

## KEY FINANCIAL TERMS - DEFINITIONS

This is a simple income statement for a company:

	31/12/2020	31/12/2021	31/12/2022	31/12/2023	31/12/2024
<b>Revenue</b>	<b>100</b>	<b>120</b>	<b>135</b>	<b>145</b>	<b>150</b>
<i>Revenue Growth</i>		20.00%	12.50%	7.41%	3.45%
Cost of Goods Sold (COGS)	60	62	75	80	85
<b>Gross Profit</b>	<b>40</b>	<b>58</b>	<b>60</b>	<b>65</b>	<b>65</b>
<i>Gross Profit Margin(%)</i>	40.00%	48.33%	44.44%	44.83%	43.33%
Salary, Incentive and Benefit	20	23	25	30	30
Sales and Marketing	10	12	15	12	15
Research and Development	5	7	7	8	10
<b>Total Expenses</b>	<b>35</b>	<b>42</b>	<b>47</b>	<b>50</b>	<b>55</b>
<b>EBITDA</b>	<b>5</b>	<b>16</b>	<b>13</b>	<b>15</b>	<b>10</b>
<i>EBITDA Margin</i>	5.00%	13.33%	9.63%	10.34%	6.67%
(-) Depreciation and Amortisation	1	1	2	2	3
<b>EBIT</b>	<b>4</b>	<b>15</b>	<b>11</b>	<b>13</b>	<b>7</b>
(-) Interest Expenses	0	0	2	1	2
<b>Taxable Income</b>	<b>4</b>	<b>15</b>	<b>9</b>	<b>12</b>	<b>5</b>
(-) Tax	1	3	2	2	1
<b>Net Income</b>	<b>3.2</b>	<b>12</b>	<b>7.2</b>	<b>9.6</b>	<b>4</b>
<i>Net Profit Margin</i>	3.20%	10.00%	5.33%	6.62%	2.67%

I will explain the features one by one, starting from Valuation Ratios:

### Valuation Ratios:

- P/E Ratio (Price-to-Earnings Ratio):

This ratio measures the company's valuation. "P" stands for the share price, and "E" stands for earnings per share (EPS), which is derived from the net income reported in the income statement.

For example, if the share price is \$100 per share as of 31/12/2024 and the company's EPS is \$4, the P/E ratio is calculated as:

$$P / E \text{ Ratio} = 100 / 4 = 25x$$

This means that investors are willing to pay 25 times the company's earnings for each share.

- EV/EBITDA Ratio (Enterprise Value to Earnings Before Interest, Taxes, Depreciation, and Amortization):

This ratio is also used to measure the company's valuation.

EV (Enterprise Value) is calculated as:

$$\text{EV} = \text{Share Price} \times \text{Number of Shares}$$

If the share price is \$100 and the company has issued 100 shares, the EV is:

$$\text{EV} = 100 \times 100 = 10,000$$

The EV / EBITDA Ratio is then calculated as:

$$\text{EV / EBITDA Ratio} = 10,000 / 10 = 100x$$

This means the company's enterprise value is 100 times its EBITDA.

- PEG Ratio (Price/Earnings to Growth Ratio):

The PEG ratio is calculated by dividing the P/E ratio by the expected earnings growth rate.

If analysts forecast a 20% growth rate, the PEG ratio is:

$$\text{PEG Ratio} = 25 / 20 = 1.25$$

Typically, a lower PEG ratio indicates that the company is undervalued relative to its growth potential. For example, Nvidia's PEG ratio is currently less than 1, while Tesla's PEG ratio is higher than 2.

### **Profit Margin Ratios:**

The features in the model that represent profit margins are EBITDA margin and EPS growth.

EBITDA Margin (Earnings Before Interest, Taxes, Depreciation, and Amortization Margin):

This ratio measures the company's profitability by expressing EBITDA as a percentage of total revenue. It represents the profit margin after deducting (almost) all operational-related costs but before accounting for financing and non-operational expenses.

A higher EBITDA margin indicates better operational efficiency.

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<i>Revenue Growth</i>		20.00%	12.50%	7.41%	3.45%
Cost of Goods Sold (COGS)	60	62	75	80	85
<b>Gross Profit</b>	<b>40</b>	<b>58</b>	<b>60</b>	<b>65</b>	<b>65</b>
<i>Gross Profit Margin(%)</i>	40.00%	48.33%	44.44%	44.83%	43.33%
Salary, Incentive and Benefit	20	23	25	30	30
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<b>Total Expenses</b>	<b>35</b>	<b>42</b>	<b>47</b>	<b>50</b>	<b>55</b>
<b>EBITDA</b>	<b>5</b>	<b>16</b>	<b>13</b>	<b>15</b>	<b>10</b>
<i>EBITDA Margin</i>	5.00%	13.33%	9.63%	10.34%	6.67%

### EPS Growth (Earnings Per Share Growth):

EPS growth measures how fast the company's earnings per share are increasing over time. It serves as a proxy for how quickly the company's net income is growing. If there is no change in the number of shares, EPS growth will be equivalent to net income growth.

<b>Net Income</b>	<b>3.2</b>	<b>12</b>	<b>7.2</b>	<b>9.6</b>	<b>4</b>
<i>Net Income Growth</i>		275.00%	-40.00%	33.33%	-58.33%

### **Return Ratios:**

The model also includes return ratios that measure how efficiently a company generates profit from its assets and equity:

ROA (Return on Assets) measures the company's ability to generate profit from its total assets. It is calculated as:

$$\text{ROA} = \text{Net Income} / \text{Assets}$$

This ratio shows how efficiently the company is using their assets to generate returns. A higher ROA indicates more efficient use of assets.

ROE (Return on Equity) measures the profitability relative to shareholders' equity. It is calculated as:

$$\text{ROE} = \text{Net Income} / \text{Total Equity}$$

This ratio indicates how effectively the company is using its equity base to generate profit. A higher ROE signals stronger performance in delivering returns to shareholders.

## Cash Flow Ratios:

### CFO Growth (Cash Flow from Operations Growth)

Sometimes, even when a company is profitable, it doesn't necessarily mean that it has a healthy cash flow. Profitability and cash flow are not the same — profits can be reported without generating actual cash. This situation can arise due to factors like delayed payments, high inventory levels, or accounting adjustments.

It's crucial to track CFO growth because it reflects how effectively a company is generating cash from its core business operations. A positive and growing CFO indicates that the company is not only profitable but also maintaining a solid cash position, which is essential for sustaining operations, paying debts, and funding growth.

Therefore, CFO growth is included as a feature in the model to assess the financial health and cash-generating ability of the company.

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### Statement of Cash Flow

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#### **Cash from operating activities**

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Net earnings	\$2,500,000.00
Depreciation	\$20,000.00
Decrease in accounts receivable	\$30,000.00
Increase in accounts payable	\$10,000.00
Increase in taxes payable	\$5,000.00
Increase in inventory	(\$30,000.00)
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<b>Total cash from operations</b>	<b>\$2,535,000.00</b>

## Sharpe Ratio

The Sharpe Ratio is a measure used to evaluate the risk-adjusted return of an investment. It tells us how much excess return (return above the risk-free rate) an investment generates per unit of risk taken.

**Formula:**

$$\text{Sharpe Ratio} = \frac{(R_p - R_f)}{\sigma_p}$$

Where:

- $R_p$  = **Portfolio Return** (or investment return)
- $R_f$  = **Risk-Free Rate** (typically the yield on government bonds)
- $\sigma_p$  = **Standard Deviation of Portfolio Returns** (a measure of risk)

In the model, we would assume the Risk Free Rate to be nil to simplify the calculations.

A higher Sharpe ratio indicates that the investment has a better risk-adjusted return.

A Sharpe ratio greater than 1 is generally considered good, while greater than 2 is very good, and greater than 3 is excellent.

A negative Sharpe ratio means that the risk-free rate is higher than the portfolio return, indicating poor performance.

The Sharpe ratio helps investors understand whether the returns compensate for the risk taken. Comparing the Sharpe ratios of different investments allows for better decision-making when choosing between riskier and more conservative options.