

IMPORTANT THEORY(Most important are marked in yellow)

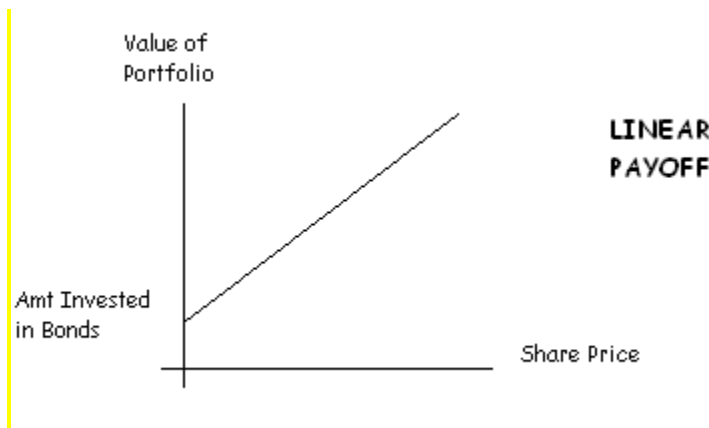
1. **PORTFOLIO REBALANCING** (include diagrams)

Dynamic strategies for asset allocation are as follows:

1. Buy-and-hold
2. Constant mix
3. Constant-proportion portfolio insurance

Buy-and-hold strategies

A buy-and-hold strategy is featured by an initial mix, say, 60 percent stock and 40 percent treasury bills, which is initially bought and then held. These can be termed as minimum risk and maximum return strategies. In fact, these strategies do not require regular rebalancing, and they are even easy to analyze.



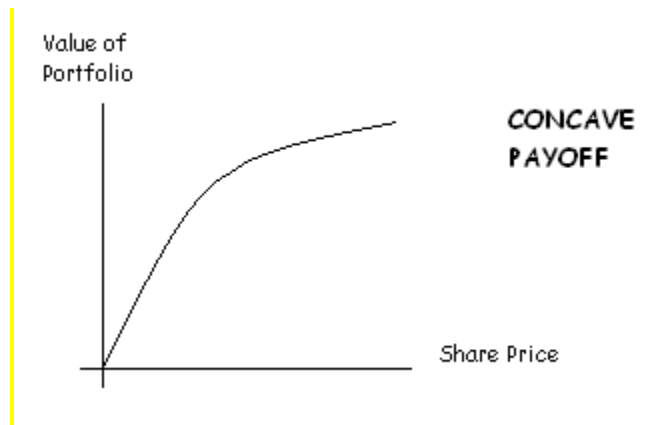
Pay-off for 60/40 Stock/Bill Buy-and-Hold Strategy

Constant mix strategies

These strategies are more dynamic in nature. Investors adopting these strategies tend to maintain an exposure to stocks that is in constant proportion of their wealth. The risk-tolerance level of the investors varies proportionately with the level of their wealth. At the time of changes in the values of the assets, it is required to either purchase or sell the required assets. Normally, rebalancing of the portfolio involves purchase of stocks as they fall in their value. The implementation of dynamic strategies actually involves the environment under which the act of rebalancing can take place. It has been statistically found that rebalancing of a constant mix requires the sale of stocks as they rise in value.

It is found in the real world that the stock markets are perfectly capable of reversing themselves, and such reversals favor constant mix strategies over the buy and hold strategies. Let us take the case where the value of stocks fall from Rs.100 and hold strategies. Let us take the case where the values of stocks fall from Rs.100 to Rs.90 and bounces back to Rs.100. In this case, while an investor going for a buy and hold strategy will face no change in his wealth, the one following the constant mix strategy will. In essence, the buy and hold strategy is the simple up and down movement along a single

straight line in a pay-off diagram, whereas in case of a constant mix strategy, each of the rebalancing changes the number of stocks the investor holds. It involves buying of shares when stock prices fall and selling of shares when stock prices rise. The value of a constant mix investor's assets after several rebalancing depends on the final level of the stock market as well as the way in which the stocks move from one period to the other before they reach a final level of the stock market.



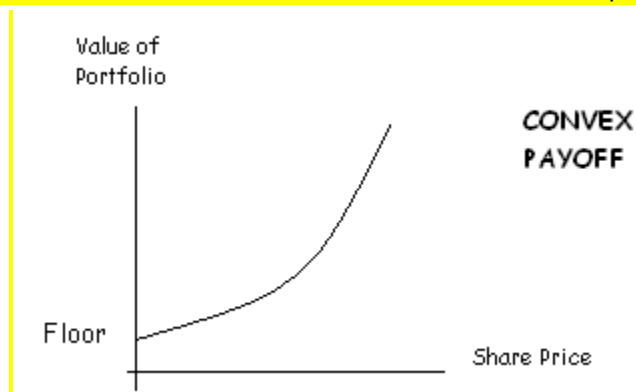
Constant proportion portfolio insurance

The constant proportion theory can be written as: Amount in stocks = m (Assets – Floor)

Where, m = fixed multiplier

The Constant proportion Portfolio Insurance (CPPI) strategy is a constant proportion strategy with multipliers greater than one. The implementation of this strategy calls for selection of the multiplier and a floor below which he does not want the portfolio value to fall. The floor actually grows at the rate of return on bills, and should be less than one at the initial stage.

This strategy therefore, requires us to allocate more/less in stocks as share price rises/falls. It gives the best results in a unidirectional market. It has a convex payoff as shown below:



2. Appraise the importance of asset allocation for portfolio performance.

Strategic allocation responds to the interaction of the investor's long-term strategic needs and long-run capital market expectations. The investor's goals are in terms of IPS objectives and constraints.

It should be remembered that the strategic allocation is based upon long-run goals and capital market expectations. Tactical allocation may be used if the market experiences short-term disruptions or the manager recognizes mispriced assets, they can change the allocation for short periods.

Since managers are the "experts" at selecting investments, the question is whether strategic allocation is worth the time and effort. The first response is that without a clearly defined strategic allocation, the portfolio may not reflect the investor's desires. Also, the importance of strategic asset allocation has been well-established empirically. One study by the Vanguard Group shows that *more than* 100% of the long-term performance of a portfolio is explained by its strategic asset allocation. Another study puts this number at 94%.

3. Compare and contrast strategic and tactical asset allocation.

Tactical asset allocation is the result of active management wherein managers deviate from the strategic asset allocation to take advantage of any perceived *short-term* opportunities in the market. Hence tactical asset allocation introduces additional risk, which should be justified by additional return (i.e., positive alpha).

4. Foreign Direct Investments (FDI)

The Foreign Investment is the acquisition of assets in another country by a foreign entity- be it the government, an institution or an individual. A country, vests in Foreign Direct Investment (FDI) for its growth, if its savings are insufficient for productive investment in comparison to the demand. In such cases, the FDI can be a vehicle for stimulating growth. The FDI is imperative to economic development of a country. Above all it brings in new technology and management concepts that pave the way to judiciously utilize the resources, thereby increasing the productivity and finally hold a chunk in the business globally. Institutionalization is one of the biggest advantages of FDI. It enforces the discipline and stability at market place and market dynamics taken care of the rest. It prepares the country to play and improve its horizon in global perspective and helps it to come out of its shell.

The presence of FDI is of definite help to a country mainly because there will be a better access to information and better monitoring capabilities. Studies also reveal that corporate governance and performance of the stock markets are positively related and the nations and firms with feeble corporate governance practices experience a bigger fall down when struck by adverse shocks and their currencies are subject to higher fluctuations. The biggest service a corporate can provide to society is the profit it generates in accounting terms and wealth creation in general. The discipline of value creation through innovation could be a lesson that can be learnt from FDI. The FDI can insist and lead to corporate integrity, transparency in decision making and direct it in the best interests of the shareholders.

Major initiatives taken by the Government of India to attract FDI are as follows:

- FDI up to 100% permitted under the automatic route in the advertising sector. FDI under the automatic route up to 100% is available for film sector and will not be subject to conditions about debt equity ratio, minimum level of equity investment etc.

- FDI up to 100% allowed in tea sector, including tea plantations, permitted subject to compulsory disinvestments of 26% equity in favor of Indian partner within a period of five years and prior approval of the state government in case of any future land use change.
- Re-issuance of ADR/GDR permitted to the extent of ADRs/GDRs which have been redeemed into underlying shares and sold in the domestic market.
- FDI up to 100% permitted with prior approval of the government for development of integrated township, including housing, commercial premises, hotels, resorts and regional level urban infrastructure facilities such as roads and bridges and mass rapid transit system.
- Automatic route of FDI up to 100% allowed in all manufacturing activities in Special Economic Zones, except some of the activities such as arms and ammunitions, explosives and allied items of defense equipment, defense aircrafts and warships, automatic substances, narcotics, distillation and brewing of alcoholic drinks and cigarettes and cigars.
- FDI in print media sector allowed up to 26% of paid-up equity capital of Indian entities publishing periodicals and newspapers dealing with news and current affairs.

5. Foreign Institutional Investment

An investor or investment fund that is from or registered in a country outside of the one in which it is currently investing. Institutional investors include hedge funds, insurance companies, pension funds and mutual funds. In Indian context, it refers to outside companies investing in the financial markets of India. International institutional investors must register with the Securities and Exchange Board of India to participate in the market. One of the major market regulations pertaining to FIIs involves placing limits on FII ownership in Indian companies.

India's gained in this regard and it can be gauged from the fact that the number of FIIs registered with SEBI has increased from none in 1992-93 to 528 in 2000-01 to 803 in 2005-06. In 2005 alone, 145 new FIIs registered themselves, taking the total registered FIIs to 803 (as on October 31, 2005) from 685 in 2004-05. A number of these investors are Japanese and European funds aiming to cash in on the rising equity markets in India. In addition, there was increased registration by nontraditional countries like Denmark, Italy, Belgium, Canada and Sweden. The Japanese have, in fact, been increasing their foothold in India. Mizuho Corporate Bank's decision to successfully expand base in the country has managed to convince almost 60-65 major Japanese corporates to set up manufacturing or marketing base in India. This list of corporates includes big names in auto sectors such as Honda, Toyota and Yamaha, as well as those in home appliances, pharmaceuticals, and communications.

6. Cost and Benefits from the FDI and FII

Cost Involved:

Although FDI improves balance of payments position but it involves following costs for the host country:

- MNCs are reluctant to hire and train local persons.
- Damage to environment and natural resources.
- Higher prices of products.
- Foreign culture infused.

Apart from the above, FDI causes a transfer of capital, skilled personnel and managerial talent from the country resulting in the home country's interest being hampered. Further, the objective of maximization of profit of MNCs also leads to deterioration in bilateral relations between the host country and the home country.

Benefits Derived:

For the Host Country

- Improves balance of payment.
- Faster forward and backward economic linkages.
- Develop a support base essential for quick industrialization.
- Maintain a proper balance amongst the factor of production by supply of scarce resources.
- Make available key raw materials along with updated technology and also provide access to continued updation of R & D work.

For the Home Country

- BOP situation improves due to receipt of dividend, royalty, fee for technical services.
- Develop closer political relationships between the home country and the host country, which is advantageous to both.

7. External Commercial Borrowings (ECB): It refers to borrowing from outside India denominated in foreign currency, usually at floating rate. ECB includes commercial bank loans, buyers' credit, suppliers' credit, securitized instruments such as floating rate notes and fixed rate bonds etc., credit from official export credit agencies and commercial borrowings from the private sector window of multilateral financial institutions. ECBs can be used for any purpose (rupee-related expenditure as well as imports) except for investment in stock market and speculation in real estate. They are a source of finance for Indian corporate for expansion of existing capacity as well as for fresh investment. Corporate are free to raise ECB from any internationally recognized source, such as banks, export credit agencies, suppliers of equipment, foreign collaborators, foreign equity holders, international capital markets etc. ECBs provide an additional source of funds to Indian companies, allowing them to supplement domestically available resources.

The borrowings in the international capital markets are in the form of Euro loans which are basically loans from the bank to the companies which need long term and medium term funds. Broadly two distinct practices of arranging syndicated credits have emerged in Euro markets, Club Loans and

Syndicated Loans. The club loan is a private arrangement between lending bank and a borrower. When the loan amounts are small and parties are familiar with each other, lending banks from a club and advance a loan, hence the name Club Loan. Syndicated Euro credit however has a full fledged public arrangement for organizing a loan transaction. It is treated as an integral part of the financial market mechanism with a wide network of banks participating in the transaction over the globe. Typically a syndicated loan is available for a maturity of seven years with shorter period transactions having a maturity of 3-5 years.

8. Ways of Raising Funds in International Markets

a) Debt Instruments: The issue of bonds to finance cross border capital flows has a history of more than 150 years. In the 19th century, foreign issuers of bonds, mainly governments and railway companies, used the London market to raise funds.

International bonds are classified broadly under two categories:

b) Foreign Bonds: These are the bonds floated in the domestic market denominated in domestic currency by non-resident entities. Dollar denominated bonds issued in the US domestic markets by Non-US companies are known as Yankee Bonds, Yen denominated bonds issued in Japanese domestic market by Non-Japanese companies are known as Samurai Bonds and Pound denominated bonds issued in the UK by Non-UK companies are known as Bulldog Bonds. Similarly, currency sectors of other foreign bond markets have special names like Rambrandt Dutch Guilder, and Matador Spanish Peseta etc.

9. Euro Bonds:

The term 'Euro' originated in the fifties when the USA under the Marshall Plan was assisting the European nations in the rebuilding process after the devastation caused by the second world war. The dollars that were in use outside the US came to be called as "Eurodollars". In this context the term 'Euro' signifies a currency outside its home country. The term 'Eurobonds' thus refers to bonds issued and sold outside the home country of the currency. For example, a dollar denominated bond issued in the UK is a Euro (dollar) bond, similarly a Yen denominated bond issued in the US is a Euro (Yen) bond. The companies wishing to come out with shorter maturities have an option to issue Euronotes in the European Markets. The important ones being Commercial Paper (CP), Note Issuance Facilities (NIF) and Medium-Term Notes (MTNs). Euro-Commercial Paper issued with maturity of up to one year, are not underwritten and are unsecured. NIF are underwritten and have a maturity of upto 1 year. Standby NIFs are those formally designated instrument which back CP to raise short term finance. MTNs are not underwritten and are issued for maturity of more than 1 year with several tranches depending upon preferred maturity.

10. Equity Instruments: Issuers from developing countries, where issue of dollar/foreign currency denominated equity shares are not permitted, are now able to access international equity markets through the issue of an intermediate instrument called 'Depository Receipt'. According to the placements planned,

DRs are referred to as:

- i) Global Depository Receipts (GDRs).
- ii) American Depository Receipts (ADRs).
- iii) International Depository Receipts (IDRs).

What are Depository Receipts?

A Depository Receipt is a negotiable certificate that usually represents a company's publicly traded equity or debt. Depository Receipts are created when a broker purchases the company's shares on the

home stock market and delivers those to the depository's local custodian bank, which then instructs the depository bank, such as The Bank of New York, to issue Depositary Receipts. Depositary Receipts may trade freely, just like any other security, either on an exchange or in the over-the-counter market and can be used to raise capital. Each of the Depositary Receipt represents a specified number of shares in the domestic markets. Usually, in countries with capital account convertibility, the GDRs and domestic shares are convertible (may be redeemed) mutually. This implies that, an equity shareholder may deposit the specified number of shares and obtain the GDR and vice versa.

ADRs and GDRs

ADRs and GDRs are identical from a legal, operational, technical and administrative standpoint. Simply, the word "Global," rather than "American," is used when it is preferred for marketing reasons. The different forms of ADR differ in terms of the disclosure requirements, procedural formalities and fund raising.

LEVEL - 1

- Fresh funds cannot be raised, instead there is a diversification of Investor base.
- Minimum compliance with SEC guidelines.
- Need not comply with US GAAP.
- Traded over the counter.

LEVEL - 2

- Fresh funds cannot be raised. However, large diversification of investor base.
- Significant compliance with SEC guidelines.
- Partial compliance with US GAAP.
- Listed on one or more US Stock Exchanges, therefore, need to comply with listing requirements of those stock exchanges.

LEVEL - 3

- Fresh funds are raised.
- Full compliance with US GAAP.
- Need to get registered with SEC.
- Greater time and cost of issue involved.

Benefits To A Company

The primary reasons why a company would establish a Depositary Receipt program can be divided into two broad considerations i.e. capital and commercial. Among those considerations:

To enlarge the market for its shares through a broadened and a more diversified investor exposure which may increase or stabilize the share price? To enhance the image of the company's products, services or financial instruments in a marketplace outside its home country. To provide a mechanism for raising capital or as a vehicle for an acquisition. To enable employees to invest easily in the parent company.

Benefits To An Investor

Increasingly, investors aim to diversify their portfolios internationally. Obstacles, however, such as undependable settlements, costly currency conversions, unreliable custody services, poor information flow, unfamiliar market practices, confusing tax conventions and internal investment policy may discourage institutions and private investors from venturing outside their local market.

As negotiable securities, Depositary Receipts are usually quoted in U.S. dollars and pay dividends or interest in U.S. dollars. Depositary Receipts overcome obstacles that mutual funds, pension funds and other institutions may have in purchasing and holding securities outside of their local market. Global custodian safekeeping charges are eliminated, saving Depositary Receipt investors 10 to 40 basis points

annually. Dividends and other cash distributions are converted into dollars at competitive foreign exchange rates. Depositary Receipts are as liquid as the underlying securities because the two are interchangeable.

Types of Depositary Receipt Facilities

Companies have a choice of four types of Depositary Receipt facilities i.e. unsponsored and three levels of sponsored Depositary Receipts. Unsponsored Depositary Receipts are issued by one or more depositaries in response to market demand, but without a formal agreement with the company. Today, unsponsored

Depositary Receipts are considered obsolete and, under most circumstances, are no longer established due to lack of control over the facility and its hidden costs. Sponsored Depositary Receipts are issued by one depositary appointed by the company under a Deposit Agreement or service contract. Sponsored Depositary Receipts offer control over the facility, the flexibility to list on a national exchange in the U.S. and the ability to raise capital.

Sponsored Level I Depositary Receipts

A sponsored Level I Depositary Receipt program is the simplest method for companies to access the U.S. and Non-U.S. capital markets. Level I Depositary Receipts are traded in the U.S. over-the-counter ("OTC") market and on some exchanges outside the United States. The company does not have to comply with U.S. Generally Accepted Accounting Principles ("GAAP") or full Securities and Exchange Commission ("SEC") disclosure. Essentially, a Sponsored Level I Depositary Receipt program allows companies to enjoy the benefits of a publicly traded security without changing its current reporting process. The Sponsored Level I Depositary Receipt market is the fastest growing segment of the Depositary Receipt business. Of the more than 1,600 Depositary Receipt programs currently trading, the vast majority of the sponsored programs are Level I facilities. In addition, because of the benefits investors receive by investing in Depositary Receipts; it is not unusual for a company with a Level I program to obtain 5% to 15% of its shareholder base in Depositary Receipt form. Many well-known multinational companies which have established such programs includes Roche Holding, ANZ Bank, South African Brewery, Guinness, Cemex, Jardine Matheson Holding, Dresdner Bank, Mannesmann, RWE, CS Holding, Shiseido, Nestle, Rolls Royce, and Volkswagen to name a few. In addition, numerous companies such as RTZ, Elf Aquitaine, Glaxo Wellcome, Western Mining, Hanson, Medeva, Bank of Ireland, Astra, Telebrás and Ashanti Gold Fields Company Ltd. started with a Level I program and have upgraded to a Level II (Listing) or Level III (Offering) program.

Sponsored Level II And III Depositary

Receipts Companies that wish to either list their securities on an exchange in the U.S. or raise capital use sponsored Level II or III Depositary Receipts respectively. These types of Depositary Receipts can also be listed on some exchanges outside the United States. Each level requires different SEC registration and reporting, plus adherence to U.S. GAAP. The companies must also meet the listing requirements of the national exchange (New York Stock Exchange, American Stock Exchange) or NASDAQ, whichever it chooses. Each higher level of Depositary Receipt program generally increases the visibility and attractiveness of the Depositary Receipt.

11. Hedge Funds

(i) Hedge funds are unregulated entities set up in the form of Limited Partnership. Limited partners contribute capital and the managing partner invests that capital into sophisticated

strategy. The managing partner gets a base fee (nominal) and the incentive fee (performance related).

Base Fee = 2% of the assets under management

Incentive Fee = 20% of the returns earned over and above some threshold (say 12%).

(ii) The word “Hedge” used in a Hedge Fund is on account of the fact that Hedge funds strike for absolute performance i.e. market neutral strategies. They promise to provide positive return even when the market goes down.

(iii) Hedge funds cannot advertise – they have limited membership (less than equal to 100) and are therefore investment vehicles for risk aggressive high net worth individuals and institutional investors.

(iv) Hedge funds take extremely long short position in one or two counters – high use of leverage and derivatives – all these result in high unsystematic risk and low systematic risk.

POPULAR STRATEGIES OF HEDGE FUNDS

A. Equity Market Long Short: - It involves pair trading i.e. going long in an under priced stock and short in an over priced stock.

B. Equity Market Neutral Strategy: - It is similar to the Equity Market Long Short Strategy but in this case Beta = 0

C. Convertible Arbitrage Strategy: -

Step 1: Buy an optionally convertible bond.

Step 2: Optionally convertible bond has an embedded call option. Calculate the Delta of the call option.

Step 3: Short sell equity shares = No. of bonds X Delta of the call

D. Global Macro Strategy: - It is the most sophisticated hedge fund strategy which tries to exploit arbitrage opportunities across the globe in currency markets, commodity markets, equity markets and debt market.

E. Distressed securities can earn a high return, because many investors do not want to deal with the legal complications.

F. Emerging markets invest in developing economies and generally involve only long positions.

G. Fixed-income arbitrage takes positions in instruments based on expected changes in the yield curve and/or credit spreads.

H. Fund of funds invest in many hedge funds.

I. Merger arbitrage focuses on returns from mergers, spin-offs, takeovers, etc.

12. Explain the typical structure of a hedge fund, including the fee structure and the rationale for high water marks.

The most common **compensation structure** of a hedge fund consists of an assets-under-management fee, or *AUM fee*, of about 1% to 2% and an *incentive fee* of 20% of "profits." The definition of profit should be spelled out in the terms of the investment. It could be the dollar return over the initial investment, for example, or the dollar return above the initial investment increased by some hurdle rate.

High water marks (HWM) are typically employed to avoid incentive fee double-dipping. For example, assume a fund is valued and opened for subscription on a quarterly basis. Each quarter the increase in value over the previous quarter is determined and investors pay incentive and management fees accordingly. This is fine as long as the fund's value is higher at each successive valuation. If the value of the fund is lower than the previous quarter, however, the manager receives only the management fee and the previous high value of the fund (i.e., the last fund value at which incentive fees were paid) is established as a HWM. Investors are then required to pay incentive fees only if and when the value of the fund rises above the HWM. Note that HWMs are investor-and subscription-date specific. For those who subscribe while the fund value is below the previously established HWM, that HWM is not relevant. They will pay management fees each quarter as well as incentive fees for increases in value above the value at their subscription date.

13. Explain the purpose and special characteristics of fund-of-funds hedge funds

A **fund of funds (FOF)** consists of approximately 10 to 30 hedge funds. The point is to achieve diversification, but the extra layer of management means an extra layer of fees. Often a FOF offers more liquidity for the investor, but the cost is cash drag. Despite the drawbacks, FOF are *good entry-level investments* because the manager of the FOF exercises due diligence. A FOF may serve as a *better benchmark*, because they suffer from less survivorship bias. A FOF can suffer from **style drift**. Often two FOF that are classified as having the same style have a low correlation of returns.

FOF returns have been more highly correlated with equity markets than those of individual hedge funds. This characteristic has important implications for their use as a diversifier in an equity portfolio (i.e., as correlation increases, diversification decreases).

The membership limit in the individual hedge funds might be already exhausted. If an investor wants to invest in these four hedge funds, he can straight away invest in the FOF. So his objective would be achieved by investing a lower amount. Due diligence of all the hedge funds to be done by the fund of hedge funds manager. The investor will be able to enjoy diversification across various hedge fund styles. However all these benefits come at significant cost – there are double fees charged at the hedge fund level and the FOF level.

14. Social Cost Benefit Analysis (SCBA) :

Social Cost Benefit Analysis/Economic Analysis is the methodology developed to evaluate an investment from the social point of view, i.e., what would be the effect of the project on the society. Two formal approaches of conducting SCBA are:

*UNIDO APPROACH

*LITTLE MIRRELESS APPROACH

It has to be understood that the social costs & benefits of a project are quite different from the financial costs and benefits. Some of the instances where the differences arise are :-

- A project may be creating employment opportunities which involve no monetary benefit to the project, but the society stands to gain as a result of it.
- The project may be causing pollution for which it is not fined. So there is no monetary cost, but there are significant social costs.
- The project is regarding the construction of a Dam, which will save flood damages of say Rs.10 million annually. So Monetary Benefit = 0, but Social Benefit = Rs.10 million.
- The project is going to generate electricity for household consumption for which it has to charge as per government regulation say Rs.2/unit, but the households are willing to pay Rs.3/unit. So, Monetary Benefit = Rs.2/unit, but Social Benefit = Rs.3/unit.

Limitations of Social Cost Benefit Analysis:

- Successful application depends upon reasonable accuracy and dependability of the underlying forecasts as well as assessment of intangibles.
- Technique does not indicate whether given project evaluated on socio-economic considerations is best choice to reach national goals or whether same resources if employed in another project would yield better results.
- Cost of evaluation by such technique could be enormous for smaller projects.
- Social Cost Benefit Analysis ignores some qualitative aspects like happiness, satisfaction, aesthetic pleasure, better quality of life.

15. Commodity Derivatives

Derivatives contracts can be entered into for different types of commodities such as sugar, jute, pepper, gur, castor seeds etc. In India futures contracts in commodities are available at different commodities exchanges. MCX, NMCEX, and NCDEX offer futures contracts in several agricultural commodities and metals.

16. Insider Trading:

Insider Trading is a buying or selling or dealing in securities of a listed company, by a director, member of management, an employee or any other person such as internal or statutory auditor, agent, advisor, analyst consultant etc. who have knowledge of material, 'inside' information not available to general public. The dealing in securities by an insider is illegal when it is predicated upon utilization of inside information to profit at the expense of other investors who do not have access to such investment information. The word insider has wide connotation. An outsider may be held to be an insider by virtue of his engaging himself in this practice on the strength of inside information.

Insider trading which is an unethical practice resorted by those in power in corporates has manifested not only in India but elsewhere in the world causing huge losses to common investors thus driving them away from capital market. Therefore, it is punishable.

17. Relationship between Spot Price and Futures Price/basis/contango and backwardation

Futures are priced as per the 'cost of carry' model which is based on the prevention of arbitrage principal.

As per the model,

Theoretical $F = S + C$

Where

S = Spot Price

C = Cost of Carry = Interest saved + Storage cost saved – Convenience yield foregone.

- If $F > S$, the market is said to be in Contango.
- If $F < S$, the market is said to be in Backwardation.

The term basis is defined as $(S - F)$. Thus, basis would be negatively/positively in case of **Contango/Backwardation**.

As we approach maturity, the rule of convergence requires that basis narrows down. On the maturity date, we have

$F = S$ such that basis = 0.

18. Exchange Rate Forecasting and its Techniques

Due to dramatic changes in the foreign exchange market, the volume of foreign exchange traded has increased over the years. In this increasingly challenging and competitive market, investors and traders need tools to select and analyze the right data from the vast amounts of data available to them to help them make good decisions. Corporate need to do the exchange rate forecasting for taking decisions regarding hedging, short-term financing, short-term investment, capital budgeting, earnings assessments and long-term financing.

Techniques of Exchange Rate Forecasting

There are several techniques available for forecasting exchange rates. They can be categorized into four general groups- technical, fundamental, market-based, and mixed.

- **Technical Forecasting:** It involves the use of historical data to predict future values. For example time series models. Speculators may find the models useful for predicting day-to-day movements. However, since the models typically focus on the near future and rarely provide point or range estimates, they are of limited use to MNCs.
- **Fundamental Forecasting:** It is based on the fundamental relationships between economic variables and exchange rates. For example subjective assessments, quantitative

measurements based on regression models and sensitivity analyses. In general, fundamental forecasting is limited by:

- The uncertain timing of the impact of the factors,
 - The need to forecast factors that have an immediate impact on exchange rates,
 - The omission of factors that are not easily quantifiable, and
 - Changes in the sensitivity of currency movements to each factor over time.
- (c) Market-Based Forecasting: It uses market indicators to develop forecasts. The current spot/forward rates are often used, since speculators will ensure that the current rates reflect the market expectation of the future exchange rate.
- (d) Mixed Forecasting: It refers to the use of a combination of forecasting techniques. The actual forecast is a weighted average of the various forecasts developed.

19. Foreign Exchange Exposures:

Transaction Exposure –

This exposure arises only when a firm enters into a foreign transaction by virtue of which it comes to have a foreign currency payable or receivable, the amount of which is known with certainty but the home currency equivalent of it is uncertain. So this exposure will arise only due to exports, imports, foreign borrowing and investment etc. A purely domestic firm will not face this exposure.

Example: Suppose an Indian exporter has to receive \$100000 after 9 months. So if the dollar depreciates relative to the rupee a cash loss occurs. Conversely, if the dollar appreciates relative to the rupee, a cash gain occurs.

Operating or Economic Exposure –

This exposure is faced irrespective of whether a firm entered into a foreign transaction or not. Unlike transaction exposure it is broader in nature and its essence lies in the fact that it significantly alter the cost of a firm's inputs and prices of its outputs and thereby influence its competitive position substantially. Thus it refers to the extent to which the economic value of a company can decline due to changes in exchange rate. It is the overall impact of exchange rate changes on the value of the firm.

Example: Suppose, there is sudden spurt in oil prices which increases Indian oil import bill significantly. The resultant demand for \$ tends to push up the rupee dollar exchange rate very steeply. Though in India we have a floating Exchange Rate System i.e. Exchange Rates are supposed to be determined by the free forces of demand and supply, yet in reality it is a managed float/dirty floats. So, RBI frequently intervenes in the Forex Market to smoothen out steep changes in Exchange Rate. In the present case RBI may sell \$ reserves to bring down the exchange rate. Sale of \$ reserves implies corresponding buying of rupee from the market which will decrease the money supply. A higher interest rate results in a higher

cost of borrowing for the Indian Company. Moreover, a lower money supply implies a lower rate of inflation, which would affect the purely domestic company both on the cost side and revenue side. The ultimate impact of which is situation specific. It needs to be entertained that even a firm having a foreign currency payable or receivable whose amount is not known with certainty is subject to operating exposure. Even if an Indian Exporter to US invoices in rupee, changes in exchange rate will bring about a change in the dollar equivalent price. Given the price elasticity, there will be a change in the demand for the product.

Translation or Accounting exposure

This exposure relates to the translation of the financial statements of foreign branches or subsidiaries into the parent company's home currency. This translation takes place at different rates and may result in some translation gain or loss. However, this loss or gain is not accompanied by any cash flow and is therefore purely notional. There is no need to manage this exposure. However investors may not be matured enough to understand the notional feature of this loss or gain and may treat the same as real. This would affect share prices and in such a situation it becomes necessary to manage even this exposure.

20. TECHNIQUES FOR MANAGING EXPOSURE

Internal hedging techniques

Invoicing -Invoicing as an internal hedging technique and involves drawing the invoice in home currency. Thus, if the terms of the trade permit, an Indian importer / exporter should have the invoice drawn in Re. Normally invoice is drawn in the seller's currency. However, if the bargaining power of the buyer is high, it could be otherwise. Invoicing may be in a third currency or there may be a case of dual invoicing i.e. invoicing partly in the seller's currency & partly in the buyer's currency.

Leading & Lagging -

This implies:

- Lead the payable in a strong currency
- Lag the payable in a weak currency
- Lead the receivable in the weak currency
- Lag the receivable in a strong currency

Outsourcing –It involves outsourcing the inputs and business process requirement from the country to which the firm is presently exporting. Thus, if an Indian company is exporting to US, it has \$ receivable and is therefore afraid of \$ depreciating. To hedge the same, it should start importing from US.

Netting – This implies setting off the payable and receivable in the same currency, thereby, reducing transaction cost. It is especially prominent in the case of multinational companies having subsidiaries all around the world.

External hedging techniques

- Spot contracts.
- Rupee forward contract.
- Rupee roll over contract.
- Cross-currency forward contract.
- Cross currency roll over contract.
- Cross currency options.
- Currency futures.
- Currency and interest rate swaps.
- Arbitrage.

21. Efficient Market Hypothesis and Random Walk Theory –

“An ‘efficient’ market is defined as a market where there are large numbers of rational, profit-maximizers actively competing, with each trying to predict future market values of individual securities, and where important current information is almost freely available to all participants. In an efficient market, competition among the many intelligent participants leads to a situation where, at any point in time, actual prices of individual securities already reflect the effects of information based both on events that have already occurred and on events which, as of now, the market expects to take place in the future. In other words, in an efficient market at any point in time the actual price of a security will be a good estimate of its intrinsic value.”

The random walk theory asserts that price movements will not follow any patterns or trends and that past price movements cannot be used to predict future price movements. There are three forms of the efficient market hypothesis

- 1. The **“Weak” form** asserts that all past market prices and data are fully reflected in securities prices. In other words, technical analysis is of no use.
- 2. The **“Semistrong” form** asserts that all publicly available information is fully reflected in securities prices. In other words, fundamental analysis is of no use.
- 3. The **“Strong” form** asserts that all information is fully reflected in securities prices. In other words, even insider information is of no use.

Securities markets are flooded with thousands of intelligent, well-paid, and well-educated investors seeking under and over-valued securities to buy and sell. The more participants and the faster the dissemination of information, the more efficient a market should be.

22. Arbitrage pricing theory –

APT is a multi-factor model as against CAPM which is a single factor model. Thus, CAPM assumes that all systematic risk factors are captured by R_m & hence the characteristic line - $[R_j = \alpha_j + \beta_j R_m + e_j]$. Since the error term is correlated with the R_m & with other error terms, unsystematic risk is diversifiable. So, CAPM rewards investors only for systematic risk captured by beta. So, we have SML i.e. $R_e = R_f + (R_m - R_f)\beta$.

The APT criticizes CAPM stating that the true market portfolio doesn't exist. Proxies such as Nifty, Sensex, etc do not capture all systematic risk factors. Thus stock returns depend on a number of factors i.e. $F_1, F_2, F_3, \dots, F_n$. Therefore:

$$R_j = \alpha_j + \beta_{1j}F_1 + \beta_{2j}F_2 - \dots + e_j$$

The APT also assumes that e_j is uncorrelated with $F_1, F_2, F_3, \dots$ as well as uncorrelated with other error terms. So, unsystematic risk is diversifiable. Investors will be rewarded only for systematic risk captured by factor sensitivities, i.e. $\beta_1, \beta_2, \dots, \beta_n$. thus, the risk-return relationship under APT, known as the Arbitrage.

Price is given by:

$$R_e = R_f + RP_1\beta_1 + RP_2\beta_2 + \dots \text{ (Similar to SML)}$$

Where, RP_1, RP_2 are the risk premium $(R_m - R_f)$

23. Classification of Merger and Acquisition

- **HORIZONTAL:** This is an acquisition of a firm in the same industry as the acquiring firm. The firms compete with each other in their product market.
- **VERTICAL:** A vertical acquisition involves firms at different steps of the production process. The acquisition by an airline company of a travel agency would be a vertical acquisition.
- **CONCENTRIC:** It refers to a merger between two firms in different but related industry. Example: Bank insurance.
- **CONGLOMERATE:** The acquiring firm and the acquired firm are not related to each other. The acquisition of a food products firm by a computer firm would be considered a conglomerate acquisition.

24. TAKEOVER DEFENCES

Corporate takeovers have increasingly assumed a hostile nature since the 1980s. this has resulted in a formulation of innovative tactics as defense tool by vulnerable firms. The last decade has witnessed an

increasing level of sophistication in designing of such defenses, which makes it difficult for a raider to penetrate. Most of these tactics are preventive in nature and are aliened at making any hostile acquisition, a difficult proposition if not an impossibility some of the common takeover defense are :-

- **CROWN JEWELS:** Section 23 of SEBI takeover regulations indicate that the company calls its precious assets as crown jewels to depict the greed of the acquirer under the takeover bid. These precious assets attract the raider to bid for the company's control. The company sells these assets at its own initiative leaving the rest of the company intact (Instead of selling the assets, the company may also leases them or mortgage them so that the attraction of free assets to the predator is suppressed).
- **GOLDEN PARACHUTES:** (or First Class passenger strategy). This envisages a termination package for senior executive and is used as a protection tool against the takeover.
- **GREEN MAIL:** A large block of shares is held by an unfriendly company, which forces the target company to repurchase the stock at a substantial premium to prevent the takeover. (This could prove to be an expensive deal to the raider.)
- **PACMAN STRATEGY:** The target company attempts to takeover the hostile raider. This happens when the target company is larger than the predator.
- **POISON PILL:** An anti takeover defense, which creates securities, that provides their holders with special rights. The exercise of these rights would make it more difficult and/or costly for an acquirer to takeover the target against the will of its Board Of Directors.
- **STAGGERED BOARD:** An ant takeover measure which divides a firm's Board Of Directors into several classes only one which is up for election in any given year, thus delaying the effective transfer of control to a new owner in a takeover. Also called classified board.
- **STANDSTILL AGREEMENT:** A voluntary contract by a large group of shareholders not to make further investments in the target company for a specified period of times.
- **WHITE KNIGHTS:** White knight enters the fray when the target company is raided by a hostile suitor. The clause 25 of SEBI takeover regulations gives the provision to the white knight to offer a higher price than the predator to avert the takeover bid. (with the higher bid offered by the white knight, the predator might not remain interested in acquisition and hence the target company is protected from the raid.): A third party friendly to management who helps a company avoid an unwanted takeover without taking over the company on its own.
- **POISON PUT:** A covenant allowing the bond holder to demand repayment in the event of hostile takeover.

25. CONTRACTION : Contraction is a form of restructuring, which results in a reduction in the size of the firm. It can take place in the form of a spin off, split off, divestiture or equity carve out.

- **SPIN-OFFS** : A spin-off is a transaction in which a company distributes on a prorata basis all of the shares it owns in a subsidiary to its own shareholders. Hence, the stockholders proportional ownership of shares is the same in the new legal subsidiary as well as the parent firm. The new entity has its own management and is run independently from the parent company. A spin off does not result in an infusion of cash to the parent company. Example : Kotak Mahindra Capital Finance Ltd. formed a subsidiary called Kotak Mahindra Capital Corporation by spinning off its investment division.
 - **SPIT-OFFS** : In a split-off, a new company is created to takeover the operations of an existing division or unit. A portion of the existing shareholders receives stock in a subsidiary (new Company) in exchange for parent company stock. The logic of split-off is that the equity base of the parent company is reduced reflecting the dour sizing of the firm. Hence, the shareholding of the new entity does not reflect the shareholding of the parent firm. A split-off does not result in any cash inflow to the parent company.
 - **SPLIT-UPS** : In a split up, the entire firm is broken up in series of spin-offs, so that the parent company no longer exists and only the offspring survive. A split-up involves the creation of a new class of stock for each of the parents operating subsidiaries, paying current shareholders a dividend of each new class of stock, and then dissolving the parent company. Stockholders in the new companies may be different as shareholders in the parent company may exchange their stock for stock in one or more of the spin-offs.
 - **DIVESTITURES** : A divestiture is a sale of a portion of the firm to an outside party, generally resulting in an infusion of cash to the parent. A firm may choose to sell an undervalued operation that it determined to be non strategic or unrelated to the core business and to use the proceeds of the sale to fund investments in potentially higher return opportunities. It is a form of expansion on the part of the buying company.
 - **EQUITY CARVE-OUTS** : An equity carve out involves the sale of a portion of the firm through an equity offering to outsiders. New shares of equity are sold to outsiders who give them ownership of a portion of the previously existing firm. A new legal entity is created. The equity holders in the new entity need not be the same as the equity holders in the original seller.
- ASSETS SALE** : It involves the sale of tangible or intangible assets of a company to generate cash. When a corporation sells off all its assets to another company, it becomes a corporate shell with cash and/ or securities as its sale assets. The firm may then distribute the cash to its stockholders as a liquidating dividend and go out of existence. The firm may also choose to continue to do business and use its liquid assets to purchase other or companies.

26. LEVERAGE BUYOUT:

It may be understood as the buyout of a company with the help of debt. If the existing management buys out the company from the owners by employing debt, it is called a Management Buy Out (MBO). However, if the acquisition of a company or parts of it is done by outside investors who will then form the new management, it is called a Management Buy-In (MBI) The entities (wether management or

outsiders) who initiate the LBO generally hope to reverse the LBO within 3-7 years by way of a public offering or sale of the company to another firm. A buyout is therefore likely to be successful only if the firm generates enough cash to serve the debt in the early years, and if the company is attractive to other buyers as the buyout matures.]

There are 2 major reasons given for the ability of an LBO to create value –

- Tax Benefits
- Increased Efficiency

27. FINANCIAL ENGINEERING

Over the last two decades, financial engineering has brought about a remarkable change in the global financial markets. The deregulation of the financial services sector has resulted in increasing stress being placed on ability to design new products, develop superior processes and implement structured solutions to complex financial problems. A number of factors have accelerated the process of financial innovation. They include:

- interest rate volatility
- exchange rate volatility
- price volatility
- regulatory and tax changes
- globalization of the markets
- increased competition among investment bankers.

According to John Finnerty “Financial engineering involves design, development and implementation of innovative financial instruments and processes and the formulation of creative solutions to the problems in finance.” The soul of this definition is captured by the words ‘innovative’ and ‘creative’. This may involve a quantum leap through the introduction of a revolutionary new idea like the first swap deal or the first Leveraged Buy Out transaction. At other times it may involve adding a new dimension to an existing product or novel extension of an existing idea. For eg., a new variant of a derivative.

Miller characterizes financial engineering as unpredictable improvement in the variety of available financial products resulting from unforeseen changes. Kane views financial engineering from the point of view of regulatory dialectic. He sees regulatory dialectic as a cyclical process in which opposing forces of regulation and avoidance by regulates perpetually try to outwit each other. Silber perceives innovative financial instruments and processes as endeavors by corporations to mitigate the financial constraints they face. According to him, the cost of following the rules provides the impetus for innovative activities. Financial engineering relaxes the constraints and thereby reduces the cost of compliance. Van Horne takes a more critical view, maintaining that a new product or process cannot be considered ‘truly’ innovative unless it makes the financial markets operate more efficiently or makes them more complete. According to him, financial markets are made more complete by the introduction of new securities whose contingent after tax cash flows cannot be replicated by any combinations of existing securities.

The following are some of the factors which drive financial engineering:

- reducing transaction costs
- reducing agency costs
- leveraging tax asymmetries
- unbundling and reallocation of risks
- enhancing liquidity
- overcoming regulatory constraints
- technological advances
- advances in financial theory
- arbitrage opportunities.

28. Open Interest: Most of the futures contracts are squared off before maturity. Thus, open interest denotes number of contracts not yet squared off. Open interest reduces as maturity approaches.

DAY	A	B	C	D	Open Interest
1	+		–		1
2		+		–	2
3	+	–			2
4	–		+		1

29. Camel model is designed for Rating Banks. Each letter stands for one factor that needs to be taken into consideration by the Rating Agency –

- (a) *Capital* – Capital acts as a quotient against unexpected losses. So a bank should have adequate capital. This is measured in terms of capital to Risk Weighted Asset Ratio i.e.

$$CRAR = \text{Capital} / \text{Risk Weighted Assets}$$
- (b) *Asset Quality* – The loan portfolio of the bank should be diversified and there should be low proportion of Non-performing Assets.
- (c) *Management Quality*
- (d) *Earnings Quality* – The Bank's core earning is its Net Interest Income (NII). If it is steadily going up, there is sustainability and we say that the earnings quality of the bank is rich.
- (e) *Liquidity* – Liquidity refers to the ability of a bank to pay off its liabilities. A deposit rich bank is more liquid compared to other bank having less deposit. Similarly bank should hold an adequate amount of short term marketable securities to face liquidity problems.

30. Option Greeks

Option Greeks are partial derivatives that try to capture the rate of change of option price with respect to each factor, ceteris Paribas.

- **Delta of an option** is the rate of change of option price with respect to option price, (cet par).
- **Gamma of an option** is the rate of change of delta with respect to stock price, ceteris paribus. Options are a non-linear function of share price. Hence as share price changes, delta of an option changes & this rate of change is known as gamma.
- **Theta of an option** is the rate of change of option premium with respect to passage of time, ceteris paribus. It is known that options are wasting assets i.e. as time passes there is a time decay at the rate known as theta, Theta is therefore negative. It means that if theta of an option is 2.5, it means that with passage of 1 day option premium will fall by 2.5.

- **Vega of an option** is the rate of change of option premium with respect to volatility, ceteris paribus. Since an option buyer cannot have a negative payoff but enjoys unlimited payoff potential, vega is always positive.
- **RHO** is the rate of change of option premium with respect to interest rate, ceteris paribus. It is positive for call & negative for put. Thus if RHO of a call is 1.2, this means if interest rate goes up by 1%, then call premium will go up by 1.2 rupees.

31. Currency swaps

In a currency swap, two parties exchange debt obligations denominated in different currencies. Each party agrees to pay the other's interest obligation. At maturity, principal amounts are exchanged, usually at a rate of exchange agreed upon in advance. The currency swap market traces its roots to the 1960's, when parallel loans were arranged between two borrowers of different nationalities.

In currency swaps both the principal and interest in one currency are swapped for principal and interest in another currency. On maturity the principal amounts are swapped back.

Usually in practice swap is intermediated by a bank which takes away a part of the savings, leaving the balance to be shared by the parties. Swap gains or losses arise because of spread compression which varies in different financial markets.

32. Caps and Collars

These are derivatives which a finance manager can use to manage his cash-flows effectively and also to reduce the risk involved in case of a major devaluation of currency.

Caps—if a company decides on a particular rate of a currency vis-à-vis the rupee over which it is not ready to take a risk, it can buy a cap at that rate. The cost of caps is very prohibitive and can be offset by selling a 'floor' which is just the opposite of cap. **Collar**—a combination of caps and floors is called collar.

33. Dow Theory

Dow Theory is propagated by Charles Dow who is considered to be the grand daddy of the technical analysis. The Dow Theory is the earliest theory on technical analysis.

The Dow Theory is five tenets—

i) **Market Discounts everything:**—This means that the market price reflects all rational and irrational factors.

ii) **The market has three types of movement—**

- **Primary Movement** i.e. the long term secular uptrend or downtrend which last for 1 to 3 years.
- **Secondary Movement**—These are movements which retrace around $1/3^{\text{rd}}$ to $2/3^{\text{rd}}$ of the primary movement and last for 3 weeks to 3 months.
- **Minors Movement** i.e. Daily fluctuation.

It seems that Charles Dow was too much enchanted with the sea and therefore named the primary movement, secondary movement and minor movement as Tides, Waves & Ripples.

iii) **Lines indicate sideways trend**—If these are formed in the middle of bull/bear trend, we call it distribution/accumulation.

iv) Price action should be studied with volume – volume shows the intensity of price change. In the direction of the trend, volume should be high and against the trend, volume should be low. If this is not respected, there is a chance of trend reversal.

v) The broad market averages like the Nifty & Sensex represents the pulse of the economy and therefore should confirm each other.

34. Momentum Index

Momentum Index is an oscillation which gives advance signal of potential trend reversal as against moving average which gives late signal.

It is based on the concept of momentum i.e. rate of change. When we throw a ball up, it goes up at a high speed and then slows down and then turns. The same is true of stock prices. When the stock price goes up at a fast pace, we do not expect a trend reversal. Only when the rate of change is slows down there is signal of trend reversion.

35. Confidence index

It is a smart money indicator. The equity guys consider the bond guys to be smarter on predicting business cycles. Hence, they compute Confidence Index given by-

Confidence Index= Yield on high grade bonds / yield on low grade bonds. Obviously, this ratio is less than 1.

Case-1: If confidence index rises, bond traders are expected in economic boom, so equity market participants should built up long positions in equity.

Case-2: If confidence index falls, bond traders are expected in economic recession. So equity market participants should built up short positions in equity.

36. SUPPORT AND RESISTANCE:

Support and Resistance -

Support is a level at which bulls (i.e., buyers) take control over the prices and prevent them from falling lower.

Resistance, on the other hand, is the point at which sellers (bears) take control of prices and prevent them from rising higher. The price at which a trade takes place is the price at which a bull and bear agree to do business. It represents the consensus of their expectations.

Support levels indicate the price where the most of investors believe that prices will move higher. Resistance levels indicate the price at which the most of investors feel prices will move lower.

But investor expectations change with the time, and they often do so abruptly. The development of support and resistance levels is probably the most noticeable and reoccurring event on price charts. The breaking through support/resistance levels can be triggered by fundamental changes that are above or below investor's expectations (e.g., changes in earnings, management, competition, etc.) or by self-fulfilling prophecy (investors buy as they see prices rise). The cause is not so significant as the effect: new expectations lead to new price levels. There are support/resistance levels, which are more emotional.



Resistance becomes support

When a resistance level is successfully broken through, that level becomes a support level. Similarly, when a support level is successfully broken through, that level becomes a resistance level.

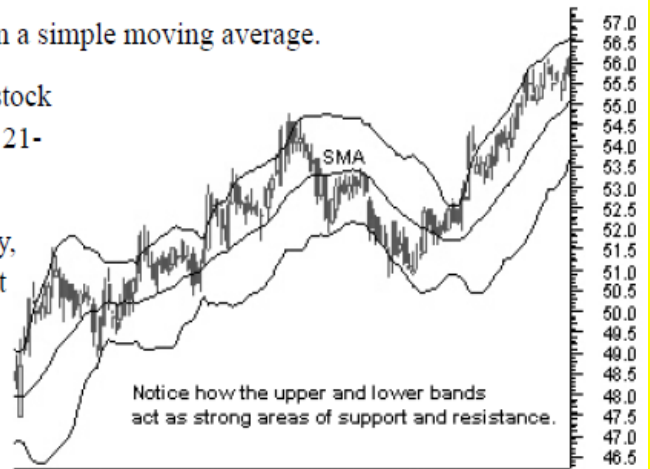
The reason for it is that a new "generation" of bulls appears, who refused to buy when prices were low. Now they are anxious to buy at any time the prices return to the previous level. Similarly, when prices drop below a support level, that level often becomes a resistance level that prices have a difficult time breaking through. When prices approach the previous support level, investors seek to limit their losses by selling.

37.**Bollinger Bands –**

A band plotted two standard deviations away from a simple moving average.

In this example of Bollinger bands, the price of the stock is banded by an upper and lower band along with a 21-day simple moving average.

Because standard deviation is a measure of volatility, Bollinger bands adjust themselves to the market conditions. When the markets become more volatile, the bands widen (move further away from the average), and during less volatile periods, the bands contract (move closer to the average). The tightening of the bands is often used by technical traders as an early indication that the volatility is about to increase sharply.



This is one of the most popular technical analysis techniques. The closer the prices move to the upper band, the more overbought the market, and the closer the prices move to the lower band, the more oversold the markets.

Calculation

Bollinger bands are formed by three lines. The middle line (ML) is a usual Moving Average.

$$ML = \text{SUM} [\text{CLOSE}, N] / N$$

The top line, TL, is the same as the middle line a certain number of standard deviations (D) higher than the ML.

$$TL = ML + (D * \text{StdDev})$$

The bottom line (BL) is the middle line shifted down by the same number of standard deviations.

$$BL = ML - (D * \text{StdDev})$$

Where:

N — is the number of periods used in calculation;

SMA — Simple Moving Average;

StdDev — means Standard Deviation.

$$\text{StdDev} = \text{SQRT}(\text{SUM}[(\text{CLOSE} - \text{SMA}(\text{CLOSE}, N))^2, N] / N)$$

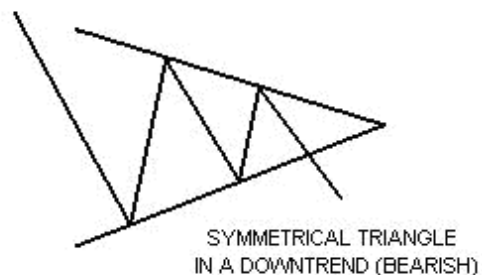
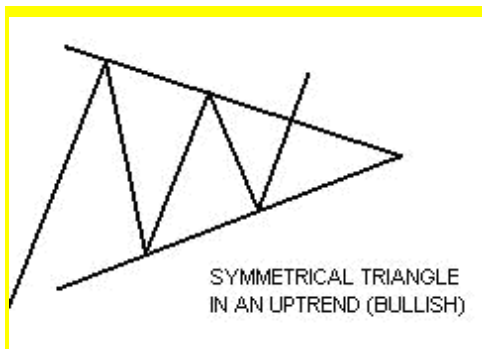
It is recommended to use 20-period Simple Moving Average as the middle line, and plot top and bottom lines two standard deviations away from it. Besides, moving averages of less than 10 periods are of little effect.

38. Price Patterns

Technical Analysis is based on the assumption that history repeats itself. Thus if a stock price had risen or fallen after the formation of a particular pattern 9 out of 10 times in the past, a technical analyst believes that the same results will be obtained even in future. This is based on the premise that human behaviour in similar situations is by and large consistent if not identical. Thus a technical analyst is always in search of reliable price patterns. Some such patterns are described below –

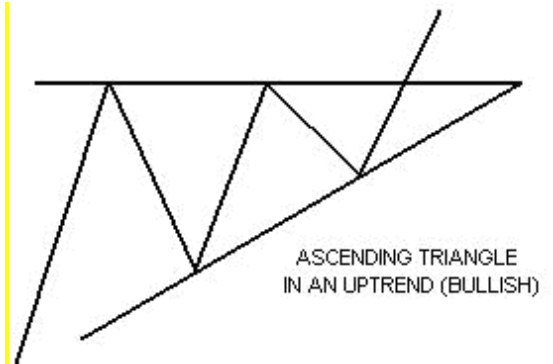
The Symmetrical Triangle

Symmetrical triangles can be characterized as areas of indecision. A market pauses and future direction is questioned. Typically, the forces of supply and demand at that moment are considered nearly equal. Attempts to push higher are quickly met by selling, while dips are seen as bargains. Each new lower top and higher bottom becomes more shallow than the last, taking on the shape of a sideways triangle. (It's interesting to note that there is a tendency for volume to diminish during this period.) Eventually, this indecision is met with resolve and usually explodes out of this formation (often on heavy volume.) Research has shown that symmetrical triangles overwhelmingly resolve themselves in the direction of the trend. With this in mind, symmetrical triangles in my opinion, are great patterns to use and should be traded as continuation patterns.



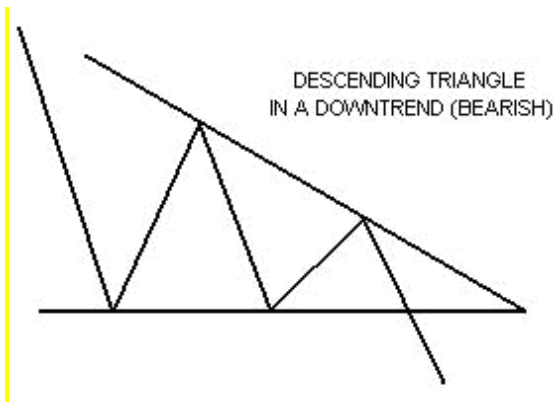
Ascending Triangles

The ascending triangle is a variation of the symmetrical triangle. Ascending triangles are generally considered bullish and are most reliable when found in an uptrend. The top part of the triangle appears flat, while the bottom part of the triangle has an upward slant. In ascending triangles, the market becomes overbought and prices are turned back. Buying then re-enters the market and prices soon reach their old highs, where they are once again turned back. Buying then resurfaces, although at a higher level than before. Prices eventually break through the old highs and are propelled even higher as new buying comes in. (As in the case of the symmetrical triangle, the breakout is generally accompanied by a marked increase in volume.)



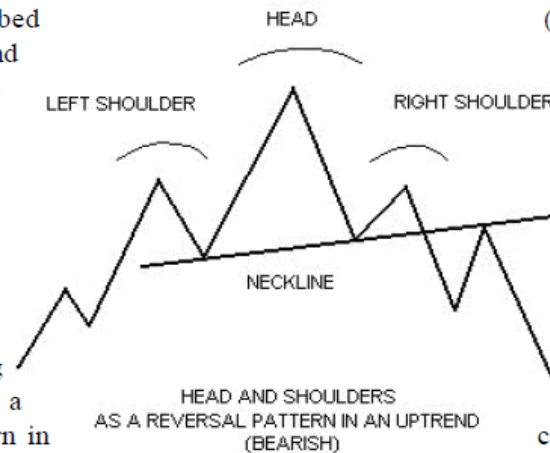
Descending Triangles

The descending triangle, also a variation of the symmetrical triangle, is generally considered to be bearish and is usually found in downtrends. Unlike the ascending triangle, this time the bottom part of the triangle appears flat. The top part of the triangle has a downward slant. Prices drop to a point where they are oversold. Tentative buying comes in at the lows, and prices perk up. The higher price however attracts more sellers and prices re-test the old lows. Buyers then once again tentatively re-enter the market. The better prices though, once again attract even more selling. Sellers are now in control and push through the old lows of this pattern, while the previous buyers rush to dump their positions. (And like the symmetrical triangle and the ascending triangle, volume tends to diminish during the formation of the pattern with an increase in volume on its resolve.)

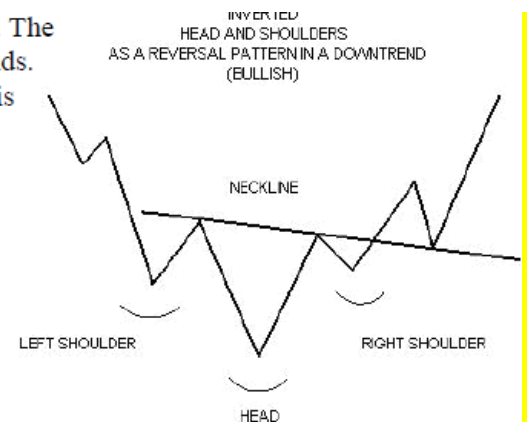


Head and Shoulders

The head and shoulders pattern is generally regarded as a reversal pattern and it is most often seen in uptrends. It is also most reliable when found in an uptrend as well. Eventually, the market begins to slow down and the forces of supply and demand are generally considered in balance. Sellers come in at the highs (left shoulder) and the downside is probed (beginning neckline.) Buyers soon return to the market and ultimately push through to new highs (head.) However, the new highs are quickly turned back and the downside is tested (neckline.) Tentative buying re-emerges and more, but fails to take out the previous high. (This right shoulder.) Tentative buying tests the downside yet the market rallies once the previous high. (This right shoulder.) Buying tests the downside yet this pattern should be drawn from the beginning of the uptrend. Your trendline for the neckline to the continuing greater importance in the comparison to other patterns. (Volume has a head and shoulders pattern in Volume generally follows the price higher on the left shoulder. However, the head is formed on diminished volume indicating the buyers aren't as aggressive as they once were. And on the last rallying attempt-the left shoulder-volume is even lighter than on the head, signaling that the buyers may have exhausted themselves.) New selling comes in and previous buyers get out. The pattern is complete when the market breaks the neckline. (Volume should increase on the breakout.)



The head and shoulders pattern can sometimes be inverted. The inverted head and shoulders is typically seen in downtrends. (What's noteworthy about the inverted head and shoulders is the volume aspect. The inverted left shoulder should be accompanied by an increase in volume. The inverted head should be made on lighter volume. The rally from the head however, should show greater volume than the rally from the left shoulder. Ultimately, the inverted right shoulder should register the lightest volume of all. When the market then rallies through the neckline, a big increase in volume should be seen.)



Wedges:

The wedge formation is also similar to a symmetrical triangle in appearance, in that they have converging trendlines that come together at an apex. However, wedges are distinguished by a noticeable slant, either to the upside or to the downside. (As with triangles, volume should diminish during its formation and increase on its resolve.)

A falling wedge is generally considered bullish and is usually found in uptrends. But they can also be found in downtrends as well. The implication however is still generally bullish. This pattern is marked by a series of lower tops and lower bottoms.

A rising wedge is generally considered bearish and is usually found in downtrends. They can be found in uptrends too, but would still generally be regarded as bearish. Rising wedges put in a series of higher tops and higher bottoms.

