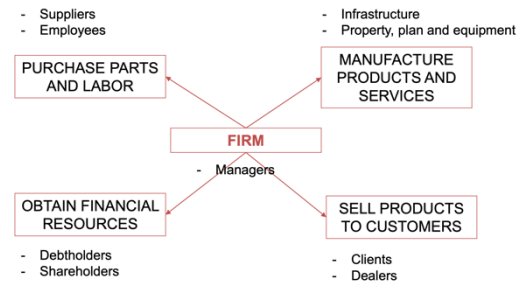


Financial Accounting - First Partial

Chapter 1 – Financial Statements and Business Decisions.

Understanding the Business, a firm is connected with many players in the industry and therefore it has to carry on many different activities. First of all, the business of the firm can be described by following scheme:

- **Managers**
- **Purchase parts and labor**, such as **Suppliers** of raw materials (input) and **Employees** that provide the human capital.
- **Manufacture products and Services**, such as infrastructures, Property, Plan and Equipment.
- **Obtain Financial Resources** from **Debtholders** (Bank, in exchange of interests), **Shareholders** (Equity, in exchange of dividends), and **Internal** (Selling Products).
- **Sell Products to Customers**, both **Clients** and **Dealers**.



When analyzing a business, we have to keep in consideration **3 types of Business Activities**:

- **Financing Activities** (Firm interacts with Capital Providers), borrowing or paying back money to lenders and receiving additional funds from stockholders or paying them dividends.
- **Investing Activities** (Purchase of Property, Plant and Equipment), buying or selling items such as plant and equipment used in the production of beverages.
- **Operating Activities** (All transactions related to the core business of the company), day-to-day process of purchasing raw material from suppliers, manufacturing beverages, delivering them to customers, collecting cash from customers and paying suppliers.

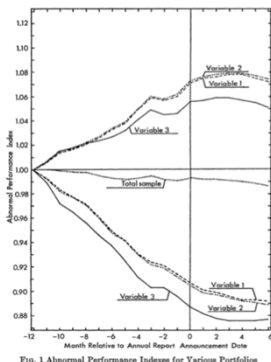
A business is made up of many operations with diverse subjects, therefore **keeping track of business transactions is fundamental**:

For Managers:

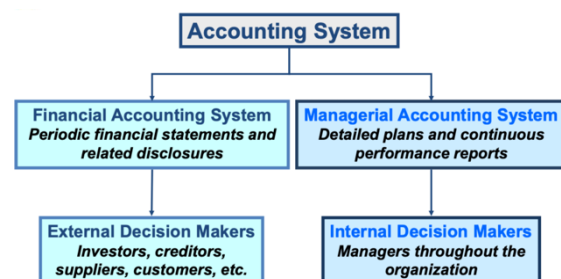
- To fulfill contractual obligations;
- To understand whether the firm is doing well.

For External Subjects:

- To decide whether or not to invest in a company;
- To monitor whether the company is performing well;
- For contractual purposes.



There exist two type of **Accounting System**: **Managerial Internal** and **Financial External**. The accounting system collects and processes financial information and reports it to decision makers that can be **Managers** (Internal decision makers) or **Investors and Creditors** (External decision makers).



Ball and Brown, in an article of **1968** underlined the strict relation that occurs between Accounting Information and Financial Markets, indeed Equity Holders care about accounting statements, showing that there is a relation between profits of the firm and price of the shares. If a firm gains profits, it will more likely share dividends, therefore more people will be interested in buying that share, which will make raise the price.

The accounting system is an organized format used by companies to accumulate the dollar effects of transactions.

There exist **4 basic Financial Statements**:

- **Income Statement**, it includes all revenues earned from sales to customers and the expenses incurred to produce those revenues. It's the first financial statement that the company will prepare.
- **Balance Sheet**, it includes all resources (assets) owned and amounts owed (liabilities). The difference between the resources owned and the amounts owed represents the stockholders' equity in the business. Cash is the key asset, the first element in the balance sheet. $A = L + SE$.
- **Statement of Cash Flows**, it lists all sources and uses of cash. Cash is such an important asset, that it has its own financial statement. The company will show external subjects all the inflows and outflows of cash. How it is generated and used.
- **Statement of Stockholders' Equity**, it accumulates net earnings less the dividends paid to owners representing the reinvestments in the core business. It is exclusively for shareholders, because they are interested in the variation of their investment in the company, in particular in accounting retained earnings (the portion of net income that it is not distributed among shareholders).

Statement	Formula
#1 Income Statement	Revenues - Expenses = Net Income
#2 Statement of Stockholders' Equity	Beginning Retained Earnings + Net Income - Dividends Declared = Ending Retained Earnings Beginning Contributed Capital + Stock Issuances - Stock Repurchases = Ending Contributed Capital Ending Stockholders' Equity
#3 Balance Sheet	Assets = Liabilities + Stockholders' Equity (includes Cash)
#4 Statement of Cash Flows	Cash provided by (or used in) Operating Activities +/- Cash provided by (or used in) Investing Activities +/- Cash provided by (or used in) Financing Activities Change in Cash + Beginning Cash Ending Cash

The 4 Financial Statements are tightly related indeed a change in a parameter affects more than one statement.

Financial Statements are used by every subject that has interest in a company, they are useful for all stakeholders, because accounting information is used in contracts. For example, Marketing and Credit Managers use customer's financial statements to decide whether to extend credit. Purchasing Managers use suppliers' financial statements to decide whether suppliers have the resources to meet the demand for products. Employees' union and human resources managers use the company's financial statements as a basis for contract negotiations pay rates.

Accounting Principles

A lot of business decisions are taken on the basis of financial statements. Two important aspects of them are:

- The **accounting information should truthfully reflect business operations.**
- It has to be clear so that the receiver can understand it.

These two aspects are assured through firms' compliance to accounting principles. **Accounting principles are accounting measurement rules that firms have to fulfill at the moment of redacting financial statements.**

Absent the rules, firms would be free to record the business operations that they want and in the way they want.

Prior to 1933, management teams of most companies were free to choose the accounting principles used to keep track of its transactions.

In 1933, Securities Act of 1933 and Securities and Exchange Act of 1934 defined the **Securities and Exchange Commission (SEC)**, which has been given broad powers to determine measurement rules for financial statements, and it has the role to control that firms are following the rules. The SEC has worked closely with the accounting profession to work out the detailed rules that have become known as **GAAP**. Currently, the **Financial Accounting Standards Board (FASB)** is recognized as the body to formulate GAAP.

Since 2002, there has been substantial movement to develop international financial reporting standards by the **International Accounting Standards Board (IASB)**.

In 2002, the European Union agreed that from 1 January 2005, **International Accounting Standards (IAS)** would apply for the consolidated accounts of the EU listed companies.

The **accuracy of financial statements** is ensured by:

- **Board of Directors monitoring managers' actions**
- **System of Internal Controls**
- **Outside Independent Auditors** (Deloitte, Ernst&Young, PWC, KPMG). They are now 4, but they used to be 5 (Arthur Andersen), which went bankrupt after Enron's scandal. They have to:

- Examine the financial reports to ensure compliance with GAAP. (Unqualified opinion)
- Examine the underlying transactions incorporated into the financial statements
- Express an opinion on the fairness of presentation of financial information.

Independent auditors have responsibilities that extend to the general public. A CPA's (Certified Public Accountant) reputation for honesty and competence is his/her most important asset.

Chapter 2 – Investing and Financing Decisions and the Balance Sheet.

The **Benefits of providing accurate accounting information** are **better access to financial resources** (because I obtain more easily equity) and **better contractual terms**. The **Costs of providing accurate accounting information** are the so-called **preparation costs**, which are the cost of obtaining, storing and exploiting data, in addition there are **Audit Fees** and **Proprietary Costs** (loss of classified information that can become useful to competitors, it is a reduction in competitive advantage).

The **primary objective of external financial reporting** is *"To provide useful economic information about a business to help external parties make sound financial decisions"*. The **external parties** involve **Banks, Equityholders, Clients and Suppliers**. While the documents are the 4 financial statements.

The **Characteristics of Accounting Information**, those that will be checked every year by Auditors.

Accounting Information should be:

- **Relevant to Decision Makers**, it provides feedback and predictive value on a timely basis.
- **Reliable**, therefore accurate, unbiased and verifiable. When the firms commit an error in their financial statements, they produce an **Accounting Restatement**. The years following the accounting restatement usually the firm receives lower funds because it's considered unreliable.
- **Comparable**, across companies. I will choose in which company to invest in after comparing their financial statements, therefore the financial statements have to be comparable with those of other companies.
- **Consistent**, over time, the same accounting rule on measurement is used from one accounting period to the next. It means that I make account choices that should be the same over time.

Balance Sheet

If the first item of the balance sheet is **cash** expressed in **U.S. Dollars**, the firm is following **GAAP**, otherwise if the first item is **Property, Plant and Equipment**, the firm is following **IFRS**. As we

already said, the Balance Sheet includes all resources (assets) owned and amounts owed (liabilities).

Assets are economic resources with probable future benefits owned or controlled by an entity as a result of past transactions.

They can be:

- **Current Assets**, resources that company will use or turn into cash within one year, such as **Cash, Accounts Receivables** and **Inventories**.
- **Non-Current Assets**, resources that company will use or turn into cash beyond one year, such as **Property, Plant and Equipment**.

Liabilities are probable debts or obligations (claims to company's resources) that result from a company's past transactions and will be paid with assets or services.

They can be:

- **Current Liabilities**, liabilities that the company needs to pay or settle within the coming year, such as **Accounts payable, Short-term Borrowings** and **Current Portion of Long-Term Debt**.
- **Non-Current Liabilities**, liabilities that the company needs to pay or settle beyond the coming year, such as **Long-Term Debt**.

Stockholders' Equity is the financing provided by the owner and business operations (retained earnings).

Stockholders' Equity = Contributed Capital + Retained Earnings.

Retained Earnings is the part of earnings that it is not distributed through dividends and it is reinvested in the company.

Dividends and **Capital Gains** represent the return for owners' investment in the firm.

<u>L</u>	Accounts payable	<u>A</u>	Inventories
<u>A</u>	Accounts receivable	<u>A</u>	Land
<u>A</u>	Cash	<u>L</u>	Notes payable
<u>SE</u>	Contributed capital	<u>SE</u>	Retained earnings
<u>A</u>	Plant and equipment		

During the accounting period, transactions that result in exchanges between the company and other external parties are analyzed and recorded in the **general journal** in chronological order, and the related accounts are updated in the **general ledger**. These formal records are based on two very important tools used by accountants:

Journal Entries and **T-accounts** (created for each accounting item we have in the financial statement). From the standpoint of accounting systems design, these analytical tools are a more efficient way to reflect the effects of transactions, determine account balances, and prepare financial statements. The **steps needed to record a transaction** are:

- **Identify the transaction**

- Identify the accounts that are involved
- Determine the effects (increase vs decrease) of the transaction on each account
- Record the effect of the transaction for each account, making sure that the accounting equation is fulfilled.

Transaction Analysis Mode

Assets (many accounts)		=	Liabilities (many accounts)		+	Stockholders' Equity (two accounts)			
+	-		-	+		Contributed Capital		Retained Earnings	
debit	credit		debit	credit		-	+	-	+
						debit	credit	debit	credit
							Investments by owners	Dividends declared	Net income of business

The Duality of Effects

Most transactions with external parties involve an exchange where the business entity gives up something but receives something back. **Hence, transactions related with investments and financing affects the balance sheet at least twice.**

Account is an organized format used by companies to accumulate the dollar effects of transactions.

To remember which accounts debits increase and which accounts credits increase, recall that a **debit (left) increases asset accounts because assets are on the left side of the accounting equation ($A = L + SE$)**. Similarly, a **credit (right) increases liability and stockholders' equity accounts because they are on the right side of the accounting equation.**

The **journal entry**, then, is an accounting method for expressing the effects of a transaction on accounts. It is written in a debits-equal-credits format. One very useful tool for summarizing the transaction effects and determining the balances for individual accounts is a **T-account**, a simplified representation of a ledger account.

		Debit	Credit
(a)	Property and Equipment (+A)	2,000	
	Loan (+L)		2,000

Reference:
Letter, number, or date.

Account Titles:
Debited accounts on top.
Credited accounts on bottom.

Amounts:
Debited amounts on left.
Credited amounts on right.

Journal Entry

After Journal entries are prepared, the accountant posts (transfers) the dollar amounts to each account affected by the transaction. For each transaction during the year, Journal Entry and T-Accounts for each account are affected. At the end of the year, all the T-Accounts related to balance sheet are combined in the final balance sheet.

Chapter 3 – Operating Decisions and the Income Statement.

The **Income Statement** includes all revenues earned from sales to customers and the expenses incurred to produce those revenues: shows the **outcome of business operations** for which the firm makes investments and obtain financial resources and **how it has been achieved**.

To understand how business plans and the results of operations are reflected on the income statement, we need to answer the following questions:

- **How do Business activities affect the income statement?**
 - The **Operating Cycle**, begins when a company receives goods to sell, pays for them, and sells to customers; it ends when customers pay cash to the company. The length of time for completion of the operating cycle depends on the nature of the business. Yet, financial statements refer to a **Fiscal Year**. Hence, in most cases, the operating cycle lasts more than one year causing a not-perfect overlap between operating cycle and fiscal year to which financial statements refer. This creates two problems:
 - **Recognition Issues**, when should the effects of operating activities be recognized?
 - **Measurement Issues**, what amounts should be recognized?
 - **Elements on the Income Statement**
 - **Revenues**, increases in assets or settlements of liabilities from ongoing operations. Economic benefits generated by assets. **Core Business**.
 - **Expenses**, decreases in assets or increases in liabilities from ongoing operations. **Core Business**.
 - **Gains**, increases in assets or settlements of liabilities from **peripheral transactions**.
 - **Losses**, decreases in assets or increases in liabilities from **peripheral transactions**.
- **How are Business Activities measured?**
 - **Accrual Accounting**, revenues should be recognized when the transaction that causes them occurs, not necessarily when cash is paid or received
 - **Revenue Principle**, four criteria must be met for revenue to be recognized:

- Delivery has occurred or services have been rendered.
- There is persuasive evidence of an arrangement for customer payment.
- The price is fixed or determinable.
- Collection is reasonably assured.

At this point, **3 situations** may occur:

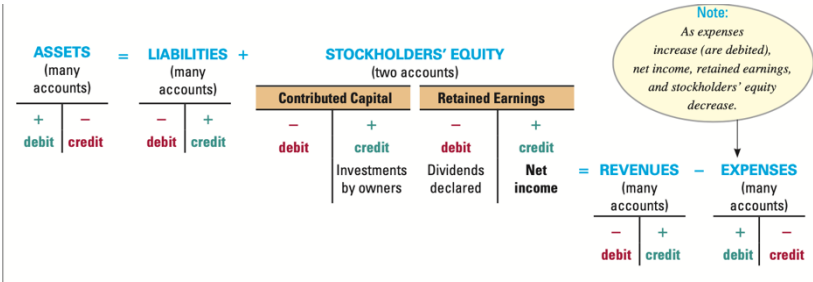
- **Cash is received before** the goods or services are delivered; the liability account **Unearned Revenue** is recorded. When the company delivers the goods or services Unearned Revenue is reduced and Revenue is recorded.
- **Cash is received in the same period** as the goods or services are delivered. **Revenue** is recorded.
- **Cash is received after** the goods or services are delivered. An asset **Accounts Receivable** is recorded. When the cash is received the Accounts Receivable is reduced.
- **Matching Principle**, resources consumed to earn revenues in an accounting period should be recorded in that period, regardless of when cash is paid. (Matching of costs with benefits).

At this point, **3 situations** may occur:

- **Cash is paid before** the expenses is incurred to generate revenue. When revenues are generated in the future, the company records an expense for the portion of the cost of the assets used.
- **Cash is paid in the same period** as the expense is incurred to generate revenue. Expenses are sometimes incurred and paid for in the period in which they arise.
- **Cash is paid after** the cost is incurred to generate revenue. A liability **Payable** is recorded. When cash is paid the Payable is reduced.
- **Cash Accounting**, revenue is recorded when cash is received, and expenses are recorded when cash is paid.

The **Expanded Transaction Analysis Model**.

We have discussed the variety of business activities affecting the income statement and how they are measured. Now we need to determine **how these business activities are recorded in the accounting system and reflected in the financial statements**. Chapter 2 covered investing and financing activities that affect assets, liabilities, and contributed capital. **We now expand the transaction analysis model to include operating activities.**



Chapter 4 – Adjusting and Closing Entries.

The **end of the accounting period** is a very busy time for accountants. Although the last day of the fiscal year falls on the last day of December each year, the financial statements are not distributed to users until management and the external auditors (independent CPAs) make many critical evaluations.

- Management must ensure that the correct amounts are reported on the balance sheet and income statement. This often requires estimations, assumptions and judgments about the timing of revenue and expense recognition and values for assets and liabilities.
- The Auditors have to assess the strength of the controls established by management to safeguard the company's assets and ensure the accuracy of the financial records and evaluate the appropriateness of estimates and accounting principles used by management in determining revenues and expenses.

Managers of most companies understand the need to present financial information fairly so as not to mislead users. However, since end-of-period adjustments are the most complex portion of the annual record keeping process, they are prone to error.

Many operating activities take place over a period of time or over several periods, such as using insurance that has been prepaid or owing wages to employees for past work. Because recording these and similar activities daily is often very costly, most companies wait until the end of the period to make **adjustments** to record related revenues and expenses in the correct period. These entries update the records and are the focus of this chapter.

The accounting cycle is the process followed by entities to analyse and record transactions, adjust the records at the end of the period, prepare financial statements, and prepare the records for the next cycle. During the accounting period, transactions that result in exchanges between the company and other external parties are analysed and recorded in the general journal in chronological order (journal entries, and the related accounts are updated in the general ledger (T-Accounts)). We are now examining the end-of-period steps that focus primarily on adjustments to record revenues and expenses in the proper period and to update the balance sheet accounts for reporting purposes.

Accounting systems are designed to record most recurring daily transactions, particularly those involving cash. As cash is received or paid, it is recorded in the accounting system. In general, this focus on cash works well, especially when cash receipts and payments occur in the same period as the activities that produce revenues and expenses. However, cash is not always received in the period in

which the company earns revenue: likewise, cash is not always paid in the period in which the company incurs an expense.

How does the accounting system record revenues and expenses when one transaction is needed to record a cash receipt or payment and another transaction is needed to record revenue when it is earned or an expense when it is incurred? The solution to the problem created by such differences in timing is to record **adjusting entries** at the end of every accounting period, so that:

- **Revenues** are recorded when they are earned
- **Expenses** are recorded when they are incurred to generate revenues
- **Assets** are reported at amounts that represent the probable future benefits remaining at the end of the period.
- **Liabilities** are reported at amounts that represent the probable future sacrifices of assets and services owed at the end of the period.

Companies wait until the end of the accounting period to adjust their accounts in this way because adjusting the records daily would be very costly and time-consuming. Adjusting entries are required every time a company wants to prepare financial statements for external users.

In analysing adjustments at the end of the period, there are three steps:

- **Was revenue earned or an expense incurred that is not yet recorded?**
 - If the answer is **YES**, credit the revenue account or debit the expense account in the adjusting entry.
- **Was the related cash received or paid in the past or will it be received in the future?**
 - If cash **was received** in the past, a deferred revenue (**liability**) account was recorded in the past. Now, reduce the liability account (usually **Unearned Revenue**) that was recorded when cash was received because some or all of the liability has been earned since then.
 - If cash **will be received** in the future. Increase the **Receivable Account** (such as Interest Receivable or Rent Receivable) to record what is owed by others to the company (creating an **Accrued Revenue**)
 - If cash **was paid** in the past, a **deferred expense account (asset)** was created in the past. Now, reduce the **asset account** (such as **Supplies** or **Prepaid Expenses**) that was recorded in the past because some of or the entire asset has been used since then.
 - If cash **will be paid** in the future. Increase the **payable account** (such as **Interest Payable** or **Wages Payable**) to record what is owed by the company to others (creating an **Accrued Expense**)

- Cash is never included in the adjusting entry because it was recorded already in the past or will be recorded in the future.
- **Compute the amount of revenue earned or expense incurred.** Sometimes the amount is given or known, sometimes it must be computed, and sometimes it must be estimated.

There exist four **Types of Adjustments**:

- Adjusting entries that **Increase Revenues**
 - **Deferred or Unearned Revenues**, previously recorded liabilities that were created when cash was received in advance and that must be reduced for the amount of revenue actually earned during the period.
 - **Accrued Revenues**, revenues that have been earned but not yet recorded because cash will be received after the services are performed or goods are delivered.
- Adjusting entries that **Increase Expenses**
 - **Deferred or Prepaid Expenses**, previously recorded assets, (such as **Prepaid Rent, Supplies and Equipment**), that were created when cash was paid in advance and that must be reduced for the amount of expense actually incurred during the period through use of the asset (**Depreciation**).
 - **Accrued Expenses**, expenses that have been incurred but not yet recorded because cash will be paid after the goods or services are used.

Chapter 6 – Reporting and Interpreting Sales Revenue, Receivables, and Cash.

Net Sales is the top line of the **Income Statement**. Coordinating Sales and cash collections from customers also involves managing bad debts, which affect selling, general, and administrative expenses on the Income Statement and cash and accounts receivable on the Balance Sheet. Net Sales, accounts receivable, and cash are what we are focusing on.

The **First Issue** faced by firms is “**When a revenue should be recorded?**” According to the **Revenue Recognition Principle**, revenues should be recorded when they are earned namely when the delivery of goods has occurred and services have been delivered. The point at which title (ownership) changes hands is determined by the shipping terms in the sales contract. When goods are shipped **FOB (Free On Board) Shipping Point**, title changes hands at shipment, and the buyer normally pays for shipping. When they are shipped **FOB Destination**, title changes hands on delivery, and the seller normally pays for shipping. Revenues from goods shipped FOB Shipping Point are normally recognised at shipment. Revenues from goods at FOB Destination are normally recognised at delivery.

- **Kellogg's** recognises sales upon delivery of its products to customers, that is, Kellogg's will recognise revenues when products are delivered. If you keep reading the footnote, Kellogg's says that: “Revenue, which includes shipping and handling charges billed to the customer”. Hence, Kellogg's follows a FOB Shipping Point model where the buyer is the one paying for the shipping.
- **Apple** considers the iPhone as delivered when the software updates had been provided to the end user. Yet, the updates occur **two years after the selling**. Hence, when iPhones are sold, Apple will not recognise the full amount of revenues in one accounting period as part of that revenue (namely the part related to the software updates) will be earned in subsequent period. In this way, Apple does not immediately recognise the full amount of revenues in the income statement, even though it had collected the money. They justify their choice saying that such practice ensure that revenue wasn't counted ahead of delivering a full product. Thus, we observe a large amount of deferred revenues in the balance sheet. The same practice is maintained for Apple TV, iPad and Mac. Moreover, Apple's deferred revenues also include high margin sales of support contracts such as AppleCare (as they are sold upfront and recognised as income over time as they expire) as well as gift cards for iTunes and App Store. It is important to notice that other peers did not use a similar practice. Above all Apple's deferred revenues is far greater than the recently

released quarterly earnings of Microsoft, Samsung or Google.

The **Second Issue** faced by firms is “**For which amount should I record the revenues?**”

Some sales practices differ depending on whether sales are made to **businesses** or **consumers**. There is a variety of methods to motivate both groups of customers to buy its products and make payments for their purchases.

Kellogg's states that: “Revenue is reported net of applicable provisions for discounts, returns, allowances, and various government withholding taxes”.

Hence, the gross amount of revenue is reduced in case of:

- **Sales Discount**, if the customer pays in advance, Kellogg's can offer a cash discount. Such discounts are offered to encourage prompt payments. This is a benefit because immediate cash payment improves firms' liquidity and reduces the risk that the customer will not pay later.
- **Sales Return and Allowances**, reduction of sales revenues for returns of or allowances for unsatisfactory goods. Retailers and consumers have a right to return unsatisfactory or damaged merchandise and receive a refund or an adjustment to their bill. Such returns are often accumulated in a separate account called Sales Returns and Allowances and must be deducted from gross sales revenue in determining net sales.
- **Credit Card Discounts**, fee charged by the credit card company for its services. Firms may decide to accept credit cards for a variety of reasons:
 - Increasing customer traffic
 - Avoiding the costs of providing credit directly to consumers, including record keeping and bad debts
 - Lowering losses due to bad checks
 - Avoiding losses from fraudulent credit card sales
 - Receiving money faster

Some companies decide to report credit card discounts as part of sellings, general, and administrative expenses.

Credit card discounts, sales discounts, sales returns and allowances are accounted for separately to allow managers to monitor the costs of credit card use, sales discount and returns.

Classifying Receivables

Receivables may be classified in three common ways. First, they may be classified as either an account receivable or a note receivable. An **account receivable** is created by a credit sale on open account. A **note receivable** is a promise in writing (a formal document) to pay a specified amount of money, called the **principal**, at a definite future date known as the maturity date and a specified amount of **interest** at one or more future dates. The interest is the amount charged for use of the principal. Second, receivables may be classified as trade

or nontrade receivables. A **trade receivable** is created in the normal course of business when a sale of merchandise or services on credit occurs. A **nontrade receivable** arises from transactions other than the normal sale of merchandise or services. Third, in a classified balance sheet, receivables also are classified as either **current** or **noncurrent** (short term or long term), depending on when the cash is expected to be collected.

Accounting for Bad Debts

When a company extends credit to its commercial customers, it knows that some of these customers will not pay their debts. The expense recognition principle requires recording of bad debts expense in the same accounting period in which the related sales are made. The company resolves this problem by using the **allowance method** to measure bad debt expense. The allowance method is based on estimates of the expected amount of bad debts. Bad debt expense is the expense associated with estimated uncollectible accounts receivable. An adjusting journal entry at the end of the accounting period records the bad debt estimate. The credit is made to a contra-asset called **Allowance for Doubtful Accounts**. As a contra-asset, the balance in Allowance for doubtful accounts is always subtracted from the balance of the asset accounts receivable.

Throughout the year, when it is determined that a customer will not pay its debts, the **write-off** of that individual bad debt is recorded through a journal entry. Notice that this journal entry did not affect any income statement accounts. It did not record a bad debt expense because the estimated expense was recorded with an adjusting entry in the period of sale. Also, the entry did not change the net book value of accounts receivable since the decrease in the asset account (Accounts Receivable) was offset by the decrease in the contra-asset account (Allowances for Doubtful Accounts). Thus, it also did not affect total assets.

Accounts Receivable (Gross) includes the total accounts receivable, both **collectible** and **uncollectible**. The balance in the Allowance for Doubtful Accounts is the portion of the accounts receivable balance the company estimates to be uncollectible. **Accounts Receivable (Net)** reported on the balance sheet is the portion of the accounts the company expects to collect (or its estimated net realizable value).

When receivables are material, companies must employ the allowance method to account for uncollectibles. These are the steps in the process:

- The end-of-period adjusting entry to record the estimate of bad debt expense and increase the allowance for doubtful accounts.
- Writing off specific accounts determined to be uncollectible during the period to eliminate the specific uncollectible

account receivable and decrease the allowance for doubtful accounts.

The adjusting entry reduces net income as well as net accounts receivable. The write-off affects neither.

Estimating Bad Debts

The bad debt expense amount recorded in the end-of-period adjusting entry often is estimated based on either:

- **Percentage of Credit Sales Method**, bases bad debt expense on the historical percentage of credit sales that result in bad debts. The average percentage of credit sales that result in bad debts can be computed by dividing total bad debt losses by total credit sales.
- **Aging of Accounts Receivable**, relies on the fact that, as accounts receivable become older and more overdue, it is less likely that they will be collected. Based on prior experience, management would then estimate the probable bad debt loss rates for each category, for example, not yet due, 2%; 1 to 90 days past due, 10%; over 90 days, 30%.

In order to determine the bad debt expense to be reported in the income statement, we take the difference between the value of the allowance for doubtful accounts at the end of the period (4,050\$) and value of allowance for doubtful accounts at the beginning of the period (3,600\$). The difference is 450\$ and represents the bad debt expense to be recorded.

Chapter 7 – Reporting and Interpreting Cost of Goods Sold and Inventory.

Controlling inventory quality, quantities, and cost are key to maintaining gross profit margin. Finally, selecting appropriate accounting methods for inventory can have a dramatic effect on the amount a company pays in income taxes.

The cost and quality of inventory are concerns faced by all modern manufacturers and merchandisers and so we turn our attention to **cost of goods sold** (cost of sales, cost of products sold) on the income statement and **inventory** on the balance sheet. The primary goals of inventory management are to have sufficient quantities of high-quality inventory available to serve customers' needs while minimizing the costs of carrying inventory. Purchasing or producing too few units of a hot-selling item causes stock-outs, which mean lost sales revenue and decreases in customer satisfaction. Conversely, purchasing too many units of a slow-selling item increases storage costs as well as interest costs on short-term borrowings used to finance the purchases. It may even lead to losses if the merchandise cannot be sold at normal prices.

Inventory is tangible property that is held for sale in the normal course of business or used to produce goods or services for sale. The types of inventory normally held depend on the characteristics of the business.

- **Merchandise inventory**, goods (or merchandise) held for resale in the normal course of business. The goods usually are acquired in a finished condition and are ready for sale without further processing.
- **Raw Materials Inventory**, items acquired for processing into finished goods. These items are included in raw materials inventory until they are used, at which point they become part of work in process inventory.
- **Work In Process Inventory**, goods in the process of being manufactured but not yet complete. When completed, work in process inventory becomes finished goods inventory.
- **Finished Goods Inventory**, manufactured goods that are complete and ready for sale.

Costs included in Inventory Purchases

Goods in inventory are initially recorded at cost. Inventory cost includes the sum of the costs incurred in bringing an article to usable or salable condition and location. In general, the company should cease accumulating purchase costs when the raw material are **ready for use** or when the merchandise inventory is **ready for shipment**.

Flow of Inventory Costs

When merchandise is purchased, the merchandise inventory account is increased. When the goods are sold, cost of goods sold is increased and merchandise inventory is decreased.

The flow of inventory costs in manufacturing environment is more complex. First, **raw materials** must be purchased. When they are used, the cost of these materials is removed from the raw materials inventory and added to the work in process inventory. Two other components of manufacturing cost, **direct labor** and **factory overhead**, are also added to the work in process inventory when they are used. **Direct Labor** cost represents the earnings of employees who work directly on the products being manufactured. **Factory Overhead** costs include all other manufacturing costs. When the product is completed and ready for sale, the related amounts in work in process inventory are transferred to finished goods inventory.

When the finished goods are sold, cost of goods sold increases, and finished goods inventory decreases.

Cost of Goods Sold Equation

Cost of Good Sold (**CGS**) expense is directly related to sales revenue. **Sales Revenue** during an accounting period is the number of units sold multiplied by the sales price. **Cost of goods sold** is the same number of units multiplied by their unit costs.

Every company starts each accounting period with a stock of inventory called **Beginning Inventory (BI)**. During the accounting period, new **Purchases (P)** are added to inventory. The sum of the two amounts is the **Goods Available for Sale** during that period. What remains unsold at the end of the period becomes **Ending Inventory (EI)** on the balance sheet. The portion of goods available for sale that is sold becomes **Cost of Goods Sold** on the income statement. The relationships between these various inventory amounts are brought together in the **Cost of Goods Sold Equation**:

$$BI + P - EI = CGS$$

Perpetual and Periodic Inventory System

The amount of purchases for the period is always accumulated in the accounting system. The amount of cost of goods sold and ending inventory can be determined by using one of two different inventory systems: **perpetual** or **periodic**.

In a **Perpetual Inventory System**, purchase transactions are recorded directly in an inventory account. When each sale is recorded, a companion cost of goods sold entry is made, decreasing inventory and recording cost of goods sold.

Under the **Periodic Inventory System**, no up-to-date record of inventory is maintained during the year. An actual physical count of the goods remaining on hand is required at the end of each period. The primary disadvantage of a periodic inventory system is the lack of inventory information. Managers are not informed about low or excess stock situations.

Inventory Costing Methods

- **Specific Identification Method**, the cost of each item sold is individually identified and recorded as cost of goods sold. This method requires keeping track of the purchase cost of each item. The specific identification

method is impractical when large quantities of similar items are stocked.

The choice of an inventory costing method is not based on the physical flow of goods on and off the shelves. That is why they are called **cost flow assumptions**.

- **First-In, First-Out Method**, frequently called **FIFO**, assumes that the earliest goods purchased (the first ones in) are the first goods sold, and the last goods purchased are left in ending inventory. **FIFO allocates the oldest unit costs to cost of goods sold and the newest unit costs to ending inventory.**
- **Last-In, First-Out Method**, frequently called **LIFO**, assumes that the most recently purchased goods (the last ones in) are sold first and the oldest units are left in ending inventory. **LIFO allocates the newest unit costs to cost of goods sold and the oldest unit costs to ending inventory.**
- **Average Cost Method**, uses the weighted average unit cost of the goods available for sale for both cost of goods and ending inventory.

Each of the four alternative inventory costing method is in conformity with GAAP and the tax law. To understand why managers choose different methods in different circumstances, we must first understand their effects on the income statement and balance sheet.

The weighted average cost method generally gives income and inventory amounts that are between the LIFO and FIFO extremes. **When unit costs are rising, LIFO produces lower income and a lower inventory valuation than FIFO. When unit costs are declining, LIFO produces higher income and higher inventory valuation than FIFO.**

Valuation at Lower of Cost or Market

Inventories should be measured initially at their purchase cost in conformity with the cost principle. When the **Net Realizable Value** (sales price less cost to sell) of goods remaining in ending inventory falls below cost, these goods must be assigned a unit cost equal to their current estimated net realizable value. This rule is known as measuring inventories at the **lowest of cost or market (LCM)**. This departure from the cost principle is based on the **conservatism** constraint, which requires special care to avoid overstating assets and income. Under LCM, companies recognize a “holding” loss in the

period in which the net realizable value of an item drops, rather than in the period the item is sold. The holding loss is the difference between the purchase cost and the lower net realizable value. It is added to the cost of goods sold for the period.

Chapter 8 – Reporting and Interpreting Property, Plant and Equipment; Intangibles; and Natural Resources.

The resources that determine a company's productive capacity are often called **Long-Lived Assets (Capital Intensity = Noncurrent Assets/ Total Assets)**. These assets, which are listed as noncurrent assets on the balance sheet, may be either **tangible** or **intangible assets**.

Tangible Assets have physical substance, that is, they can be touched. The three kinds of long-lived tangible assets are:

- **Land** used in operations.
- **Buildings, Fixtures and Equipment** used in operations.
These first two tangible assets are also called **Property, Plant and Equipment**.
- **Natural Resources** used in operations.

We are interested in the creation of **Journal Entries** related to:

- **Acquisition**

Under the cost principle, all reasonable and necessary expenditures made in acquiring and preparing an asset for use should be recorded as the cost of the asset.

Therefore, the Cost of an asset is given by: **Cost = Price – Discount + Transportation Cost + Installation Cost + Preparation Cost**. Since PPE are more expensive than inventories, there are 3 different methods through which the company can buy them:

- **Cash** (coming from Operating Activities)
- **Debt** (Loans from Bank or Issuing Bonds in the Market)
- **Equity** (Additional Capital from Equity Issuance by Stockholders).

Most assets require substantial expenditures during their lives to maintain or enhance their productive capacity. These expenditures include cash outlays for ordinary repairs and maintenance, major repairs, replacements, and additions. The expenses that are encountered before the assets become ready-to-use should be included in the initial cost.

Expenditures that are made after an asset has been acquired are classified as follows:

- **Ordinary repairs and Maintenance** are expenditures that **maintain the productive capacity of the asset** during the current accounting period only. These cash outlays are recorded as expenses in the current period. This expense is included in the **Income Statement**
- **Improvements or Expansion Expenses** are **expenditures that increase the productive life, operating efficiency, or capacity of the asset**. These **capital expenditures** are added to the appropriate asset accounts. They occur infrequently, involve large amounts of money, and increase an asset's economic usefulness in the future through either increased efficiency or longer life. Examples include additions, major overhauls, complete reconditioning, and major replacements and improvements, such as the complete replacement of an engine on an aircraft. This expense will be included in the **Balance Sheet**, meaning that it will be **capitalized**.

In some cases, the company cannot buy the PPE from external subjects, but it creates its own PPE. Think about the case of very special machineries that are not available in the market so that it needs to create them. In order to build the PPE, the firm will bear a number of expenses associated with the construction such as **labour, materials** and also **interests**. **PPE in construction** is an Asset. The firm will capitalize such costs by debiting the asset account once the cash payment is made.

- **Depreciation (Use)**
Long-lived assets can be considered as prepaid expenses for which the firm paid in one accounting period. Nevertheless, as any other prepaid expense, its benefits will occur in next accounting periods once the firm will use them. As the long-lived assets will be used in a repeated manner for a certain number of periods, the firm has to allocate part of that cost (namely the **prepaid expense**) in each period. This is in line with the matching expense principle according to which the firm has to record the expenses in the period in which they are incurred namely in the period in which the associated revenues have been earned. **Long-lived assets contribute to generate revenues so, once the revenues are recognized, the firm has to recognize not**

only the expenses incurred to purchase the materials, but also the expenses related to the use of the PPE.

The term used to identify the matching of the cost of using buildings and equipment with the revenues they generate is **depreciation**. Thus, depreciation is the process of allocating the cost of buildings and equipment over their productive lives using a systematic and rational method.

At the end of the accounting period we need to make an adjusting entry to recognize the use of equipment and buildings for the period (**depreciation expense**). The depreciation will be included in the income statement as a separate item or as a component of the cost of goods sold. The amount of depreciation expense accumulated since the acquisition date is reported on the balance sheet as a contra-account, **Accumulated Depreciation**, and deducted from the related asset's cost, as the allowance for doubtful accounts for the accounts receivables, indirectly reduces the value of PPE. So, we have a **gross amount of PPE** (that represents the acquisition cost of the PPE) and a **net amount** that represents the **difference between the acquisition cost and the accumulated depreciation**.

As for the allowance for doubtful accounts, the accumulated depreciation doesn't only contain the current depreciation included in the current income statement, but also the depreciation occurred in the past (since the acquisition of PPE). Thus, the accumulated depreciation represents the extent to which we used PPEs and the net amount of PPEs tells us the magnitude of economic benefits that PPEs still generate in the future.

Thus, the net book value (or carrying value) of a long-lived asset is the difference between its acquisition cost and the accumulated depreciation from the acquisition date to the balance sheet date.

The point is **how we compute the depreciation**.

We need three amounts:

- **Acquisition Cost**
- **Estimated Useful Life**, estimate of the assets' useful economic life to the company. In other

words, it is the amount of time the firm expects to use the asset.

- **Estimated Residual Value** at the end of the assets' useful life. Managers' estimate of the amount that the company expects to recover upon disposal of the asset at the end of the estimated useful life. Imagine that, at the end of the estimated useful life, the firm decides to sell PPE. The value for which PPE would be sold is the estimated residual value that the firm uses to compute the depreciation expense.

Notice that both the estimated useful life and the estimated residual value are estimates therefore also **depreciation expense** to include in the income statement is also an estimate.

Because of significant differences among companies and the assets they own, accountants have not been able to agree on a single best method of depreciation. Therefore, managers have to define the systematic and rational method to allocate the overall cost of PPEs to each accounting period namely to choose the **Depreciation Method**. The depreciation method can be different for specific assets or classes of assets. Yet, it is important that the depreciation method is consistent over time to ensure the comparability of the financial statements.

There exist 3 possibilities:

- **Straight-line Method** (most common, used by more than 98% of companies for many or all of their assets). Under the straight-line method, an equal portion of an asset's depreciable cost is allocated to each accounting period over its estimated useful life. **$(\text{Cost} - \text{Residual Value}) \times 1/\text{Useful life} = \text{Depreciation Expense}$** . "Cost – Residual Value" is the amount to be depreciated, also called the **Depreciable Cost**, while the formula " **$1/\text{Useful life}$** " is the **Straight-Line Rate**. Notice that: **Depreciation expense** is a constant amount each year. **Accumulated depreciation** increases by an equal amount each year. **Net Book Value** decreases by the same amount each year until it equals the estimated residual value. This is the reason for the name straight-

line method. Notice, too, that the adjusting entry can be prepared from this schedule, and the effects on the income statement and balance sheet are known.

- **Units of Production Method**

This method relates depreciable cost to total estimated productive output. The formula to estimate annual depreciation expense under this method is as follows:

$$\text{Depreciation Expense} = ((\text{Cost} - \text{Residual Value}) / \text{Estimated Total Production}) * \text{Actual Production}$$

Dividing the depreciable cost by the estimated total production yields the **depreciation rate per unit of production**, which is then multiplied by the actual production for the period to determine depreciation expense.

Notice that, from period to period, depreciation expense, accumulated depreciation, and book value vary directly with the units produced. In the units-of-production method, **depreciation expense** is a **variable expense** because it varies directly with production or use.

The units-of-production method is based on an estimate of an asset's total future productive capacity or output, which is difficult to determine.

- **Declining Balance Method (Accelerated)**

In this method, we assume that PPE are used more in the first years of their estimated useful life. This can happen as PPE may be more productive when they are new. Thus, instead of allocating the depreciable cost in equal manner across the estimated useful life, we allocate a greater amount at the beginning of the useful life and a lower amount at the end. It is why the declining balance is also called accelerated depreciation method.

Among the diverse accelerated depreciation method that a firm can use, we focus on the double-declining balance rate according to

which the usage of the PPE at the beginning is double than at the end of the useful life. In particular, to determine the depreciation expense to report in the income statement, we use the following formula:

$$\text{Depreciation expense} = (\text{Acquisition cost} - \text{Accumulated depreciation}) * 2/\text{Useful Life}.$$

Notice that accumulated depreciation, not residual value, is included in the formula. Since **accumulated depreciation increases each year, net book value** (cost minus accumulated depreciation) **decreases**. The double-declining rate is applied to a lower net book value each year, resulting in a decline in depreciation expense over time. As with the other methods, the net book value should not be depreciated below the residual value. Occasionally, before the end of the estimated useful life, if the annual computation reduces net book value below residual value, only the amount of depreciation expense needed to make net book value equal to residual value is recorded, and no additional depreciation expense is computed in subsequent years. More likely, in the last year of the assets estimated useful life, whatever amount is needed to bring net book value to residual value is recorded, regardless of the amount of the computation.

These differences between the straight-line and the accelerated depreciation method have important implications for the net income and the income taxes. Indeed, at the beginning of assets' useful life, depreciation expenses would be higher if the accelerated depreciation method is preferred to the straight-line method. Consequently, the net income at the beginning of assets' useful life would be lower if the accelerated depreciation method is used. Yet, the method would be advantageous from a tax point of view as income taxes will also be lower. Instead, at the end of the estimated life, depreciation expense will be higher if the straight-line method is preferred to the accelerated method. In this case, net income will be higher if the accelerated method is used. Nevertheless, taxes will also be higher.

Moreover, there is also evidence that firms using an accelerated depreciation method make significantly larger capital investments than firms that use straight-line depreciation.

Assets are defined as economic resources with probable future benefits acquired in an exchange transaction. On the date of the exchange, an asset is measured at historical cost. However, later in its useful life, when an asset is not expected to generate sufficient cash flows at least equal to its book value, we say the asset's book value is **impaired**. Corporations must review long-lived tangible and intangible assets for possible impairment.

Two steps are necessary:

- **Test for Impairment**

Impairment occurs when events or changed circumstances cause the estimated future cash flows of these assets to fall below their book value.

If net book value > estimated future cash flows, then the asset is impaired.

Otherwise (<) no adjusting entry is recorded.

- **Computation of Impairment Loss**

For any asset considered to be impaired, companies recognize a loss for the difference between the asset's book value and its **fair value** (a market concept).

Impairment Loss = Net Book Value – Fair Value

That is, the asset is **written down** to fair value.

- **Disposal of Property, Plant and Equipment**

In some cases, a business may **voluntarily** decide not to hold a long-lived asset for its entire life. The company may drop a product from its line and no longer need the equipment that was used to produce it, or managers may want to replace a machine with a more efficient one. These disposals include sales, trade-ins, and retirements. A business may also dispose of an asset **involuntarily**, as the result of a casualty such as storm, fire or accident. Disposals of long-lived assets seldom occur on the last day of the accounting period. Therefore, depreciation must be recorded on the date

of disposal for the amount of cost used since the last time depreciation was recorded. Therefore, the disposal of a depreciable asset usually requires two journal entries:

- An adjusting entry to update the depreciation expense and accumulated depreciation accounts.
- An entry to report the disposal. The cost of the asset and any accumulated depreciation at the date of disposal must be removed from the accounts. The difference between any resources received on disposal of an asset and its book value at the date of disposal is treated as a gain or loss on the disposal of the asset. This gain (or loss) is reported on the income statement. It is not an operating revenue (or expense), however, because it arises from peripheral or incidental activities rather than from central operations. Gains and losses from disposals are usually shown as a separate item on the income statement.

So far, we focused on the tangible assets namely on long-lived assets that have physical presence and can be touched. However, tangible assets are not the only long-lived assets present in the balance sheet of a company. **Intangible Assets** are increasingly important resources for organizations. An intangible asset, like any other asset, has value because of certain rights and privileges often conferred by law on its owner. The majority of intangible assets usually are evidenced by a legal document. The most common types of intangible assets are the following:

- **Goodwill** (recognized in a business combination), by far the most frequently reported intangible asset is goodwill (cost in excess of net assets acquired). The term goodwill arises from factors such as customer confidence, reputation for good service or quality goods, location, outstanding management team, and financial standing. From its first day of operations, a successful business continually builds goodwill. In this context, the goodwill is said to be **internally generated** and is not reported as an asset. The only way to report goodwill as an asset is to purchase another business. Often the purchase price of the business exceeds the fair value of all of its net assets. Why would a company pay more for a business as a whole than it would pay if

it bought the assets individually? The answer is to obtain its **goodwill**. For accounting purposes, goodwill is defined as the difference between the purchase price of a company as a whole and the fair value of its net assets.

- **Trademarks**

A trademark is a special name, image, or slogan identified with a product or a company; it protected by law. Trademarks are among the most valuable assets a company can own. Although trademarks are valuable assets, they are rarely seen on balance sheets. The reason is simple; intangible assets are not recorded unless they are purchased. Companies often spend millions of dollars developing trademarks, but most of those expenditures are recorded as expenses rather than being capitalized as an intangible asset.

- **Copyrights**

A copyright gives the owner the exclusive right to publish, use, and sell a literary, musical, or artistic piece for a period not exceeding 70 years after the author's death.

- **Technology**

Includes costs for computer software and Web development.

- **Patents**

A patent is an exclusive right granted by the federal government for a period of 20 years, typically granted to a person who invents a new product or discovers a new process. The patent enables the owner to use, manufacture, and sell both the subject of the patent and the patent itself.

- **Franchises**

Franchises may be granted by the government or a business for a specified period and purpose. A city may grant one company a franchise to distribute gas to homes for heating purposes, or a company may sell franchises, such as the right to operate a KFC restaurant. Franchise agreements are contracts that can have a variety of provisions. They usually require an investment by the franchisee; therefore, they should be accounted for as intangible assets.

- **Licenses and Operating Rights**
Obtained through agreements with governmental units or agencies; permit owners to use public property in performing their services.
- **Others, including customer lists/relationships, noncompete covenants, and contracts and agreements.**

Intangible assets differ from the tangible assets along 3 dimensions:

- Even if the life cycle of intangibles can be divided in 3 periods (Acquisition, Use and Disposal) as the tangible assets, intangible assets are recognized in the balance sheet only if they are purchased from external parties. Intangibles that are internally generated are not included in the balance sheet (contrary to tangible assets for which we discussed the case of the construction in process representing tangible assets that are built inside the firm). The difference is due to the difficulty to measure intangible in a reliable manner. As one of the characteristics of accounting is reliability, we will report only the intangibles for which the value can be determined in a reliable way through to a market transaction with external parties.
- We will not refer to depreciation rather to **amortization**
- We will not determine the amortization for all the intangible assets. Rather, we can distinguish intangible assets into:
 - Intangible assets with a **Definite Useful Life**.
The cost of an intangible asset with a definite life is allocated on a **straight-line basis** each period over its useful life in a process called **amortization** that is similar to depreciation. Most companies do not estimate a residual value for their intangible assets. Amortization expense is included on the income statement each period and the intangible assets are reported at cost less accumulated amortization on the balance sheet.
 - Intangible assets with an **Indefinite Useful Life**.

Intangible assets with indefinite lives are **not amortized**. Instead, these assets must be reviewed at least annually for possible impairment of value by first using qualitative factors to determine whether it is more likely that not (that is, it is greater than a 50 percent likelihood) that the fair value of the indefinite-life intangible is less than its carrying amount. Qualitative factors can include, for example, negative effects due to increases in costs, decreases in cash flows beyond expectations, an economic downturn, or deterioration in the industry.

Chapter 11 – Reporting and Interpreting Stockholders' Equity.

So far, we saw that a firm can use three types of financing to make its investments and carry on its business operations,

POT (Packed Order Theory):

- **Internal Resources** (namely profits generated in the past that were not distributed as dividends);
- **Debt** (notes payable, bonds, loans and debentures);
- **Equity Financing**.

These 3 ways of financing are in order which means that the firm will arrive to ask for equity as a last step, only after having already used/checked the two ways before it. That's because equity is the most expensive way of financing for a firm, and that is related to the risk that shareholders are ready to take in exchange of a premium.

In order to understand how much of financing comes from the equity we have to check the capital structure of the firm, and in particular the mix of debt and equity used to finance its investments. Therefore, by computing **Financial Leverage Ratio** = Stockholders' Equity / Total Assets, (as we'll see , in the case of Kellogg's this ratio is 17.8%).

This chapter is focused on **Equity Financing**.

A firm like Kellogg's, in 2018 reported a total stockholders' equity in the balance sheet of 3159\$. The stockholders' equity includes both the **retained earnings** (that is the profits generated by the firm in the past and reinvested in the company) and the **common equity** (that is the money provided by company's owners). Moreover, as the financial

statements of Kellogg's are consolidated financial statements, there is also a separate indication of equity belonging to minorities.

If you consider the total assets of Kellogg's (17780\$), we can see that 82.2% of the assets are financed through debt financing and just 17.8% is financed through equity and internal resources.

As Kellogg's is a corporation (rather than a partnership or sole proprietorship), the equity (namely its ownership) is divided in a number of pieces called **shares**. Each share gives the owner two rights:

- **Voting Rights**, rights to vote in the stockholders' meetings and, hence, influence company's decisions.
- **Cash Flow Rights**, cash flow rights comprise:
 - The right to receive **dividends**, namely receive a proportional share of the distributed profits (notice that the share of dividends is proportional to the amount of equity provided by the shareholder).
 - At the end of the life of the company (case of failure or liquidation), the company pays back a cash amount to shareholders that is proportional to the initial contribution. This is the so-called **residual claim** of shareholders. In the case of failure, owners are paid after everyone else (suppliers, banks, etc.). This makes equity investments riskier than lending. This is the reason why the profits that are not distributed in form of dividends are included in firm's stockholders' equity as shareholders have a residual claim over them.

Shares differ depending on the type of rights that they provide. In particular, we can distinguish between:

- **Common Shares**, they provide **both rights**. Yet, we can have different classes depending on whether they provide more/less voting and cash flow rights. For instance, in the case of family firms, family owners hold shares that provide more voting rights than cash flow right as the family wants to influence more the corporate activities.
- **Preferred Shares**, they are distinct from the common shares. In this case, equity holders will receive dividends and will be paid back before the others. Usually, they don't carry voting rights.

A corporation having both types of shares has a **Dual Class Structure**. (Lyft vs Uber).

The different rights provided by the shares are reflected in different prices that owners pay for them.

In the case of private firms, the price of the shares is privately negotiated. In the case of listed firms, the price is determined on the stock market where the shares are traded. In US, the major stock market is the **New York Stock Exchange (NYSE)** but it is not the only one. Other two relevant stock markets are the **NASDAQ** (specialized for **high-tech companies**) and **OTC** (specialized for **start-up companies**). Kellogg's for example is traded on the NYSE.

When shares are traded in the markets and therefore the prices changes according to Demand&Supply, the Balance Sheet is not affected. The only situation in which the Balance Sheet and the Statement of Stockholders' Equity are affected is in case of issuance of new shares.

When a firm decides to sell its shares in the stock market, it makes an **IPO (Initial Public Offering)**. New shares are issued and sold in the market at a given price. At the moment of IPO, the firm has to provide the past financial statements and the expected ones so that investors can decide to buy or not the shares. In US, the document containing all these information is the **form S-1**.

After the initial IPO, the firm can decide to issue new shares in the market as it needs more capital to make its investments. In this case, we have a **SEO (Seasoned Equity Offerings)** where new shares are issued and traded in the market. Note that the firm can decide to trade all its shares or just part of them.

The maximum number of shares that a company can issue is the **authorized number of shares**. (In the case of Kellogg's, authorized shares are equal to 1.000.000.000).

The **issued shares** is the total number of shares that have been issued and sold. (In the case of Kellogg's, the issued shares are equal to 420.666.780)

However, the shares that have been sold in the market may have been purchased by investors or by the firm itself. The firm can decide to purchase its own shares when it has low growth opportunities and the management thinks that the firm itself is the best investment. The shares that the company

repurchases are separately identified as **treasury stock**. In the case of Kellogg's, the number of shares that has been repurchased is 76.801.314 and the treasury stock is 4551. Shares that have been repurchased are considered as issued shares but not **outstanding** (that is the total number of shares of stock that are owned by stockholders on any particular date) as they are not owned by shareholders but by the firm. This is the reason why they are reported with a negative sign as they do not represent financial resources provided by external subjects towards which the firm has obligations (that is, **dividend payment** and **residual claim**).

Thus, the number of shares held by stockholders is the difference between the issued shares and the treasury stock. In the case of Kellogg's, this number is 343.865.466 and it represents the number of shares outstanding of Kellogg's namely the number of shares owned by Kellogg's shareholders.

Giving that, in discussing the journal entries relative to stockholders' equity, we will focus on:

- **Issuance of (new) shares**
- **Stock repurchase**
- **Payment of dividends**

Notice that all these transactions have implications for the balance sheet and the statement of stockholders' equity when all changes in stockholders' equity are recorded.

Starting from the **Issuance of (new) shares**.

We previously mentioned the IPO and the SEO as cases of issuances of new shares. These are particular cases where new shares are issued and sold in the stock market. However, when the firm started its activities, the owner of the firm invested an initial amount of capital to start the business. That amount is included in the common equity, but it is also included in the corporate chapter.

In particular, in the corporate chapter, the company indicates the **legal capital** namely the capital that will not be touched throughout the life of the firm in order to avoid instances of low capitalization. The legal capital is determined by multiplying the number of shares authorized included in the corporate chapter by the **par value** namely the nominal value per share established in the corporate chapter. The legal capital is the permanent amount of capital that owners cannot

withdraw before the bankruptcy. In the case of Kellogg's, the par value is 0.25\$. All changes in common equity are determined by multiplying the existing par value by the number of new shares issued (unless a modification in the corporate charter occurs). Most states require stock to have a par value. The original purpose of this requirement was to protect creditors by specifying a permanent amount of capital that owners could not withdraw before a bankruptcy, which would leave creditors with something in the event that a company did not succeed.

Nevertheless, in subsequent issuance of new shares, the price asked for the new shares can be:

- **Price equal to the Par Value**, in this case, we recognize an increase in cash and an increase in the **common equity** for an amount equal to price (which is equal to the par value) multiplied by the number of new shares issued.
- **Price higher than the Par Value**, in this case, we record an increase in cash equal to the number of new shares issued multiplied by the price. Moreover, we will credit the common equity account by an amount equal to the number of shares multiplied by the Par Value. The difference between the cash received and the increase in common equity will credit the so-called "**Additional paid-in capital**" account. The "Additional paid-in capital" is one of the components of stockholders' equity (in addition to the common equity, retained earnings and treasury stock) representing the value of the shares issued exceeding Kellogg's par value.
- **Price lower than the Par Value**, in this case, the firm sells its shares for a price lower than its par value. Thus, we recognize an increase in cash equal to the number of shares multiplied by the price. At the same time, we credit the common equity account for an amount equal to the number of shares multiplied by the par value, as increases in common equity cannot be recognized at a value lower than the par value unless we modify the corporation charter. However, as we charged a price lower than the par value and, hence, we received less cash than the actual increase in common equity, we will debit the "**Discount on common equity**" account for the difference. The discount on common equity account is a contra-equity to be reported in the balance sheet as an indirect reduction in common equity. Remember that, common equity can be "reduced" only if there is a change in the

corporation charter changing the number of authorized shares or the par value. Likewise, the legal capital namely the permanent capital can be withdrawn only in exceptional cases.

Note that the firm's new shares can be purchased by existing shareholders as well as new shareholders. Shareholders can be investors, funds, government but also employees of the firm. In certain cases, firms offer firms' shares as a form of compensation to employees and managers.

As we previously discussed, the company can also decide to repurchase its own shares. In this case, we have a **stock repurchase**.

There are several reasons why the company decides to repurchase its stock from existing stockholders. A common reason is to provide employees bonus plans based on firms' shares and avoid dilution effect. When the company repurchases its stock from existing shareholders, the shares that have been repurchased are held by the corporation and have no voting or cash flow rights.

Even if the company purchases its own shares, the treasury stock is not reported as an asset as the firm cannot own itself. Instead, the treasury stock will be included in the balance sheet as a component of the stockholders' equity with a negative sign. Indeed, the treasury shares are shares issued but not outstanding. Thus, it will appear in the balance sheet as a separate account of the stockholders' equity and, in particular, as a contra-equity account.

What happens when the firm sells the repurchased shares?

- If the **price is higher** than that paid at the moment of repurchase, then cash is increased, treasury stock is reduced and the difference between the two is compensated increasing the additional paid-in capital.
- If the **price is lower** than that paid at the moment of repurchase, cash is increased, treasury stock is reduced and the difference between the two is compensated decreasing the additional paid-in capital.

One of the rights provided by shares is the right to periodically receive **dividends**. Shareholders invest into the firm because they expect to gain a return from their investment. Such return has two forms:

- **Stock Price Appreciation** (difference between the price paid for obtaining the share and the price at which shares are sold).
- **Dividends**

Firms have diverse dividend policies: some firms regularly distribute dividends while others are less likely to do so (Apple).

The decision to distribute dividends or not is quite sticky over time and it depends on firms' characteristics and strategies. For instance, high-tech firms are less likely to pay dividends as they will use the profits generated to make the new investments and keep their growth.

Nevertheless, the dividend policy of the firm is a relevant factor that investors consider when they have to decide in which firm they want to invest. Indeed, some investors prefer firms that regularly pay dividends as they assure a steady income. Others may prefer capital gains.

In the case of Kellogg's, the firm regularly paid dividends as you can see from the statement of stockholders' equity and from the Kellogg's website.

Kellogg's declared its latest dividend on 21 February 2020. The announcement points out the dividend policy of Kellogg's characterized by frequent dividend payments. In the announcement, there are 3 relevant dates:

- February 21, 2020. This is the **declaration date** namely the date when the board of directors officially approves the dividend. Note that when the dividend is declared, the company has a legal obligation to pay that dividend. The corporation will make a journal entry to record this decision. In particular, it will recognize a reduction in retained earnings and a new liability (dividend payable) is created.
- March 3, 2020. This is the **date of record** namely it is the date on which the company prepares the list of shareholders who will receive the dividend payment. For this date, no journal entry is required.
- March 16, 2020. This is the **date of payment** namely the date when the dividend will be paid for cash. The corporation will make a journal entry to recognize the decrease in cash and the settlement of the liability towards the shareholders.

Thus, the dividend payment leads to a decrease in cash and a decrease in retained earnings. Hence, in order to pay the cash dividend, the firm needs to have:

- **Enough retained earnings** namely the company needs to generate net income now and/or in the past. If the firm is not able to generate profits, no dividend can be distributed.
- **Sufficient cash.** The availability of cash is fundamental for the firm to pay dividends as the lack of cash does not allow the firm to settle its obligation towards the shareholders.

Chapter 9 – Reporting and Interpreting Liabilities.

Liabilities represent obligations that the firm owes to external subjects like suppliers, tax authorities, employees, banks and bondholders. As the assets are ordered on the basis of their liquidity, liabilities can be listed depending on their maturity namely depending on when the obligation becomes due. In particular, liabilities can be distinguished into **current** and **non-current liabilities**.

Current Liabilities are expected to be paid with current assets within the current operating cycle of the business or within one year of the balance sheet. In the case of Kellogg's, they represent the 30,97% of the total liabilities in 2018.

Instead, **Non-Current Liabilities** are obligations that the firm will settle beyond the next accounting period. The non-current liabilities of Kellogg's in 2018 are equal to 69,03%. Hence, most of the liabilities of Kellogg's will not become due in the next accounting period.

The higher weight of the non-current liabilities with respect to the current ones is consistent with the greater weight of non-current assets with respect to current assets. Such correspondence between the weights of current and non-current assets, on the one hand, and current and non-current liabilities, on the other hand, is fundamental for the effective management of the firm.

We will now discuss the current liability accounts that are common to most balance sheet.

- **Accounts Payable**, Obligation to pay suppliers in the near future. When Kellogg's purchases its supplies, it can decide to pay immediately for cash or to delay the payment in the future. In that case, an accounts

payable is recorded. The accounts payable will disappear when suppliers are paid. For many companies, buying on credit from suppliers is a relatively inexpensive way to finance the purchase of inventory because interest does not normally accrue on accounts payable. Some managers may be tempted to delay payment to suppliers as long as possible to conserve cash. This strategy can create problems for suppliers. Most successful companies develop positive working relationships with suppliers to ensure that they receive quality goods and services. A positive relationship can be destroyed by slow payments. In addition, financial analysts become concerned if a business does not meet its obligations to suppliers on a timely basis because such slowness often indicates that a company is experiencing financial difficulties.

- **Notes Payable**, a note payable is a written promise to pay a stated sum (principal) at one or more specified future dates. An example is when Kellogg's borrows money from banks or creditors to make its investments. In this case, Kellogg's recognizes a notes payable representing an obligation to pay banks and creditors. The obligation implies the payment of the **principal** (namely the amount of money that Kellogg's received from the bank or the creditor) + payment of **interest expenses**. Interest expenses are computed by multiplying the principal by a given percentage, negotiated at the moment of signing the contract. They represent an expense for Kellogg's but they are a source of revenues for lenders. Indeed, lenders require the payment of interests to be compensated for others' use of their money. Notes payable are included in the current liabilities if the principal has to be paid within the next accounting period.
- **Current Portion of Long-Term Debt**
The distinction between current and long-term debt is important for both managers and analysts. A company must have sufficient cash on hand to repay current debt. Notes payable may have a longer maturity than just one year. In that case, they cannot be classified as current liabilities as they will become due in more than one year, rather they will be included in the non-current liabilities. However, part of such long-term notes payable may be included among the current

liabilities if the firm has to pay back part of the principal within the next 12 months.

Some contracts require the payment of the whole principal at the end of the contract. However, the contract can require the payment of part of the principal before the end of the contract. Thus, other than paying interests, the firm is required to pay back part of the principal with a certain frequency. When this is the case, the part of the principal of the long-term notes that the firm has to pay back in the next accounting period will be separately recognized in the balance sheet as a **current maturity of a long-term debt**. Once again, the current maturity of the long-term debt represents the part of the principal that the firm has to pay back in the next accounting period, excluding the interests.

- **Other Current Liabilities**

- Accrued Income Taxes
- Accrued Salaries and Wages
- Accrued Advertising and Promotion
- Other

Thus, other current liabilities include obligations that Kellogg's has towards tax authorities (accrued income taxes), employees (accrued salaries and wages) and other external subjects. Such current liabilities arise because Kellogg's incurred the associated expenses, but it did not pay for them yet. The payment will occur next year, and it is why we recognized such current liabilities.

For instance, in the case of accrued salaries and wages, Kellogg's had to recognize the wages in the income statement as the employees contributed to realize the products that have been sold. However, as Kellogg's did not pay them yet, at the end of the year, Kellogg's made an adjusting entry to recognize the expense and the related accrued expense payable namely the obligation towards the employees.

Next year, when employees will be paid, Kellogg's will recognize a decrease in cash and a decrease in the accrued salaries accounts as the obligation is settled.

Other than current liabilities, Companies has also **non-current liabilities** represented by:

- **Long-Term Debt**, financial obligations towards banks and creditors that will become due in more than one year. As for the notes payable, the contract underlying the long-term debt usually requires:
 - **Payment of the Principal** (namely the amount that the firm received from the creditor at the beginning of the contract) that can occur at the end of the contract for the whole amount or can be divided in instalments to be paid with a certain frequency.
 - **Payment of Interests**, computed on the basis of the principal amount and to be included in the income statement.

Once again, the long-term debt reported in the balance sheet just reflects the principal amount that the company received at the beginning of the contract and it has to pay back later on.

- **Deferred Income Taxes**, difference in income recognition between tax laws and accounting methods.
- **Pension and other liabilities**, in particular, other liabilities include Income Taxes Payable, Non-pension post-retirement benefits. Both pension and non-pension post-retirement benefits represent obligations towards employees. They are different from wages as they refer to the moment when employees will retire. When employees retire, firms need to pay them the amounts reported in these accounts.
- **Contingent Liabilities**
Some recorded liabilities are based on estimates because the exact amount will not be known until a future date. For example, a **contingent liability** is created when a company offers a warranty with the products it sells. The cost of providing future repair work must be estimated and recorded as a liability (and expense) in the period in which the product is sold. Therefore, they are firms' obligations that are less certain than those discussed so far.

Such obligations are reported in the balance sheet only if they are probable, namely when we know that we have to pay but we don't know the exact amount. In that case, we recognize an expense in the income

statement and a contingent liability in the balance sheet.

If the obligation is not probable, it is reported in the footnotes. In the case of Kellogg's, no commitment or contingency is reported in the balance sheet. In particular, in order to be included in the balance sheet, the contingent liability has to meet two requirements:

- The future event determining the obligation and, hence, a future economic sacrifice is probable.
- The amount of the liability can be reasonably estimated.

Note that, although the contingent liabilities are included in the balance sheet, they are kept as distinct from the other liabilities as they are less certain.

- **Lease Liabilities**

Companies often lease assets rather than purchase them. When a company leases an asset, it enters into a contractual agreement with the owner of the asset. In the language of contracts (and accounting), the party that owns the asset is referred to as the **lessor**. The party that pays for the right to use the asset is referred to as the **lessee**. For accounting purposes, a lessee can lease an asset by signing either an **operating lease** or a **capital lease**.

- **Operating Lease**, the contract gives the firm the right to use the asset. Until 1st January 2019, the equipment under operating lease would not be reported in the balance sheet among firm's assets. Thus, when the contract was signed, the firm did not own any new asset and no journal entry was required. The first journal entry was done when the firm pays the rent for the usage of the equipment. In particular, when the lease payment occurs, the firm will recognize a new (operating) expense in the income statement (i.e. rental fee) to account for the use of others' equipment.

However, starting from 1st January 2019, companies have to report the PPE under operating lease among their assets. Hence, the first journal entry is the recognition of the PPE and the associated lease liability (as in a capital lease).

- **Capital Lease**, in this case, the contract gives the firm the option to buy the equipment at the end of the contract. As the contract gives the firm the possibility to become the owner of the equipment at the end of the contract, the firm may recognize the asset in the balance sheet. Thus, in this case, when the contract is signed, the firm will recognize a new asset in the balance sheet. At the same time, the firm will recognize a new liability towards the lessor. The liability represents the firm's obligation to pay the lessor in order to become the owner of the equipment at the end of the contract. Given that, the liability will be equal to the present value of the total rental fees that the firm has to pay in the future. The equipment will also be recognized in the balance sheet for the same amount.

Chapter 10 – Reporting and Interpreting Bond Securities.

In this chapter we will discuss how companies raise money from investors by issuing debt securities in the bond markets. The bond markets are where companies go to sell debt securities and where investors go to purchase and trade debt securities. The debt securities purchased and traded in the bond markets are generically referred to as “bonds” by the press and investors. The companies issuing debt securities in the bond markets, however, almost always refer to these securities as “notes” in their financial statements.

Once again, we focus on the liabilities and equity side of the balance sheet. In the previous chapters, we discussed the Stockholders' equity. Today we will focus on the bonds included in the long-term debt.

Firms need financial resources to carry on their operating and investing activities. When they lack internal resources, they look for debt. In this case, firms can ask financial resources to banks (loans) or they may issue debt securities that are traded in the bond market. If bank loans represent a private type of debt financing characterized by a close relation between the firm and the bank, bonds represent a public type of debt financing. Like firms' shares, bonds are traded in the market and the possibility for investors to sell firms' bonds increases their willingness to finance the firm.

From the point of view of investors, bonds differ with respect to equity because are safer. The issuance of bonds implies the payment of interests on a regular basis and the repayment of the principal at the end. Instead, in the case of equity financing, owners have the right to receive dividends, but the payment of dividends is not scheduled (as in the case of bonds). Moreover, equity holders are residual claimants. Thus, they will be paid after all the others are paid.

From the point of view of the firm, a company can prefer to issue bonds rather than equity for several reasons:

- Existing owners keep their **control over the firm**, avoidance of control dilution that takes place when I issue new shares.
- The presence of debt can **discipline managers** and avoid that they act at detriment of shareholders.
- The presence of debt gives a **tax benefit** to shareholders. Indeed, the presence of interest expenses decreases the pre-tax income and, hence, the taxes that the company would pay. As a result, shareholders may obtain a greater return from their investment in the firm.

At the same time, a company can prefer to issue equity rather than bonds because:

- Bonds increase the **bankruptcy risk** of the firm, higher level of distress.
- They imply the periodical payment of interests that reduces the financial resources available to the firm to make new investments.

Bonds' Characteristics

Bonds are obligations that the firm owes to creditors. The obligation is twofold:

- **Regular payment of interests** at a given date and at a given rate.
- **Payment of the principal** (usually at the end of the contract).

Thus, at the moment of the issuance, the firm receives financial resources in exchange for the regular payment of interests and the repayment of the principal at the end.

The important elements that we should consider are:

- **Maturity Date**, date at which the firm has to pay back the principal (or face value).
- **Face Value, Par Value or Principal**, amount that the firm has to pay back at the maturity date.

- **Coupon Rate**, rate to determine the interest that the firm should pay. The coupon rate is applied to the principal amount. (Interest Payment = Coupon Rate x Principal Value).
- **Frequency of Interest Payment**.

Such information are determined at the moment of the issuance by the company and are reported in the bond certificate, also called **Bond Prospectus**. However, the price that bondholders are willing to pay for the bond is determined in the market and, hence, it can differ from the par value.

In order to determine if the company is a good investment, the investor will compare the **Coupon Rate** included in the Bond Prospectus with the interest rate of another company with similar characteristics, which is the **Effective Market Rate**.

The **Price** of the Bond is the amount of cash that the company will receive from the Bond Issuance. The price is equal to the Present Value of all the future obligations. This means the value today of all the future interest payments + value today of the payment of the principal amount. To obtain the value today of these obligations I have to apply a discount.

The **discounted amount** will be equal to $(\text{interest payment}) / (1 + \text{effective market rate})^n$. This is the value today of an interest payment at time $t+n$. While the value today of the payment of the principal amount is $(\text{Principal Amount}) / (1 + \text{effective market rate})^n$ where n is the years range in which occur the maturity date (e.g. 10 years, $n = 10$).

Therefore **Price = Discounted Amount (Interest Payments) + Discounted Amount (Payment of the Principal Amount)**.

In particular, the price is determined on the basis of the present value of interest expenses and principal amount. In order to determine the present value, bondholders will use a discount rate that it is equal to the return that bondholders expect to get from a firm with similar characteristics.

If the bondholders believe that the return from the investment in the firm is equal to the coupon rate, then, the price will be equal to the principal amount.

If bondholders believe that the return from the investment in the firm is higher than the coupon rate, then, the price will be lower than the principal amount and the bond is issued at the

discount. Hence, the firm will receive less financial resources than it will pay at the end. Bondholders provide less financial resources because they believe that the coupon rate offered by the firm is lower than the return that the market will offer for a similar firm.

Thus, we can identify three cases:

- Bond issued at **Par Value** (Effective Market Rate = Coupon Rate), then Amount received at the bond issuance is equal to Face Value.
- Bond issued at the **Discount** (Effective Market Rate > Coupon Rate), then Amount received at the bond issuance is lower than Face Value.
- Bond issued at a **Premium** (Effective Market Rate < Coupon Rate), then Amount received at the bond issuance is higher than Face Value.

Note that in all the 3 cases, the return earned is the effective interest rate that determined the price paid by the firm.

Types of Bonds

- **Secured Bonds**, the bond is secured by the issuer's pledge of a specific asset, which is a form of collateral on the loan. In the event of the default, the title of the asset passes from the bond issuer (that is, the firm) to the bondholders. (Higher Price)
- **Callable Bonds**, the callable bond is a bond that can be redeemed by the issuer prior to its maturity. (Higher Price)
- **Convertible Bonds**, the bond gives the owner the option to convert bonds into equity, therefore, to become a shareholder. (Not clear the effect).

Appendix A – Reporting and Interpreting Investments in Other Corporations.

In this session, we will focus on the investing activities of the firm. Investing activities of the firm are reflected in firm's balance sheet in the form of new assets that will generate economic benefits in the future. So far, we have discussed firms' investments in long-lived assets, both tangible (PPE) and intangibles (Patents, trademarks, franchises, brands). Yet, investment in long-lived assets is not the only type of investments that firms can undertake. Firms can also decide to invest in companies.

We can distinguish between two types of investments:

- **Passive Investments**
- **Active Investments**

Passive investments are investments in other firms with the mere goal of earning a financial return. In other words, the firm has excess financial resources and decides to invest them in another firm to obtain a gain rather than keeping them inside the firm.

Instead, active investments are investments where the firm not only wants to earn a financial gain, but also influence firms' activities. Hence, they are more strategic. Examples are investments in suppliers or retailers through which the firm can influence their decisions.

Another important distinction is between:

- **Debt Investments**
- **Equity Investments**

Indeed, the firm can decide to lend money to another firm thus acting as a bank or a bondholder, or to become a shareholder by purchasing other firm's shares.

Debt investments are considered as passive investments as debtholders do not have the power and the right to influence the decision-making process. On the contrary, as a debtholder, the firm has the right to **receive interests** and the **principal at the end of the contract**. Hence, when a firm is the debtholder of another one, it has a mere financial interest in the company.

Instead, **equity investments can be both active and passive investments**. Indeed, as equityholder, the firm has both cash flow and voting rights. Cash flow rights imply that the firm has the right to **receive dividends** and the **residual value at the end of the life of the firm**. Yet, the influence that the company can exert (and then the extent to which the investment can be considered as active or passive) will depend on the percentage of outstanding shares purchased by the firm.

If the firm buys less than 20% of the outstanding shares, then the equity investment can be considered as passive as owning **less than 20%** of the outstanding shares does not allow the firm to influence firm's choices. If the firm owns **between 20% and 50%** of firm's outstanding shares, the firm can influence firms' decisions so that the investment can be considered as active. Finally, if the firm owns more than 50% of firm's

outstanding shares, the investment allows the firm to control the other company.

Such distinctions are relevant as they determine the choice of the accounting method to use to recognize the investment in the other corporation.

In particular, in the case of **debt investments**, we can use:

- **Amortized Cost Method** if the investment is held-to-maturity. In other words, if the company wants to keep the investment until maturity, then, the investment is classified as held-to-maturity and the amortized cost is used.
- **Fair Value Method** if the investment is not held to maturity. If the company does not want to keep the investment until maturity, then the investment is classified either as **trading** (if the intent is to trade the debt securities in a short period of time) or **available-for-sale** (residual category) and the fair value method is used. Until 31st December 2017, both equity and debt securities could be included in the category of the available-for-sale investments. Starting from 1st January 2018, only debt securities can be classified as available-for-sale investments. Thus, it is like a residual category where debt securities are included if we want to sell them but not in the immediate future.

Instead, in the case of **equity investments**, we have:

- **Fair Value Method** if the equity investment is passive (that is, the firm owns less than 20% of outstanding shares).
- **Equity Method** if the equity investment is active but does not imply control (that is, the firm owns between 20% and 50% of outstanding shares).
- **Consolidation** if the equity investment is active and gives the firm the right to control the other firm (that is, the firm owns more than 50% of the outstanding shares).

Chapter 12 – Statement of Cash Flow.

So far, we mainly focused on the balance sheet and income statement of Kellogg's. We also discussed the components of the statement of shareholders' equity (common stock, addition paid-in capital, treasury stock and dividends) and the statement of other comprehensive income (to account for unrealized gains and losses relative to available-for-sale securities).

Accounting standards require companies to make a statement of cash flows given the importance that cash has for firms' activities. Analysts often say that "Cash is the king" because the availability of cash implies that the firm has enough financial resources to keep their business operations (by buying supplies and paying employees), make new investments (by purchasing new tangible and intangible assets), fulfill their financial obligations (by paying interests and dividends as well as repaying principal amounts of bonds and loans). Yet, the availability of financial resources does not always overlap with firm's profitability in a given accounting period as not all revenues immediately generate cash and not all expenses lead to a reduction in cash. The divergence is a consequence of the revenue recognition and matching expense principles.

According to the revenue recognition principle, revenues are recognized when they are earned (namely when the goods and services are sold/delivered) regardless of the cash receipt. Thus, it might be the case that the firm earned revenues but did not receive cash from the clients yet (so that account receivables arise). Likewise, according to the matching expense principle, expenses should be recognized when they are incurred (namely when the associated revenues are earned) regardless of the cash payment. Hence, it might be the case that the company recognized an expense although it did not pay the suppliers yet (so that account payables arise). As a consequence, a firm can be profitable reporting a positive net income in the income statement, but it might not have enough cash to keep their activities. This can happen if the firm was not able to collect cash from clients while it had to pay suppliers. On the other hand, a firm can report a loss in the income statement, but it can have enough cash to keep their activities. This can occur if the firm received cash from clients without recognizing revenues. Hence it is important to consider both aspects (i.e. profitability and availability of cash) at the moment of evaluating the firm.

Note that the cash flow statement is strictly related to the balance sheet as the cash reported at the end of the cash flow statement is the amount of cash reported in the balance sheet.

The cash flow statement has 3 distinct sections/areas reflecting the variation in cash for:

- **Operating activities**, (i.e. related to buying of supplies and selling of goods) -> an example of cash generated

by the operating activities is the cash received from the clients for the sale of goods while an example of cash used by operating activities is the cash paid to suppliers for the use of raw materials;

- **Investing activities**, (i.e. related to the purchase and disposal of tangible and intangible assets) -> an example of cash generated by the investing activities is the cash obtained through the sale of PPE while an example of cash used by investing activities is the cash paid for the purchase of new equipment;
- **Financing activities**, (i.e. related to firms' transactions with capital providers like banks and shareholders) -> an example of cash generated by the financing activities is the cash received by banks, bondholders and equity holders while an example of cash used by the financing activities is the cash used to pay dividends or to pay back the principal amount of the bonds.

Each activity will generate a (net) cash flow which is the difference between the cash generated and the cash used by each activity. In order to determine the cash to report in the balance sheet, we add/subtract the variation in cash due to the three activities (i.e. the sum of the three cash flows) to the beginning value of cash. As we already discussed, the cash flow from operating activities represents the cash generated and/or used by the selling of goods and the purchase of raw materials. We have two methods to compute the cash flow from operating activities:

- **Direct Method**, we directly consider the cash received from clients for the selling of goods and the cash payments to suppliers and employees. Keeping track of all the receipts and payments related to the operating activities can be demanding so that most of firms prefer to use the indirect method.
- **Indirect Method**, we determine the net cash flow from operating activities by adjusting the net income reported in the income statement. Hence, we start from the net income reported in the income statement and we try to distinguish between the cash and non-cash component of revenues and expenses in order to determine the cash flow from operating activities.

Cash Flow from Operating Activities

As the cash flow statement starts with the net income, our goal is to determine the cash generated by the operating

activities so that we need to adjust the net income by the non-cash components of revenues and expenses.

Let's start with revenues. As we previously said, not all revenues result in an immediate increase in cash. Indeed the firm can grant a credit to clients. As a result, the firm will recognize the revenue but the cash will be received in the future. Given that, in order to determine the cash-component of cash, we consider the variation in accounts receivables. An increase in accounts receivables means that the company will receive cash in the future. In other words, the company recognized a revenue for which did not receive cash yet. Given that, in order to determine the cash generated by the operating activities, we need to subtract the increase in accounts receivables. Instead, a decrease in accounts receivables means that the company collected cash from clients. Given that, we need to add back the decrease in accounts receivables as we obtained cash thanks to the selling of finished goods.

Let's consider now the expenses that we subtract from revenues in order to determine the net income. As for the revenues, not all expenses lead to a variation in cash as firms not all always immediately suppliers. When suppliers allow firms to pay them later, the firm recognizes an expense (if the associated revenue is earned) and an accounts payable. Thus, from the point of view of the cash flows, an accounts payable represents cash that the firm did not use to pay suppliers and it is kept inside the firm. When we use the indirect method to compute the cash flow from operating activities, we need to account for the expenses that give rise to the accounts payable as they represent a reduction in revenues that are not associated with a decrease in cash. Hence, we consider the variation in accounts payable and, if an increase in accounts payable is observed, we add it back to the net income in order to determine the cash generated by the operating activities. Contrariwise, when a decrease in accounts payables is observed, it means that we used cash to pay suppliers so that we need to subtract it from the net income.

A similar logic applies for the other operating liabilities: an increase in operating liabilities should be added back to net income as they represent expenses for which there is no reduction in cash while a decrease should be subtracted as it suggests that cash is used to pay back suppliers. Yet, accounting for variations in accounts receivables and liabilities is not the only adjustment that we need to do to

determine the cash used by the generating activities. Another important adjustment is that relative to inventories. Inventories represent materials purchased by the firm that have not been transformed into finished goods as well as finished goods that have not been sold yet. In both cases, they are associated with expenses that the firm incurs but for which it did not obtain economic and financial benefits yet. Noteworthy, they represent cash that the firm can generate in the future (through the selling of goods). In particular, an increase in inventories represent materials and/or goods that the firm purchased and/or realized during the accounting period but they will generate cash in the future. Given that, like the accounts receivables, an increase in inventories should be subtracted from the net income. At the same time, a decrease in inventories suggests that the firm sold finished goods that the firm realized in the past generating cash. Hence, a decrease in inventories should be added back. Thus, if for the current liabilities (e.g. accounts payable; accrued income taxes; accrued interest expense), we add increases in liabilities and we subtract decreases in liabilities as they represent sources and uses of cash, respectively; in the case of current assets (e.g. accounts receivable and inventories), we subtract increases in assets and we add decreases in assets representing sources and uses of cash, respectively.

Note that these adjustments are in line with the definition of current assets as assets that will turn into cash within one accounting period. Hence, an increase in current assets represent potential increases in cash in the future but in the immediate they represent cash that has not been generated but for which the firm recognized revenues in the income statement (i.e. accounts receivable) or cash that has been used without recognizing an expense in the income statement (i.e. inventories).

Likewise, remember that current liabilities represent obligations that the firm will settle within the next accounting period. Thus, they represent potential uses of cash in the future while in the immediate they represent cash that is kept inside the firm although the firm recognized expenses in the income statement.

Adjustments for the variations in accounts payable, inventories and accounts receivable are called accrual adjustments and are necessary to identify the part of net

income that generated/use cash from the part (i.e. accruals) that did not generate/use cash.

The last adjustment to consider is that relative to non-cash expenses.

So far, we focused on expenses for which we did not pay in cash in a given accounting period, but the cash payment would occur in the future. Yet, there are expenses that would not be associated with a decrease in cash now and in the future. An example is depreciation and amortization. Both represent allocations of cost over time for the use of long-lived assets for which the firm paid at the moment of the initial purchase. Given that, they do not represent expenses for which the firm would pay for cash in an accounting period.

Cash Flow from Investing Activities

The section of the cash flow statement relative to the investing activities provides information about the cash used (outflow) and generated (inflow) by the investing activities of the company. Hence, it includes the cash payments relative to the purchase of assets (tangible, intangible assets and investments in other corporations) and receipts relative to their selling. The net cash flow from investing activities is positive when the cash receipts from the disposal of firm's assets exceed the cash payments for the purchase of new assets. Instead, it is negative when the cash payments for the purchase of new assets are greater than the cash received for the sale of existing assets.

Cash Flow from Financing Activities

The financing activities section of the cash flow statement provides information about the cash generated and used by the financing activities of the company namely relative to the transactions that the company has with its equity holders and debtholders. In particular, we consider the inflows of cash relative to the issuance of new debt (both bank loans and bonds) and new equity (seasoned equity offerings, initial public offerings and private placements, exercise of stock option). At the same time, we consider outflows of cash relative to the repayment of debt principal and purchase of firm's shares (i.e. treasury stock). As we are focusing on US GAAP, we will also consider in the financing activities the decrease in cash due to the payment of cash dividends.

Notice that we did not consider the changes in cash due to the following transactions:

- **Dividends received from the investment in other companies** -> under the US GAAP, the inflows related to the dividends received are included in the operating activities section.
- **Interests paid and received** -> under the US GAAP, the outflows of cash relative to the interest payment and the inflows of cash relative to the receipt of interests from the investment in other companies are included in the operating activities section of the cash flow statement.

Notice that, as for the cash flow from investing activities, in order to determine the cash flow from financing activities, we did not distinguish between a direct and indirect method as in the case of cash flow from operating activities. Moreover, as in the case of the cash flow from investing activities, information included in the balance sheet are not always enough to compute the reductions and increases in cash due to the financing activities. Additional information are needed.

Chapter 13 – Financial Statement Analysis.

We said that financial statements are important because investors decide whether to invest or not based on financial statements and analysts also make their evaluation on the basis of accounting numbers.

We demonstrated the importance of accounting numbers for investors in two ways:

- Remember the initial graph that put together market returns and earnings;
- Correlation between bond yield and some accounting data as total assets and operating income.

Now that we know how the financial statements are prepared and the rules that firms follow to prepare them, let's see the tools that investors and analysts use to make their evaluations namely how accounting numbers are transformed to decide whether to invest or not in the company -> financial statement analysis (FSA).

We already saw something:

- If you remember, in the case study relative to Facebook, we used information contained in the S-1 document to understand Facebook's business, the main source of revenues, the main type of financing and the level of capital intensity of the firm, We also looked at the information to understand why analysts suggested to buy facebook's shares (i.e. expected growth in the number of users);

- The other case was Pepsi and Coke. In this case we compared the strategies of the two companies (both operating and investing) by looking at the accounting numbers.

In all these cases, I was implicitly pushing you to transform accounting data to understand what was going on inside the firm and use those transformations to make evaluations:

- Evaluated whether to invest or not in the firm;
- Evaluate two firms and understand which one is more successful the other and why;
- Evaluate firms' changes over time.

These are all goals of the financial statement analysis and the reasons why investors are interested in the financial statement analysis. In the next sessions, we will go more in depth focusing on the most common tools that external subjects use to analyze financial statements and make evaluation.

Making evaluations is not easy as it requires a relevant amount of judgment. Yet, a key “**rule**” of the financial statement analysis is that companies should not be evaluated in isolation. Instead, we need a benchmark with respect to which the company is evaluated. The benchmark can be temporal (i.e. past) or cross-sectional (other firms belonging to the same industry or companies that have similar characteristics). Remember that firms' earnings do not only depend upon firms' characteristics and judgment but also on economy – wide factors (gdp, inflation) and industry factors (existing trend in the industry).

Types of FSA:

- **Component percentages;**
We divide items from the income statement by net sales and items from the balance sheet by total assets. Then, we compare these percentages with prior firm's percentages or with the component percentages of other firms. So far, we discussed some examples of common percentages:
 - Comparison of the percentage of investments in other corporations of Coke and Pepsi;
 - Computation of the main source of financing of Facebook.
- **Ratio analysis.**

Focus on ratios belonging to diverse financial statements. This is our main focus. We can distinguish four main types:

- **Profitability:**
 - ROA
 - ROE
 - EPS
- **Activity ratios:**
 - Asset Turnover Ratio
 - Fixed Asset Turnover Ratio
 - Accounts Receivable Turnover Ratio
 - Inventory Turnover Ratio
 - Accounts Payable Turnover Ratio
 - Operating Cycle
- **Liquidity ratios:**
 - Current Ratio
 - Quick Ratio
 - Cash Ratio
- **Solvency ratios:**
 - **Capital Structure:**
 - Financial Leverage
 - Debt-To-Equity
 - **Coverage Ratios:**
 - Time Interest Earned Ratio
 - Cash Coverage Ratio

As we already said, financial statement analysis is not something mechanical and requires a lot of judgment so that some refer to the financial statement analysis as an art. This has also implications about how the ratios are computed. Some ratios are more meaningful than others depending on the industry and the circumstances. Moreover, they can be computed in a different way.

I will refer to the ratios used in the textbook and how the textbook suggests to compute them. Yet, bear in mind that they are not the only ones and there are alternatives in the way they are computed.

Magnitude of Accruals

So far, we focused on the evaluation of firm's characteristics on the basis of accounting numbers assuming that such numbers are reliable and trustworthy. In other words, we

assumed that accounting numbers properly reflect firms' operating, investing and financing activities so that they can be used to make our evaluations and take our investment decisions. This is not only the case as managers can make accounting choices and "adjust" accounting numbers to appear better than in reality. For this reason, financial analysts run an additional analysis to assess the extent to which financial statements reflect firms' operations (i.e. quality of financial statements) and, hence, are trustworthy.

One of the tools used by the financial analysts is to consider the magnitude of total accruals. Total accruals represent the amount of net income that did not turn into cash yet. Indeed, they are computed as net income less cash flow from operations. As they did not turn into cash yet, they are more exposed to managers' adjustments and manipulation. Given that, analysts usually evaluate the trustworthiness of firm's financial statements by dividing the absolute value of total accruals by the absolute value of cash flow from operations.

A greater value of the ratio indicates a greater discrepancy between cash and the net income reported by the firm and, hence, a higher probability that managers adjusted accounting numbers to appear better.

Overall Evaluation

First of all, it is important to point out that equityholders and debtholders look for different firms' characteristics. If equityholders are more concerned with profitability, debtholders may be more concerned with the solvency. Hence, the evaluation of the firm and, hence, the use of the ratios based on accounting numbers differ depending on the type of investor (equityholder vs debtholder) and their preferences.