Introduction to Finance

L4

Profit and Loss Statement (Income Statement/ Statement of financial performance)

- P&L statement lists the firm's revenues and expenses **over a period of time** (usually for 1 accounting year)
- The last line of the income statement shows the firm's **net income**, which is a measure of its profitability during the period.
- The income statement is sometimes called a profit and loss account, or "P&L" statement, and the net income is also referred to as the firm's **earnings**.
- Whereas the **balance sheet** shows the firm's assets and liabilities **at a given point in time**, the **income statement** shows **the flow of revenues and expenses** generated by those assets and liabilities **between two dates (over a period)**

Income Statement

- P&L statement list revenues from sales of products and the cost incurred to make and sell the products
- **Gross Profit**: Difference between sales revenue and the costs
- $\boldsymbol{Gross\ Profit = Sale\ Revenue - Cost\ of\ sales}$

GLOBAL CONGLOMERATE CORPORATION

Income Statement
Year Ended December 31 (in $ million)

	2022	2021
Total sales	186.7	176.1
Cost of sales	(153.4)	(147.3)
Gross Profit	33.3	28.8
Selling, general, and administrative expenses	(13.5)	(13.0)
Research and development	(8.2)	(7.6)
Depreciation and amortization	(1.2)	(1.1)
Operating Income	10.4	7.1
Other income	—	—
Earnings Before Interest and Taxes (EBIT)	10.4	7.1
Interest income (expense)	(7.7)	(4.6)
Pretax Income	2.7	2.5
Taxes	(0.7)	(0.6)
Net Income	2.0	1.9
Earnings per share:	$0.556	$0.528
Diluted earnings per share:	$0.526	$0.500

Income Statement

- **Operating expense (OE)**: These are the expenses from the ordinary course of running the business that are not directly related to producing the G&S being sold by the firm.
- OE include administrative expenses, salaries, marketing costs and R&D expenses, Depreciation and amortization (not an actual expense but represents an estimate of the cost from wear and tear)
- **Operating Income**: Firm's gross profit net of operating expenses

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Income Statement

- $Operating\ Income = Gross\ profit - Operating\ expense$
- $Earnings\ Before\ Interest\ and\ Taxes\ (EBIT) = Operating\ Income + Other\ Income$
- $Pretax\ Income = EBIT - Interest\ expense$
- $Net\ Income = Pretax\ Income - Taxes$

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Earnings per share (EPS)

- Net income represents the total earnings of the firm’s equity holders.
- It is often reported on a per-share basis as the firm’s **earnings per share (EPS)**, which we compute by dividing net income by the total number of shares outstanding:
- $EPS = \frac{Net\ Income}{Shares\ outstanding}$
- Also, EPS= (Net income- preferred dividends)/ Shares outstanding
- (Shares O/S is the End of period data)
- Preferred Dividends are not deducted from net income of the current year unless it had been declared by the management.

Diluted Earnings per share (EPS)

- The **number of shares** outstanding **may grow** if the **company compensates employees with grants of stoc**k or **stock options (**that give the holder the right to buy a certain number of shares by a specific date at a specific price). If the options are "exercised," the company issues new stock and the number of shares outstanding will grow.
- The number of shares may also grow if the firm issues **convertible bonds**, a form of debt that can be converted to shares.
- Because there will be more total shares to divide the same earnings (net income), this growth in the number of shares is referred to as **dilution**.
- Firms disclose the potential for dilution by reporting **diluted EPS**, which computes earnings per share as though any in-the-money stock options, stock grants, or dilutive convertible debt had already been exercised or converted

Income Statement

- **Net Income= 2 million**
- **EPS= 0.556**
- **In 2021, the company issued 2 lakh (0.2 mn) stocks to its employees.**
- **Diluted EPS ?**

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Income Statement

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- **EPS= 0.556**
- **If the company issued 2 lakh (0.2 mn) stocks to its employees.**
- **Diluted EPS ?**
- **O/S shares = 2/0.556=3.6 (3.597)**

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- **O/S shares = 2/0.556=3.6 (3.597)**
- **After employee stock issue O/S shares= 3.6 + 0.2=3.8**
- **Diluted EPS= 2/3.8=0.526**

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EPS

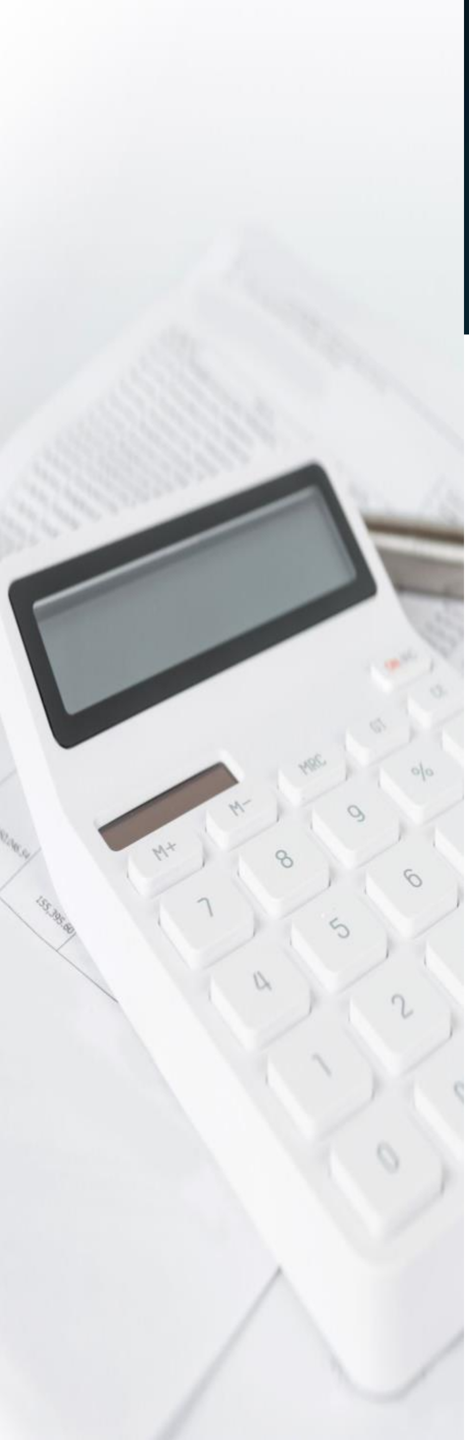
- It is a significant financial tool for investors to gauge if investing in a company would help generating more income
- Higher EPS indicate a profitable status, which implies that the company may **increase dividend payout over time**
- EPS helps to determine if a company's stock price is valued as per its performance by estimating the P/E (Price Earnings)ratio.
- Investors can **compare the performance** of promising companies with EPS and **choose their investment** accordingly.
- A company with steadily increasing EPS is often considered to be a reliable investment option and vice versa (downward EPS trend-shares usually not preferred by investors)
- However judging on the basis of EPS alone is also not advisable as it can be manipulated (for short term), it doesn't reflect cash flow scenario and it doesn't account for the inflation factor.

P/E ratio

- **The price-to-earnings (P/E)** ratio measures a company's share price relative to its earnings per share (EPS). Often called the price or earnings multiple, the P/E ratio helps assess the relative value of a company's stock.
- $\boldsymbol{Price\ to\ Earning\ ratio(\frac{P}{E}) = \frac{Market\ value\ per\ share\ (Share\ Price)}{Earnings\ per\ share\ (EPS)}}$
- $Price\ to\ Earning\ ratio(\frac{P}{E}) = \frac{Market\ Capitalization}{Net\ Income}$
- $EPS = {}^{Net\ Income}/_{Shares\ outstanding}$
- It’s used for **comparing** a company's valuation against its historical performance, against other firms within its industry, or the overall market.

P/E ratio

- P/E ratio is most widely used by investors to determine a stocks relative valuation- Stock is overvalued or undervalued?
- A **high P/E ratio** could mean that a company's **stock is overvalued or** that investors **expect high growth rates** and vice versa
- Companies with no earnings or are losing money don't have a P/E ratio because those companies incur **no EPS** or earnings.
- P/E ratios are **most valuable when comparing similar companies** in **the same industry** or for a single company over time.



3. Cash Flow statement

- The income statement provides a measure of the firm's profit over a given time perio
- However, it does not indicate the amount of *cash* the firm has generated.
- There are two reasons that net income does not correspond to cash earned. First, the **non-cash entries** on the income statement, such as depreciation and amortization. S **certain uses of cash**, such as the purchase of a building or expenditures on inventory, **reported on the income statement**.
- The firm's **statement of cash flows** utilizes the information from the income statemen balance sheet to determine how much cash the firm has generated, and how that cas been allocated, during a set period.
- From the perspective of an investor attempting to value the firm, the statement of ca provides what may be the most important information of the four financial statemen

Cash Flow Statement

GLOBAL CONGLOMERATE CORPORATION
Statement of Cash Flows
Year Ended December 31 (in $ million)

	2022	2021
Operating activities		
Net income	2.0	1.9
Depreciation and amortization	1.2	1.1
Other non-cash items	0.2	1.0
Cash effect of changes in		
Accounts receivable	(5.3)	(0.3)
Accounts payable	4.7	(0.5)
Inventory	(1.0)	(1.0)
Other net operating assets	(3.0)	(2.0)
Cash from operating activities	**(1.2)**	**0.2**
Investment activities		
Capital expenditures	(14.0)	(4.0)
Acquisitions and other investing activity	(7.0)	(2.0)
Cash from investing activities	**(21.0)**	**(6.0)**
Financing activities		
Dividends paid	(1.0)	(1.0)
Sale (or purchase) of stock	—	—
Increase in borrowing	24.9	5.5
Cash from financing activities	**23.9**	**4.5**
Change in cash and cash equivalents	**1.7**	**(1.3)**

CFS

- The statement of cash flows is divided into three sections:
    - operating activities,
    - Investment activities,
    - and financing activities.
- The first section, operating activity, starts with net income from the income statement. It then adjusts this number by adding back all non-cash entries related to the firm’s operating activities.
- The next section, investment activity, lists the cash used for investment.
- The third section, financing activity, shows the flow of cash between the firm and its investors.

CFS-Operating Activity

- The Operating activity section of the CF statement of cash flows adjusts net income by all non-cash items related to operating activity.
- For instance, depreciation is deducted when computing net income, but it is not an actual cash outflow. Thus, we add it back to net income when determining. the amount of cash the firm has generated.
- Similarly, we add back any other non-cash expenses (such as stock-based compensation expenses or increases in deferred taxes).
- Next, we adjust for changes to net working capital that arise from changes to accounts receivable, accounts payable, or inventory. When a firm sells a product, it records the revenue as income even though it may not receive the cash from that sale immediately. Instead, it may grant the customer credit and let the customer pay in the future. The customer’s obligation adds to the firm’s accounts receivable.

Operating Activity

- We use the following guidelines to adjust for changes in working capital:
  - ***Accounts Receivable*** : When a sale is recorded as part of net income, but the cash has not yet been received from the customer, we must adjust the cash flows by *deducting* the increases in accounts receivable. This increase represents additional lending by the firm to its customers, and it reduces the cash available to the firm.
  - ***Accounts Payable*** : Conversely, *add* increases in accounts payable. Accounts payable represents borrowing by the firm from its suppliers. This borrowing increases the cash available to the firm.
  - ***Inventory*** : Next, *deduct* increases to inventory. Increases to inventory are not recorded as an expense and do not contribute to net income (the cost of the goods are only included in net income when the goods are actually sold). However, the cost of increasing inventory is a cash expense for the firm and must be deducted.
  - ***Other*** : Also, *deduct* the increase in any other current assets net of liabilities,*excluding cash and debt*.

Investment activity

- The next section of the statement of cash flows shows the cash required for investment activities.
- Purchases of new property, plant, and equipment are referred to as **capital expenditures**.
- Note that capital expenditures do not appear immediately as expenses on the income statement. Instead, firms recognize these expenditures over time as depreciation expenses.
- To determine the firm's cash flow, we already added back depreciation because it is not an actual cash outflow. Now, we subtract the actual capital expenditure that the firm made.
- Similarly, we also deduct other assets purchased or long-term investments made by the firm, such as acquisitions or purchases of marketable securities.

Financing activity

- The last section of the statement of cash flows shows the cash flows from financing activities.
- Dividends paid to shareholders are a cash outflow.
- **Retained Earnings = Net Income – Dividends**
  - The difference between a firm's net income and the amount it spends on dividends is referred to as the firm's **retained earnings** for that year:
- In the example, if the company Global paid $1 million to its shareholders as dividends in 2022.
- Eg: Global retained earnings= $2 million – $1 million = $1 million, or 50% of its earnings in 2022
- Also listed under financing activity is **any cash the company received from the sale of its own stock (i.e. issue of stock), or cash spent buying (repurchasing) its own stock.**

CFS

- Finally, CFS combines cash flow from these three activities to calculate overall change in the firm's cash balance over the period of the statement.

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Balance Sheet and CFS

GLOBAL CONGLOMERATE CORPORATION

Consolidated Balance Sheet
Year Ended December 31 (in $ million)

Assets	2022	2021	Liabilities and Stockholders' Equity	2022	2021
Current Assets			**Current Liabilities**		
Cash	21.2	19.5	Accounts payable	29.2	24.5
Accounts receivable	18.5	13.2	Notes payable/short-term debt	3.5	3.2
Inventories	15.3	14.3	Current maturities of long-term debt	13.3	12.3
Other current assets	2.0	1.0	Other current liabilities	2.0	4.0
Total current assets	57.0	48.0	Total current liabilities	48.0	44.0
Long-Term Assets			**Long-Term Liabilities**		
Land	22.2	20.7	Long-term debt	99.9	76.3
Buildings	36.5	30.5	Lease obligations	—	—
Equipment	39.7	33.2	Total debt	99.9	76.3
Less accumulated depreciation	(18.7)	(17.5)	Deferred taxes	7.6	7.4
Net property, plant, and equipment	79.7	66.9	Other long-term liabilities	—	—
Goodwill and intangible assets	20.0	20.0	Total long-term liabilities	107.5	83.7
Other long-term assets	21.0	14.0	**Total Liabilities**	**155.5**	**127.7**
Total long-term assets	120.7	100.9	**Stockholders' Equity**	**22.2**	**21.2**
Total Assets	**177.7**	**148.9**	**Total Liabilities and Stockholders' Equity**	**177.7**	**148.9**

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Cash Flow statement

- In this case, Global had cash inflows of $1.7 million, which matches the change in cash from 2021 to 2022 shown earlier in the balance sheet.
- By looking at the cash flow statement as a whole, we can determine that Global chose to borrow to cover the cost of its investment and operating activities. Although the firm's cash balance has increased,
- The company's negative operating cash flows and relatively high expenditures on investment activities might give investors some reasons for concern. If that pattern continues, the company will need to raise capital, by continuing to borrow or issuing equity, to remain in business

Financial Statement Analysis

- Investors often use accounting statements to evaluate a firm in one of two ways:
  1. Compare the firm with itself by analyzing how the firm has changed over time.
  2. Compare the firm to other similar firms using a common set of financial ratios.

Profitability Ratios-GM

- Profitability ratios are mostly derived from the income statement (P&L a/c)
- The income statement provides very useful information regarding the profitability of a firm's business and how it relates to the value of the firm's shares.
- The **gross margin** of a firm is the ratio of gross profit to sales revenue:
- $$\text{Gross Margin (GM)} = \frac{Gross\ Profit}{Sales}$$
- A firm's gross margin reflects its ability to sell a product for more than the cost of producing it.

Profitability Ratios-OM

- The **Operating margin** of a firm is the ratio of operating Income to sales :
- $$\text{Operating Margin (OM)} = \frac{Operating\ Income}{Sales}$$
- The operating margin reveals how much a company earns before interest and taxes from each dollar of sales.

Profitability Ratios-EBIT Margin

- The **EBIT margin** of a firm is the ratio of earnings before interest and taxes (EBIT) to sales :
- $$EBIT \text{ Margin } = \frac{EBIT}{Sales}$$
- By comparing operating margin or EBIT margin across firms within an industry, we can assess the relative efficiency of the firms' operations
- However, sometimes differences in profitability can be the result of corporate strategy, than efficiency of operations.
- For example, if in 2021, high-end retailers Reliance Retail had an EBIT margin of 22%; Dmart (had an EBIT margin of only 4.5%. In this case, Dmart's lower operating margin was not a result of its inefficiency. Rather, the low operating margin is part of Dmart's strategy of offering low prices to sell common products in high volume.

Profitability Ratios-NPM

- The **Net profit margin** of a firm is the ratio of net income to sales :
- $$\text{Net Profit Margin} = \frac{Net\ Income}{Sales}$$
- The net profit margin reveals how much a company earns after interest and taxes from each dollar of sales.
- The net profit margin shows the fraction of income that is available to equity holders after the firm pays interest and taxes.
- One must be cautious when comparing net profit margins: While differences in net profit margins can be due to differences in efficiency, they can also result from differences in leverage, which determines the amount of interest expense, as well as differences in accounting assumptions.

Income Statement: Profitability ratios

- Gross Margin ?
- Operating Margin?
- EBIT margin?
- Net Profit Margin?

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Income Statement: Profitability ratios (%)

- Gross Margin = 33.3/186.7=17.8%
- Operating Margin?
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Income Statement: Profitability ratios

- Gross Margin = 33.3/186.7=17.8%
- Operating Margin = 10.4 / 186.7= 5.57 %
- EBIT margin = OM
- Net Profit Margin= 2/ 186.7=1.07%

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