Portfolio Management

Learning Objectives :

To provide a synoptic view of portfolio management.

To familiarize with various models of portfolio management.

To discern various ingredients of portfolio management.

To outline various portfolio management principles & policies.

Structure:

- A Synoptic View
- Markowitz's Model
- Sharpe's Portfolio Model
- Baumol's Model
- Problems in Portfolio Management
- Ingredients of Portfolio Management
- Principles of Portfolio Management
- Policies of Portfolio Management

A Synoptic View

Portfolio management is the process of selecting a bundle of securities that will provide a maximum yield for a given level of risk or alternatively ensure minimum risk for a given level of return.

Efficient portfolio is that which provides maximum returns for a given level of risk or minimum level of risk for given returns.

In this context, portfolio is defined as, the composite set of ownership rights to financial asset in which the investor wishes to invest.

Before 1950, the process was carried by portfolio manager on an intuitive basis with no real knowledge. However, a body of knowledge has been built up which quantifies the expected return and riskiness of the portfolio.

A Synoptic View

These studies have come to be known as 'portfolio theories'. This theory provides management a technique to evaluate the merits of an investment portfolio & thereby select the most efficient portfolio which provides best trade off between risk & return.

A number of portfolio models which contain methods for preparing an attractive efficient frontier and choosing from the frontier the optimal portfolio have been developed.

We shall look at important models developed by Dr. H. Markowitz, who laid down the foundation of the portfolio theory, and subsequently at refinements to the theory, offered by Sharpe and Baumol.

Markowitz's Model

Dr. H. Markowitz,laid down the foundation of the portfolio theory in March 1952 in his article on 'portfolio selection'. Broad features of his models are as below.

a. Investment Portfolio Criteria

b. Efficient Portfolio

c. Portfolios Selection

Markowitz's Model

a. Investment Portfolio Criteria

According to Markowitz, the portfolio theory establishes a relationship between a portfolio's expected returns and its level of risk as the criterion for selecting the optimum portfolio.

Thus two measures were suggested for evaluating the merits of a portfolio.

- ♥ the expected return from the port folio and
- ♥ the level of risk associated with it.

The expected return on the portfolio, according to Markowitz, is the weighted average of return of each security in the portfolio. The risk of the portfolio consists of the riskiness of the individual securities & the co-variance between the returns of the securities amongst all possible combinations of them

Markowitz's Model

b. Efficient Portfolio

The portfolio manager selects his portfolio from the efficient portfolios .

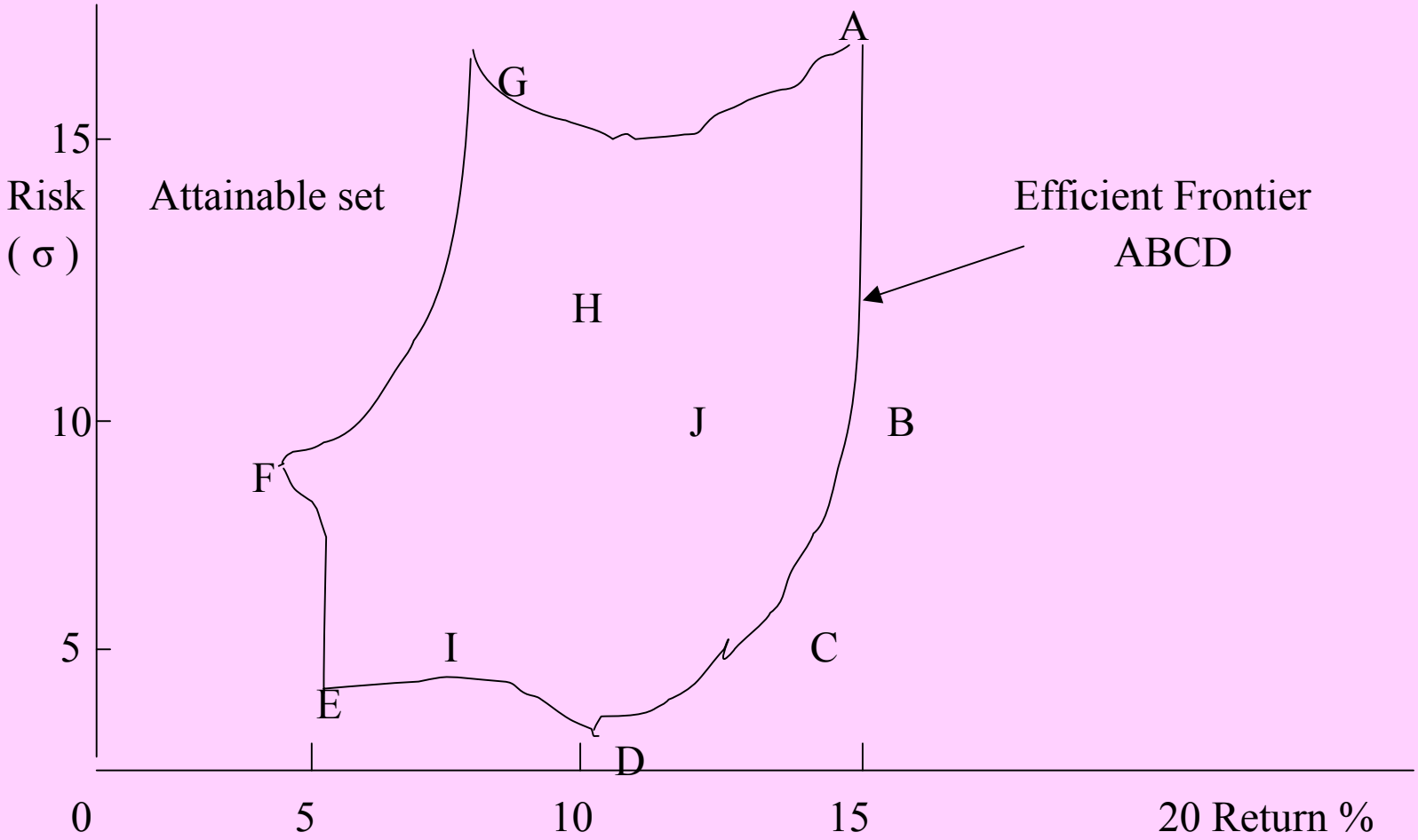
Efficient portfolios are those that , from attainable portfolios offer the highest return at a particular level of risk or minimum level of risk for a given level of return.

On the basis of expected return and risk and co-variance analysis the portfolio manager picks up securities from the various securities & constructs a portfolio.

Since there may be several combinations of securities based on expected return and risk, a set of attainable portfolio emerges. See next.

Markowitz's Model

- Attainable set of portfolios



Markowitz's Model

c. Portfolios Selection

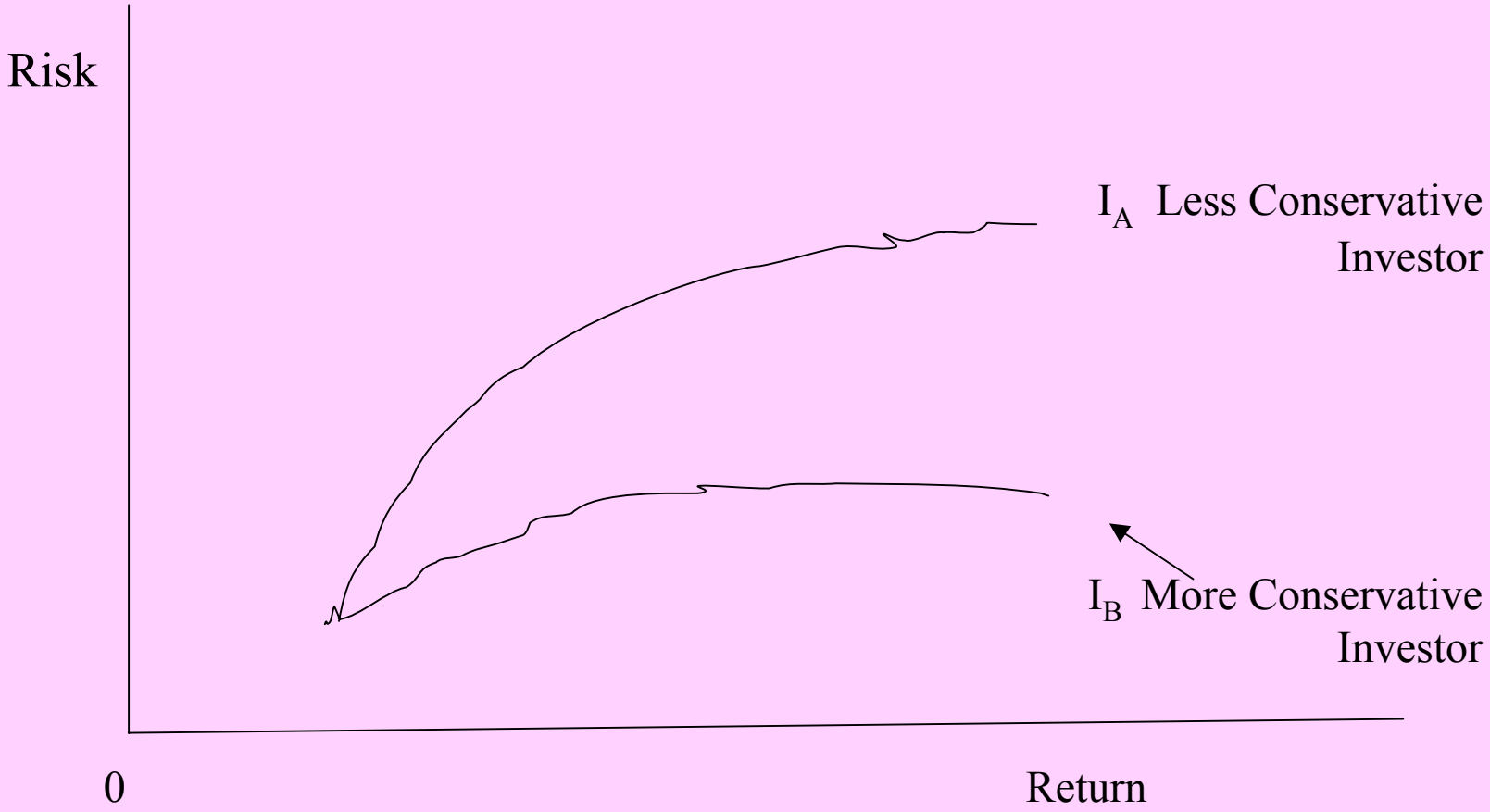
After building a set of attainable portfolios, the final task is to select optimum portfolio for the organization. The portfolio which maximizes utility of the investor is the optimum portfolio.

Depending upon like & dislike for risk each investor has his own degree of risk aversion. By interviewing the investor about his likes & dislikes, it is not difficult to locate the combinations of risks and expected return where he is indifferent.

An investor is now in a position to select the optimum portfolio from the efficient set where the investor's indifference curve is at tangent to his efficient portfolio frontier.

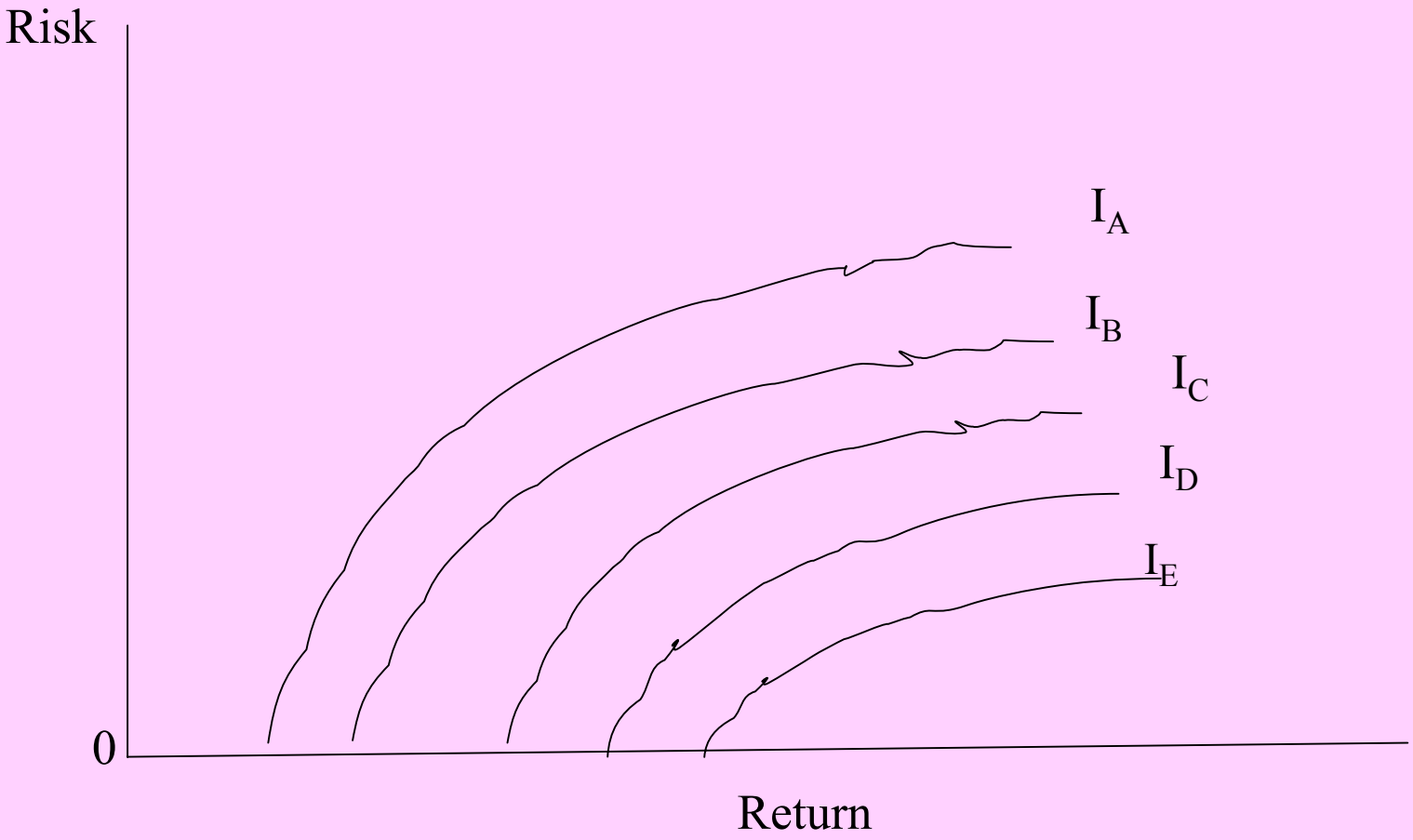
Markowitz's Model

Comparison of Indifference Curves



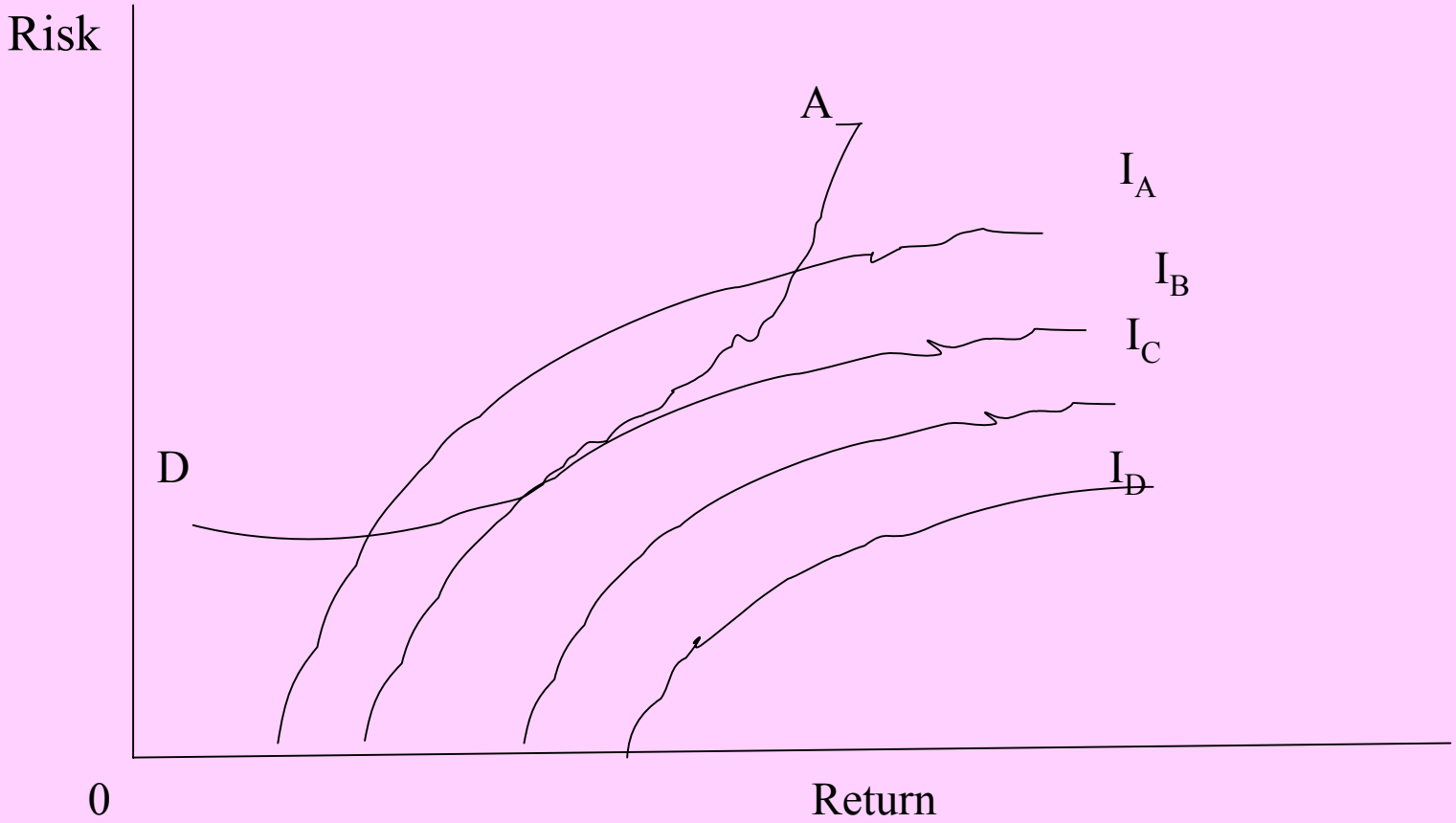
Markowitz's Model

Indifference Curves of an Investor



Markowitz's Model

Selection of Optimum Portfolio



Sharpe's Portfolio Model

Prof. W. Sharpe in his article on 'A Simplified Model for Portfolio Analysis' published in Jan. 1963, issue of 'Management Science' developed a single index model, which is a substantial simplification of the full Markowitz model.

He proposed a general theory of pricing of stocks and shares.

According to his model, only correlation between return for a particular security and that for some market index needs to be estimated.

This substantially reduces coefficient estimates to be computed.

His model is based on following five assumptions.

Sharpe's Portfolio Model

Assumptions are:

a. All investors have identical expectations

b. Investors have the same one-period time horizon.

c. There does not exist any transaction costs.

d. There are no corporate taxes.

e. The rate of borrowing and lending are same.

According to Sharpe, where borrowing and lending rate are homogeneous, there will be only one combination of shares which would be efficient.

The manager's work will be then just involve deciding whether to lend completely, lend & purchase portfolio A, invest all his money in A or to borrow and invest in portfolio A.

Baumol's Model

Mr. W. J. Baumol, in his article "An Expected Gain-Confidential Limit Criterion for Portfolio Selection", published in the Oct. 1963, issue of 'management Science' suggested a method which helps an investor to decide between various portfolios making up the efficient set.

In this method, investor is required to establish confidence limits for the expected return.

This method assumes the distribution of returns from the normal portfolios.

Problems in Portfolio Management

Although portfolio theory provides models to help and solve the problems in managing the portfolio, but in reality, these models suffer from several practical problems.

Some of these problems are listed below.

a. Problem of Construction of Optimal Investment Portfolio.

b. Problem of Non-availability of Securities.

c. Problem of Measurement of Risk

Problems in Portfolio Management

a. Problem of Construction of Optimal Investment Portfolio.

- Construction of an optimal investment portfolio involves search of securities having desired combination of risk & return, preparation of efficient sets of securities and finally choosing the optimal portfolio from the efficient sets.
- The optimal portfolio is dependent upon firm's utility function. Maximization of utility is the major objective of the a firm. Utility represents present and future consumption. Determination of optimal consumption-investment is complicated by the fact that future wealth levels associated with investment decisions are not with certainty.
- Immense quantity of data related to risk & return has to be gathered for number of securities, requiring investment in a lot of time and money.

  All such requirements cannot be easily included in the programming solutions and results have only academic significance.

Problems in Portfolio Management

b. Problem of Non-availability of Securities.

- Securities that could satisfy the investment needs of the firm are not always available.

- If available in the market, they are not in required quantities.

- This non availability of securities fulfilling firm's needs of risk & return, restricts the construction of optimal investment portfolio.

Problems in Portfolio Management

c. Problem of Measurement of Risk

Although there are statistical techniques to measure risk involved in future returns, they are not adequate in all the cases.

Techniques of dispersion only suggest that investment with less dispersion is subject to less risk than one with higher dispersion. However, they are not helpful in a situation where the firm is least interested in upside deviations from the expected value.

Further measure of dispersion is useful only for a simple problem.

Finally measures of dispersion fail to deal with different states of nature. The measure cannot be of use for the deviations of actual returns from desired ones.

Ingredients of Portfolio Management

The finance manager is engaged in portfolio management, when he endeavours to select securities for investment portfolio, so as to satisfy investment needs of the firm. For that he has to look after several key factors or ingredients of portfolio management. These include

1. Planning
2. Timing
3. Conservatism & Rationalism
4. Supervision
5. Performance

Ingredients of Portfolio Management

- Planning

- Planning involves preparation of a list of securities for a portfolio with due consideration to investment needs. The portfolio manager must have a clear cut idea of the investor's objectives.

- It would be in fitness of things if these objectives are spelled out in wiring to ease preparation of suitable investment portfolio accordingly.

- A well defined course of action determined in advance
  - fulfills investor's needs and
  - averts risk involved in investment.

Ingredients of Portfolio Management

2. Timing

- Time horizons relevant to the portfolio is another ingrediant of the portfolio management.
- While undertaking investment plan the manager should take into consideration timing of investment.
- When funds should be invested in securities and when it should be disposed off so as to make maximum gains out of it must receive the attention of the manager.

Ingredients of Portfolio Management

3. Conservatism & Rationalism

- The investor should be conservative and act rationally while making decisions. This is significant in view of inherent risk in any investment.
- It is prudent to accept reasonable gain for reasonable risk rather than to accept undue risk with a strong possibility of a loss.
- Another tenet of portfolio management is rationalism. Investment decisions be based on analysis of facts & figures and not on emotions & passion.

Investments be prompted by rational expectations.

Ingredients of Portfolio Management

4. Supervision

- Effective portfolio management calls for regular supervision of securities in the portfolio. In changing business & economic environment, it is necessary that investor frequently analyzes company & security to ensure that it continues to fulfill investor's needs.
- If analysis indicates that fundamental position of the security has undergone change & has ceased to meet investor's needs, it must be replaced.
- Such supervision precludes the investor from financial loss and hence must form an inseparable part of portfolio management.

Ingredients of Portfolio Management

5. Performance

Performance appraisal of the investment portfolio, known as recapitulation in financial circles, is important as it ensures that portfolio continues to meet organization's goals & objectives.

If the goal was to achieve *x%* return over *y* years , manager has to find out whether this is achieved or being achieved.

If not, he must find out underlying reasons for corrective action even though it is a time consuming task.

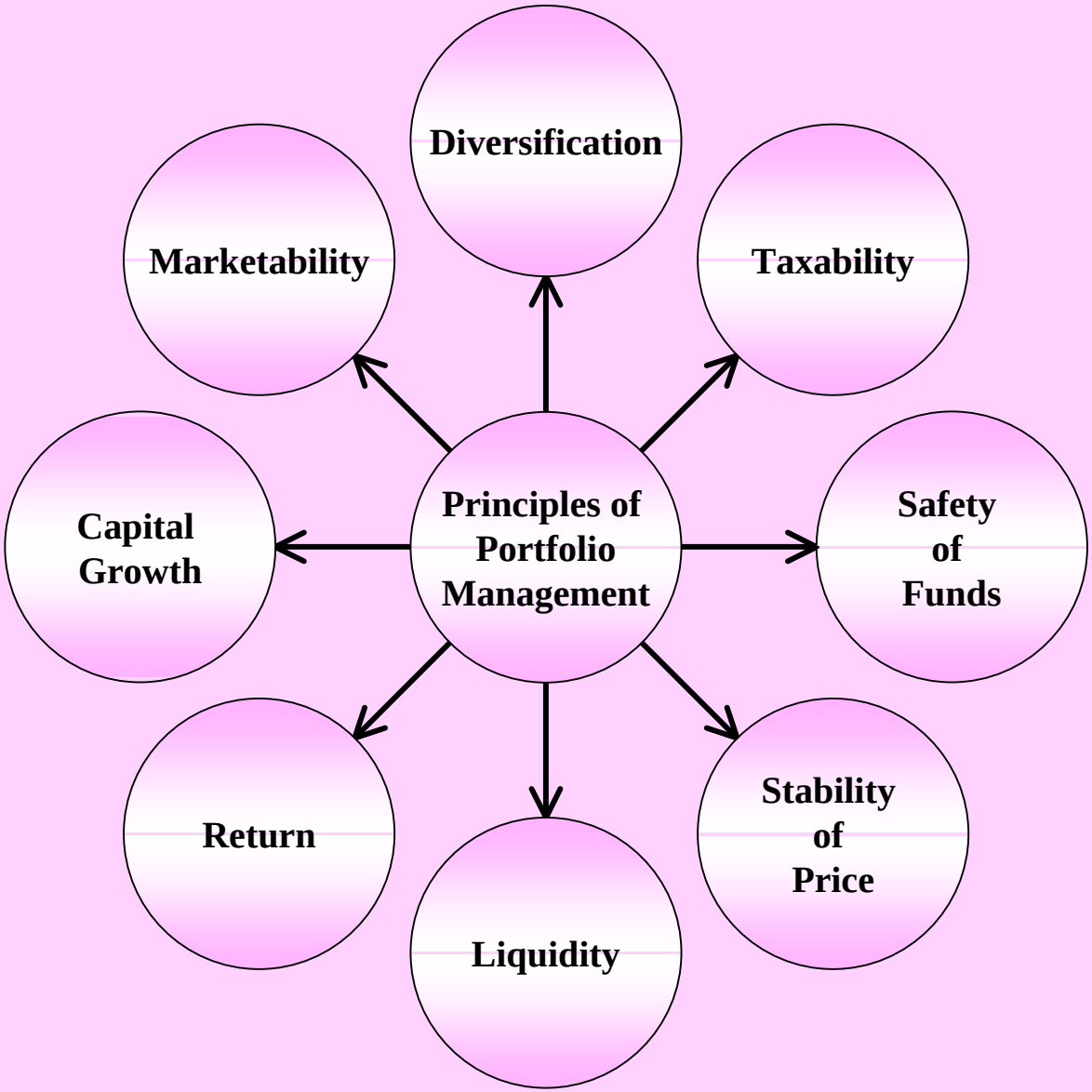
Continuous appraisal of a portfolio tends to i] minimize risk & ii] improve yield.

Principles of Portfolio Management

- The emphasis of the portfolio management varies from investor to investor.
- Some may desire higher earnings, others may opt for capital gain and still others want combination of both.
- Despite these variations, there are several objectives which should be considered as basic to well executed investment programme. These might rightly be called as guiding principles of portfolio management.

In the next slide we shall see these principles presented in the chart form.

Principles of Portfolio Management



Principles of Portfolio Management

Safety of Funds :

Whatever securities are to be bought it must be ensured that the money invested is not lost.

In evaluating safety of funds, state of economy should also taken in to account as government derives the funds necessary for repayment of principal with interest.

Next to review is credit risk, bonds of the central government are considered very safe. Bonds of corporate enterprises are relatively more risky.

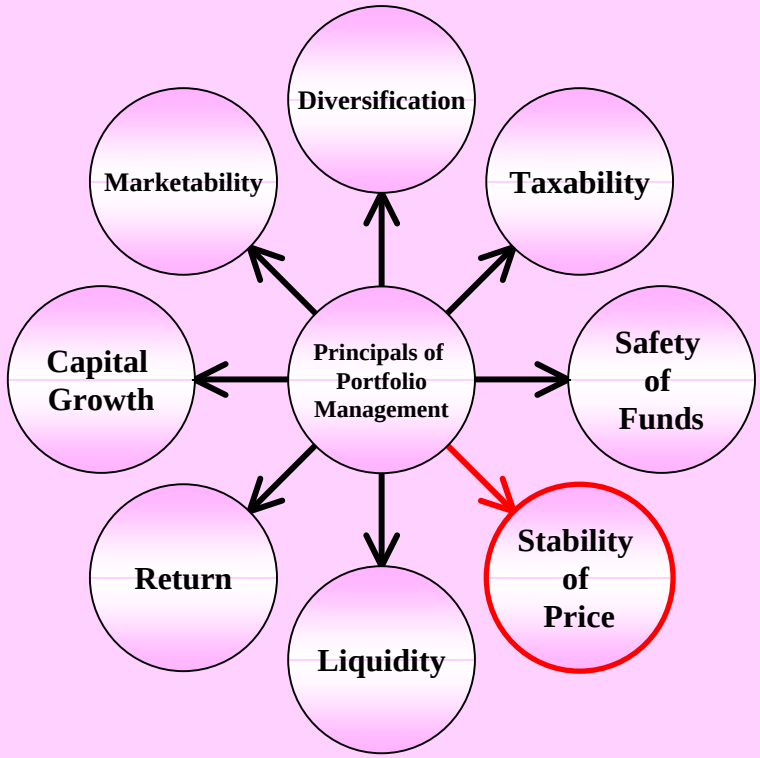
Principles of Portfolio Management

Stability of Price :

Every investor needs a high degree of stability of principal money in their investment portfolios. Because of a thin equity cushion, they cannot afford any loss or shrinkage in value of securities.

Security investment is subject to money rate risk, besides credit risk. Money rate risk involves the movement in the market values given changes in interest rates.

Shares do not carry a fixed rate of dividends and hence have more amplitude of fluctuations.



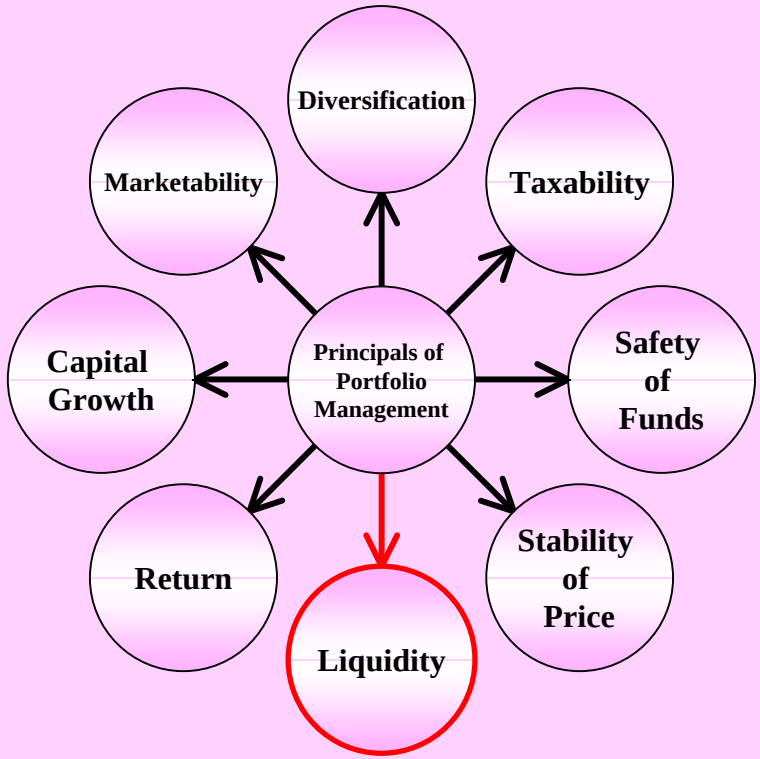
Principles of Portfolio Management

Liquidity :

A liquid security is one which can be disposed off in substantial quantities in the market at short notice with negligible capital loss.

Government and municipal bonds as well as port trust bonds can be disposed off in fairly big lots without forcing down their market prices.

In contrast, it is difficult to liquidate corporate shares without suffering material loss



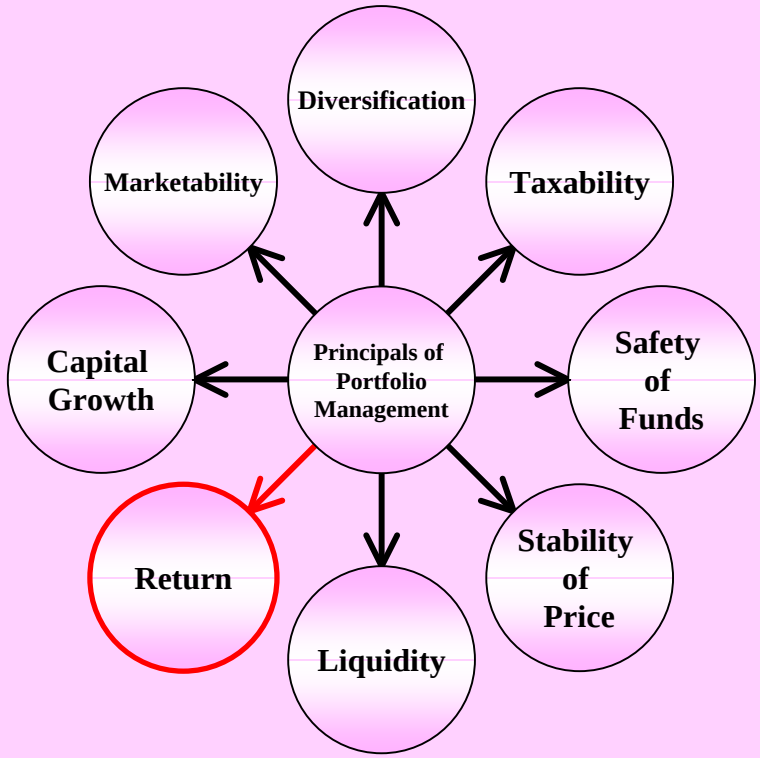
Principles of Portfolio Management

Return :

The fourth cardinal principle that should engage the attention of the management is the return on portfolio.

The portfolio should assure investor of a fair and stable return.

While considering the income factor, it would be pertinent to take into account rate of interest or dividend rate, tax exemption benefits, loss or gain, if any, at the time of redemption.



Principles of Portfolio Management

Capital Growth :

Appreciation of capital is one of the desirable objective of portfolio management.

Capital growth focuses on yield and measures both risk and reward. Capital growth is necessary to improve the long range position of the investor, to maintain purchasing power and to offer flexibility of management.

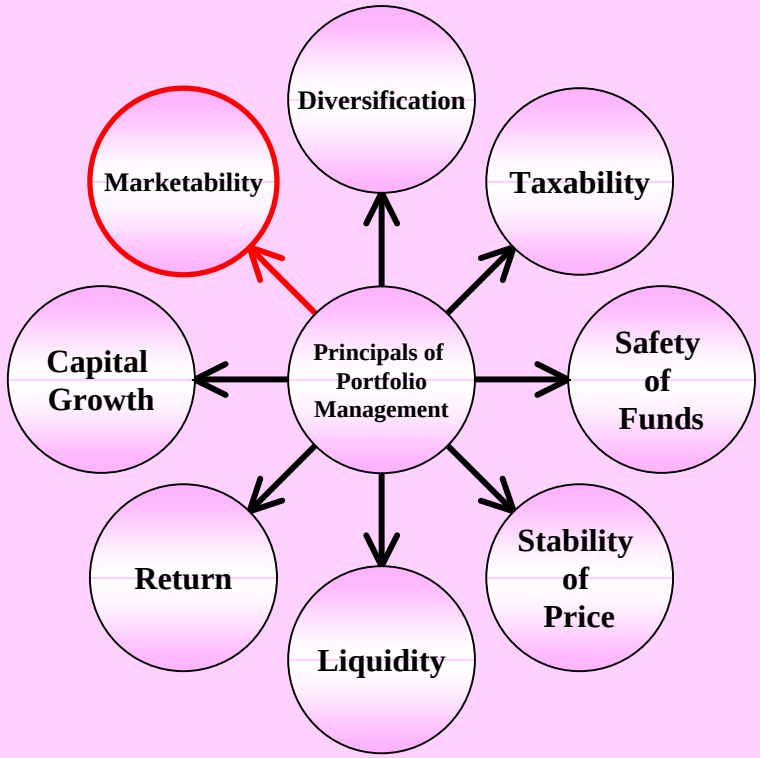
Principles of Portfolio Management

Marketability :

Marketability refers to the ability to buy and sell a security easily and quickly without involving material loss.

It is the function of price and size of the market for a given stock. Stock of smaller companies are less marketable than larger or big companies.

Quality of the management of the company also has bearing on the marketability. Companies with skilled & reputed management enjoy relatively greater marketability.



Principles of Portfolio Management

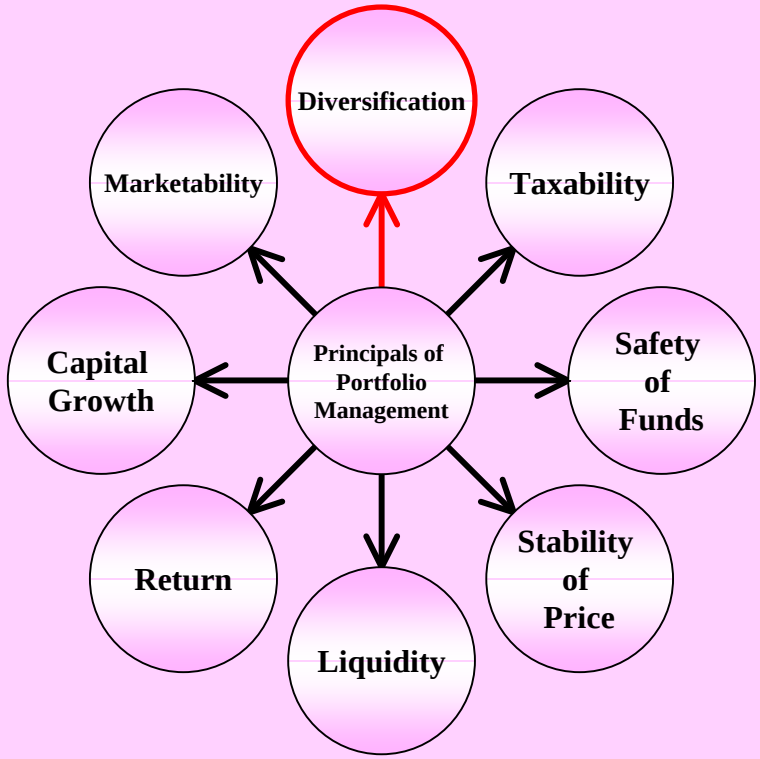
Diversification :

This is the most venerable rule of the portfolio management.

Diversification may take the form of unit, industry, maturity, geography, type of security and management.

With diversification the investment risk is also minimizes.

The important kind of diversification is spaced maturity plan that ensures certain amount of securities mature at regular intervals..



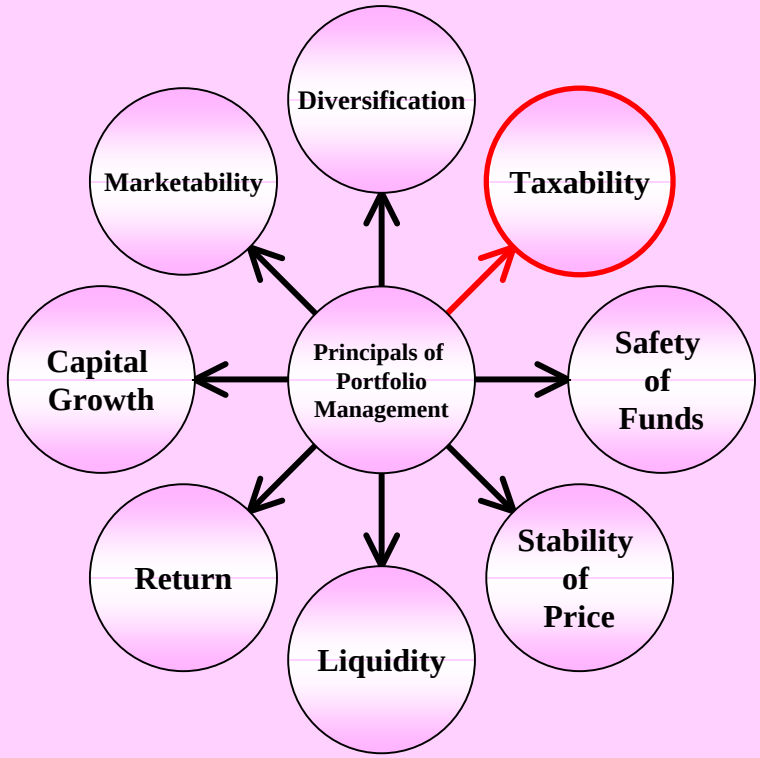
Principles of Portfolio Management

Taxability :

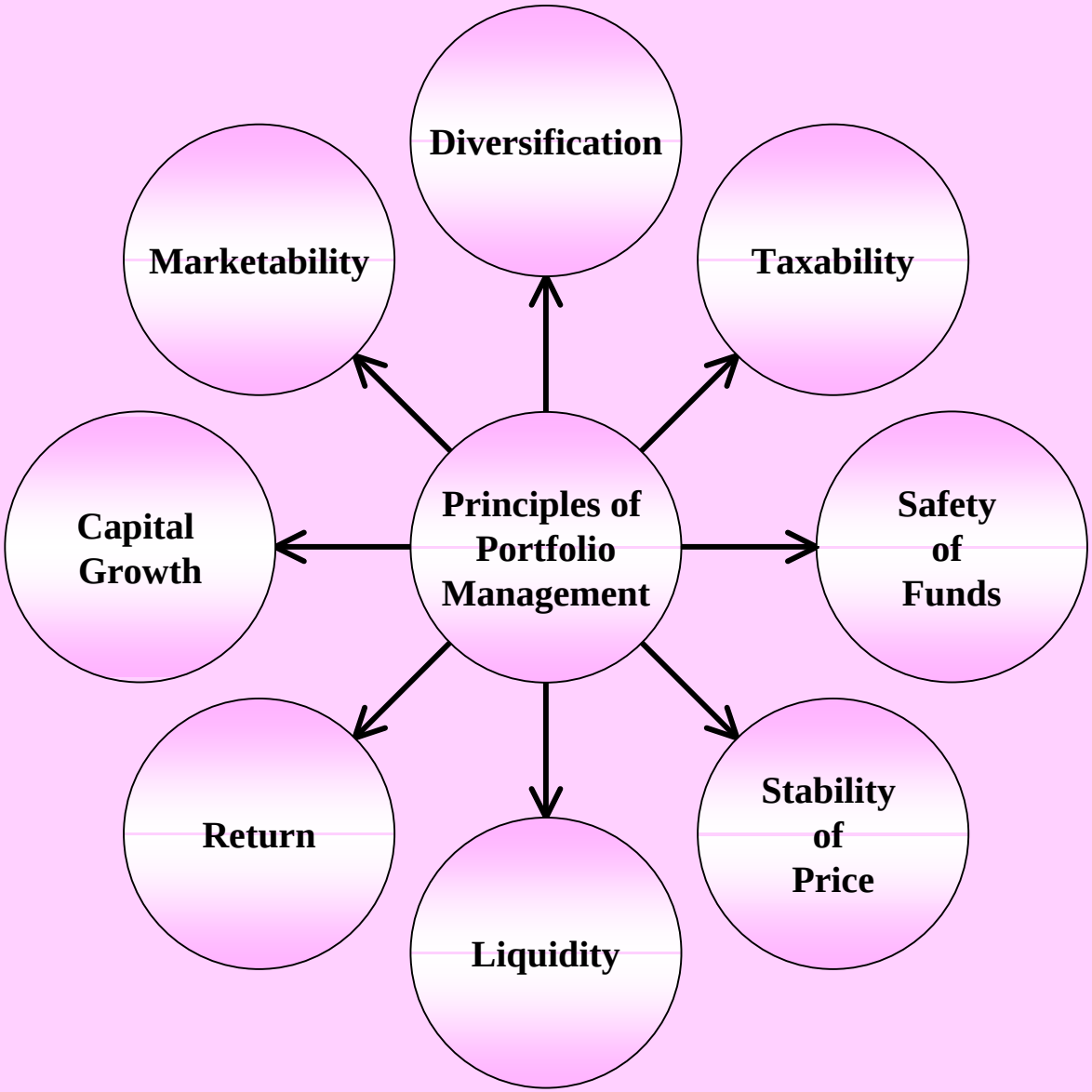
Many financial decisions, in today's society are governed by the income tax factor.

The problem is how to retain as much of income and capital gains as possible. With progressive tax rate on ordinary income, it is difficult to save income. Finance manager has to attempt to include such securities which are exempted from levy of income and wealth tax.

Presently dividends and long term [. One year] capital gains are exempt from tax.



Principles of Portfolio Management



Policies of Portfolio Management

Different companies have different policies regarding management of investment portfolio. Most common types that are usually followed in the portfolio management are:

a. Aggressive Policy, b. Defensive Policy c. Aggressive-Defensive Policy and d. Income Vs. Growth Policy.

In aggressive policy greater emphasis is placed on yield of securities. Hence portfolio is predominantly composed of common stocks.

Policies of Portfolio Management

b. Defensive Policy

- Defensive policy lays emphasis on safety of capital. Accordingly, securities that resist a decline in price are favored under this policy for inclusion in the portfolio. Bonds and preferred stocks are defensive type of securities.

- Conservative investment demands a defensive policy especially when it is suspected that the market is likely to decline in near future.

Policies of Portfolio Management

c. Aggressive- Defensive Policy

- Aggressive-defensive policy suggests for the construction of a balanced portfolio comprising of various types of securities.
- This policy provides hedge against a rise or fall in the market. In the event of market buoyancy, the common stock will carry the portfolio up and fetch large income.
- If the market is caught in the recession, the bond will preclude the portfolio from experiencing a complete loss of principal.

Policies of Portfolio Management

d. Income vs. Growth Policy

➨ This policy stresses whether returns of the investor will be in the form of current income or capital gains. Income policy places emphasis on the maximization of current income and attaches insignificant importance to capital gains & growth. Growth policy aims at postponement of current income with a view to increase the value of the portfolio through capital appreciation.

➨ Income-growth policy requires due weightage to both income & growth factors.

The end!

We have completed First section – Investment Decisions.

Next

Section II Financial Institutions – starting with chapter Six " Term Loans"

Good Luck!