Financial Management

2017 chapter 3 :- Ratio Analysis

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Tuesday

1. Liquidity Ratios

Liquidity (or) short term solvency means ability of the business to pay its short term liabilities

a) Current Ratio = $\frac{\text{current Assets}}{\text{current liabilities}}$

b) Quick Ratio (or) Acid Ratio = $\frac{\text{Quick Assets}}{\text{C.L}}$ [QA = CA − (Inventories − prepaid exps]

c) Cash Ratio (or) Absolute Liquidity Ratio = $\frac{\text{Cash \& Bank Bal + Marketable securities (or) current investments}}{\text{C.L}}$

d) Basic Defense Interval / interval Measure = $\frac{\text{C\&B bal + Net receivables + Mkt Securities}}{\text{operating exps} \div \text{No. of days (360)}}$

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(or)

= $\frac{\text{CA − prepaid Exps − Inventories}}{\text{Daily operating exps}}$

Daily operating exps = $\frac{\text{COGS + selling Admin. \& General Exps − Dep}^n \text{ \& non cash Exp}^n}{\text{No. of days in a year}}$

e) Net working Capital = CA − CL (Excl. STB).

B. Long term Solvency Ratio / Leverage Ratios

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Those financial ratios which measure the term stability & Capital structure of firm.

A. Capital Structure Ratios.

a) Equity Ratio = $\frac{\text{Shareholders Equity}}{\text{Net assets}}$

SH's equity = E.S.C + P.S.C + Reserves - fictitious assets.
Net assets = FA + CA + Investment - CL

b) Debt Ratio = $\frac{\text{Total Debt}}{\text{Net assets}}$

Total Debts (or) Total o/s liabilities = STB, LTB, Deb/bonds

c) Debt to Equity Ratio = $\frac{\text{Total Debt}}{\text{shareholders Equity}}$

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SH's equity = E.S.C + Res

d) Debt to Total assets Ratio = $\frac{\text{Total Debt}}{\text{Total assets}}$

e) Capital Gearing Ratio = $\frac{\text{P.S.C + Deb + other borrowed funds}}{\text{E.S.C + Reserves \& surplus - losses}}$

f) Proprietary Ratio = $\frac{\text{Proprietary fund}}{\text{Total assets}}$

proprietary fund (or) SH's equity (or) Net worth are same

B. Coverage Ratios

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a) Debt service coverage Ratio (DSCR) = $\frac{\text{Earnings available for Debt Service}}{\text{Int. + Installaments}}$

EA for Debt service = Net (after) profit + Non cash operating exps + Interest

b) Int. Coverage Ratio = $\frac{\text{EBIT}}{\text{Int.}}$

c) Preference Dividend Coverage Ratio = $\frac{\text{Net profit / EAT}}{\text{Pref. Dividend}}$

- Equity Dividend Coverage Ratio = $\frac{\text{EAT} - \text{Pref. Dividend}}{\text{Equity Dividend}}$

d) Fixed charges coverage Ratio = $\frac{\text{EBIT} + \text{Dep}^n}{\text{Int.} + \text{Repayment of loan}}$

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Imp pts:-

- EBIT = PBIT • EAT = PAT • PBT = EBT

27/1/24 3. Activity Ratios / Efficiency Ratios / Performance Ratios / TO Ratios

a) Total asset TO Ratio = $\frac{\text{Sales / COGS}}{\text{Total assets}}$

b) Fixed assets TO Ratio = $\frac{\text{Sales / COGS}}{\text{fixed assets}}$

c) Capital TO Ratio = $\frac{\text{Sales / COGS}}{\text{Net assets}}$

d) CA TO Ratio = $\frac{\text{Sales / COGS}}{\text{current assets}}$

Dec 2016

Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
18	19	20	21	22	23	24	25	26	27	28	29	30	31							

e) Working Capital TO Ratio = $\frac{\text{Sales / COGS}}{\text{WC}}$

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i. Stock TO Ratio = $\frac{\text{COGS/Sales}}{\text{Avg. inventory}}$

Avg inventory = $\frac{\text{op. st + cl. st}}{2}$

ii. Debtors TO Ratio (Receivables) = $\frac{\text{Credit Sales}}{\text{Avg. a/cs receivable}}$

Avg. A/cs receivable = Avg Drs & Avg BR

Receivables (Drs) Velocity (or) Avg. collection period = $\frac{\text{Avg. A/cs receivables}}{\text{Avg. Daily Credit Sales}}$

(or)

= $\frac{\text{12 months / 52 weeks / 360 days}}{\text{Drs TO Ratio}}$

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Avg. Daily credit sales = $\frac{\text{Credit Sales}}{\text{No. of days in year (360)}}$

iii. Payables TO Ratio = $\frac{\text{Annual Net credit purchases}}{\text{Avg. A/cs payables}}$

Avg A/cs payable = Avg Crs & Avg BP

Payable velocity (or) Avg payment period = $\frac{\text{Avg A/cs payable}}{\text{Avg. Daily Credit purchases}}$

(or)

= $\frac{\text{12m / 52 w / 360 d}}{\text{Payables TO Ratio}}$

Imp pts:-
COGS = cost of sales

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4. Profitability Ratios

A. Profitability Ratios based on Sales

a) Gross profit Ratio $= \frac{GP}{Sales} \times 100$

b) Net profit Ratio $= \frac{NP}{Sales} \times 100$ (or) $\frac{EAT}{Sales} \times 100$

c) operating profit Ratio $= \frac{\text{operating profit}}{Sales} \times 100$ (or) $\frac{EBIT}{Sales} \times 100$

operating profit = Sales − COGS − Operating exps

d) Expenses Ratio ⇒
- COGS Ratio $= \frac{COGS}{Sales} \times 100$
- op exps Ratio $= \frac{\text{Admin Exp} + S\&DOH}{Sales} \times 100$
- op Ratio $= \frac{COGS + \text{operating exps}}{Sales}$

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- financial exps Ratio $= \frac{\text{financial Exps}}{Sales} \times 100$

B. Profitability Ratios related to Overall Return on Assets / Investments

a) Return on investment (ROI) $= \frac{\text{Return / Profit / Earnings}}{Investment} \times 100$

(or)

$=$ Profitability Ratio × Investment TO Ratio

Investment TO Ratio $= \frac{Sales}{Investments}$

Profitability Ratio $= \frac{\text{Return / Profit / Earnings}}{Sales} \times 100$

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i. Return on Assets (RoA) = $\frac{\text{Net profit after taxes}}{\text{Avg. total assets (or) Tangible assets (or) FA}}$

Net profit is exclusive of int.

$$RoA = \frac{NPAT + Int}{\text{Avg total assets (same)}} \text{ (or) } \frac{EBIT(1-t)}{\text{Avg total assets}} \rightarrow \text{Return on Total assets}$$

(or)

$$= \frac{EBIT(1-t)}{\text{Avg. net assets}} \rightarrow \text{Return on net assets}$$

ii. Return on Capital Employed (ROCE) (Pre-tax) = $\frac{EBIT}{\text{Capital employed}} \times 100$

(Post tax) = $\frac{EBIT(1-t)}{\text{Capital Employed}} \times 100$

(or)

$$= \frac{NPAT + Int}{\text{Capital Employed}} \times 100$$

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capital employed = TA - CL
(or)
= FA + WC
(or)
= Equity + LTD

iii. Return on Equity (ROE) = $\frac{\text{NPAT} - \text{Pref. Dividend (if any)}}{\text{Networth / Equity SH's funds}} \times 100$

Return on equity using Du Pont Model. → refer pg 3.26 for egs

- Profitability / NP margin = $\frac{\text{Profit / Net income}}{\text{Sales}}$
- Investment TO / Asset TO / Capital TO = $\frac{\text{Sales}}{\text{Invest / Ass / Capital}}$

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- Equity multiplier = $\frac{\text{Investment / Assets / Capital}}{\text{Shareholders fund (Equity)}}$

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in Simple way

RoEquity = Profitability (or) NP margin X Investment TO X Equity multiplier

C. Profitability Ratios required for Analysis from Owners point of View.

a) Earnings per share (EPS) = $\frac{\text{NP available to Eq. SHs}}{\text{No. of eq. sh outstanding}}$.

b) Dividend per share (DPS) = $\frac{\text{Total Dividend paid to Eq. SH}}{\text{No. of eq. shares outstanding}}$.

c) Dividend pay out Ratio (DP) = $\frac{DPS}{EPS}$

D. Profitability Ratios related to Market / valuation / Investors.

a) Price - earnings Ratio (P/E Ratio) = $\frac{\text{Market price per share (MPS)}}{EPS}$

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b) Dividend & Earning yield = $\frac{\text{Dividend} \pm \text{change in share price}}{\text{Initial share price}} \times 100.$

(or)

$= \frac{DPS}{MPS} \times 100.$

Earnings Yield = $\frac{EPS}{MPS} \times 100$

c) Market value / Book Value per share (MV/BV) = $\frac{\text{Avg. share price}}{\text{Networth} \div \text{no. of Eq. sh}}$

(or)

$= \frac{\text{closing share price}}{\text{networth} \div \text{no. of Eq sh.}}$

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d) Q. Ratio $= \dfrac{\text{MV of Equity \& Liabilities}}{\text{Estimated replacement cost of assets}}$

(or)

$= \dfrac{\text{MV of a company}}{\text{Assets replacement cost}}$