# EFR Summary

## Accounting IBEB, FEB11018X

## 2026-2027



## Lectures 1 to 18

### Weeks 1 to 7

Deloitte.

DeNederlandscheBank
EUROSYSTEEM

LandLane Capital

## Details

**Subject:** Accounting IBEB 2026-2027

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**Date of publication:** 09.10.2026

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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:** Measure and present a true and fair view of the financial position and financial performance of a business to interested parties.

## Users of Accounting Data

| Internal users | External users |
|---|---|
| Management | Banks |
| Human resource | Suppliers |
| Marketing | Investors |

**Information is 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:** 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.

# Qualitative Characteristics of Financial Reporting

**Relevance** and **faithful representation** are the twin pillars of quality financial reporting under IFRS.

- ➔ **Relevance:** must help users make informed decisions by offering insights into past, present, or future events.
- ➔ **Faithful representation:** information must be complete, neutral, and free from error.

## 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 | **Revenue recognition principle**<br>Revenues recorded when goods or services are provided |
| Expenses recognized when cash is paid | **Expense recognition principle**<br>Expenses recognized when incurred, in |

| | |
|---|---|
| | the same period as the revenues they helped to generate |
| NOT in accordance with IFRS<br>NOT a true and fair view | In accordance with IFRS |

# The Accounting Equation

**Assets**

- A resource controlled by the entity
- As a result of past events
- From which future economic benefits are expected to flow into the entity
- E.g.: cash, equipment and machinery, **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
- E.g.: bank loan, **accounts payable**

**Equity**

- The residual interest in the assets of a firm after deducting all its liabilities
- The owner of the company is a residual claimant
- **Equity** = Total assets - Total liabilities

## Accounting Equation 1

| |
|---|
| **Total assets** = Total liabilities + Equity |

## Financial Reports

**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 accounting equation 1

**Income statement**

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

## Stock vs. Flow Variables

**Stock variables:** single point in time (snapshots) and are recorded in the balance sheet. E.g.: assets, liabilities and equity.

**Flow variables:** activity over a period of time, recorded in the income statement. E.g.: revenue and expenses.

# 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
- Revenue recognition principle
- Expense recognition principle

**Valuation**

- Historical cost
- Fair value

**Different accounting standards worldwide**

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

## Accounting Equation 2

Recall the simple accounting equation:

| Total assets = Total liabilities + Equity |
|---|

**Equity** = Share capital + Retained Earnings
**Retained Earnings** = Prior Retained Earnings + Net Income - Dividends
**Net Income** = Revenues - Expenses

Therefore, the expanded accounting equation is:

| **Total assets** = total liabilities + [Share capital + retained earnings - dividends + revenues - expenses] |
|---|

**Dividends:** distributions of retained earnings to shareholders. They are NOT an expense and are recorded as a reduction of retained earnings on the declaration date, and creates a liability until payment date.

# The Accounting Cycle

**1.** Analyze 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: Identify and Analyze Transactions

When analyzing transactions, you can follow the steps below:

1. What has happened?
2. Which accounts are affected and by how much?
3. What is the effect on the accounting equation?

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

| Total assets = total liabilities + [Share capital + retained earnings - **dividends** + revenues - expenses] |
|---|

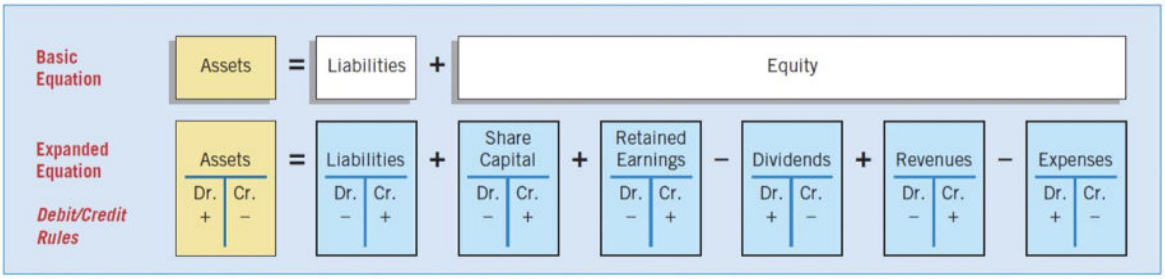
E.g.: On January 5th, 2019, Firm X purchases equipment on account for $3,500, payment due within the month
**Equipment:** +3,500 (asset)
**Accounts payable:** +3,500 (liability)

**Remember:** for all transactions: assets = liabilities + equity.

## Debit/Credit Bookkeeping

**Rules of Debits and Credits:**

- Every transaction must have at least one **debit** and at least one **credit**
- Debits must equal credits for all transactions
- Normal balance is on the **increase** side



In order to remember this, the **DEALER** rule is helpful:







## Step 2: Record Journal Entries for Transactions

**Journal entry:** description of an economic translation in terms of T-accounts and their corresponding changes. Typically, a journal has dates, name of the account, and two amount columns for debit and credit.

Journal Entry Example:
On January 3, 2019, Firm X issued $20,000 in ordinary shares for cash.

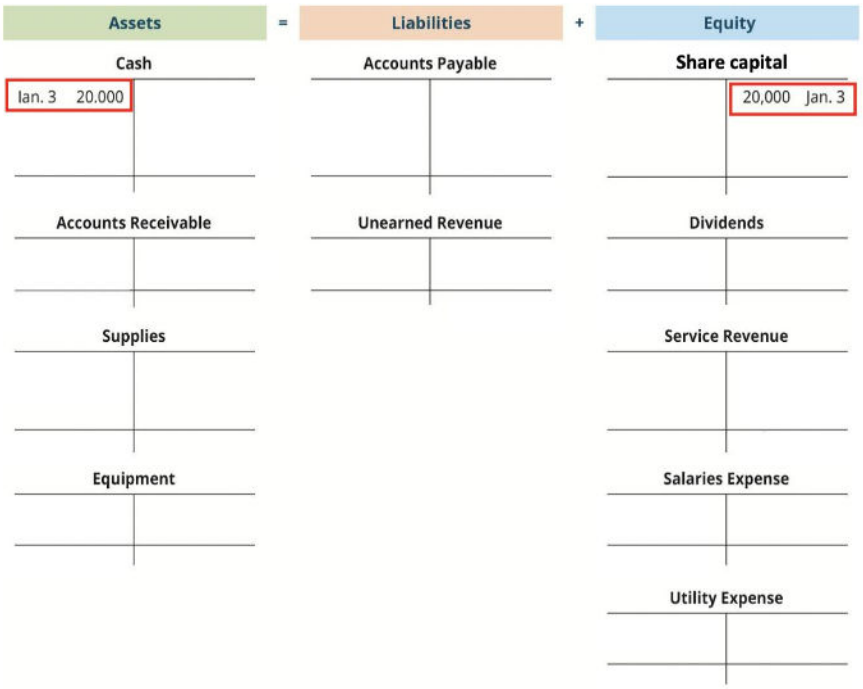
| **Date** | **Account Name** | **Debit** | **Credit** |
|---|---|---|---|
| Jan. 3, 2019 | Cash<br>  Share Capital | 20,000 | <br>20,000 |

**Total debit = Total Credit**

## Step 3: Post Journals to Ledgers

**Ledger:** Set of all accounts that are maintained by a firm. It includes all the asset, liability, and equity accounts, and all types of revenues and expenses.

Ledger Entry Example:
Following the previous example.




# Accounting – IBEB – FA Lecture 2

## Step 4: Prepare an Unadjusted Trial Balance

**Trial Balance:** a list of all accounts in the general ledger that have nonzero balances, remember that we are considering our trial to be unadjusted.

**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. Once all balances are transferred to the unadjusted trial balance, sum each of the debit and credit columns to prove equality.

**Example**

| Yazici Advertising A.Ş.<br>Trial Balance<br>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 | |
| | ₺287,000 | ₺287,000 |

## Step 5: Adjusting Journal Entries

Adjusting entries do not record new events, update the books for events that are already in progress and they are required every time financial statements are prepared. **Recall:** accrual accounting (revenue recognition principle and expense recognition principle).

### Types of Adjusting Entries

Deferrals

- **Prepaid expenses:** expenses paid in cash before they are used or consumed
  - Debit an expense account
  - Credit an asset account
- **Unearned revenue:** cash received before services are performed
  - Debit unearned revenue (liability)
  - Credit a revenue account
- **Depreciation:**
  - Debit depreciation expense
  - Credit accumulated depreciation (asset)
  - The difference between the asset's value (historical cost) and Accumulated Depreciation is called the **book value of the asset**

Accruals

- **Accrued Revenue:** revenue that is earned but not billed
    - Debit account receivable (asset)
    - Credit a revenue account
- **Accrued expenses:** expenses incurred but not yet paid in cash or recorded
    - Debit an expense account
    - Credit accounts payable

## 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.

# Accounting - IBEB - FA Lecture 3

## Step 8: Prepare 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.
Net income = revenues - expenses

| | **Revenue** |
|---|---|
| (minus) | COGS |
| (equals) | **Gross profit** |
| (minus) | Expenses (selling, administrative…) |
| (equals) | **Income from operations** (operating profit) |

| | |
|---|---|
| (minus) | Interest |
| (equals) | **Income before income tax** |
| (minus) | Tax |
| (equals) | **Net income for the year** |

**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
**Closing equity** = Opening equity + Net Income + Share Issuances - Dividends

## Organizational firms

**Sole proprietorship**

- One owner/manager
- Unlimited liability

**Corporation (public listed companies)**

- Ownership and management are separated
- Limited liability for owners (shareholders)

## Equity accounts

Sole proprietorship

- ➔ **Owner's capital:** total equity value of the firm and it is the book value of the firm for the owner of the firm
- ➔ **Owner's drawing:** keeps track of capital drawings during accounting period

| |
|---|
| **Change in equity** = Owner's Capital Contributions + Net Income - Owner's Drawings |

Corporation

- ➔ **Share capital - ordinary:** nominal value of ordinary shares issued by the corporation.
- ➔ **Share capital - premium:** amount received in excess of the face value of shares.
- ➔ **Retained earnings:** remaining profit after all expenses are deducted and dividends paid.
- ➔ **Dividends:** keeps track of dividends declared during accounting period

| |
|---|
| **Change in equity** = Capital contributions + Net Income - Dividends |

**Capital contributions** = Share Capital + Share Premium
**Retained earnings** = Net Income - Dividends

# Statement of Financial Position (Balance Sheet)

**Contents of a balance sheet**

| | |
|---|---|
| **Non-Current Assets**<br>Cash and other assets that are expected to be converted to cash in more than 1 year. | **Current Assets**<br>Cash and other assets that are expected to be converted to cash within a year. |

| | |
|---|---|
| Examples:<br>• Long term Investments<br>• Property, Plant, and Equipment<br>• Intangible Assets | Examples:<br>• Receivables<br>• Prepaid Expenses<br>• Cash<br>• Inventories<br>• Short-term Investments |

| **Non-Current Liabilities**<br>Liabilities that will be paid in more than 1 year | **Current Liabilities**<br>Liabilities that will be paid within 1 year |
|---|---|
| Examples:<br>• Long-term loans<br>• Debentures | Examples:<br>• Accounts payable<br>• Unearned revenue |

| **Equity** (Corporations)<br>• Share Capital<br>• Share Premium<br>• Retained earnings |
|---|

## Statement of Cash Flow

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

### Categories for Transactions

- **Cash Flow from Operating Activities:** cash from day-to-day main business operations. E.g.: cash collected from customers, salaries.
- **Cash Flow from Investing Activities:** cash spent on or made from long-term assets. E.g.: selling land, long-term investments.
- **Cash Flow from Financing Activities:** cash from owners and lenders, transactions that involve liability and equity items. E.g.: issuing shares, taking

out long-term loans, repurchasing shares.

### Structure of Cash Flow Statement

| |
|---|
| Net cash provided by operating activities |
| Net cash used by investing activities |
| Net cash provided by financing activities |
| **Net cash flow** |
| **Ending cash balance** (beginning cash balance + net cash flow) |

**Free Cash Flow:** how much discretionary cash a company has left over after maintaining its operations and paying its investors. High and positive FCF indicates strong financial health and flexibility.

| |
|---|
| **FCF** = net cash provided by operating activities - capital expenditure - cash dividends |

**Current ratio:** a liquidity ratio that measures a company's ability to pay short-term obligations or those within one year. A value below 0 of the current ratio indicates that the company has more immediate bills (liabilities) than short-term assets, which can signal potential cash flow challenges.

| |
|---|
| **Current ratio** = current assets/current liabilities |

# Accounting - IBEB - FA Lecture 4

## Step 9: Closing Entries

Reduce the balance of **temporary** (flow) accounts to zero. **Permanent** (stock) accounts are not closed.

### 4-step Procedure for Preparing Closing Entries

| |
|---|
| Dr. **Revenue** (each revenue account must be debited separately)<br>Cr. **Income Summary** for total revenue |
| Dr. **Income Summary** for total expenses<br>Cr. **Expenses** (each expense account must be credited separately) |
| Dr. **Income Summary** for the amount of **Net Income**<br>Cr. **Retained Earnings** for the amount of **Net income** |
| Dr. **Retained Earnings** for the amount of Dividends<br>Cr. **Dividends** |

### Closing Entries: Sole Proprietorship Versus Corporation

For Sole Proprietorship

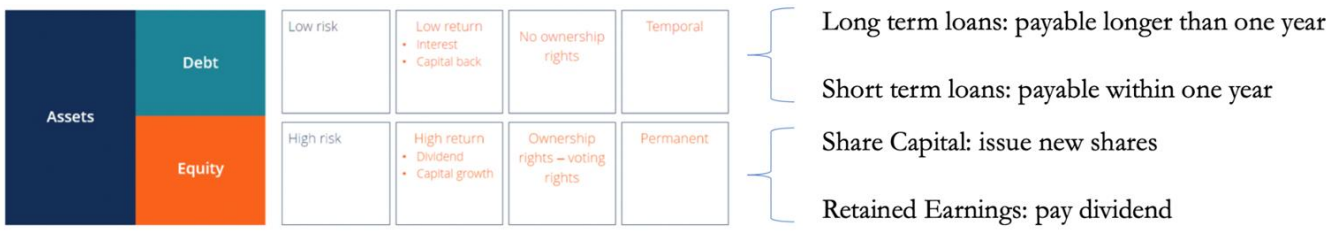
- Use **Owner's Capital** instead of Retained Earnings
- Use **Owner's Drawings** instead of Dividends

## Step 10: Post Closing Trial Balance

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

- Carry permanent accounts into post-closing trial balance.
- Update Retained Earnings value
    - **Retained Earnings** = Prior Retained Earnings + Net Income - Dividends

# Accounting for the Financing Activities




## Types of Shares

**Share Capital:** total amount of cash and other assets paid into the corporation by stockholders in exchange for capital stock (common shares).

## Ordinary Shares Account

**Share Capital - Ordinary Account:** par value
**Share Premium - Ordinary Account:** proceeds above or below par value
Corporations may also issue stock for **services** (e.g.: attorneys) or **non-cash assets** (e.g.: land).

Journal Entry Example

| **Date** | **Account Name** | **Debit** | **Credit** |
|---|---|---|---|
| Jan. 3, 2019 | Cash/Service/Non-cash asset<br>Share **Capital**/**Premium** - **Ordinary** | 20,000 | <br>20,000 |

## Preference Share Account

**Share Capital - Preference account:** par value
**Share Premium - Preference account:** proceeds above or below par value
Journal Entry Example

| | | | |
|---|---|---|---|
| Jan. 3, 2019 | Cash/Service/Non-cash asset<br>Share **Capital**/**Premium** - **Preference** | 20,000 | <br>20,000 |

**Ordinary Shares** represent the basic **voting shares** of a corporation. **Preference shareholders** have a **priority** as to distributions of **earnings** (dividends) and assets in the event of **liquidation**. However, they generally do not have voting rights.

## Treasury Shares Account

**Treasury Shares** are a corporation's own stock that it has reacquired from shareholders but not retired. Why?

- To reissue the shares to officers and employees
- To have additional shares available for use in the acquisition
- To increase earnings per share (EPS)

## Cash Dividends

Cash Dividends: payment of cash by the company to shareholders on a pro rata basis. For a corporation to pay a cash dividend it must have: retained earnings, adequate cash and a declaration of dividends by the Board of Directors.

### 3 Important Dates

**Declaration Date**

- Company declares when and how much dividend will be paid
- Board authorizes dividends
- Company has an obligation

| Date | Account Name | Debit | Credit |
|---|---|---|---|
| Dec. 1, 2025 | Retained Earnings<br>Dividends Payable | 500 | <br>500 |

**Record Date**

- Registered shareholders are eligible for dividends. No entry needed.

**Payment Date**

- Company pays the dividends to shareholders who had shares on the record date.

| | | | |
|---|---|---|---|
| Jan. 20, 2026 | Dividends Payable<br>Cash | 500 | <br>500 |

## Debt Capital: Short-term Loans

**Short-term Loan:** loan with a term of at most one year, referred to as note payable.

When the term of the short-term loan is shorter than the reporting period, no adjusting entries are needed.

**Zero Interest Bearing Note:** a loan with no explicit interest rate.

Journal Entry Example

A company borrows $7,500 in cash from the bank on June 5 and must pay $7,800 on August 5.

| **Date** | **Account Name** | **Debit** | **Credit** |
|---|---|---|---|
| Sept. 9, 2020 | Cash<br>Notes Payable | 6,000 | <br>6,000 |
| Dec. 1, 2020 | Notes Payable<br>Interest Expense<br>Cash | 6,000<br>100 | <br><br>6,100 |

## Debt Capital: Long-term Loans

- How much? - **Principal amount**
- How expensive? - **Interest rate**
- How to pay backP - **Equal installments** or **end of year**

Journal Entry Example

$30,000 loan for 3 years at an interest rate of 12%. Interest paid annually at the end of each year and adjusting entries are made monthly. Principal is paid at the end of the third year.

| **Date** | **Account Name** | **Debit** | **Credit** |
|---|---|---|---|
| Jan. 1, 2026 | Cash<br>Long-term Loan | 30,000 | <br>30,000 |

| | | | |
|---|---|---|---|
| Jan. 31, 2026<br>**(Repeat all months)** | Interest Expense<br>Interest Payable | 300 | <br>300 |
| Dec. 31, 2026 | Interest Payable<br>Cash | 3,600 | <br>3,600 |
| Dec. 31, 2028 | Long-term Loan<br>Interest Payable<br>Cash | 30,000<br>3,600 | <br><br>33,600 |

Journal Entry Example

$30,000 loan for 3 years at an interest rate of 12%. Interest paid annually at the end of each year and the adjusting entries are made annually. Principal is paid in three equal installments at the end of each year.

| **Date** | **Account Name** | **Debit** | **Credit** |
|---|---|---|---|
| Jan. 1, 2026 | Cash<br>Long-term Loan | 30,000 | <br>30,000 |
| Dec. 31, 2026 | Long-term Loan<br>Interest Expense<br>Cash | 10,000<br><br>13,600 | <br>3,600 |
| Dec. 31, 2027 | Long-term Loan<br>Interest Expense<br>Cash | 10,000<br>**2,400** | <br><br>12,400 |
| Dec. 31, 2028 | Long-term Loan<br>Interest Expense<br>Cash | 10,000<br>**1,200** | <br><br>11,200 |

Remember: **interest expenses** = interest rate x outstanding loan amount during the period.

# Accounting - IBEB - FA Lecture 5

**Inventories:** items held for sale in the ordinary course of a business or goods to be used in the production of goods which will be sold (asset).

**Merchandising company:** one classification. One inventory account (purchase merchandise in a form ready for sale).
**Manufacturing company:** three classifications. Raw materials, work in progress (WIP) and finished goods.

## Inventory Cost Flow in Merchandising Companies

### Periodic System

A periodic system updates the inventory balances at the end of the reporting period, typically the end of a month, quarter or year.

End of period calculation

| |
|---|
| **COGS** = beginning inventory + purchases - ending inventory |

Journal Entry Example

| **Date** | **Account** | **Debit** | **Credit** |
|---|---|---|---|
| | Purchases<br>(temporary holding account)<br>Cash/Accounts Payable | XXX | <br><br>XXX |
| | Cash<br>Sales Revenue<br>(do not record which items left store) | | |

| | | | |
|---|---|---|---|
| | Inventory<br>COGS<br>  Purchases<br>  Inventory (beginning) | XXX<br>XXX | <br><br>XXX<br>XXX |

## Perpetual System

A perpetual system updates the inventory account on an on-going basis, at the time of each individual sale.

Journal Entry Example

| **Date** | **Account** | **Debit** | **Credit** |
|---|---|---|---|
| | Inventory<br>  Cash/Accounts Payable | XXX | <br>XXX |
| | Cash<br>  Sales Revenue<br>COGS<br>  Sales Inventory | XXX<br><br>XXX | <br>XXX<br><br>XXX |

**COGS** and inventory levels can be found in inventory T-account. There is no need for a final calculation or final journal entry.

# Costs Included in Inventory

Cost of inventory is not just the price tag on the product itself, but all necessary costs to get that item into your hands and ready to sell.

1) **Product costs:** directly connected with bringing the good to the buyers place and converting it to a salable condition. E.g.: purchase price, import duties and other taxes, transportation costs to the factory, other handling costs directly linked to the acquisition of the goods.

2) **Purchase Discounts:** recorded as a reduction from the cost of inventories. Credited to inventory or purchases.

3) **Period costs:** regular costs to run the business (e.g.: administrative costs). They are not included in inventory costs because they did not help bring the inventory to your door.

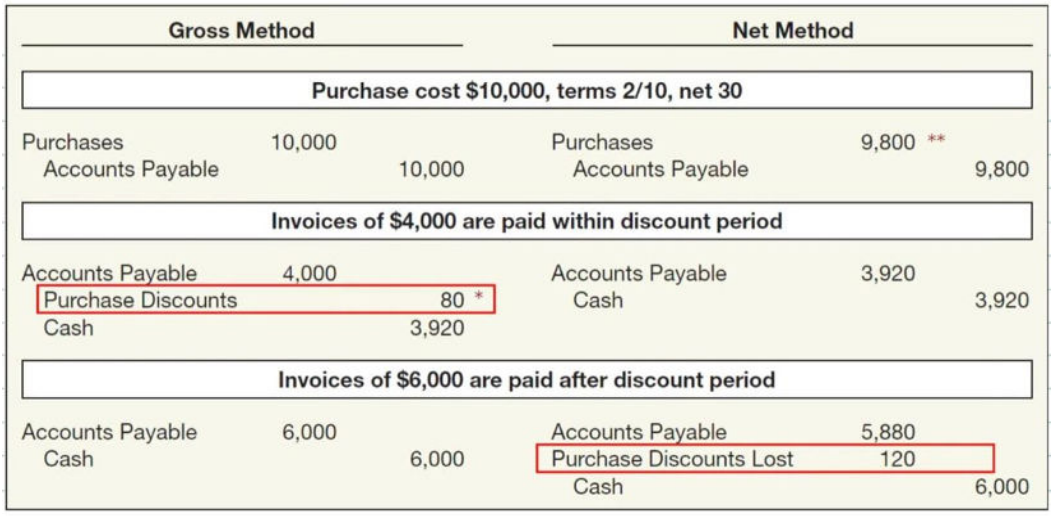
## Purchase Discounts Under Periodic System

**Gross Method:** assumes you may not take the discount. Record the full amount first.

**Net Method:** assumes you will take the discount. Record the discounted amount first.

Example

Order of coffee beans for $10,000. Supplier has offered the terms 2/10, net 30. This means that if the beans are paid within 10 days there is a 2% discount, if not, the full price must be paid within 30 days.



| Gross Method | | | Net Method | | |
|---|---|---|---|---|---|
| **Purchase cost $10,000, terms 2/10, net 30** | | | | | |
| Purchases | 10,000 | | Purchases | 9,800 ** | |
| Accounts Payable | | 10,000 | Accounts Payable | | 9,800 |
| **Invoices of $4,000 are paid within discount period** | | | | | |
| Accounts Payable | 4,000 | | Accounts Payable | 3,920 | |
| Purchase Discounts | | 80 * | Cash | | 3,920 |
| Cash | | 3,920 | | | |
| **Invoices of $6,000 are paid after discount period** | | | | | |
| Accounts Payable | 6,000 | | Accounts Payable | 5,880 | |
| Cash | | 6,000 | Purchase Discounts Lost | 120 | |
| | | | Cash | | 6,000 |

# Accounting - IBEB - FA Lecture 6

## 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. While **inventory** remains unsold it is recorded as a **current asset** on the balance sheet. Once it is sold it becomes an **expense** on the income statement as **COGS**.

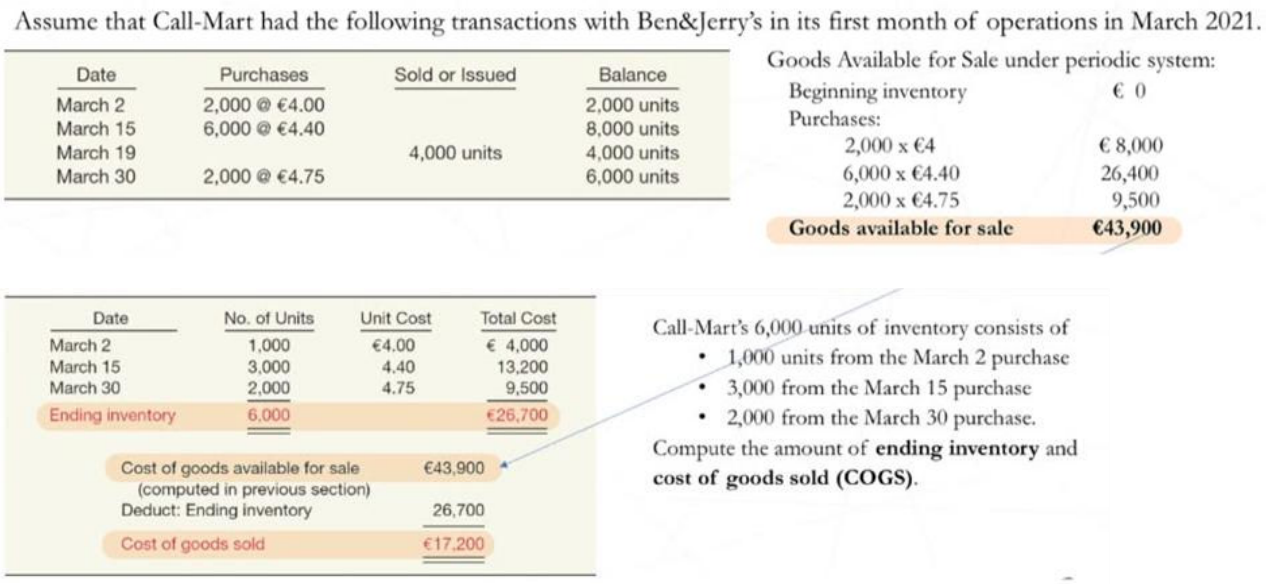
# Methods of Inventory Valuation

## Specific Identification

Used for small and costly but easily distinguishable items. Matches actual revenue against actual costs but it is not commonly used.

Remember

| |
|---|
| **COGS** = purchases - ending inventory |



Assume that Call-Mart had the following transactions with Ben&Jerry's in its first month of operations in March 2021.

| Date | Purchases | Sold or Issued | Balance |
|---|---|---|---|
| March 2 | 2,000 @ €4.00 | | 2,000 units |
| March 15 | 6,000 @ €4.40 | | 8,000 units |
| March 19 | | 4,000 units | 4,000 units |
| March 30 | 2,000 @ €4.75 | | 6,000 units |

Goods Available for Sale under periodic system:

| | |
|---|---|
| Beginning inventory | € 0 |
| Purchases: | |
| 2,000 x €4 | € 8,000 |
| 6,000 x €4.40 | 26,400 |
| 2,000 x €4.75 | 9,500 |
| **Goods available for sale** | **€43,900** |

| Date | No. of Units | Unit Cost | Total Cost |
|---|---|---|---|
| March 2 | 1,000 | €4.00 | € 4,000 |
| March 15 | 3,000 | 4.40 | 13,200 |
| March 30 | 2,000 | 4.75 | 9,500 |
| Ending inventory | 6,000 | | €26,700 |

| | |
|---|---|
| Cost of goods available for sale (computed in previous section) | €43,900 |
| Deduct: Ending inventory | 26,700 |
| Cost of goods sold | €17,200 |

Call-Mart's 6,000 units of inventory consists of

- 1,000 units from the March 2 purchase
- 3,000 from the March 15 purchase
- 2,000 from the March 30 purchase.

Compute the amount of **ending inventory** and **cost of goods sold (COGS)**.

# Average-cost

Uses average cost of all similar goods available during the period.

- **Weighted average cost:** periodic system
- **Moving average cost:** perpetual system

## Periodic System

One weighted average unit cost for the whole period.

| **Weighted-average cost per unit** = total cost of purchases / units |
|---|



| Date of Invoice | No. Units | Unit Cost | Total Cost |
|---|---|---|---|
| March 2 | 2,000 | €4.00 | € 8,000 |
| March 15 | 6,000 | 4.40 | 26,400 |
| March 30 | 2,000 | 4.75 | 9,500 |
| Total goods available | 10,000 | | €43,900 |

Weighted-average cost per unit: €43,900 / 10,000 = €4.39

Inventory in units: 6,000 units

Ending inventory: 6,000 × €4.39 = €26,340

| | |
|---|---|
| Cost of goods available for sale | €43,900 |
| Deduct: Ending inventory | 26,340 |
| Cost of goods sold | €17,560 |

**COGS:** 17,560
**Ending inventory:** 26,340

## Perpetual System

Update inventory constantly. New average unit cost each time a purchase is made.

| Date | Purchased | | Sold or Issued | Balance | |
|---|---|---|---|---|---|
| March 2 | (2,000 @ €4.00) | € 8,000 | | (2,000 @ €4.00) | € 8,000 |
| March 15 | (6,000 @ 4.40) | 26,400 | | (8,000 @ 4.30) | 34,400 |
| March 19 | | | (4,000 @ €4.30) | | |
| | | | €17,200 | (4,000 @ 4.30) | 17,200 |
| March 30 | (2,000 @ 4.75) | 9,500 | | (6,000 @ 4.45) | 26,700 |

1)

Calculate the average cost for the purchases made on March 2 and March 15.

- 2,000*4.00 = 8,000
- 6,000*4.40 = 26,400
- 8,000 + 26,400 = 34,000
- 34,000/8000 = **4.30**

**Average cost = 4.30**

2) Calculate the **COGS**

- 4,000*4.30 = 17,200

3) Update average costs again for the remaining units

- 2,000*4.75 = 9,500
- 4,000*4.30 = 17,200
- 17,200 + 9,500 = 26,700
- 26,700/6000 = 4.45

**New average cost for remaining units = 4.45**

**COGS:** 17,200
Ending inventory: 26,700

Using the same method, COGS and ending inventory will differ based on the system used (periodic vs. perpetual).

## 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 **COGS**.

| Date | Purchases | Sold or Issued | Balance |
|---|---|---|---|
| March 2 | 2,000 @ €4.00 | | 2,000 units |
| March 15 | 6,000 @ €4.40 | | 8,000 units |
| March 19 | | 4,000 units | 4,000 units |
| March 30 | 2,000 @ €4.75 | | 6,000 units |

## Periodic System

| Date | No. Units | Unit Cost | Total Cost |
|---|---|---|---|
| March 30 | 2,000 | €4.75 | € 9,500 |
| March 15 | 4,000 | 4.40 | 17,600 |
| Ending inventory | 6,000 | | €27,100 |

| | |
|---|---|
| Cost of goods available for sale | €43,900 |
| Deduct: Ending inventory | 27,100 |
| Cost of goods sold | €16,800 |

Of the 4,000 units sold, 2,000 come from March 2 and 2,000 units come from March 15.
2,000*4.00 = 8,000
2,000*4.40 = 8,800
**COGS** = 16,800

This can also be calculated using the formula mentioned previously using purchases and ending inventory to calculate **COGS**.

**Cost of goods available for sale** = 43,900
**Ending inventory** = 27,100
**COGS** = 43,900 - 27,100 = 16,800

## Perpetual System

| Date | Purchased | | Sold or Issued | Balance | |
|---|---|---|---|---|---|
| March 2 | (2,000 @ €4.00) | € 8,000 | | | |
| March 15 | (6,000 @ 4.40) | 26,400 | | 2,000 @ 4.00<br>6,000 @ 4.40 | 34,400 |
| March 19 | | | 2,000 @ €4.00<br>2,000 @ 4.40<br>(€16,800) | 4,000 @ 4.40 | 17,600 |
| March 30 | (2,000 @ 4.75) | 9,500 | | 4,000 @ 4.40<br>2,000 @ 4.75 | 27,100 |

1) Calculate cost of purchase

- 2,000*4.00 = 8,000
- 6,000*4,40 = 26,400

2) Calculate what was sold using FIFO (as done previously)

- 2,000*4.00 = 8,000
- 2,000*4.40 = 8,800
- **COGS** = 16,800

3) Calculate ending balance of what remains

- 4,000*4.40 = 17,600
- 2,000*4.75 = 9,500
- **Ending inventory** = 27,100

Using FIFO, results of COGS and Ending inventory will be the same at the end of the month regardless of the system used.

# Last-in, First-out (LIFO)

The costs of the last units are the first to be recognized as the COGS.

| Date | Purchases | Sold or Issued | Balance |
|---|---|---|---|
| March 2 | 2,000 @ €4.00 | | 2,000 units |
| March 15 | 6,000 @ €4.40 | | 8,000 units |
| March 19 | | 4,000 units | 4,000 units |
| March 30 | 2,000 @ €4.75 | | 6,000 units |

## Periodic System

| Date of Invoice | No. Units | Unit Cost | Total Cost |
|---|---|---|---|
| March 2 | 2,000 | €4.00 | € 8,000 |
| March 15 | 4,000 | 4.40 | 17,600 |
| Ending inventory | 6,000 | | €25,600 |

| | |
|---|---|
| Goods available for sale | €43,900 |
| Deduct: Ending inventory | 25,600 |
| Cost of goods sold | €18,300 |

2,000 units are coming from March 30
2,000*4.75 = 9,500
2,000*4,40 = 8,800
**COGS** = 18,300

This can also be calculated using the formula mentioned previously using purchases and ending inventory to calculate **COGS**.

## Perpetual System

| Date | Purchased | | Sold or Issued | Balance | |
|---|---|---|---|---|---|
| March 2 | (2,000 @ €4.00) | € 8,000 | | 2,000 @ €4.00 | € 8,000 |
| March 15 | (6,000 @ 4.40) | 26,400 | | 2,000 @ 4.00<br>6,000 @ 4.40 | 34,400 |
| March 19 | | | (4,000 @ €4.40)<br>€17,600 | 2,000 @ 4.00<br>2,000 @ 4.40 | 16,800 |
| March 30 | (2,000 @ 4.75) | 9,500 | | 2,000 @ 4.00<br>2,000 @ 4.40<br>2,000 @ 4.75 | 26,300 |

Since the purchase was made on March 19, the last purchase made before March 19 was on March 15. Those are the units used to calculate COGS.

**COGS** = 4,000*4.40 = 17,600

## Summary of Inventory Evaluation Methods

- All three valuation methods will yield the same exact result when the price of purchase is constant throughout the whole year
- If there is an increase in inflation, FIFO method will yield the highest gross profit because prices keep increasing and FIFO uses the oldest purchases. This results in lower CGOS and hence higher gross profit
- If there is an increase in deflation, the LIFO method will yield the highest gross profit because prices keep decreasing and LIFO uses the most recent purchases. This results in lower COGS and hence higher gross profit.

## Effects of Inventory Errors

### Income Statement Effects

| **Error** | **COGS** | **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

| Error (Ending inventory) | Assets | Liabilities | Equity |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Overstated | Overstated | No effect | Overstated |
| Understated | Understated | No effect | Understated |

# Accounting – IBEB - FA Lecture 7

## Net Realizable Value

**Net Realizable 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.

| |
|---|
| **NRV** = estimated selling price - cost to complete - cost to sell |

### The Lower-of-cost-or-Net-realizable-value (LCNRV)

A company abandons the historical cost principle when the future utility (revenue-producing ability) of the asset drops below its original cost. Therefore, companies report their inventories at **LCNRV**.

**LCNRV:** the company should value its inventory at its historical cost or **NRV**, whichever one is lower.

### Methods of applying LCNRV

Companies can choose how broadly to group their products when making this comparison. Companies can pick whichever method but must be consistent from one period to the next.

- **Item-by-item:** compare NRV and Historical cost individually. This method always yields the lowest (most conservative) inventory valuation and is therefore the most commonly used.

- **Major groups:** compare for entire product categories
- **Total inventory:** compare for all products combined

## Recording NRV Instead of Historical Cost

There are different write downs which can be used when applying the **LCNRV rule**.

### Without Allowance Account

| **COGS Method**<br>Treat the cost as part of your regular cost of doing business | **Loss Method**<br>Break out loss into separate account |
|---|---|
| Dr. COGS<br>Cr. Inventory | Dr. Loss due to decline to NRV<br>Cr. Inventory |

### With Allowance Account

Companies generally use an **allowance account**. Instead of crediting the inventory account directly, to avoid touching it and to keep the historical cost visible on the balance sheet, companies use **Allowance to Reduce Inventory to NRV** (contra-asset account).

| **COGS Method**<br>Treat the cost as part of your regular cost of doing business | **Loss Method**<br>Break out loss into separate account |
|---|---|
| Dr. COGS<br>Cr. Allowance to Reduce Inventory to NRV | Dr. Loss due to decline to NRV<br>Cr. Allowance to Reduce Inventory to NRV |

## Impact on Financial Statements

- **Ending Inventory:** both methods reduce total inventory value on the balance sheet by equal amounts.
- **COGS:** COGS are higher under COGS method as the write-down is included

within the COGS account.

- **Gross profit:** lower under COGS method, because as COGS are higher gross profit is lower.
- **Net income:** equal under both accounts.

## Recovery of Inventory

Record a recovery of inventory loss under international accounting standards when inventory which previously dropped in value, gains value back.

- Reverse the loss due to NRV if prices go back up and record a **recovery (gain)** to bring the inventory value back up.

Journal Entry Example

| **Date** | **Accounts** | **Debit** | **Credit** |
|---|---|---|---|
| Aug. 9, 2026 | Allowance to Reduce Inventory to NRV | 5,000 | |
| | Recovery of Inventory Loss (COGS) | | 5,000 |

**Strict limit**: never write up inventory value above its **original purchase cost**.

## Inventory Turnover

**Inventory Turnover**: it is a financial metric that measures the number of times a company sells its inventory over a specific period, typically within a year. It indicates the efficiency with which a company manages its inventory and how well it converts inventory into sales.

| **Inventory turnover** = COGS / average inventory |
|---|

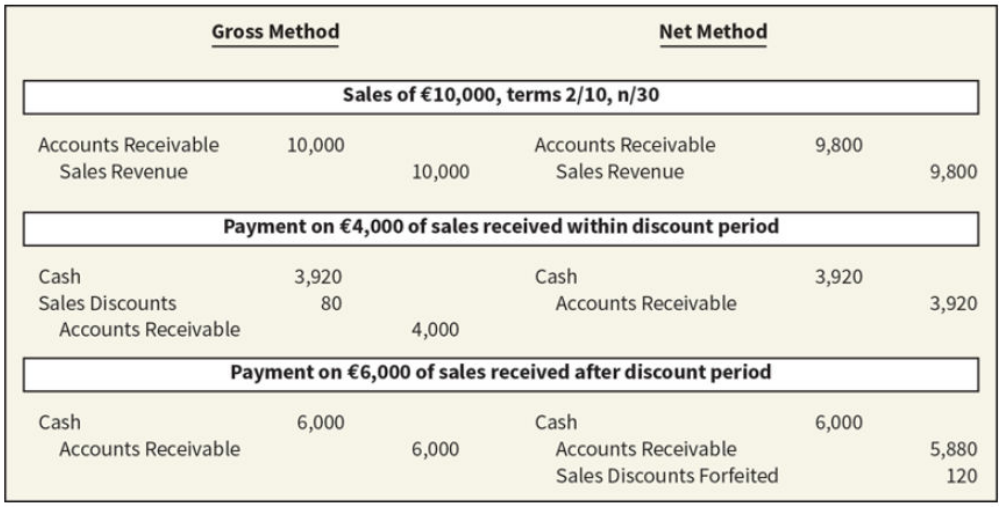
**Average Days to Sell Inventory**: it is a financial metric that indicates the average number of days it takes for a company to turn its inventory into sales. It provides insight into how efficiently a company is managing its inventory and how long inventory stays on hand before it is sold.

| **Average days to sell inventory** = 365 / inventory turnover |
|---|

# Accounting – IBEB - FA Lecture 8

## Cash Discounts for Account Receivables

**Gross method:** record the gross amount as revenue
**Net method:** record the net amount (subtracting discounts) as revenue.



| Gross Method | | | Net Method | | |
|---|---|---|---|---|---|
| **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 |

## Sales Returns for Account Receivables

We use a **contra-revenue** account.

Example of Journal Entry

| Date | Accounts | Debit | Credit |
|---|---|---|---|
| Jul. 16, 2026 | Account Receivable<br>Sales Revenue<br>Return Liability | 5,000 | <br>4,600<br>400 |

If the customer does end up returning the expected amount of product, we reduce from return liability instead of revenue directly. E.g.: **$300 grant** for defective product

| | | | |
|---|---|---|---|
| Aug. 10, 2026 | **Return Liability**<br>Accounts Receivable | 300 | <br>300 |

The $300 is the amount the producer will not receive because of defective products.

# Valuation of Account Receivable

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

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

## 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** |
|---|---|
| • Loss is charged to Bad Debt Expense.<br>• Receivables reported at gross value. | • Companies estimate uncollectible accounts receivable.<br>• Receivables reported at cash realisable value. |

## 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:
    - Readily convertible to cash AND.
    - So near to maturing that they do not involve significant risk to changes in value.
    - e.g. Government bonds, commercial paper, money market funds.
- *Restricted Cash* – Money that the company has segregated to save for a later purpose.
    - 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.
    - Generally reported as a *current liability.*
    - 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).
    - 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

## Acquisition of PP&E

**Property, Plant, and Equipment (PPE)**: long-term, durable physical assets used in operations (not held for resale to customers). **PPE** is initially recorded at **Historical Cost**.

**Historical Cost**: measures the cash or cash equivalent price of obtaining the asset and bringing it to the location and condition necessary for its intended use.

Including:

- Purchase price
- Import duties and non-refundable purchase taxes
- Trade discounts and rebates

- Costs attributable to bringing the asset to the location and condition necessary for it to be used in a manner intended by the company

In subsequent periods after obtaining PPE, companies value PPE using either the **cost method** or **fair value (revaluation) method**.
Not all money spent is treated as an asset, you must determine whether a cost is included in the asset's initial balance sheet value or expensed immediately.

## Acquisition of PP&E: Cost of Land

Includes all expenditures made to acquire land and ready for its use.

- Purchase price
- Real estate broker commissions and attorney/legal fees
- Closing costs, title fees and recording fees
- Clearing, grading, filling and draining costs
- Assumption of any existing liens or mortgages
- **Net removal cost of old buildings**: cost to demolish an old building minus any cash received from salvaged materials
- **Indefinite-life Improvements**: landscaping that lasts indefinitely, included in costs.

**Definite-life Improvements**: items with a limited useful life (e.g.: fences, driveways, sidewalks and parking lots) are recorded separately under **Land Improvements** and are depreciated over the years. They are not part of the acquisition costs of the land, the land itself has an indefinite life and is **never depreciated**.

## Acquisition of PP&E: Cost of Buildings & Equipment

### Cost of Buildings

All expenditures related to the acquisition and the construction of the building.

- Materials, labors and overhead costs incurred during construction
- Professional fees and building permits
- All cost incurred, from excavation to completion

### Cost of Equipment

Includes all expenditures incurred in acquiring the equipment and preparing it for use.

- Purchase price
- Freight and handling charges
- Insurance on the equipment while in transit
- Cost of special foundations if required
- Assembling and installation costs
- Costs of conduction of trial runs

**Ongoing Operating Expenses**: annual insurance for operating the machine, routine maintenance, or licensing fees are **Operating Expenses** (Income Statement), **not** part of the equipment's capitalized cost.

# Depreciation of PP&E

**Depreciation**: accounting process of allocating the cost of tangible assets in a systematic and rational manner to those periods expected to benefit from the use of the asset. It is **not** a tool to measure the market value of the asset, but a **cost allocation process** that spreads the initial cost (historical cost) of a tangible asset over the period expected to benefit from its use.

## Factors Involved in the Depreciation Process

**Historical Cost**: original cost recorded on the balance sheet (calculated in the previous part of this lecture).
**Residual value (or Salvage Value)**: estimated value of the asset at the end of its useful lifetime.
**Depreciable Base**: cost - residual value (C - R)
**Service Life**: expected operational lifespan. If a machine has a service life of 10 years, it does not mean it will stop working after 10 years, the machine can still be used (physical life has not ended). It just means that depreciation stops in year 10.
**Book Value (Carrying Value)**: historical cost - **accumulated depreciation**

## Methods of Depreciation

- Activity method (units of use or production)

- Straight-line method
- Diminishing (accelerated)-charge methods
    - Sum-of-the-years'-digits
    - Declining-balance method

### Journal Entry to Record Depreciation

| **Date** | **Account** | **Debit** | **Credit** |
|---|---|---|---|
| Jan. 17, 2025. | **Depreciation Expense**<br>(Income Statement) | 10,000 | |
| | **Accumulated Depreciation**<br>(Contra-asset on Balance Sheet) | | 10,000 |

Depreciate PP&E each year and record an adjusting entry. Remember to use one account from the **Balance Sheet** and one account from the **Income Statement**.

## Depreciation Methods

Example used for all four depreciation methods

**Data for Stanley Coal Mines**

| | |
|---|---|
| Cost of crane | $500,000 |
| Estimated useful value | 5 years |
| Estimated salvage value | $50,000 |
| Productive life in hours | 30,000 hours |

### Units of Activity Method

$$\frac{(\text{Cost} - \text{Residual Value}) \times \text{Hours This Year}}{\text{Total Estimated Hours}} = \text{Depreciation Charge}$$

(500,000 - 50,000)*4,000 / 30,000 = 60,000

Under this method, the depreciation costs are going to change every year based on how many hours the equipment is used.

## The Straight-Line Method

$$\frac{\text{Cost} - \text{Residual Value}}{\text{Estimated Service Life}} = \text{Depreciation Charge}$$

(500,000 - 50,000) / 5 = $90,000
Under this method, the depreciation expense is the same every fiscal year.

## Sum of the Year's Digit Method

Calculates higher depreciation in earlier years using a fraction that decreases every year.

$$\text{Depreciation Expense} = \frac{\text{Remaining Useful Life}}{\text{Sum of the Years' Digits}} \times \text{Depreciable Basis}$$

Denominator: 5 + 4 + 3 + 2 + 1 = 15
Year 1 = (5/15)*450,000 = $150,000
Year 2 = (4/15) * 450,000 = $120,000
Year 3 = (3/15) * 450,000 = $90,000
Year 4 = (2/15) * 450,000 = $60,000
Year 5 = (1/15) * 450,000 = $30,000

## The Declining Balance Method

Applies a fixed multiplier rate to the asset's Book Value at the beginning of the year. Do **not** deduct the residual value in computing the depreciation base (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.**

| **Annual Depreciation Expense** = Book value at the beginning of the year x declining balance rate |
|---|

20% * 2 = 40%
500,000 * 40 = $200,000. Book value at the end of year = $300,000.
300,000 * 40 = $120,000. Book value at the end of year = $180,000
180,000 * 40 = $72,000. Book value at the end of year = $108,000
…
Stop depreciating once **Book Value equals the Residual Value**. The final year's depreciation expense is adjusted so the ending book value equals the residual value.

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

# Accounting – IBEB - FA Lecture 10

## Revision of Depreciation Rates

When a company changes its estimates for useful life or residual value, it adjusts prospectively (adjusting only current and future years).

Case Study Example

Business **purchases** a coffee roasting machine for **$51,000**, with an estimated **5-year life** and **$1,000 residual value**. Depreciation was recorded on a **straight-line basis** for 3 years (Jan. 2026 - Jan. 2029). In 2029, the estimate was revised to a total life of **8 years** and a **residual value of $500**. Calculate the depreciation expense for 2029.

1) **Annual depreciation**
   (51,000 - 1,000) / 5 = $10,000.
2) **Book value after 3 years**
   Accumulated depreciation = 10,000 * 3 = $30,000.
   Net Book Value (NBV) = 51,000 - 30,000 = $21,000.
3) **New estimate in 2029**
   Years remaining = 8 - 3 = 5
   New depreciable base = 21,000 (NBV) - 500 (new residual) = $20,500
4) **New annual depreciation**
   20,500 / 5 = $4,100 per year.

Journal Entry Example

| Date | Account | Debit | Credit |
|---|---|---|---|
| Jan. 2029 | **Depreciation Expense**<br>(Coffee roasting machine) | 4,100 | |
| | **Accumulated Depreciation**<br>(Coffee roasting machine) | | 4,100 |

# Depreciation of Partial Periods

When an asset is purchased mid-year, prorate the full-year expense for the months used.

Case Study Example

Business purchases an espresso coffee machine in **July 2026 for $10,000** with an estimated **useful life of 5 years** and **no residual value**. Using the straight-line method, calculate the depreciation expense for 2026.

1) Full year depreciation
   10,000 / 5 = 2,000
2) Straight-line proration
   2026 (6 months, Jul. - Dec.) = $2,000 * (6/12) = 1,000
   2027 (full year) = 2,000

**SYD and DDB Proration (Accelerated Methods)**

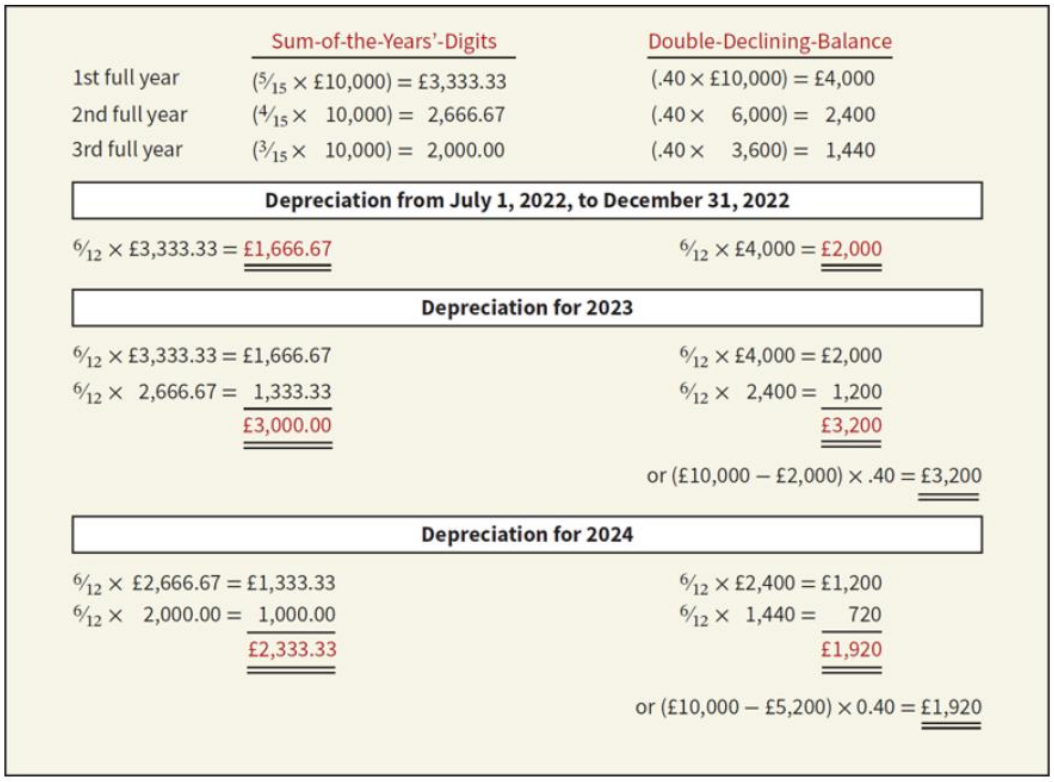
Under accelerated methods, compute full-year amounts first, then split each year's amount across fiscal boundaries.

Double-Declining Balance Example

1) **Year 1 full-year rate**
   40% * 10,000 = 4,000
2) **2026 expense**
   6 months

4,000 * (6/12) = $2,000

3) **2027 expense**
   Remaining 6 months of Year 1 and first 6 months of Year 2
   40% * 6,000 * (6/12) = $3,200



| | Sum-of-the-Years'-Digits | Double-Declining-Balance |
|---|---|---|
| 1st full year | $(5/15 \times £10{,}000) = £3{,}333.33$ | $(.40 \times £10{,}000) = £4{,}000$ |
| 2nd full year | $(4/15 \times 10{,}000) = 2{,}666.67$ | $(.40 \times 6{,}000) = 2{,}400$ |
| 3rd full year | $(3/15 \times 10{,}000) = 2{,}000.00$ | $(.40 \times 3{,}600) = 1{,}440$ |

**Depreciation from July 1, 2022, to December 31, 2022**

$6/12 \times £3{,}333.33 = £1{,}666.67$

$6/12 \times £4{,}000 = £2{,}000$

**Depreciation for 2023**

$6/12 \times £3{,}333.33 = £1{,}666.67$
$6/12 \times 2{,}666.67 = 1{,}333.33$
£3,000.00

$6/12 \times £4{,}000 = £2{,}000$
$6/12 \times 2{,}400 = 1{,}200$
£3,200

or $(£10{,}000 - £2{,}000) \times .40 = £3{,}200$

**Depreciation for 2024**

$6/12 \times £2{,}666.67 = £1{,}333.33$
$6/12 \times 2{,}000.00 = 1{,}000.00$
£2,333.33

$6/12 \times £2{,}400 = £1{,}200$
$6/12 \times 1{,}440 = 720$
£1,920

or $(£10{,}000 - £5{,}200) \times 0.40 = £1{,}920$

# Recognizing Impairments

**Impairment:** an asset is impaired when its Book Value (Carrying Amount) is greater than what you can recover from using or selling it.
On an annual basis, companies review the asset for indicators of impairments - that is, a decline in the asset's cash-generating ability through use or sale.

## The Impairment Test

1) Find recoverable amount: this value is the higher of
   **Fair Value Less Costs to Sell** (net sale price)
   **Value-In-Use** (present value of future cash flows from use)

2) Compare Carrying Amount vs. Recoverable Amount

Carrying Amount < Recoverable Amount: no impairment
Carrying Amount > Recoverable Amount: record impairment loss
**Impairment Loss** = carrying amount - recoverable amount

Journal Entry Example

| **Date** | **Account** | **Debit** | **Credit** |
|---|---|---|---|
| Jan. 2029 | Loss on Impairment<br>Accumulated Depreciation - PPE | 1,000 | <br>1,000 |

To reverse a mistaken or recovered impairment loss, the latter is capped at the amount of the original impairment loss.

Journal Entry Example

| **Date** | **Account** | **Debit** | **Credit** |
|---|---|---|---|
| Jan. 2029 | Accumulated Depreciation - PPE<br>Recovery of Impairment Loss | 1,000 | <br>1,000 |

# Cost Subsequent to Acquisition

**Capitalize (Balance Sheet Asset)**: if expenditure increases useful life, production capacity or quality and it is probable that the company will obtain future economic benefits. E.g.: additions, major upgrades, replacements...

**Expense (Income Statement)**: routine repairs, maintenance and internal rearrangements.

# Disposal of PP&E

There are two steps to follow before recording the disposal entry.

1) Update depreciation up to the exact date of disposal.
2) Calculate gain or loss
   **Gain or Loss** = cash received - Net Book Value (NBV)

Journal Entry Example

Sale at a Gain (Cash > NBV)

| **Date** | **Account** | **Debit** | **Credit** |
|---|---|---|---|
| XXX | Cash<br>Accumulated Depreciation<br>Asset Account<br>(Original Historical Cost)<br>**Gain on Disposal of PPE**<br>(Income Statement) | XXX<br>XXX | <br><br>XXX<br><br>XXX |

Sale at a Loss (Cash < NBV)

| **Date** | **Account** | **Debit** | **Credit** |
|---|---|---|---|
| XXX | Cash<br>Accumulated Depreciation<br>**Loss on Disposal of PPE**<br>Asset Account<br>(Original Historical Cost) | XXX<br>XXX<br>XXX | <br><br><br>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. E.g.: creditors, shareholders, regulators. | **Primary users** | Internal users. E.g.: officers, managers. |
| Financial statements.<br>Quarterly, annually. | **Types and frequency** | Internal reports.<br>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 |

# Cost Concepts

## Terminology

**Cost:** resource sacrificed (cost does not equal expense)
**Cost object:** item or activity costs are being separately measured. E.g.: departments.
**Cost collection system:** includes process and methods.

## Cost Classification: Cost Function

**Product costs:** directly tied to manufacturing the item. Recorded as an **asset** (**inventory**) on the **balance sheet if unsold**, or as **COGS** on the **income statement** if **sold**. E.g.: direct labour, direct material, manufacturing overheads.

**Period costs:** operating expenses which are not part of the manufacturing process. Recorded as an operating expense on the income statement. E.g.: administrative expenses, selling expenses.

## Cost Classification: Cost 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 | Direct Material & Direct labour | Indirect Material & Indirect Labour |
| Examples | Raw materials, software, delivery cost per unit. | Tape, oils and lubricants, supervisors, security guards. |

**Manufacturing Overheads (MOH):** indirect factory costs that are still part of the manufacturing process but cannot be traced to one cost object specifically.

The **scope** of a cost object can change the classification of the cost. For example, if the **cost object** is one soap bar, factory electricity is an **indirect (overhead) cost** but if the **cost object** were to be the whole soap factory then factory electricity is a **direct**

**cost.**

| **Prime costs (direct production costs)** = DM + DL |
|---|

| **Conversion costs (raw materials into finished goods)** = DL + MOH |
|---|

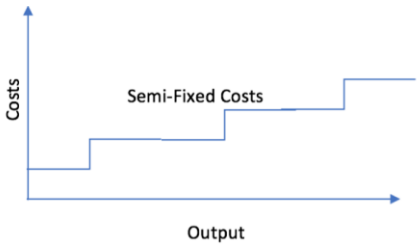
## Cost Classification: Cost Behaviour

**Variable Costs:** increase in direct proportion to production.
Unit costs for variable costs may be constant.

**Fixed Costs:** do not vary with the level of output or activity (e.g.: factory rent). In the long run, fixed costs may turn into variable costs.
Unit costs for fixed costs may decrease with an increase of volume.

Semi-Variable Costs: contains a minimum fixed base fee plus a variable part that increases with usage. E.g.: factory electricity, labour salary that includes a fixed wage and a variable bonus dependent on output.

Semi-Fixed Costs: constant with specified activity levels but subject to step increases or decreases by a constant amount at various critical activity levels.




## 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

## Cost tracing vs cost allocation

**Cost tracing:** assigning an exact cost to a cost object because you can track precisely how much was used.

- Used for: direct costs
- Uses: materials requisition form for direct materials and time sheets for direct labour

**Cost allocation:** spreading shared costs amongst different products using a logical rule because exact usage cannot be traced.

- Used for: indirect costs
- Uses: allocation base rule

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

## Budgeted Overhead Rate

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

Allocating overheads to products

| **Allocated MOH =** Budgeted overhead rate x actual activity used |
|---|

Why use Budgeted Overhead Rates?

- Timely product costs during the year
- MOH are typically only known at the end of the year/period

## 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.

## Cause and Effect vs. Arbitrary allocation

**Cause and effect:** allocation method that uses an allocation base that is a significant determinant of the costs. E.g.: direct labour. **Preferred method** as products that consume more effort or factory resources get assigned a higher share of overheads leading to better product pricing and smarter manager decisions.

**Arbitrary:** allocation method that uses an allocation base that does not actually reflect the underlying costs. Leads to inaccurate cost assignments by treating all products as if they consume equal amounts of overhead resources. E.g.: units produced.

## Under and Over Recovery of Overheads

**Under-recovery:** Allocated MOH < Actual MOH
Must increase expenses at year-end. Remaining balance: credit.

**Over recovery:** Allocated MOH > actual MOH
Must decrease expenses at year-end. Remaining balance: debit

| **Gross profit** = Revenue - COGS - under (over) recovery of MOH |
|---|

# Accounting – IBEB - MA Lecture 3

## Job Order Costing System

**Job order costing:** use for when each unit or batch of output is unique. E.g.: custom buildings. The objective of job order costing is to calculate the cost per job, each job is a separate **cost object**.

## Cost Flow in Job Order Costing

As a product moves through production, its costs move through accounting stages
.

1) **Raw materials:** unprocessed inputs (inventory).
2) **Work-in-progress (WIP):** items which are currently being made, this is where conversion costs take place which turn raw materials into finished products.
3) **Finished goods:** completed items ready for sale.
4) **COGS:** the moment the product is delivered to the customer, costs transfer from an asset account in the balance sheet (**inventory**) to an expense account in the income statement (**COGS**).

## Journalization in a Job Order Costing System

**Job cost sheet:** accumulates and summarizes the cost of an individual job.

### 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**. This slip should include the quantity and type of materials withdrawn, as well as the account to be charged.

**Inventory - direct materials** and **Inventory - Indirect materials:** are detailed, subsidiary ledgers that track movement of the raw materials inventory.

Example of Journal Entry

| **Date** | **Account** | **Debit** | **Credit** |
|---|---|---|---|
| Aug. 2 | Inventory - direct materials | 20,000 | |
| | Accounts payable | | 20,000 |

### 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. Direct labour goes into the specific job's Work-in-Progress (WIP) account.

Example of Journal Entry

| | | | |
|---|---|---|---|
| Aug. 31 | Inventory - WIP (Job 102) | 3,200 | |
| | Wages payable | | 3,200 |

## Assign WIP Costs

**Inventory - WIP:** tracks the costs of partially completed orders. It accumulates costs related to direct materials, direct labour and allocated manufacturing overhead that have been incurred up to that point in the production process per order.

Example of Journal Entry

| | | | |
|---|---|---|---|
| Aug. 5 | Inventory - WIP (Job 102) | 8,000 | |
| | Inventory - direct materials | | 8,000 |

## Accumulate Manufacturing Overhead Cost

**Factory overhead:** temporary account that accumulates all manufacturing overhead (all indirect costs incurred). E.g.: manufacturing costs not directly traceable to jobs.
Example of Journal Entry

| | | | |
|---|---|---|---|
| Aug. 6 | Factory overhead | 3,500 | |
| | Inventory - indirect materials | | 3,500 |

| | | | |
|---|---|---|---|
| Aug. 10 | Factory overhead | 2,500 | |
| | Wages payable | | 2,500 |

| | | | |
|---|---|---|---|
| Aug. 12 | Factory overhead | 700 | |
| | Cash | | 700 |

| | | | |
|---|---|---|---|
| Aug. 31 | Factory overhead | 500 | |
| | Accumulated depreciation | | 500 |

## Allocate Indirect Costs

Until now, indirect costs have been accumulated but they need to be allocated.

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)**, expressed in terms of a common allocation base (e.g.: direct labour costs).

Example of Journal Entry

| | | | |
|---|---|---|---|
| Aug. 6 | Inventory - WIP (Job 102) | 9,600 | |
| | Factory overhead | | 9,600 |

## Completing the Job

The job is now finished.
Total Job Cost = Direct materials + Direct Labour + Allocated Overhead
Total Job Cost = $8,000 + $3,200 + $9,600 = $20,800

Example of Journal Entry

| | | | |
|---|---|---|---|
| Aug. 31 | Finished goods inventory | 20,800 | |

| | | | |
|---|---|---|---|
| | Inventory - WIP (Job 102) | | 20,800 |

### Closing Factory Overhead

**Factory Overhead** is a temporary holding account and should be closed off at the end of the accounting period. At the end of the period, you must compare **Actual MOH** to **Allocated MOH**, if there is a difference a journal entry is needed.

- **Actual MOH:** actual expenses incurred (e.g.: materials, maintenance…)
- **Allocated MOH:** overhead charged to jobs using the predetermined rate

**Case A: Over-Recovery**

Allocated MOH were higher than Actual MOH.
Example of Journal Entry

| | | | |
|---|---|---|---|
| Aug. 31 | Factory overhead | 2,400 | |
| | Over-recovery of MOH | | 2,400 |

**Case B: Under-Recovery**

Actual MOH were higher than Allocated MOH.
Example of Journal Entry

| | | | |
|---|---|---|---|
| Aug. 31 | Under-recovery of MOH | 2,400 | |
| | Factory overhead | | 2,400 |

# Accounting – IBEB - MA Lecture 4

## Process Costing System

Used for **large volumes of identical products** and there is no need to track costs of individual products. Instead, costs are assigned once per period to output. Accounts

are created for each process instead of for each job (as done in **Job Order Costing**).

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.

## Cost Flow Process Costing

Since all products are identical, costs are not tracked for individual products. Instead, total factory costs are gathered for the entire month and then averaged.

| **Average Cost per Unit** = Total Product Costs / Total Units Produced |
|---|

## Cost Calculation in a Process Costing System

### Equivalent units

If some units are not fully completed at the end of a period (e.g.: beginning or ending WIP), total cost cannot be assigned using physical units alone. We therefore convert **partially completed units** into **equivalent units**.

**Equivalent Units (EU):** expresses a number of partially completed units as a smaller number of fully completed units.

| **Equivalent Units** = Number of Physical Units x Percentage Completed |
|---|

Simple 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?

Total Cost: 50,0000
Equivalent units: 4,500 + 1,000(20%) = 4700
Unit cost = 50,000/4,700 = €10.60/unit

The **average cost per unit** of the product in August is €10.60/unit.

Equivalent units are usually calculated separately for **Direct Materials (DM)** and **Conversion Costs (CC)**, because they may enter the production process at different moments.

Example: Ending WIP contains 1,000 units

**Scenario 1**
DM are added at the start of the process, CC are added uniformly throughout the process. Ending WIP is 60% complete.
Since units reached 60%, they already passed the 0% mark where all materials were dumped in.

- EU w.r.t. DM: 1,000 EU
- EU w.r.t. CC: 1,000 x 60% = 600 EU

**Scenario 2**
DM are added when the process is 80% complete, CC are added uniformly throughout the process. Ending WIP is 60% complete.
Since units are only at 60%, they have not reached the 80% mark yet. They have received zero materials so far.

- EU w.r.t. DM: 0 EU
- EU w.r.t. CC: 1,000 x 60% = 600 EU

**Scenario 3**
Both DM and CC are added uniformly. Ending WIP is 80% complete w.r.t. DM and 60% complete w.r.t. CC.

- EU w.r.t. DM: 1,000 x 80% = 800 EU
- EU w.r.t. CC: 1,000 x 60% = 600 EU

## No Beginning WIP

1) Combine fully completed units with the equivalent work done on unfinished units. **DM** and **CC** must be done separately.
2) Calculate cost per equivalent unit. DM and CC costs per EU are calculated separately, but then their monetary values can be added to obtain **Total Cost per Fully Completed Unit**.

| **Average Cost per EU** = Total Cost / Total EU |
|---|

3) Assign costs to finished goods and ending WIP. Multiply the units by their respective cost rates to obtain **Finished Goods** and **Ending Work-in-Progress**.

## Beginning WIP

What happens when you have opening WIP?
If there is **beginning WIP** in the process, some units were started in the previous period but not yet completed. We therefore have to decide how the costs of beginning WIP are treated in the current period.
In process costing, we always need to account for both

- The flow of physical units

| Opening WIP + started units = completed units + ending WIP |
|---|

- The flow of costs

| Opening WIP costs + costs added in current period = cost of completed units + ending WIP costs |
|---|

**Weighted-Average Method (WA)**

Beginning WIP units are not distinguished from units started in the current period. Beginning WIP costs and current-period costs are averaged.

The 5-Step Weighted-Average Process

1) Summarize the flow of physical units using previous formula

| Opening WIP + started units = completed units + ending WIP |
|---|

2) Calculate output in equivalent units (EU) for DM and CC. Under **Weighted-Average (WA)**

| |
|---|
| EU = completed units + ending WIP in EU |

3) Summarize the total product costs to account for. Add last month's leftover costs to this month's new costs. (Opening + Current). Remember to calculate DM and CC costs separately

4) Calculate costs per equivalent unit

| |
|---|
| **WA cost per EU** = Beginning WIP cost + current-period costs / total EU |

5) Assign costs to **Completed Units** and to **Ending WIP**. Check that the costs you have split up into Completed units and Ending WIP equal the value **Total Costs Accounted For** that was found in Step 3.

**FIFO Method**

Old work and new work are kept completely separate. Assumption is that old units from last month are finished first before starting brand new ones. Therefore, only work done in the current month counts towards unit costs. This method is used when average cost changes significantly over time.

1) Summarize the flow of physical units. 2 formulas.

| |
|---|
| Opening WIP + started units = completed units + ending WIP |

| |
|---|
| **Units completed** = units completed - opening WIP |

2) Calculate the output in Equivalent Units.

| |
|---|
| **FIFO cost per EU** = current-period costs / current-period equivalent units |

3) Determine the costs to be allocated.
4) Divide only the month's new costs by the EU units calculated.
5) Allocate total costs between Completed Goods and Ending Inventory.

**Comparing WA and FIFO**

- **WA**: beginning costs are blended with current-period costs.
- **FIFO**: beginning WIP costs are kept separate and cost per equivalent unit is based only on current-period costs.
- If costs per unit change from one period to the next, the cost of completed units and the value of ending WIP may differ under **WA** and **FIFO**. E..g.: FIFO may yield a higher value if the costs from the previous period were higher, as they remain visible. In WA, they are averaged with the current-period costs.

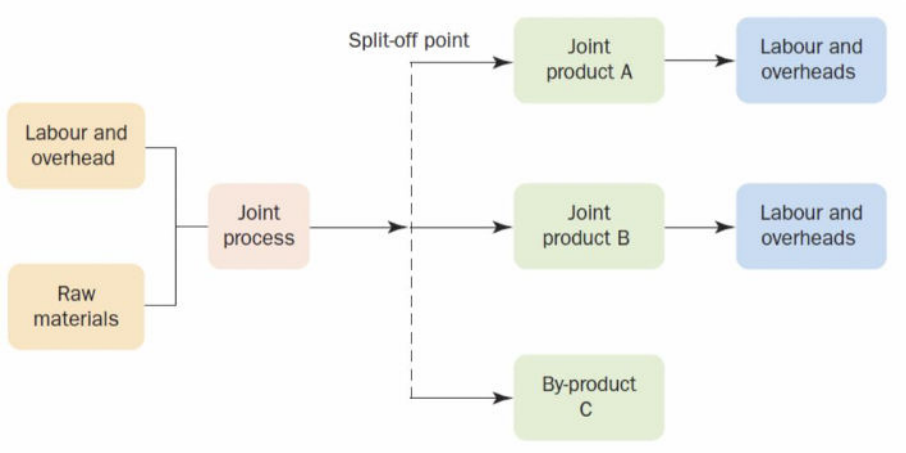
# Accounting - IBEB - MA Lecture 5

## Joint and By-Products

- **Joint Process:** production of one product makes inevitable the production of other products, no individual product can be produced without the accompanying products appearing.
- **Joint Products:** products are produced simultaneously and each product has **significant sales value**. E.g.: milk and butter
- **By-Products:** products that result incidentally from the production process and have only **minor sales value**.

## Joint Costs and Further Processing Costs

Products are not identifiable as different products until the **Split-off Point**. Before then, **Joint Costs** cannot be traced to particular products.




After the **Split-off Point**, separable costs can be traced and allocated to the different **Joint Products** before sale. These are called **Further Processing** (or **Separable**) **Costs** and may include both direct and indirect costs.

**Joint Costs:** include expenses related to raw materials, labor, and manufacturing overhead that are incurred before the Split-off Point when the products become separately identifiable.

## Methods for Allocating Joint Costs to Joint Products

Objective: to calculate the value of **inventory** on **balance sheet** and **COGS** on **income statement**.

### Physical Measures Method

Joint costs are allocated in **proportion to a comparable physical measure**. E.g.: volume, weight or quantity.
This method assumes that there is **no further processing** after the split-off point, that joint products are measurable by the **same unit of measurement** and the cost per unit is the same for each of the products.

**Disadvantage:** ignores sales generating power of each product.

| **Joint costs of X** = (Physical output of X / Total physical Output) x Total Joint Costs |
|---|

## 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. This method can be used even if there are further processing costs, but when there are not, we should rely on this method or the **Physical Measures Method**.

**Disadvantage:** unprofitable products with low sales revenue are allocated with a small share of joint cost and this can give the impression that the product is generating profits.

| **Joint cost of X** = (Sales value of X / Total sales value of all joint products) x Total Joint costs |
|---|

## Net Realizable Value Method

If the products are not sold at the split-off point, but instead need further processing, we use the **Net Realizable Value Method**.

**Disadvantage:** gross margin % is different for each product, even though products are inseparable.

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

| **Joint costs of X** = (NRV of X / Total NRV of all joint products) x Total Joint Costs |
|---|

## 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.**

| |
|---|
| **Gross profit margin %** = (total sales value of all joint products - total costs of all joint products) / total sales value of all joint products |

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

## 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.

Joint costs to be allocated to the joint products should be reduced by the **NRV of by-products**. Firms can decide to further process the by-product after the split-off point: **further processing costs** should be allocated to the by-product as well.

# 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.<br>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<br>Assumes that a sales value at split-off point can be determined |
| **Net realizable value** | Takes further processing costs into account<br>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 |

# Accounting – IBEB - MA Lecture 6

## Losses in Process

Not all input turns out to be useful output.

In process costing, we aim to calculate the **value of our output** (completed units/ending WIP). However, in some processes, part of the input is lost during the **production process**. Losses affect how **total product costs** are assigned to output (remember we are calculating **average cost per unit**).

**Normal losses**: occur under regular and efficient operations, they are unavoidable and are included in the product costs. E.g.: 10% of apples always get bruised when transported.
**Abnormal losses/gains:** unexpected, avoidable and are not included in the product cost. E.g.: one truck crashes and all apples in that truck are lost

In our calculations of average cost per unit with **losses**, the assumption is that all output is fully complete in the period (**no beginning/ending WIP**).

## Normal Losses

Taken into account in our calculations for average cost per unit.

Recall: **total product costs** = direct materials + conversion costs

| **Normal output** = input - normal loss |
|---|

| **Average cost per unit** = total product cost / normal output |
|---|

## Abnormal Losses

Not taken into account in our calculations for average cost per unit because there has been a **deviation** from what is considered normal.

| **Abnormal output** = normal output - actual output |
|---|

The abnormal loss is treated as period cost and valued at average cost per unit of normal output.

| **Cost of abnormal loss** = average cost per unit x amount of abnormal loss |
|---|

## Abnormal Gains

Occur when losses **are lower than expected**. Because these are unexpected they are not taken into account in calculations

| **Abnormal gain** = normal output - actual output (should be < 0) |
|---|

The abnormal gain is treated as other income and valued at **average cost per unit of normal output**.

## Scrap Value of Losses

**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.
The scrap value **reduces the overall cost** of the loss

| |
|---|
| **Average cost per unit** = (total product cost - scrap value of normal loss) / normal output |

Abnormal loss/gain is still valued at average cost per unit, but with scrap value, there is also a **scrap effect**. Because with more abnormal losses, there is more scrap that can be sold or reused and with abnormal gains there is less scrap than can be sold or reused.

- **Abnormal loss:** more scrap than expected and extra scrap proceeds
- **Abnormal gain:** less scrap than expected and lost scrap proceeds

| |
|---|
| **Net value of abnormal loss/gain** = gross value (of abnormal gain or loss) at cost per unit - scrap effect |

# Joint and By-product Costing: Journal Entries

## Joint Costs vs. Indirect Costs

**Joint costs:** incurred during a shared production process where **multiple products** are **manufactured simultaneously**. Production proportions are **constant**. E.g.: material costs, labor costs and manufacturing overheads. Allocated to products using:

- Physical measures method
- Sales value at split-off point method
- Net realizable value method
- Constant gross profit method

**Indirect costs:** costs incurred for **multiple products** or for the overall functioning of the business. E.g.: maintenance costs, factory rent. Production proportions **may vary**. Allocated to products using:

- Traditional costing method (budgeted overhead rate)
- Activity-based costing method (covered in Intermediate Accounting)

## Joint Cost Allocation

1) Determine the **joint costs** to be allocated to the joint products. Remember to account for **by-products** (using the **NRV** of the by-product as explained previously).

2) **Allocate joint costs** using one of the four methods stated above.

3) Record **journal entries.** Once the joint cost is calculated and assigned to each joint product, we can record the journal entries at the **split-off point**.

## Journal Entries

If there are joint costs, these costs are accumulated in a **WIP Joint Process Account**. Remember that in process costing we accumulate costs for each process.

Journal Entry Example

| **Date** | **Account** | **Debit** | **Credit** |
|---|---|---|---|
| June 2026 | Inventory - WIP joint process | XXX | |
| | Inventory - Direct Materials | | XXX |
| | Wages Payable | | XXX |
| | Factory Overhead | | XXX |

At the **split-off point**, products need to be valued using one of the four methods. Then, their journal entries must be recorded.

Journal Entry Example (if **further processing**)

| **Date** | **Account** | **Debit** | **Credit** |
|---|---|---|---|
| June 2026 | Inventory - WIP cocoa butter | 369,375 | |
| | Inventory - WIP cocoa powder | 123,125 | |
| | Inventory - FG cocoa shells | 7,500 | |
| | Inventory - WIP joint process | | 500,000 |

Journal Entry Example (if **no further processing**)

| | | | |
|---|---|---|---|
| June 2026 | Inventory - FG (A) | XXX | |
| | Inventory - WIP Joint Process | | XXX |

If **sales** are made, the transactions must also be recorded.
Journal Entry Example

| **Date** | **Account** | **Debit** | **Credit** |
|---|---|---|---|
| June 2026 | Cash | 7,500 | |
| | Revenue (by-product) | | 7,500 |

| | | | |
|---|---|---|---|
| June 2026 | COGS | 7,500 | |
| | Inventory - FG cocoa shells | | 7,500 |

# Accounting - IBEB - MA Lecture 7

Is it worth further processing the joint products after the split-off point?

**Option 1: Sell products at split-off point**
For this option, calculate gross profit using revenue at split-off point and allocated joint costs. To allocate the joint costs, remember to subtract the NRV of the by-product if there is one.

**Option 2: Further process the products**
For this option, calculate the allocated joint costs and take into account the further processing costs when calculating the gross profit of each product.

To decide whether to process the products or sell them at split-off point, **incremental (additional) numbers** are what must be analyzed.
**Irrelevance of joint costs for decision-making:** the decision to further process or not is not affected by joint costs.

- Incremental Revenue
- Incremental Costs

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

# Management Accounting

## Purposes of Management Accounting

- **Cost assignment**: tracking inventory and COGS. Lectures 2-6.
- **Decision support**: help managers make strategic choices. Lectures 7-8.
- **Planning and control**

## Absorption Costing

- Required for **financial reporting** (IFRS)
- Assigns all **product costs** (Direct Materials, Direct Labour, Manufacturing Overhead) to **inventory**, which flows into the Income Statement as COGS when sold.

### Internal Decision-Making

- Focuses strictly on relevant costs and revenues, which are the financial factors that actually change as a result of a decision.
- E.g.: if launching a new product lowers manufacturing costs but doubles marketing expenses, managers must weigh the incremental savings against the added marketing spend, not just look at product costs.

# Cost Classification Based on Cost Relevance

**Cost collection system:** the framework a company uses to track costs. Costs are classified depending on the decision being made.

## Relevant vs. Irrelevant Costs

**Relevant costs:** future costs that change depending on which choice you make
**Irrelevant costs:** costs that remain the same no matter what choice you make

## Sunk Costs

Past, unrecoverable costs (e.g.: a non-refundable concert ticket bought months ago). Sunk costs are always **irrelevant** for future decisions.

## Opportunity Cost

The potential profit lost when choosing one option over another.
E.g.: taking a new contract requires sacrificing 10 units of Product A.

- Product A: selling price $50, variable cost $20
- Opportunity cost = 10*($50-$20) = $300.
- Fixed overhead does not affect this short-term decision.

## Incremental Analysis

When choosing between alternatives, perform an **Incremental Analysis**.

- Focus only on **future cash flows** that differ between choices.
- Ignore **past/sunk costs** that cannot be changed.
- Shows the difference in **profits** for each of the alternatives when making a decision

# Replacement of PPE

Should managers replace current equipment with more efficient and cheaper to use equipment?

## Relevant costs in the Replacement of PPE

- 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)

## Irrelevance of Past (Historical or Sunk) Costs Principle

The **Book value** of current equipment is **irrelevant** in replacement decisions.

| **Book value** = original cost - accumulated depreciation |
|---|

**Residual or salvage value:** estimated resale value of an asset at the end of its useful lifetime.
**Disposal value or price:** current resale value of an asset.

| **Straight line depreciation** = (original cost - salvage value) / useful life |
|---|

Case Study Example

A large bakery is considering replacing their industrial oven with a newer model. The bakery uses a straight-line depreciation and the residual value of both machines is zero. The new machine is more efficient but has a shorter life.

| | OLD | NEW |
|---|---|---|
| Original purchase price | €100,000 | €80,000 |
| Useful life | 10 years | 5 years |
| Remaining useful life | 5 years | 5 years |
| Accumulated depreciation | €50,000 | - |
| Book value | €50,000 | - |
| Disposal value | €15,000 | - |
| Annual operating costs | €42,000 | €27,000 |

Should management replace the current machine with the newer machine?

1) Calculate total operating costs for both options over the remaining life
   **Old machine**
   Operating costs per year: $42,000
   Over 5 years: $42,000 x 5 = $210,000
   **New machine**
   Operating costs per year: $27,000
   Over 5 years: $27,000 x 5 = $135,000
   **Difference**
   $210,000 - $135,000 = $75,000
   The new machine saves **$75,000** in running costs over 5 years

2) Add the upfront cash needed today
   If you choose to buy the new machine two things happen:
   You spend cash to buy the new oven: **-$80,000** (**purchase price**)
   You receive cash by selling the old oven: **+$15,000** (**disposable value**)
   Net upfront cash needed for the oven: -$80,000 + $15,000 = -$65,000

3) Compare the savings vs. the upfront costs
   Running costs savings: +$75,000 by buying the new one
   Selling the old oven: +$15,000 by selling the old oven today
   **Total benefits:** $75,000 + $15,000 = **$90,000**
   **Cost of new oven**: **$80,000**
   Since the **relevant benefit** ($90,000) is larger than the **relevant costs** of purchasing the new oven ($80,000), buying the new oven leaves you with a $10,000 benefit. Therefore the decision the firm should make is to **replace** the machine.

# Accounting – IBEB -MA Lecture 8

We now focus on using (cost) information for internal (e.g.: managerial) decision-making. We shift from concentrating on past results to future planning.

# Cost-volume-profit Analysis

**Cost-volume-profit (CVP) Analysis:** examines the relationship between changes in activity levels (e.g.: output) and changes in total sales revenue, costs and net profit. **CVP Analysis** tells what will happen to the financial results if the activity level or volume changes. Helps managers understand how changes in these variables will affect the profitability of the business.

## Decision-making Tools Using Cost Information

Lectures 2-5: we were calculating product costs because that was needed for external reporting purposes (**Cost Behaviour**, **Job Order Costing**, **Process Costing** and **Joint Costs**). Using these calculations we can also perform **CVP Analysis**.

- How many units must be sold to break even?
- How many units must be sold to achieve certain profit?
- What would be the effect of selling price and selling units on profits?

For **CVP Analysis** cost classification is based on cost behavior, meaning how total costs vary with levels of activity within the relevant range in the business. Recall:

- Variable costs
- Fixed costs
- Mixed costs (semi-variable) costs
- Step-fixed (semi-fixed) costs

By separating these costs, we get a clear picture of what drives profitability and how changes in sales affect profitability, needed in managerial decision-making.
**Important:** in the long run, all costs are variable. Costs are fixed for a specific activity and for a given time period (short-run).

## CVP Analysis Assumptions

- Costs can be classified into variable of fixed costs within the relevant range

- Revenues are linear within the relevant range (in reality, revenue is not often linear as firms can benefit from economies of scale).
- All units produced are sold
- Sales mix remains constant

## Numerical CVP Analysis

| |
|---|
| **Profit** = total revenue - total costs |

| |
|---|
| **=** (#units sold*sales price per unit) - [(#units sold*variable cost per unit) + total fixed costs] |

### Contribution Margin

| |
|---|
| **Contribution margin per unit** = price per unit - variable cost per unit |

**Contribution margin** measures how sales affect profit and explains how sales price, sales volume, variable costs and fixed costs interact. It also shows how much **revenue** we have left after accounting for variable cost per unit, so what is left can be used to pay for **fixed costs**.

| |
|---|
| **Total contribution margin** = total sales revenue - total variable costs |

| |
|---|
| **Contribution margin ratio** = (sales price per unit - variable cost per unit)/sales price per unit |

The most relevant costs for internal decisions are **variable costs**. Since Fixed Costs cannot be changed in the short-term, they are less important. On the other hand, variable costs are influenced by output which can be adjusted in the short-term.
This is why managers will normally use an adjusted income statement based on a **Contribution Approach**.

| | |
|---|---|
| **Income statement**<br>Primarily used for external reporting | **Income statement**<br>Primarily used for internal reporting |

| | |
|---|---|
| Sales | Sales |
| **- COGS**<br>**(Product costs)** | **- Variable Costs** |
| Gross Margin | Contribution Margin |
| **- Operating Expenses**<br>**(Period costs)** | **- Fixed Costs** |
| Net Operating Income | Net Operating Income |

## Break-even Point

The point in the level of units at which **Total Costs (TC) = Total Revenue (TR)**. Therefore profit is 0.

| |
|---|
| **Break-even point in units** = fixed costs / contribution margin per unit |

| |
|---|
| **Break-even sales** = break-even point in units * selling price per unit |

## Target Profit

**Target profit:** the specific amount of profit you want to earn. You can calculate how many sales you need to make to reach your target profit.

| |
|---|
| **#units to sell for target profit** = (fixed costs + target profit) / contribution margin per unit |

| |
|---|
| **Selling price at target profit** = [(fixed costs + target profit)/ #units sold] + variable cost per unit |

## Margin of Safety

**Margin of safety**: indicates how much sales can decrease before a loss occurs.

**Margin of safety in sales** = expected sales - break even sales

**Margin of safety in amount** = expected revenue - break even revenue

**Margin of safety (%)** = (expected revenue - break even revenue) / expected revenue

A lower margin of safety indicates a **higher risk**, as even a small drop in sales revenue could push the company into a **loss**.

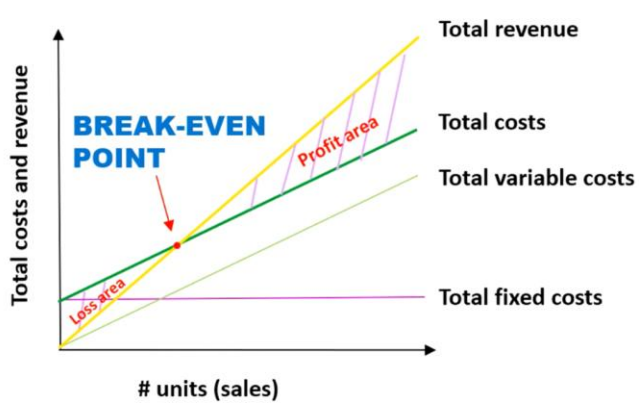
## Operating Leverage

**Operating leverage:** measure of the sensitivity of profits to changes in sales. The greater the operating leverage, the more changes in sales will affect profit.

**Degree of OL** = (total contribution margin) / profit

**Change in profit** = (degree of OL)*(% change in sales revenue)

## Graphical CVP Analysis

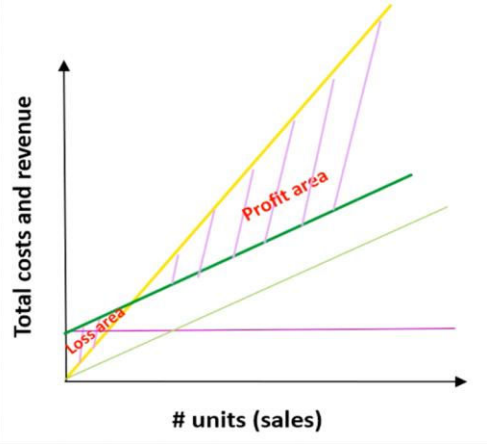



**Key aspects of the graph**
Slope of Total Variable Costs is Variable Cost per Unit.
Slope of Total Revenue is Selling Price per Unit.
Total Variable Costs line starts at origin.

All of this occurs only within **relevant range** (operation range in the short-run). Fixed Costs are **fixed** in the short-run and Variable Costs per Unit and Selling price are **constant**. Therefore total revenue and total costs are **straight lines**.

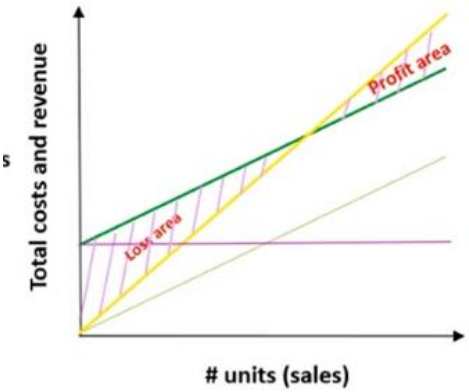
**Graphical Analysis** allows us to visually see if one of the factors changes.

E.g.: increase in Selling Price



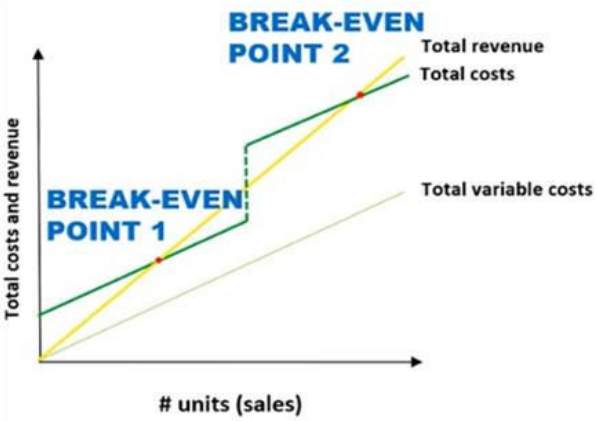

No costs are affected, but the slope of the Total Revenue line becomes steeper, shifting the Break-Even point to the left. This increases the profit area.

E.g.: increase in Fixed Costs




If the Fixed Costs line changes, the Total Cost line will also change. This has an effect on Break-Even point, shifting it to the left and causing a much larger loss area and a smaller profit area.

If there are **Semi-fixed Costs** there could be multiple Break-Even points.



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