

Capital Rationing

It is the process of making investment decisions on viable projects where funds are

limited. It is the process of making investment decisions given a fixed amount of capital to be invested in viable projects. Investment decisions are made under capital constraints.

If a company doesn't have sufficient funds to undertake all projects with a positive

NPV, it is a capital rationing situation.

Causes of capital rationing

1. Hard capital rationing

2. Soft capital rationing

1. Soft Capital Rationing

It is caused by internally generated factors of the company. It is a self-imposed capital rationing by management of a company. The management may put a maximum budget limit to be spent within a specific period.

Examples of soft capital rationing include:

i) Self imposed budget limit where the management puts a ceiling on maximum amount to be spent on investment

ii) Management may decide against more non-owner supplied funds in order to maintain control of company's affairs by the shareholders

iii) Management may not opt not to raise new equity to avoid dilution in the EPS. Issuing additional shares to raise additional equity results to an increase in the number of shares hence a dilution in EPS since EPS is sensitive to the number of shares.

iv) Management may decide against raising additional debt funds due to: Increase in interest payment commitments. The more the company is financed by debt, the more the interest it will have to pay on debt. Need to control the gearing

Level to minimize the financial risk.

v) If a company is small or family owned, its managers may limit the investment funds available to maintain constant growth through retained earnings as opposed to a policy of rapid expansion.

2. Hard Capital Rationing

The market externally imposes it and it is caused by factors beyond the control of the company. It occurs where the company has exhausted all its borrowing limits and is unable to raise funds externally.

Causes of hard capital rationing

1. Economic factors e.g.

i) High rates of inflation

ii) High interest rates

2. Perception by investors that the company is risky. Where the company is deemed risky e.g. a company in an infant industry or operating in a very competitive market, the investors will not provide funds to that company.
3. High competition for funds by different companies resulting into an increase in the cost of borrowing.
4. Depressed stock exchange; - where the company's MPS is very low, it will find it difficult to raise funds through stock exchange either through:
 - i) Issues of shares
 - ii) Floating a corporate bond/commercial company

Single period capital rationing

It is a situation where the company has limited amount of funds in one investment period only. After that period, the company can access funds from various sources

e.g. Issuing ordinary shares, Borrowing from financial institutions, Issuing commercial paper/corporate bond

Multi-period capital rationing

It occurs where the company has limited amount of funds or resources for investment

For a long duration of time. The capital constraint extends beyond one investment

Period.

A company is in a capital rationing situation needs to find a way of choosing most

Opportunities, which maximizes returns on its investments. It needs to rank investment projects with respect to their desirability.

The NPV method that requires a company to invest in all projects with positive NPV to maximize shareholders wealth requires the existence of an efficient market that is hard to achieve in real life. NPV can therefore not be used to rank capital projects since ranking by NPV will lead to incorrect decision.

A combination of smaller projects may collectively offer a high NPV than a single

project in return for available capital. Even if when ranked by NPV, the smaller projects will be ranked below the larger ones. If investment capital is rationed due to the above limitations of NPV, profitability index should be used to evaluate the projects. The projects will be ranked on basis of PI and funds will be committed based on that ranking until the available funds are exhausted.

Divisible Projects

These are projects that can be undertaken in parts or proportions depending on the

capital available for investments. In capital rationing situation where funds available

are not available to undertake all the projects, the remaining funds can be partly invested in the next viable project.

Indivisible projects

They are projects that cannot be undertaken in proportions. They have to be undertaken as a whole. The company must invest 100% of the funds required for such projects. In a capital rationing situation where funds are not available or inadequate to invest wholly in a project, then such project is abandoned altogether.

CONCEPT OF RISK.

Risk is the uncertainty involved in a decision, the variability of undesired outcome from various investments.

Types of risk.

1. Financial risk.

This is the likelihood that a firm will be unable to meet its short term obligations as and when they fall due. It is caused by the use of non owner supplied funds ie debts.

It is measured by liquidity and leverage ratios.

2. Business risk.

This is the variability of future cash flows caused by uncertainty in factors affecting the cash flows.

Types of business risk.

i. Systematic risk/undiversifiable risk.

It is the risk caused by factors beyond the company's control. E.g. politics and economic factors like inflation.

ii. Unsystematic risk/diversifiable risk.

This type is caused by factors that are unique to a specific firm/organization or factors within the control of management. E.g. the type of market for the company's products, product nature and services for the company, management competence of the company.

Systematic risk cannot be eliminated by investing in an efficient portfolio.

Unsystematic risk cannot be eliminated by investing in an efficient portfolio.

Measures of business risk.

i. Standard deviation.

ii. Coefficient of variation.

iii. Beta coefficient.

i. Standard deviation.

It measures the variability of cash flows or returns from the expected returns.

The variance,

$$\delta_2 = \sum_{t=1}^n (C_t - E_c)^2 P_t$$

Where:

N is the number of periods.

C_t is the cash flow in year t.

E_c is the expected cash flows.

P_t is the probability of occurrence of the cash flow.

δ is the standard deviation.

While the standard deviation is the square root of variance.

Illustration.

Consider 2 projects A and B whose cash flows and probability are shown below.

PROJECT A.

Year. Cash flow. Probability.

1	10,000	0.1
2	12,000	0.2
3	11,000	0.5
4	15,000	0.2

PROJECT B.

Year. Cash flow. Probability.

1	20,000	0.1
2	15,000	0.5
3	16,000	0.2
4	17,000	0.2

REQUIRED:

- Determine the expected cash flows for each project.
- Determine the standard deviation for each project.

Answer.

PROJECT A.

Year. Cash flow. Probability . Expected cash flow .

1	10,000	0.1	1,000
2	12,000	0.2	2,400
3	11,000	0.5	5,500
4	15,000	0.2	<u>3,000</u>
			<u>11,900</u>

PROJECT B.

Year. Cash flow. Probability . Expected cash flow .

1	20,000	0.1	2,000
2	15,000	0.5	7,500
7	16,000	0.2	3,200
8	17,000	0.2	<u>3,400</u>
			<u>16,100</u>

Basing our analysis on expected cash flows the firm should invest in project B. this is

because it has the highest expected cash flow.

Standard deviation.

PROJECT A.

Year. Cash flow. Probability . $(C_t - E_c)^2 P_t$.

1	10,000	0.1	$(10,000 - 11,900)^2 * 0.1 = 361,000$
2	12,000	0.2	$(12,000 - 11,900)^2 * 0.2 = 2,000$
3	11,000	0.5	$(11,000 - 11,900)^2 * 0.5 = 405,000$
4	15,000	0.2	$(15,000 - 11,900)^2 * 0.2 = 1,922,000$
			<u>2,690,000</u>

Standard deviation therefore is $\sqrt{2,690,000} = 1640.1219$

PROJECT B.

Year. Cash flow. Probability . $(C_t - E_c)^2 P_t$
variance.

1	20,000	0.1	$(20,000 - 16,100)^2 * 0.1 = 1,521,000$
2	15,000	0.5	$(15,000 - 16,100)^2 * 0.5 = 605,000$
3	16,000	0.2	$(16,000 - 16,100)^2 * 0.2 = 2,000$
4	17,000	0.2	$(17,000 - 16,100)^2 * 0.2 = 162,000$
			<u>2,290,000</u>

Standard deviation therefore is $\sqrt{2,290,000} = 1513.275$.

The project analysis is as follows:

Project . Risk . Rank .

A	1640.122	1
B	1513.275	2

The decision to invest is in project B since it has lower risk of 1513.275 compared to project A that has 1640.122

ii. Coefficient of variation.

It is a measure of relative business risk. It is used to compare projects of different sizes based on their risk and return considerations.

$$CV = \delta / E_c$$

Where:

CV is the coefficient of variation.

E_c is the expected cash flows.

δ is the standard deviation.

Project A .

$$1640.122 / 11900 \\ = 0.1378$$

Project B .

$$1513.275 / 16100 \\ = 0.094$$

The decision based on the coefficient of variation is for the company to invest in project B since its risk is lower. The higher the coefficient of variation, the higher the relative business risk of the project.

RISK PROFILES.

- 1) Risk averse: - they are decision makers who avoid risk. They take risks with low risk.
- 2) Risk takers: - they are decision makers who undertake risky projects anticipating high returns. They therefore undertake risky projects.
- 3) Risk neutral: - these are not influenced by risk in making their decisions. They are indifferent to risk hence neither averse or risk takers.

iii. Beta coefficient.

It is a measure of the market risk, i.e. the extent to which the returns of a security move with the stock market or stock exchange. It therefore measures the volatility of returns of an individual stock or security relative to the stock market returns. By definition, a market has a beta coefficient of one (1). It can expect the same returns as the market. Its returns are volatile as the market.

The beta coefficient can be restated using the CAPM (capital assets pricing model) which forms the equation of the security market line.

CAPM equation: - $R_i = R_f + (E R_m - R_f)\beta$

R_i is the required rate of return.

R_f is the risk free rate (rate on treasury bills).

$E R_m$ is the expected return of the market.

β is the beta coefficient.

Illustration.

An investor is considering buying securities whose beta is 1.1, the return on the treasury bills is 12 %, and the expected return of the market is 17.5%.

Compute the

required rate of return incorporating the risk aspect.

From the CAPM equation,

$$R_i = R_f + (E R_m - R_f)\beta$$

$$= 12 + (17.5 - 12)1.1$$

$$= 18.05\%$$

CONCEPT OF REQUIRED RATE OF RETURN.

It is the minimum funds/returns that a project must earn in order for it to receive

funds. It is the opportunity cost of capital. It is the minimum rate of return that

investors or the providers of funds expect receive from their investment.

$$R_i = R_f + R_p.$$

Where:

R_i is the cost of capital.

R_f is the risk free rate/rate on treasury bills.

R_p is the risk premium.

Risk free rate is also called the time preference rate. It compensates the investor for

the passage of time. It is the rate that investors require for giving up the use of their

funds in a risk free market.

It is estimated by the rate on the Governments treasury bills.

The risk premium compensates the investor for uncertainties involved in future cash

flows of a particular project.

Thus:

$$R_i = R_r + I_p$$

Where: -

R_r is the real rate of return.

I_p is the inflation premium.

The real rate of return is the financial rent for the use of money. It compensates the

investor for giving up the use of their funds in inflation free and risk market.

The inflation premium compensates the investor for the decrease in purchasing power

of money caused by inflation.

$$R_i = R_f + R_p$$

Thus:

$$R_i = R_r + I_p + R_p.$$

TYPES OF RISK PREMIUM.

– Default risk premium: - it compensates the investor for the possibility that the

users of funds will be unable to pay the interest plus the principal.

– Liquidity risk premium: - it compensates the investor for the possibility that the security given by the users of funds will not be easily converted into cash.

– Maturity risk premium: - it compensates the investor for the possibility that the users of funds will be unable to meet the obligations when they mature.

– Sovereign risk premium: - it compensates the investor for political uncertainty

in the company or in the country in which funds have been invested.

– Exchange risk premium: - it compensates the investor for changes/ fluctuations in the country's currency/exchange rate.

MEASUREMENT OF FINANCIAL PERFORMANCE.

FINANCIAL STATEMENT ANALYSIS.

RATIO ANALYSIS.

Ratio analysis is a means of comparing and quantifying relationship between financial variables in the income statement and the balance sheet.

A financial ratio is a relationship between two financial variables. It is used to ascertain a certain condition of the firm. A single ratio on itself is not useful or analysis. It needs to be compared with various standards of comparison.

Eg

1. Ratios in the industry.
2. Ratios computed from past financial statements of a company.
3. Ratios of some selected companies performing well in the market.
4. Ratios of projected financial statements.(budgets)

Classification of ratios.

1. Profitability ratios.
2. Investor ratios.
3. Activity ratios.
4. Liquidity ratios.
5. Gearing/leverage ratios.

1. Liquidity ratios .

Liquidity ratios measure the firm's ability to meet its short-term obligations as and when they fall due. They measure the liquidity risk of the company.

The lower the liquidity ratios the higher the liquidity risk of the company and vice versa.

Failure to meet its short-term obligations due to low liquidity will lead to:

- Poor creditworthiness of the company.
- Lack of creditor's confidence.
- Insolvency.
- Litigations by creditors/suppliers.
- Loss of customers due to failure to meet their demand.

2. Gearing/leverage ratios .

They measure the extent to which a firm uses the assets which have been financed by

non owner supplied funds i.e. they measure the financial risk of the company. The higher the ratio the higher the financial risk of the company. A company with higher debt finance in relation to equity finance is referred to as being highly geared.

The leverage ratios indicate the mix of funds provided by non-owner and owner

lenders. In conclusion there should be an appropriate mix of debt and equity in a firm.

IMPLICATIONS OF HIGH GEARING RATIOS.

1. Debt financing is more risky in the company's point of view. the company has a legal obligation to pay debt interest to debt holders irrespective of the company's profitability position. If the company does not pay the interest and principal in time, the lenders may sue the firm that may lead to liquidation.

2. Debt is advantageous to shareholders in that: -

- They maintain control of the company since debt holders do not have a controlling interest in the company.

- Shareholder wealth is maximized if they earn a return on capital employed higher than the interest rate on the debt funds. The process of magnifying shareholder wealth through employment of debt is referred to as financial leverage. But if the cost of debt is higher than the overall rate of return then the shareholder earnings will be reduced and there is a risk of insolvency.

3. A firm that is heavily debt-burdened will find it hard to raise funds since providers of funds such as creditors view it as being risky. Creditors treat the owner's equity as the margin of safety. If the equity is thin then the firm is less likely to receive funds from creditors.

Activity Ratios

They measure the efficiency with which a company uses its assets to generate sales.

Also referred to as turnover ratio as they indicate the rate at which the assets are being converted into sales. They look at the relationship between sales and assets. A proper balance between sales and assets reflect that the assets are well managed. They show how efficiently a company has managed its short term assets and long term liabilities i.e. working capital. They are closely related to liquidity Ratios.

Profitability Ratios

They measure management's effectiveness as shown by returns generated on sales

and investments. They indicate how successful management has been in generating

profits of the company. If a company has made profits:

- i. It will be able to meet its short-term obligations e.g. paying interest on loans borrowed as and when due.
- ii. Shareholders will obtain reasonable returns on investments in form of dividends.

Profitability in relation to sales: -

It indicates management's ability to control production and financing costs.

Profitability in relation to investments: -

They measure efficiency with which a firm uses its funds/capital/investments to

generate a return to the providers of those funds.

Investor evaluation/equity ratios

They are used to evaluate the overall performance of the firm. They are also used to:

- i) Determine the company's dividend policy
- ii) Determine the effect of a proposed financing option of the company
- iii) Predict the effects of a rights issue
- iv) Determine whether securities are over/under valued
- v) Determine theoretical value of company's securities

Profitability ratios

1. Return on capital employed ROCE

= $\frac{\text{Profit before interest and tax}}{\text{Total capital employed}} \times 100\%$

But Capital employed =

Shareholders funds xx
+ Long term debt xx
xx

And Shareholder's funds

Ordinary shares xx
+ Preference shares xx
+ Reserves/Retained earnings xx
+ Share premium xx
xx

ROCE is sensitive to:

- i) Investments in fixed assets
- ii) Age of the fixed assets since older assets will have depreciated more than the younger ones
- iii) Latest asset valuation

ROCE measures the efficiency with which a company uses its long-term funds to

generate returns to the shareholders.

2. Gross profit margin

= $\frac{\text{Gross profit}}{\text{Sales turnover}} \times 100\%$

It shows how well the cost of production/sales has been controlled by the company

3. Net profit margin

= $\frac{\text{Net profit}}{\text{Sales turnover}} \times 100\%$

Turnover(Sales)

* Net profit is after tax

It measures the firm's ability to control its cost of sales, operating production and financing costs.

4. Operating profit margin ratio

= $\frac{\text{Operating profit (before interest)}}{\text{Sales turnover}} \times 100\%$

Sales turnover

It indicates the company's efficiency to control its operating costs so as to generate profits from sales.

5. Operating expenses ratio

= $\frac{\text{Operating expenses}}{\text{Sales(Turnover)}} \times 100\%$

Sales(Turnover)

It indicates the firm's ability to control its production, cost of sales and other operating costs to generate a given level of sales. It explains the changes in the profit margin.

6. Return on investments

= $\frac{\text{Net profit after tax}}{\text{Capital employed}} \times 100\%$

Capital employed

It measures the efficiency with which a company uses its funds to generate returns to the providers of such funds.

7. Returns on equity

= $\frac{\text{EATESH}}{\text{Equity (OSE)}} \times 100\%$

Equity (OSE)

But, Equity/Ordinary Shareholders Funds:

Ordinary share capital XX
+Add share premium XX
+ Reserves XX
XXX

EATESH

Sales	XX
Cost of sales	(XX)
Gross profit	XX
Total operating cost	(XX)
Operating profit	XX
Less interest	<u>(XX)</u>
PBT	<u>XX</u>
Tax	<u>(XX)</u>
PAT	<u>XX</u>
Preference dividends	<u>(XX)</u>
EATESH	<u>XX</u>
Less ordinary dividends	<u>(XX)</u>
Retained earnings	<u>XX</u>

Activity Ratios

1. Debtor's turnover

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

Where average debtors = (Opening debtors + Closing debtors) / 2

It shows the number of times that debtors pay within a year. It shows how efficient it has been in its credit management policy. The higher the ratio, the more efficient the company is.

Where credit sales figure is not available, the total sales can be used. Where both opening and closing figures of debtors aren't provided, the debtors figure in the balance sheet can be used. There should be consistency in computation of ratios so that if average figures are used e.g. for debtors, they should be applied consistently for all the ratios. Also if the figure in the balance sheet is used then such should be used for all other ratios.

2. Debtor's ratio/average collection period/debtor's days

i) $\frac{\text{No of days in a year}}{\text{Debtor's turnover}}$

ii) $\frac{\text{Debtors}}{\text{Total credit sales}} \times \text{No. of days in a year}$

It gives the average days customers take who buy goods on credit. It indicates on average the number of days debtors will take to settle their dues. It measures the quality of debtors since it indicates the speed of their collection. The shorter the average collection period, the more efficient is the company's credit policies. It indicates a stringent credit policy where:

- i. The company extends credit to creditworthy customers only
- ii. Only known customers with good credit history are advanced credit

Liberal credit policy

The company extends a line of credit to almost all customers without conducting credit analysis to establish their creditworthiness. It is characterized by a long average collection period where debtors take a long duration of time to settle the dues.

Use of average collection period

- i) To analyze/determine collectibility of debts due from debtors and hence establish efficiency of the credit policy
- ii) To ascertain the firm's comparative strength and advantage relative to its credit policy and compare with competitor's performance and credit policy
- iii) To compare credit administration policies with industry's policies

3. Creditor's turnover

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

Where average creditors = (Opening creditors + Closing creditors) / 2

It indicates number of times that suppliers of goods and services are paid by the company during the year.

4. Creditor's days/ Deferral period/ Creditor's period

i) No. of days in a year or;

Creditor's turnover

ii) No. of days in a year x Trade creditors

Total credit purchases

NOTE: where credit purchases figure isn't provided, the total purchases or cost

of sales can be used

5. Inventory/Stock turnover

= Cost of sales

Average stock

Where average stock = (Opening stock + Closing stock) / 2

It indicates efficiency of the firm in selling its products so as to generate sales. It

shows the number of times that stock is turned over or converted into sales within a

year. It shows how rapidly stock is being turned into cash through sales.

6. Inventory days/Inventory conversion period

i) No. of days in a year x Stock

Cost of sales

ii) No. of days in a year

Inventory turnover

It indicates the number of days it takes to convert stock into sales. The fewer the number of days, the more efficient the company is in converting stock into sales; an

indication that the company is dealing in fast moving goods.

7. Cash conversion cycle/working capital cycle/operating cycle

Average collection period xxx

Add: inventory conversion period xxx

Less: deferral period (xxx)

Working capital cycle xxx

It is the period of time of which the working capital financing is needed in the company. The longer the period the higher the investment in working capital. It is

the period of time that elapses between the point at which cash is spent on production or purchase of raw materials; time to convert debtors into cash and period for paying the suppliers.

8. Cash turnover/Operating turnover

No of days in a year

Cash cycle(working capital cycle)

It shows the number of times that the business ought to replenish its working capital in a year

9. Fixed assets turnover

$$= \frac{\text{Sales}}{\text{Total fixed assets}}$$

Total fixed assets

It indicates the level of sales generated by the fixed asset base of a company. It

shows the efficiency with which a company utilizes its assets to generate sales i.e.

how much volume of sales does the company generates from its assets base?

Liquidity Ratios

1. Current Assets Ratio

$$= \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Current Liabilities

It measures the company's ability to meet its short term maturing obligations as

and when they fall due. It is a measure of the company's solvency. A current ratio of more than one indicates that a company has more current assets than current claims

against them. It represents a margin of safety for creditor. The higher the ratio the liquidity and more confident creditors are with the company.

2. Quick Acid Ratio

$$= \frac{\text{Current Assets} - \text{Stock}}{\text{Current liabilities}}$$

Current liabilities

The current assets ratio is not an accurate measure of liquidity since it contains stock not yet converted into cash. It takes time to convert stock into cash. A quick ratio of 1 is satisfactory for the company. The higher the ratio, the higher the company's ability to meet its short term obligations; but:

i) A high QR may not always reflect high liquidity of the company e.g. debtor's

period is high

ii) A low QR may not necessarily reflect low liquidity if the ACP is short.

The company's liquidity is not satisfactory as measured by the QR which is less than 1; however, it has improved in 2003. The company hence needs to:

i) Improve its debt management policy to ensure debtors pay promptly

ii) Improve stock management policy so as to convert stock into cash promptly

3. Cash Ratio

$$= \frac{\text{Cash} + \text{Short term marketable securities}}{\text{Current liabilities}}$$

Current liabilities
Short-term marketable securities include very liquid investments e.g. treasury bills that can be easily converted into cash.
It is a highly refined measure of liquidity since it considers only the most liquid assets.

3. Net working Capital Ratio

= $\frac{\text{Current Assets} - \text{Current Liabilities}}{\text{Total Assets} - \text{Current Liabilities}}$

It measures the company's ability to meet its short term liabilities from its net assets.

Gearing/Leverage Ratios

1. Debt Ratio/ Capital Gearing Ratio

= $\frac{\text{Total long term debt}}{\text{Capital employed}} \times 100\%$

It measures the proportion of debt finance in relation to the total capital employed in the company. A company is highly geared if the ratio is more than 50

2. Debt Equity Ratio

= $\frac{\text{Total long term debt}}{\text{Equity (net worth)}} \times 100\%$

Equity - common ordinary shareholders funds
Ordinary share capital XX
+ Share premium XX
+ retained earnings/reserves XX
XX

It measures the proportion of non-owner supplied funds (long term debt) to owners contribution (equity). If it is more than 100%, the company is highly geared.

A high debt equity ratio implies:

- i) Debt holder's claims (non-owner) is more than owners claims in the business. It introduces inflexibility in the firm's operations due to increasing interference from creditors
- ii) A company will borrow funds in very restrictive terms and conditions
- iii) During periods of low profits, a highly debt financed company may not earn sufficient profits to pay interest charges to creditors.

A low DER represents satisfactory capital structure since the company has a large margin of safety for the creditors.

3. Interest cover/Times interest earned ratio

= $\frac{\text{Earnings before interest and tax} + \text{depreciation}}{\text{Interest charges}}$

It shows the number of times interest earned by company (available for interest

payments) cover the interest charges. A very high ratio may indicate that a firm is very conservative – not using debt to the advantage of the shareholders. A very low ratio indicates excessive use of debt by the company. Interest cover of more than 7 times is regarded as safe and more than three times is acceptable. It is a measure of the firm's financial duties since inability to make payments may lead to the company's insolvency/liquidation.

4. Fixed charge capital to capital employed

= $\frac{\text{Fixed charge capital}}{\text{Total capital employed}} \times 100\%$

Fixed charge capital refers to capital/funds carrying fixed charges e.g.

- i) Long term debt
- ii) Preference shares

Investor/Evaluation Ratios

1. Earnings per share.

= $\frac{\text{Earnings attributable to equity shareholders}}{\text{No. of common shares/equity}}$

It indicates what the shareholders expect to generate in form of earnings based on

shares held in the firm. It indicates profitability of the company per share. EPS

over a number of years indicates whether or not the company's per share basis has changed over the period.

2. Dividend per share

= $\frac{\text{Total common dividend}}{\text{No. of common/equity shares}}$

It represents the amount of dividend that every ordinary shareholder will receive

for every share invested in the firm.

3. Dividend payout Ratio

= $\frac{\text{Total common dividend}}{\text{EATESH}} \times 100\%$

It shows the proportion of EATESH paid out/distributed to the ordinary shares in form of dividends.

4. Retention Ratio

- i) $1 - \text{DPR}$

ii) $\frac{\text{Retained earnings}}{\text{EATESH}} \times 100\%$

It shows the proportion of EATESH that is retained in the business. $(\text{EPS} - \text{DPS}) \times 100\%$

Note: Retention Ratio + Dividend Payment Ratio = 100%

5. Dividend cover

This shows the number of times the dividends paid to shareholders has been covered by earnings attributable to equity shareholders. It shows how safe a company is in its ability to pay dividends to shareholders. The higher the dividend cover, the more likely the company will maintain/increase its future dividends.

i) EPS / DPS

ii) $\frac{\text{EATESH}}{\text{Total common dividends}}$

iii) $\frac{\text{Earnings yield}}{\text{Dividend yield}}$

6. Earnings yield

$= \frac{\text{EPS}}{\text{MPS}} \times 100\%$ MPS: Market price per share

It measures the potential return that investors expect for every share invested in the company. It evaluates shareholders return in relation to market price per share.

7. Dividend yield

$\frac{\text{DPS}}{\text{MPS}} \times 100\%$

8. Price earning ratio

$= \text{MPS} / \text{EPS}$

It indicates how much an investor is prepared to pay for the company's shares given its current EPS. It indicates the payback period i.e. number of years an investor would take to recover his investments from the company from the earnings generated by that share. It is used to indicate the value of the company. It indicates the confidence investors have in the future performance of the company firms in the same risk class will tend to have some

9. Book value per share

$= \frac{\text{Equity net worth}}{\text{No. of outstanding common shares}}$

It shows the amount that every shareholder should expect to receive for every share held in the firm if the company was to be liquidated and all the assets sold at

their book value.

10. Market book value ratio

= $\frac{MPS}{Book\ value\ per\ share}$

Book value per share

It measures the value attracted by the market if the company is operating as a

going concern. The higher the ratio, the higher the goodwill and the more likely

that the company operates as a going concern.

A ratio of more than 1 shows that the company has a positive goodwill and if less

than 1, negative goodwill hence it is likely to be liquidated.

Users of financial statements

1. Shareholders

They are interested in all aspects of the firm e.g.

a. They use evaluation ratios to determine the value of their investments

b. They use profitability ratios to determine returns on their investments

1. They use liquidity ratios to determine if the company is operating as a going concern

2. Potential investors

They are concerned with evaluation ratios to determine the theoretical value of

the company's securities to establish whether the company is over/undervalued. They

also use profitability ratios to determine whether they will earn a return on the investments from the earnings generated by the company.

3. Providing of long term debt

They use gearing ratios to determine the level of indebtedness or the leverage

level of the company. Providers of debt deem a highly geared company risky. Since it may not meet its long-term obligations of paying the principal and interest in time.

Profitability ratios will evaluate the company's ability to pay interest to long-term

providers of funds. Liquidity ratios will determine the company's ability to meet its

short-term obligations.

4. Trade creditors and providers of short-term debt

They use liquidity ratios to determine the company's financial risk or its ability to

meet its short term obligations.

5. Government

It is interested with profitability ratios to evaluate the company's ability to pay taxes due in time.

6. Customers

They will use liquidity, activity and profitability ratios to evaluate the company's operation as a going concern.

7. Researchers and analysts

They evaluate the overall performance of the company and use such information in their studies and development of financial theories.

Limitation of Ratios

1. They are subjective:

They are subjective to the information that depends on accounting policies adopted by a different organization. Where different companies use different accounting policies e.g. depreciation, it is not possible to carry out efficient crosssectional analysis.

2. Relevance:

Ratios use historical information in the financial statements hence may not be relevant for future decision-making.

3. Qualitative aspects are ignored

Qualitative factors e.g. human resource policy, quality of management, experience and morale of employees are not captured in computation of ratios.

4. Ambiguity

Different people will use different ratio terms to describe financial information

e.g. i) Including preference shares in equity

ii) ROCE begin referred to as gross capital employed

5. Usefulness

Ratios are computed at a specific point in time. By the time they are analyzed to make decisions, situations may have changed e.g. decline in turnover, decrease in liability...Ratios computed at a point in time are only useful in the short run.

6. Monopoly

Companies without competitors cannot be compared with other companies hence not possible to carry out cross-sectional analysis.

Types of financial statements analysis

1. Trend analysis

This evaluates the performance of the company over a certain period of time. It

serves the following purposes:

a) To determine whether the company is progressing as projected by the budgets and strategic plans

b) Forecasting – to determine the future performance of the company and establish whether it is operating as a going concern

c) To determine the accuracy of past predictions by comparing forecasts against actual performance

Procedure:

i) Describe the trend e.g. declining profitability, improvement in liquidity.

ii) Give the possible reasons for the trends

iii) Give the implications for the trend

2. Cross-sectional analysis

It compares the company's performance with:

i) Industry as a whole

ii) Other companies in same industry

It serves the following purposes:

a) To determine the company's weaknesses and hence devise methods of improving

b) To determine company's strengths as compared with other firms and use such as a benchmark to improve its performance

Comparative ratios of ABC Ltd

	1999	2000	2001	Industry ave
Liquidity: Current ratio	2.42	2.21	1.76	2.0
Quick ratio	1.23	1.00	0.76	1.0
Activity: Inventory turnover	3.10	3.05	2.64	5.6
Debtors turnover	7.88	7.58	16.0	8.65
Profitability: NPM	5.1	3.68	3.7	3.2
Operating ratio	39.5	36.2	37.2	33.5
Gross margin	39.6	39.8	40.9	36.7

Required:

Carry out the trend and cross-sectional analysis of the company.

Financial forecasting

It involves estimating the future financial needs of a company. The most important

variable that influences the firm's financial requirements is its projected volume of

sales. A good sales forecasting is an essential foundation for financial requirements of the company.

Methods of financial forecasting

1. Cash budgets

2. Time series analysis

3. Regression analysis

4. Percentage of sales method

1. Percentage sales method

It isolates those items that are expected to vary directly with sales and uses this to determine future financial needs of the company.

Steps involved

1. Isolate balance sheet items that are expected to vary directly with sales

Item	Relationship with sales
------	-------------------------

Debtors	Direct
---------	--------

Stock	Direct
-------	--------

Cash	Direct
------	--------

Creditors	Direct/indirect
-----------	-----------------

Accruals	Direct/indirect
----------	-----------------

Long term debt	Constant
----------------	----------

Share capital	Constant
---------------	----------

Retained earnings - 100% of its	relationship exists where the company doesn't pay earnings as dividends
---------------------------------	---

Fixed assets -	direct/indirect
----------------	-----------------

2. Determine the actual relationship between the sales and items that vary with the

sales e.g. $\frac{\text{Current debtors}}{\text{Current sales}} \times 100\%$

3. Determine the forecast sales/projected sales level as

$\delta_n = \delta_o (1 + g)^n$

Where:

δ_n = projected sales

δ_o = Current level of sales

g = growth rate in sales

n = no. of periods

4. Compute the new balance sheet items required to support the forecast sales

e.g. if debtor's sales relationship = 10%

δ_n = projected sales = 500,000

New debtors = 10% x 500,000 = £50,000

5. Compute the amount of external financing needed i.e.

Users of funds increase - increase in providers of funds

Increase in users of funds:

Increase in: Debtors	XX	
Stock	XX	
Cash	XX	
Fixed assets	XX	XXX

Increase in providers of funds:

Increase in: Trade creditors	XX	
Accrued wages	XX	
Retained earnings	XX	(XXX)

Amount of external financing XXX

6. Prepare proforma balance sheet

Use the new figures for items varying directly with sales = (from step 4). The balancing item is the amount of external financing

Assumptions made

1. Ordinary share capital remains constant i.e. it does not vary with sales
2. Long term debt is constant
3. There are no additional balance sheet items
4. The firm is operating at full capacity
5. The current relationship between sales and balance sheet items does not change
6. There are no price level changes

Summary of uses of ratios

1. To enable various stakeholders – providers of short and long term funds, shareholders and customers – to ascertain the safety of their financial interest in the organization
2. To assess the financial viability of their company which is useful to finance analysts when advising potential investors and lenders of the company
3. They are economic indicators – used by stock exchange to value a company's share. Stock exchange performance is a strong indicator of the company's performance and therefore reflects overall economic performance.
4. They are used for planning – ratios can be used to project future performance of a company. Financial requirements can therefore be foreseen and plans put into place as to when and how to meet them.
5. Competition implication – cross-sectional analysis enables a company to determine its strengths and weaknesses in comparison to its competitors and hence determine strategies to survive in the long run.

DIVIDEND DECISIONS/THEORY

The dividend theory determines the division of earnings between payment to ordinary/equity/common shareholders (dividend) and retention pre-investment in the

firm. The decisions focus on the proportion of the EATESH paid out as dividends and

the proportion retained in the business.

The dividend theory focuses on the following aspects;

a). How much to pay as dividends; this enables the company to decide on

the exact amount to be paid as dividends. There are four alternatives on how much to

pay as dividends.

a) Constant amount of DPS

c). Constant DPS plus surplus/extras

Under the policy, a constant DPS is paid every year but where the company makes supernormal earnings, they will pay extra dividends commensurate to the increase in earnings. The extra dividends paid are given in such a way that they are not perceived as a commitment by the firm to continue paying extra dividends in the future. It is applied by firms whose profits are highly volatile e.g. agricultural companies.

d). Residual dividend policy

Under the policy, dividends are paid out of earnings left after financing investment decisions. Dividends are only paid if there are no viable investment opportunities available. The policy is consistent with the shareholders wealth maximization objective. Where the firm has many investment opportunities requiring huge capital outlay, it may not pay any dividends since all the earnings will be committed to such investments.

Factors to consider when paying dividends

1. Profitability of the company: a company with high profits is likely to pay high dividends than a loss making company, ceteris paribus. Where the company profits are declining, the DPS is also likely to decline.

2. Liquidity position of the company: where the company is unable to generate sufficient working capital (low cash position), it will pay less amount of dividends. Where dividends are paid in form of cash, they have a direct implication on the cash position of the firm.

3. Investment opportunities: where a company has many investment opportunities available, it is likely to pay low dividends since a large proportion of the earnings will be directed to such investments.

4. Contractual obligations/Debt covenants: where the debt-holders restrict the amount of dividends to be paid by the company (dividend restrictive covenants), shareholders of such a company will receive low amounts of dividends.

5. Industrial practice: companies will operate within the acceptable industrial norms. A company operating in an industry paying high dividends will also pay high dividends due to the effect of competition.

6. Growth stage of the company: a well-established company is likely to pay high dividends since its earnings are high and stable. A young growing company will pay

low dividends since it retains most of its earnings/commits the earnings generated to investment opportunities so that it can increase its level of operations.

7. Capital structure of the company: a company will aim to achieve an optimal capital structure.

Where the gearing level is high, the company will pay low dividends to allow reserves to accumulate until an optimal capital structure is restored. A highly geared

company will pay low dividends so as to have enough cash (improve its liquidity

position) to pay interest and principal to debt-holders.

8. Legal rule:

a) Net profit rule: states that dividends may be paid from the company's past/present profits.

b) Capital impairment rule: prohibits the company from paying dividends from capital.

The company cannot sell its assets to pay dividends. This is liquidating the firm.

c) Insolvency rule: a company should not pay dividends when it is insolvent. A company is insolvent if the current assets are less than the liabilities.

9. Ownership structure: in a small company where the owners are few and want

to retain funds for expansion, the dividends paid will be low. In a public quoted

company, dividends are significant since they reflect/send signals to the existing and

potential investors on the company's performance.

10. Shareholders expectation: The class of shareholders who invest in the business with a motive to earn dividends are likely to withdraw their investments if

the company fails to pay them dividends. Generally, shareholders expect to be paid

dividends as a return on their investments in the business.

1. Access to capital markets: large quoted companies need large capital outlay

to invest in various ventures hence they need access to funds in the capital market. They will pay dividends as a sign to the investors of sound

performance and management. Small companies are less likely to access funds through the capital market hence will retain more in the business and pay less dividends.

2.

Why do companies pay dividends?

This answers the question as to whether dividends are relevant or whether the company can exist without paying dividends. It explains the relationship of the company's survival and payment of dividends.

Theories developed

(a) MM dividend irrelevance theory

Modigliani and Miller advanced it in 1961. It asserts that a firm's dividend policy has no effect on its market value and cost of capital. They argue that the

company's market value and its cost of capital are not affected by the dividend paid

by the company. They argued that the firm's value is determined by:

- i) Level of business and financial risk
- ii) Ability to generate funds from the business

According to MM's theory, dividend policy is a passive residue that is determined by the firm's need for investment funds, hence, it doesn't matter how the

company's earnings are divided between retention and payment to shareholders.

Thereafter, an optimal dividend policy does not exist. Dividend decisions are a mere

detail that has no effect on the value of the firm, and the firm focuses on investment decisions.

Assumption of MM

1. No personal or corporate taxes
2. No transaction costs associated with floatation of shares.
3. A firm has investment policy which is independent of dividend policy; no relationship between investment and dividend policy
4. No uncertainty in the market; all investors make decisions using same discount rate i.e. company's required rate of return.

(b) Bird in hand theory

This theory was propagated by John Litner in 1962 and was furthered by Myron

Gordon in 1963. They argue that shareholders are risk averse and prefer certainty.

Dividends payment is more certain than capital gains that depend on demand

and supply forces to determine, the share prices. Hence one bird in hand (certain

dividends) is better than two birds in the bush (uncertain capital gains).

Dividend decisions are relevant to the company. A firm paying high dividends is likely to have high values since shareholders will require a low discount rate. More shareholders will be attracted to a company paying high dividends. MM was against this proposition. They argued that the required rate of return is independent of dividend policy. They maintained that an investor can realize capital by reinvestment of retained earnings if they sell the shares. Investors will thus be indifferent between dividends payments and capital gains.

(c) Information signaling effect theory

Stephen Ross advanced this in 1977. He argued that in an inefficient market management can use dividend policy to signal important information to the market which is only known to them e.g. if management pays high dividends, it signals high expected profit in the future to maintain the high dividend level. This will increase the MPS and the value of the firm.

The dividend decisions are relevant in an inefficient market and the higher the dividends, the higher the value of the firm. This theory is based on the following assumptions:

- i) Sending of signals by management should be cost effective.
 - ii) Signals should be correlated to observable events in the market e.g. an increase in the share price of the company is related to payment of high dividends.
 - iii) No company can imitate its competitors in sending the signals; signals sent by one company should be completely different from those sent by other companies.
 - iv) Managers can only send true signals even if they are bad signals; if a company has made a loss, the management should send signals to that effect. They should not portray the company to have made profits since sending of untrue signals is financially disastrous to the survival of the firm.
- MM attacked this approach and suggested that a change in share price following a change in dividend amount is due to informational content of dividend policy and not the dividend policy itself; hence payment of dividend do not affect the share price.

(d) Clientele effect theory

This was advanced by Richardson Polit in 1977. It stated that the different groups of shareholders (clienteles) have different preferences for dividends depending on their level of income from other sources. The low income earners prefer high dividends to meet their daily consumption while high income earners prefer low dividends to avoid payment of tax and to ensure that the firm has enough funds for reinvestment. High-income earners are interested in the survival of the firm and not dividends paid out. When a firm sets a dividend policy, there will be a shift of investors in and out of the firm until equilibrium is achieved. Low-income earners will shift to firms paying high dividends and reverse for high-income earners. At equilibrium, the dividend policy will be consistent with the clientele of shareholders of the firm.

(e) Tax differential theory

This was advanced by Litzenberger and Ramaswamy in 1979. They argued that the tax rate on dividends is higher than tax rate on capital gains. Therefore, a company that pays high dividends has low value since shareholders pay high taxes. Dividends are relevant, but the lower the dividends the higher the value. In Kenyan scenario since capital gains is tax exempt and withholding tax on dividends is final and relatively low. The theory is subject to the tax policies adapted by different countries e.g. capital gains are highly taxed in UK.

How to pay dividends

This explains the various ways that the company can pay dividends.

a). Cash dividends

Mostly companies pay dividends in form of cash. The company should be in a sound liquid position to do so since the dividends paid reduce the cash positions of the company. Regular cash dividends are those paid out of a company's profits to the owners of the business (i.e., the shareholders). A company that has preferred stock issued must make the dividend payment on those shares before a single penny can be paid out to the common stockholders. The preferred stock dividend is usually set whereas the common stock dividend is determined at the sole discretion of the Board of Directors (for reasons discussed later, most companies are hesitant to increase or decrease the dividend on their common stock).

b). Bonus issue/ script dividends

Under conditions of liquidity and financial constraints, the company can pay bonus issue/stock dividends. This involves issue of additional shares for free instead of cash dividends to the existing shareholders in their shareholding proportion. Bonus issue has no effect on share ownership since all shareholders receive additional shares on a pro rata basis. Script issue or dividends are bonus shares given to shareholders. For a script dividend, the shareholders are given the choice between accepting cash dividends or additional shares. If they accept more shares instead of cash dividends they have more shares and so own a greater portion of the company but the shareholders may have less portion of ownership if they reject the script dividends (unless all shareholders elect to take the script dividends).

Advantages of bonus issue

1. Tax advantages:

- Shareholders will save on withholding tax
- Shareholders can sell additional shares to generate capital gains that are tax exempt.

2. Indication of high profits in the future.

- Bonus share conveys signals that the company is likely to improve its performance in the future. It also signals/declared by management expects future increase in earnings to effect additional shares so that EPS is not diluted.

3. No effect on liquidity or cash position of the company

- There is no cash movement with a bonus issue.

Disadvantages

1. For the shareholders expecting cash dividends, a bonus issue is not an attractive policy.

2. If the level of earnings remain constant, the EPS is likely to be diluted since the number of outstanding shares increase.

3. A bonus issue would send signals that the company is experiencing liquidity

problems hence will not obtain financing from other investors e.g. debentures,

financial institutions because they will perceive the company's financial risk to be high.

Stock split/ Reverse stock split

There is where a block of shares is broken down into smaller units so that the number of ordinary shares increases and respective par value reduces at the stock split factor. Instead of paying dividends, the company can increase the number of shares through the stock split factor. It is meant to make the shares of

a company be more affordable by low-income investors and increase their liquidity.

Example

ABC Ltd has 1000 ordinary shares of Sh 20 par value. It plans to have a stock split using stock split factor of 1:4

Required:

- I) Number of shares after the stock split
- II) Par value per share after the stock split
- III) Total ordinary share capital after the stock split.

Solution

No. of shares after the stock split = No. of shares before stock split x split factor

$$= 1000 \times 4 = 4,000 \text{ ordinary shares}$$

Par value after the stock split = Par value before the stock split/split factor

$$= \text{Sh } 20 / 4 = \text{Sh. } 5$$

Total ordinary share capital after split = Shares after split x par value after split. = $4000 \times 5 = \text{Sh } 20,000$

Note

- i) Original Share Capital is not affected
- ii) No. of outstanding shares increases by effect of split factor
- iii) If the level of earnings remains constant, EPS is diluted.

Reversed stock split

This occurs when the firm consolidates its shares into bigger units and increases the par value of the shares. It is the opposite of the stock split it results in:

- i) An increase in the par value
- ii) A decrease in the number of shares

Example

If a company has 20,000 shares par value Sh 20 and the stock split factor is 2.

Compute:

- I) No. of shares after the stock split
- II) Par value after the stock split
- III) Total share capital after stock split.

Solution

No. of shares = Existing no. of shares before reverse stock split/stock split factor = $20,000 / 2 = 10,000$ shares

Par value after reverse stock split = Par value before split x stock split factor = $20 \times 2 = \text{Sh. } 40$

Share capital after reverse stock split = No. of shares after reverse split x par value after reverse split = $10,000 \times 40 = \text{Sh. } 400,000$

Note:

In both the reverse and stock split, the share capital of the company is not affected; it remains constant before and after the split. But the number of shares and par value of the shares changes according to the stock split factor.

d). Stock repurchase

It occurs when the company buys back some of its outstanding shares from the shareholders instead of paying cash dividends. The shares repurchased are

referred to as treasury stock. The company refunds the amount of capital that

had been contributed by the shareholders.

It results in a decrease in the number of shares outstanding. Some advantages

of stock repurchase include:

i) Utilization of idle funds: if a company has accumulated cash balances in excess of investment opportunities available, it may refund the share capital contributed by the shareholders by buying back the shares. Excess liquidity may lead to the company investing in an undesirable project. Stock repurchase offers an alternative.

ii) Enhance EPS: following a stock repurchase, the number of shares issued will

reduce and if the level of earnings is constant or increasing, EPS will increase.

iii) Enhance share price: after the stock repurchase, EPS increases which sends

signals or announcement that affects the company's performance has improved. This

leads to an increase in the MPS.

iv) Capital structure: company's managers may use a share buyback as a means

of correcting an unbalanced capital structure since after the repurchase, the number of

outstanding shares reduces which impacts on the share capital that impacts on the

capital structure.

v) Employee incentive schemes: a company can use stock repurchase to offer the

employee the shares bought back. A scheme of enabling employees of the company to

own shares is referred to as employee stock ownership plans/schemes.

vi) Consolidates ownership to few investors who will be able to make decisions

efficiently and effectively. It also ensures that having a large number of shareholders does not dilute the ownership.

vii) It reduces take over threats: through the stock repurchase, the company will

maintain loyal shareholders who will resist a take over bid. A take over occurs where

a class of investors or another company absorbs the company's operations in totality.

The company imposing the threat is referred to as predator/acquiring co. and that

taken over target/acquired co.

Disadvantages

1. High price: where the company's shares are highly priced, it may be difficult for the company to buy back shares.

2. Negative signals:

i) Investors whose shares are bought back will have a negative perception of the company. This will lead to a decline in the market share for the company's product. The company will lose business to its competitors. Loss of market share will lead to a decline in profitability

ii) Stock repurchase is likely to be interpreted as a lack of investment opportunities.

Other types of dividend include:

-Special dividend: Normally, public companies declare their dividends on a specific schedule; however, they also have the option to declare a dividend at any time. This type of dividend is referred to as a special dividend.

-Dividend-reinvestment plans: Some companies have dividend reinvestment plans, or DRIPs. These plans allow shareholders to use dividends to systematically buy small amounts of stock, usually with no commission and sometimes at a slight discount. In some cases the shareholder might not need to pay taxes on these re-invested dividends, but in most cases they do.

- Special One-Time Dividends: In addition to regular dividends, there are times a company may pay a special one-time dividend. These are rare and can occur for a variety of reasons such as a major litigation win, the sale of a business or liquidation of a investment. They can take the form of cash, stock or property dividends. Due to the temporarily lower rates of taxation on dividends, there has been an increase in special dividends paid in recent years.

-Property Dividends : A property dividend is when a company distributes property to shareholders instead of cash or stock. Property dividends can literally take the form of railroad cars, cocoa beans, pencils, gold, silver, salad dressing or any other item with tangible value. Property dividends are recorded at market value on the declaration date.

Important dividend dates

- **Ex-dividend date:** The ex-dividend date is defined as the date subsequent to which every share that is traded does not have any right to claim the dividend, which has been declared in the immediate past.
- **Declaration date:** The declaration date is defined as the date on which the board of directors declares its aim for payment of dividend. On this date, the payment date and the record date are also announced.
- **Record date:** The record date is defined as the date on or before which the shareholders who have officially recorded their ownership and are entitled to get the dividend.
- **Payment date:** The payment date is defined as the date on which the checks of dividend will be sent to shareholders or deposited to brokerage accounts.