FINANCIAL STATEMENT ANALYSIS.

Financial statement analysis is the process of analyzing a company's financial statement for decision making purposes. External stakeholders use it to understand the overall health of an organization as well as to evaluate financial performance and business value.

Tools of analyzing financial statement.

1. Common size analysis
2. Comparative analysis
3. Ratio analysis

1. COMMON SIZE ANALYSIS

Common size analysis is categorized into 2:

i) Vertical analysis
ii) Horizontal analysis.

Vertical common size analysis.

- In vertical common size analysis, each account or item in the financial statement is expressed as percentage (%) of the base account.
- The base account for the **income statement is the sales revenue**. Every item in the income statement is expressed as percentage of sales holding sales revenue 100%.This type of analysis allows an analyst to determine how various component of the income statement affects the company's profit.
- The base account for the **statement of financial position (Balance sheet) is total asset** or total equity and liabilities . Every item in the balance sheet is expressed as percentage of total asset holding total assets as 100%.

Illustrations 1

Consider the following financial statement for EVIBS ltd and prepare vertical common size income statement.

EVIBS ltd income statement for the year ended 31 Dec 2020

	Sh "000"
Revenue	30,000
Cost of sales	(12,000)
Gross profit	18,000
Administration expenses	(1,500)
Distribution expenses	(1,200)
EBIT	15,300
Investment income	500
Earning before tax (EBT)	15,800
Income tax expense	(3,000)
Net income	12,800

SOLUTION

EVIBS ltd income statement for the year ended 31 Dec 2020

		Sh "000"
Revenue	30,000	100%
Cost of sales	(12,000)	12000÷30000×100%=40%
Gross profit	18,000	18000÷30000×100%=60%
Administration expenses	(1,500)	1500÷30000×100%=5%
Distribution expenses	(1,200)	1200÷30000×100%=4%
EBIT	15,300	15,300÷30000×100%=51%
Investment income	500	500÷30000×100%=1.67%
Earning before tax (EBT)	15,800	15,800÷30000×100%=52.67%
Income tax expense	(3,000)	3,000÷30000×100%=10%
Net income	12,800	12,800÷30000×100%=42.67%

Summary

- **Gross profit-60%**
- **Operating profit -51%**
- **Net profit-42.67%--this means that for every 1sh in sales, EVIBS ha a net income 0.4267 cent**

ILLUSTARTION 2

Consider the following financial statement for EVIBS ltd and prepare vertical common size Balance sheet.

EVIBS ltd Balance sheet as at 31 Dec 2020

	Sh "000
Non-current assets	
PPE	22,000
Intangible assets	12,000
Investment property	5,000
Total	39,000
Current assets.	
Inventories	9,500
Trade receivables	11,500
Cash and bank	500
Total current assets	21,500
Total asset	**60,500**
Equity and liabilities	
Ordinary share capital	20,000
Share premium	6,000
Retained earnings	11,900
Non-current liabilities.	

10% debentures.	12,000
Current liabilities	
Trade payables	6,400
Bank overdraft	4,200
Total equity and liabilities	**60500**

SOLUTION

EVIBS ltd Balance sheet as at 31 Dec 2020

	Sh "000	
Non-current assets		
PPE	22,000(22000/60500×100%=36.6%	
Intangible assets	12,000 12000/60500×100%=19.83%	
Investment property	5,000	8.26%
Total	39,000	64.46%
Current assets.		
Inventories	9,500	15.75%
Trade receivables	11,500	19%
Cash and bank	500	0.83%
Total current assets	21,500	35.54%
Total asset	**60,500**	**100%**
Equity and liabilities		
Ordinary share capital	20,000	33.05%
Share premium	6,000	9.9%
Retained earnings	11,900	19.67%
Non-current liabilities.		
10% debentures.	12,000	19.83%
Current liabilities		
Trade payables	6,400	10.58%
Bank overdraft	4,200	60.94%
Total equity and liabilities	**60500**	**100%**

Horizontal common size analysis.

Under horizontal analysis, each account value is expressed as percentage of a designated base year account values. This allows the analyst to see how the items have changed over a given duration of time. Horizontal analysis is also known as **trend analysis**.

Illustrations

Consider the following financial statement for EVIBS ltd and prepare Horizontal common size income statement for the year 2019 to 2020

EVIBS ltd income statement for the year ended 31 Dec

Sh "000"	2019`	2020
Revenue	30,000	34,000
Cost of sales	12,000	12,500
Gross profit	18,000	21,500
Administration expenses	1,500	1,200
Distribution expenses	1,200	1,800
EBIT	15,300	18,500
Investment income	500	200
EBT	15,800	18,700
TAX EXPENSE	3,000	4,000
EAT	12 800	14,700

SOLUTION

EVIBS ltd statement of financial position

Sh "000"	2019` Base year		2020	
Revenue	30,000	100%	34,000	113.33%
Cost of sales	12,000	100%	12,500	104.17%
Gross profit	18,000	100%	21,500	119.44%
Administration expenses	1,500	100%	1,200	80%
Distribution expenses	1,200	100%	1,800	150%
EBIT	15,300	100%	18,500	120.92%
Investment income	500	100%	200	40%
EBT	15,800	100%	18,700	118.35%
Tax expense	3,000	100%	4,000	133.33%
EAT	12 800	100%	14,700	114.84%

2. COMPARATIVE STATEMENT ANALYIS

Comparative statement deals with the comparison of different items in profit or loss account and balance sheet of two or more periods.

- **Comparative income statement.**
  Three important information are obtained from the comparative income statement. They are gross profit, operating profit and net profit.
  The changes or the improvement in the profitability of the business concern is determined over a period of time.
- **Comparative statement of financial position.**
  The financial condition of the business concern can be found out by preparing comparative balance sheet. The various items in the balance sheet for two different periods are used.

ILLUSTARTION

Consider the following financial statement for EVIBS ltd and prepare comparative income statement for the year 2019 and 2020

EVIBS ltd income statement for the year ended 31 Dec

Sh "000"	2019`	2020
Revenue	30,000	34,000
Cost of sales	12,000	12,500
Gross profit	18,000	21,500
Administration expenses	1,500	1,200
Distribution expenses	1,200	1,800
EBIT	15,300	18,500
Investment income	500	200
EBT	15,800	18,700
TAX EXPENSE	3,000	4,000
EAT	12 800	14,700

SOLUTION

First, compute absolute change: P1-P0

Where: P_1- subsequent year/period

P_0- base year

Second, determine the % change as $(P_1-P_0)\div Po$

EVIBS ltd income statement for the year ended 31 Dec

Sh "000"	2019` Po	2020 P_1	±Absolute change	% change
Revenue	30,000	34,000	+4,000	+13.33%
Cost of sales	12,000	12,500	+500	+4.167%
Gross profit	18,000	21,500	+3,500	+19.44%
Administration expenses	1,500	1,200	-300	-20%
Distribution expenses	1,200	1,800	+600	+50%
EBIT	15,300	18,500	+3,200	+20.92%
Investment income	500	200	-300	-60%
EBT	15,800	18,700	+2,900	+18.35%
TAX EXPENSE	3,000	4,000	+1,000	+33.33%
EAT	12 800	14,700	+1,900	+14.84%

Summary.

Revenue increased by 13.66% from 2019 to 2020.

Net profit increased by 14.84% from 2019 to 2020.

Advantages of common size analysis/comparative analysis.

1. **Easy to understand**
   Common size statement helps the users of the financial statement to make clear about the ratio or percentage of each individual item to total assets/revenue.

2. **Helpful for time series analysis-**
   A common size statement helps the analyst to find out a trend relating to percentage share for each asset in total asset for a given period.
3. **Comparison at a Glance-**
   An analyst can compare the financial performance at glance since percentage of increase or decrease of each individual component.
4. **Helpful in analyzing structural composition.**
   A common size statement helps the analyst to ascertain the structural relations of various components of cost/expenses/assets/liabilities etc to the required total assets/liabilities/capital or sales.

Limitations of common-size statement.

1. **Lack of standard ratio**
   Common size statement does not help to take decision since there is no standard ratio/percentage in the various components of items.
2. **Changes in price-level**
   Common size statement does not recognize the changes in price level i.e. inflationary effect, so it supplies misleading information since it is based on historical costs.
3. **Following consistency**
   If consistency in accounting principle, concepts, and conventions is not maintained then common size statement becomes useless.
4. **Seasonal fluctuations-**
   Common size statement fails to convey proper records during seasonal fluctuations in various components of sales, assets and liabilities.
5. **Window dressing**
   Effect of window dressing in financial statement cannot be ignored and common size statement fails to supply the real position of the financial statement items.
6. **Qualitative element**
   Common size statement fails to recognize the qualitative elements eg quality of work, customer relations etc .

Advantage of ratios analysis.

1. They are used to determine the ability of the company to meet its financial obligations i.e. Liquidity ratios.
2. They indicate the extent to which the company has borrowed fund e.g. gearing ratios.
3. They are used to compare the performance of the company with that of the industry. (Industrial analysis).
4. They are used to compare the performance of the company with other competitors (cross sectional analysis).
5. They can be used to compare the performance of the company over time (trend analysis).
6. Ratios are used to determine the value of the company.(valuation ratios)

Disadvantages.

1. Ratios ignore the effect of the inflation.
2. Difference in the size of the companies.
3. Differences in the accounting policies.
4. Ratios fail to capture the qualitative aspect of the company.
5. In case of monopolistic company it's difficult to compare performance.
6. Window dressing/manipulation of financial records.

FINANCIAL RATIOS

Ratios can be categorized into 5 categories as follows:

1. Investors or valuation Ratios
2. Liquidity Ratios
3. Gearing / Leverage Ratios / Solvency
4. Profitability Ratios
5. Activity / Efficiency / Turnover / Asset utilization Ratios.

1. Investors / Valuation Ratios

These ratios are used to determine the value of the company. They include:

1. Earnings per Share (EPS)

This ratio indicates the profitability available to each share held by the investor.

$$EPS = \frac{\text{Earnings Attributable to ordinary share holders}}{\text{Number of ordinary shares full issued \& paid}}$$

2. Dividend per Share (DPS)

This indicates the actual cash received by an investor as dividends for each share held. It is calculated as follows:

$$DPS = \frac{\text{Total dividends declared \& paid}}{\text{No of ord shares}}$$

OR

$$DPS = EPS \times \text{Dividend payout Ratio}.$$

3 Earnings Yield.

This indicates the % return for every ~~earn~~ amount invested in the company.

$$ER = \frac{EPS}{MPS} \times 100\%$$

4. Dividend Yield
This indicates the % return in the form of dividend for every amount invested into the company

$$DY = \frac{DPS}{MPS} \times 100\%$$

5. Dividend payout Ratio
This indicates the proportion of the earnings available to O.S.H which is paid

$$DPR = \frac{DPS}{EPS} \times 100\%$$

OR

$$DPR = 1 - \text{Retention Ratio}$$

6. Dividend Cover
This indicates the number of times ordinary dividend is paid out from the earnings available to O.S.H

$$DC = \frac{EPS}{DPS}$$

7. Price Earning Ratio (P/E ratio)
Its shows the relationship between MPS and the EPS.

$$P/E \text{ ratio} = \frac{MPS}{EPS}$$

June 2013 Q1b

Davirex Ltd Share has a nominal value of sh 80. The company pays 10% of the nominal value of the share as dividend for the year. The current MPS is sh 160 with 15% Earning Yield.

Required.
(i). Earning per share (2mks)
(ii) Dividend cover (2mks)
(iii) Price Earning ratio (2mks)

solution:

i) $ER = \frac{EPS}{MPS}$

$EPS = ER \times MPS$

$15\% \times 160 = 24$

(ii) $DC = \frac{EPS}{DPS} = \frac{24}{8} = 3 \text{ times}$

$DPS = 10\% \times 80 = 8$

(iii) $P/E \text{ ratio} = \frac{160}{24} = 6.67$

2. LIQUIDITY RATIOS

These ratios indicates the ability of the company to meet its short-term financial obligations. They include:

1. Current Ratio

It indicates the number of times current liabilities can be paid out of the current Asset.

→ The Recommended Ratio is 2:1 or 2 times

$$\text{Current Ratio} = \frac{\text{C.A}}{\text{C.L}}$$

2. Quick Ratio / Acid Test Ratio

It indicates the ability of the company to meet its current liabilities from its most liquid Current Asset (C.A)

→ The Recommended quick ratio is 1:1

$$\text{Quick Ratio} = \frac{\text{Current Asset} - \text{stock}}{\text{current liabilities}}$$

→ Stock is excluded from calculated quick ratio because of:

a) It may be difficult to convert stock into cash immediately.

b) Stock is valued at the lower of historical cost & net Realizable value.

3 Cash Ratio

It indicates the ability of the company to meet current liabilities from its most liquid C.A and short term marketable securities eg commercial papers, treasury bills, financial asset at fair value

$$\text{Cash Ratio} = \frac{\text{Cash and cash equivalents}}{\text{current liabilities}}$$

3 Gearing / leverage ratio / Capital structure Ratio

They indicates the extent to which the company has borrowed fixed return capital to finance its asset. The ratios includes:

(a) Debt to Equity Ratio / Capital Gearing ratio

This ratio indicates the amount of the long-term debt for every one shilling of equity investment in the company.

$$\text{Debt to Equity Ratio} = \frac{\text{long term debt / Fixed charge Capital}}{\text{Equity}} \times 100\%$$

Fixed charge capital includes preference s:c and debentures.

(b) Debt Ratio / Financial Gearing Ratio

This ratio indicates the ability to which the total asset of the company have been financed with the liabilities

$$\text{Debt Ratio} = \frac{\text{Total liabilities (N.C.L + C.L)}}{\text{Total Assets}} \times 100\%$$

(c) Fixed Charge Ratio

This ratio indicates the proportion of the total Capital which has a fixed rate of return in relation to the total capital.

$$= \frac{\text{Fixed Return Capital}}{\text{Total Capital}} \times 100\%$$

(d) Interest Cover Ratio / Times Interest Earning Ratio

This indicates the number of times interest expense can be paid from the operating profit before profit get exhausted

$$= \frac{\text{EBIT (Operating profit)}}{\text{Interest expenses}}$$

(e) Equity Multiplier Ratio

This shows the relationship between the total asset and shareholders equity

4. PROFITABILITY RATIOS

These ratios indicates the ability of the company to generate returns in relation to investments & sales. They are classified into 2.

(a) Profitability in relation to sales
(b) Profitability in relation to investments.

(a) Profitability in relation to sales

1. Gross profit margin.
$$= \frac{\text{Gross profit}}{\text{sales}} \times 100\%$$

2. Operating profit margin.
$$= \frac{EBIT}{\text{sales}} \times 100\%$$

3. Net profit margin
$$= \frac{EAT}{\text{sales}} \times 100\%$$

4. Operating Expense Ratio
$$= \frac{\text{Total expenses} - \text{interest expense}}{\text{sales}} \times 100\%$$

(b) Profitability in relation to Investment

They include:

1. Return on Investment / Return on Total Asset
This indicates the % return from the utilization of total Asset

$$ROI = \frac{\text{Net profit / EAT}}{\text{Total Asset / Asset}} \times 100\%$$

2. Return on Equity / Return on Net worth.
It indicates the % return of Company from utilization of Shareholders funds.

$$ROE = \frac{\text{Net profit / EAT}}{\text{Equity}} \times 100\%$$

3. Return on Net Asset / Return on Capital Employed. (ROCE)
It indicates the % return from utilization of net Asset

$$ROCE = \frac{\text{Net profit}}{\text{Net Asset / Capital Employed}} \times 100\%$$

5. Activity / Efficiency / Turnover / Asset Utilization Ratios

These ratios indicates the efficiency with which the company utilizes its resources in order to generate the revenue. They includes.

1. Stock / Inventory Turnover

It indicates the frequency with which stock is converted into sales.
Its calculated as follows

$$= \frac{\text{Cost of goods sold}}{\text{Average stock}}$$

Average stock = (Opening stock + Closing stock) ÷ 2
Where there is no opening stock, Closing stock is assumed to be the average stock.

2. Debtors / Receivables Turnover Ratio

It indicates the frequency with which customer buys good on credit

$$= \frac{\text{Credit Sales}}{\text{Average debtors}}$$

3 Creditors / payables Turnover Ratio

It indicates the relationship credit purchases and average Creditors

$$= \frac{\text{Credit purchases}}{\text{Average Creditors}}$$

4 Fixed Asset Turnover Ratio

$$= \frac{\text{Sales}}{\text{Fixed Asset}}$$

5. Total Asset Turnover / investment turnover ratio

$$= \frac{\text{Sales}}{\text{Total Assets}}$$

6. Stock / Inventory holding period.

It indicates the number of days that the stock is held in warehouse before being sold.

$$= \frac{\text{No of days in a year}}{\text{stock turnover}} \quad \text{OR} \quad \frac{365 \text{ days} \times \text{Avg stock}}{\text{Cost of goods sold}}$$

7 Debtors / Receivables collection period.

It indicates the length of time, it takes the customer to settle their accounts

$$= \frac{\text{No of days in a year}}{\text{Debtors turnover}} \quad \text{OR} \quad \frac{365 \text{ days} \times \text{Avg debtors}}{\text{Credit sales}}$$

8. Creditors / payables payment period.

It indicates the no of days the credit is given by payment is done

$$= \frac{\text{No of days in a year}}{\text{Creditors Turnover}} \quad \text{OR} \quad \frac{365 \text{ days} \times \text{Avg creditors}}{\text{Credit purchases}}$$

RATIO ANALYSIS ILLUSTRATIONS.

ILLUSTRAION 1.

The following are the summarized financial statement of Bonoko ltd.

Bonoko ltd statement of financial position as 31 December:

	2015 sh"000"	**2016 sh"000"**
Non-current assets	4,995	12,700
Current assets		
Inventory	40,145	50,455
Account receivable	40,210	43,370
Cash at bank	12,092	5,790
Total assets	**97,442**	**112,315**
Current liabilities		
Account payable	34,389	39,215
Taxation	2,473	3,260
	36,862	**42,475**
Long-term liabilities		
10% loan note	19,840	19,480
Total liabilities	**56,702**	**62,315**
Net asset	**40,740**	**50,000**
Equity		
Ordinary share(sh 0.25)	9,920	9,920
Retained earnings	30,820	40,080
Shareholders' funds	**40,740**	**50,000**

Bonoko ltd income statement for the year ended 31 December

	2015 sh"000"	**2016 sh"000"**
Revenue	486,300	583,900
Operating profit	17,238	20,670
Interest payable	(1,984)	(1,984)
Profit before tax	15,254	18,686
Tax expense	(5,734)	(7,026)
Profit for the year	9,520	11,660

Notes:	**sh "000"**	**31 Dec 2015**	**31 Dec 2016**
Retained profit brought forward		23,540	30,820
Dividend paid during the year		2,240	2,400

Required:

For each of the year, calculate:

a) Earnings per share (EPS)
b) Dividend cover
c) Current ratio
d) Acid test ratio
e) Return on capital employed(ROCE)

ILLUSTRATION 2.

The following is a summary of the financial data for Ulimwengu ltd for the financial year ended 31 Dec 2017 and 31 Dec 2018.

Income statement	2018 sh "000"	2017 sh "000"
EBIT	29,498	27,012
Interest	(3,106)	(3,726)
Tax	(8,694)	(7,452)
PAT	17,698	15,834
Dividend payable	9,600	6,200

Statement of financial position

	2018 sh "000"	2017 sh "000"
Shareholders' funds	79,800	70,174
Long term debt	28,000	35,000
	107,800	105,174

Additional information:

	2018	2017
The number of outstanding shares (000)	28,000	28,000

Required:

Calculate the following ratios for the year 2017 and 2018.

a) Return on capital employed (ROCE0.
b) Interest coverage ratio
c) Earnings per share (EPS)
d) Dividend yield

Solution

Illustration one

	2015	2016
(i) EPS = $\frac{\text{Total Earning attributable to ord sh}}{\text{No of ordinary shares}}$ No of shares = 9920 ÷ 0.25 = 39680	$\frac{9520}{39680} = 0.24$	$\frac{11660}{39680} = 0.29$
(ii) Dividend Cover = $\frac{\text{EPS}}{\text{DPS}}$ DPS = 2015 = 2240 ÷ 39680 = 0.06 2016 = 2400 ÷ 39680 = 0.06	$\frac{0.24}{0.06}$ = 4 times	$\frac{0.29}{0.06}$ = 4.83 times
(iii) Current Ratio = $\frac{\text{C.A}}{\text{CL}}$	$\frac{92447}{36862} = 2.5$ times	$\frac{99615}{42475} = 2.35$ times
(iv) Acid test Ratio = $\frac{\text{CA} - \text{stock}}{\text{CL}}$	$\frac{92447 - 40145}{36862}$ = 1.42 times	$\frac{99615 - 50455}{42475}$ = 1.16 times
(v) ROCE = $\frac{\text{Net profit (PAT)}}{\text{Net Asset / capital employed}} \times 100\%$	$\frac{9520}{40740} \times 100\%$ = 23.37%	$\frac{11660}{50000} \times 100\%$ = 23.32%

Illustration two

	2018	2017
(i) ROCE = $\frac{\text{Net profit}}{\text{Net Asset / capital employed}} \times 100\%$	$\frac{17698}{107800} \times 100\%$ = 16.42%	$\frac{15834}{105174} \times 100\%$ = 15.06%
(ii) Interest Coverage Ratio = $\frac{\text{EBIT}}{\text{interest expense}} \times 100\%$	$\frac{29498}{3106}$ = 9.5 times	$\frac{27012}{3726}$ = 7.2 times
(iii) EPS = $\frac{\text{Total Earning}}{\text{No of ord shares}}$	$\frac{17698}{28000}$ = 0.63	$\frac{15834}{28000}$ = 0.57
(iv) Dividend yield = $\frac{\text{DPS}}{\text{MPS}} \times 100\%$ MPS = P/E ratio x EPS	DPS = $\frac{9600}{28000} = 0.34$ MPS = 14 x 0.63 = 8.82 DY = $\frac{0.34}{8.82} \times 100\%$ = 3.85%	$\frac{6200}{28000} = 0.22$ 13 x 0.57 = 7.41 $\frac{0.22}{7.41} \times 100\%$ = 2.97%