Security Analysis and Portfolio Management

DEFIN564

Edited by:
Dr. Nitin Gupta

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Content

Unit01:Investment Management

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Objectives

After studying this unit, you should be able

- understand the meaning of investment, speculation and gambling.
- interpret different objectives of investments.
- analyze different alternatives for making efficient investment.
- understand the type of investors mistake made by investors.

Introduction

Investment involves the allocation of money towards purchasing an asset, which is not to be consumed in the present but hoping it will generate stable income or is expected to appreciate in the future. So, investment is a commitment of funds to derive the future income in the form of interest, dividend, rent, premium or appreciation in the value of principal capital.

Speculation does not have a precise definition but involves purchasing an asset to profit from subsequent price changes and possible sales. The speculators indulge in marketable assets that do not have a long life.

In the world of finance, speculation, or speculative trading, refers to the act of conducting a financial transaction that has substantial risk of losing value but also holds the expectation of a significant gain or other major value.

As per Benjamin Graham, an American economist, and professional investor, investment is an activity, which upon complete analysis assures the safety of the amount invested and adequate return. Conversely, speculation is an activity which does not satisfy these requirements.

1.1 Critical Differences Between Investment and Speculation

Meaning: An investment involves an asset with the hope of securing returns over the principal amount in the future. On the other hand, speculation involves conducting a risky financial transaction to make large-scale gains from a single transaction.

Time Horizon: Investments are generally held for an extended period, usually more than a year. Instances like real estate and life insurance are held for 25-30 years. Speculation is held for a brief period, usually less than a year, and can even be on a forthcoming event.

Risk: The amount of risk assumed is relatively moderate as compared to speculation. Speculation will focus on getting high returns in a relatively shorter amount of time, and thus, the quantum of risk is very high.

Since investment is mainly made by the middle class working for the community, they would be putting the spare money off their hard work, which they expect to earn a stable return. They are ready to part with their savings if it offers a definite return.

Leverage: An investor will be using their funds for investing, whereas speculators will use borrowed funds and lure the borrowers with attractive returns.

Attitude: Investors will generally follow a cautious and conservative approach while considering the investment and the risk appetite they can absorb. Speculators believe in an aggressive approach highlighting attack but careless attitude

Decision criteria: While making decisions, investors will conduct extensive research and focus on the fundamental factors of the company, such as the financial position, ratio analytics, etc. In contrast, speculative decisions are based on technical charts, market dynamics, and personal opinions/tips received.

Return expectations: Investors expect to profit from the change in the value of an asset, whereas speculators focus on extracting profits from price changes due to demand and supply forces.

1.2 Gambling

One should not mix speculation with gambling. Both these terms will often be used together, giving an impression that it means the same, but it is not.

Gambling refers to wagering money in an event that has an uncertain outcome in hopes of winning more money, whereas speculation involves taking a calculated risk in an uncertain outcome. It is purely a game of chance with the odds, not necessarily with the gambler.

For instance, a gambler will consider an American roulette game rather than speculating in the commodities market. However, the payout is only 35 to 1, while the odds against winning are 37 to 1.

Thus, if the bet is worth $5 on a single number, the potential income is $175, but the possibility of winning this amount is 1/37, and if the selected number does not arrive, the $5 is also lost.

Gambling is very much different from the above two as gambling purely depends on the intuition or instincts of the investor. The investor trusts his instincts and the sole basis that he employs his money in hope of winning that gamble to earn profits. However, the chance of winning that gamble is particularly very less.

Difference Between Investing and Gambling

- Investing is based on research, while gambling depends on luck

Investing is an activity which requires much research. Gambling solely hinges on emotions. Gambling, on the other hand, doesn't require much research. It's just one news that breaks through in the market, and it's the emotions that control the market. However, people often invest based on tips or rumors and research to gamble sometimes. So there is a thin line between the two. Hence, people often mistake investing with gambling.

- Investing gives ownership of an asset gambling doesn't

Investing in mutual funds or shares or any asset for that matter does provide us with ownership of the asset. In gambling, when you put your money, all you receive is more money or no money. There is no ownership of an asset that comes at the end of a gambling transaction. However, in investing, one can claim ownership of an asset.

- Investing is long term, and gambling is short term

Investing is usually done in the long run. For a period, more than a year in case of equity. The only exception to this case is investing in debt funds, short term bonds, and money market instruments. Gambling or trading is done during trading hours, and sometimes it can extend to a couple of weeks or months but nothing more.

- Investing involves less risk than gambling

Gambling usually is based on a principle of going all in. In gambling, if you lose, you lose it all. One can recover the money lost in trading or gambling through more trading or gambling, but only when additional money is introduced to continue the same. While investing, one can withdraw their investments (even it is a loss) and invest it elsewhere. No one loses the entire money invested. They face losses.

- Investing is well planned to reach a goal, gambling isn't

Investing is done with a goal in mind. To save up for retirement, or child's college fund or a vacation. Betting is done to earn more money, and most of the times purely for the pleasure of it. One can also plan their future goals based on gambling, but the risk is too high, and it will work only if the luck is in favor of them.

- Investing isn't addictive, gambling is

Gambling is considered a severe mental condition. Some organizations identify compulsive gambling as a problem and also deal with it. While there are no such problems identified for investing. Instead, investing is considered as a sound financial practice for a healthy economic life.

There is a thin line of difference between the two. Gambling is riskier than investing, and gamblers are high-risk takers, while investors risk tolerance levels are slightly lower. Though there are few similarities, there is a thin line that differentiates the two. Gambling is a risk taken under certainty, and investing involves risk under uncertain conditions. Gambling solely hinges on luck and investing hinges on patience, practice, and knowledge. The famous quote said by Bret Harte is true.

"The only sure thing about luck is that it will change."

Though most of the characteristics of investment and speculation overlap, one should understand the differences separating each other.

One should note that all investments are speculation, but all speculations are not necessarily investments. Both objectives are to earn profits; only the method involves a difference. There is nothing correct or incorrect in the approach, but it depends on the long-term objective of the individual and the quantum of risk they are willing to bear.

1.3 Investment Objectives

Investment objectives are related to what the client wants to achieve with the investments portfolios. Generally, the objectives are concerned with risk and return, which are interdependent, as the risk that you are willing to take, will determine your returns.

Return

Main objective is to reduce risk and to get maximum return.

1.**Return**: Investor expects regular income& appreciation.

Rate of return could be defined as total income investors receive during the holding period stated as a percentage of purchasing price at the beginning of the holding period.

$$\text{Return} = \frac{E1 - E0 + \text{dividend}}{E0} * 100$$

OR

$$\frac{\text{Dividend + capital appreciation}}{\text{Purchase price}} * 100$$

2. **Risk**: If your primary objective is safety, you will look for investments that have a minimal risk level. But then, the safest investments tend to have the lowest rates of return and may not even keep up with inflation.

1- Variability of rate of return

2- Probability of actual return less the expected.

Safe investments include government issued securities, money market instruments and securities guaranteed by banks.

3.**Liquidity**: Another investment objective is the liquidity of the type of investment you make. Liquidity is the ability to instantly trade/sell-off/convert assets into cash with ease in the market and with minimal risk of loss.

- Quickly
- Transaction cost is low
- Price change between two successive transactions is Low

While some securities are easier to liquidate, others may not be so. Most investors generally prefer investing in securities that are easier to liquidate and use during emergencies. If not entirely, they try to keep a part of their total investments in the form of readily marketable securities. Thus, if liquidity is one of your key objectives, you can consider investing in such securities too.

4.**Safety**: Everyone wishes to keep their money safe and secure. If you are a conservative investor who desires to get their initial capital investment at maturity on time and without losses, then indeed, the safety objective is essential to you.

1) Amount investment
2) Stability of return
3) Capital appreciation

5. Hedge against inflation: The purchasing power of money deteriorates heavily in a country which is not efficient or not well endowed, in relation to another country.

1) Rate of return > inflation
2) Dividend + capital appreciation > inflation

Investors who save for the long term, look for hedge against inflation so that their investments are not unduly eroded; rather they look for a capital gain which neutralizes the erosion in purchasing power and still gives a return.

5 **Tax Saving:** Income generated by common shareholders is considered capital gains and is taxed differently. Taxes on capital gains are significantly lower than taxes on interest income or ordinary income like salary.

If your primary objective is tax-saving, registered plans such as national pension schemes and tax free savings accounts are the best bet. However, there are also effective ways to earn good returns along with saving taxes like investing in tax saving mutual funds or life insurance policy.

As is evident, there are various investment objectives, with each one holding varying levels of importance to each investor. The goal is not to choose a single objective but to maintain a good balance between them all.

Your objectives of investment depend upon several factors such as your investment goals, lifestyle, age, financial security, risk appetite, and the returns you desire. Any investment, especially those with higher risks, will see some ups and downs. As an investor, you must brace for volatility and market fluctuations and not let your emotions affect your investment decisions.

1.4 Investment Process

An investment is the purchase of an asset with an expectation to receive return or some other income on that asset in future. The process of investment involves careful study and analysis of the various classes of assets and the risk-return ratio attached to it.

An investment process is a set of guidelines that govern the behavior of investors in a way which allows them to remain faithful to the tenets of their investment strategy, that is the key principles which they hope to facilitate out-performance.

Investment Policy: Objectives& Constraints

An investment policy statement provides a plan for achieving investment success. It is developed after a fact-finding discussion with the client aimed at obtaining information about risk tolerance and specific circumstances, and asset-liability management, liquidity needs, tax considerations, etc.

Components of an IPS

- Risk objectives-ability vs willingness
- Return objectives-absolute vs relative return
- Liquidity requirement
- Time horizon
- Legal and regulatory factors
- Unique circumstances

Review of Avenues for Investment

Investor must understand that all investment products fall into two broader baskets- financial assets and non-financial assets.

While opting for an investment avenue, one shall match his risk profile with the product. There are some investments which have potential to generate better inflation adjusted returns, compared to others but more often than not, they possess higher risk.

- Equity
- Mutual Funds
- Bonds or Debentures
- Bank Fixed Deposits (FDs)
- Public Provident Fund (PPF)
- National Pension System (NPS)
- Life Insurance
- Real Estate
- Gold

Investment Analysis

Investment analysis involves researching and evaluating a security or an industry to predict its future performance and determine its suitability to a specific investor.

With the objective of the in-depth analysis there are basic two methodology-

- Fundamental Analysis
- Technical Analysis:

The basic aim of Fundamental analysis is to appraise the intrinsic value of financial assets.

Intrinsic Value is the true economic worth of financial assets. That is each financial assets has a intrinsic value that represent its future economic worth.

The Fundamental analyst believes that due to temporary disequilibrium the current market prices may be at variance with the intrinsic value but in long run market price to move towards its "real value" intrinsic value.

If the "intrinsic/real value" of a stock is above the current market price, the investor would purchase the stock because he knows that the stock price would rise and move towards its "intrinsic or real value" If the intrinsic value of a stock was below the market price, the investor would sell the stock because he knows that the stock price is going to fall and come closer to its intrinsic value.

Technical analysis is a term used to denote a security analysis discipline for forecasting the direction of prices through the study of past market data, primarily price and volume.

It analyzes demand and supply, price and volume to predict future prices.

A trend in prices is believed to continue unless there is definite change and can be used to predict future prices.

Portfolio Construction

Portfolio is a combination of securities such as stocks, bonds and money market instruments.

The process of blending together the broad asset classes so as to obtain optimum return with minimum risk is called portfolio construction.

Approaches in Portfolio Construction

- Traditional approach evaluates the entire financial plan of the individual.
- In the modern approach, portfolios are constructed to maximize the expected return for a given level of risk.

Portfolio Revision

The process of addition of more assets in an existing portfolio or changing the ratio of funds invested is called as portfolio revision.

The sale and purchase of assets in an existing portfolio over a certain period of time to maximize returns and minimize risk is called as Portfolio revision.

There are two types of Portfolio Revision Strategies.

- Active Revision Strategy

Active Revision Strategy involves frequent changes in an existing portfolio over a certain period of time for maximum returns and minimum risks. Active Revision Strategy helps a portfolio manager to sell and purchase securities on a regular basis for portfolio revision.

- Passive Revision Strategy

Passive Revision Strategy involves rare changes in portfolio only under certain predetermined rules. These predefined rules are known as formula plans. According to passive revision strategy a portfolio manager can bring changes in the portfolio as per the formula plans only.

Portfolio Evaluation

Portfolio evaluating refers to the evaluation of the performance of the investment portfolio. It is essentially the process of comparing the return earned on a portfolio with the return earned on one or more other portfolio or on a benchmark portfolio.

The evaluation of the portfolio provides a feed back about the performance to evolve better management strategy. Evaluation of portfolio performance is considered to be the last stage of investment process.

Sharpe index measures the risk premium of the portfolio relative to the total amount of risk in the portfolio.

- Sharpe Index
- Treynor's Performance Index
- Jensen's Performance Index

The absolute risk adjusted return measure was developed by Michael Jensen.

The standard is based on the manager's predictive ability.

The basic model of Jensen is:

Rp = a + b (Rm – Rf)

Steps in Investment Process

When investing for lifelong goals, the portfolio planning process never stops. As investors move through their life stages, changes may occur, such as job changes, births, divorce, deaths, or shrinking time horizons, which may require adjustments to their goals, risk-reward profiles or asset allocations.

As changes occur, or as market or economic conditions dictate, the portfolio planning process begins anew, following each of the five steps to ensure that the right investment strategy is in place.

Investment is a process of acquiring an asset with an aim to generate money from it. Generating income from an asset can be through regular income or appreciation of the asset.

Investment Alternatives

Types of investments

There are different types of investment in the market, and we have bifurcated them into three main categories. They are-

- Fixed income investments: These investments give guaranteed returns in the form of interest. These are low-risk investments. Below is a list of few of the best fixed-income investments.
- Market linked investments: Market linked investments are those investments that do not guarantee returns and their returns are dependent on the market movements. These are considered high-risk investments. However, the returns from these investments are also high when the market rallies. Below is the list of the best market-linked investment options.
- Other investment: Investments that do not come under fixed income or market-linked investments are other investments. These are also called alternative investments.

1.5 Investment Alternatives Evaluation

"An asset is a resource controlled by the enterprise as a result of past events and from which future economic benefits are expected to flow to the enterprise."

An asset is a resource owned or controlled by an individual, corporation, or government with the expectation that it will generate a positive economic benefit. Common types of assets include current, non-current, physical, intangible, operating, and non-operating.

Investors in alternatives should carefully evaluate the risks related to each investment they're considering, and have a strong understanding of the underlying assets, yield, timing of payments, liquidity, place in the capital stack, potential risks, among other factors.

Generally speaking, alternatives don't behave quite the same way stocks, bonds, or cash do. And each different alternative investment requires different types of due diligence by a prospective investor.

Fortunately, asking a few strategic questions when you're personally vetting an investment opportunity can take you a long way through the evaluation process.

Equity Share

Share capital of co. is divided into smaller units of equal value called shares.

Equity shares basic features-no preferential rights in payments of divided & refund of capital.

Preference share

Preference share have preference in payment of capital and dividend.

The basic feature is Claim on income, Claim on assets, No controlling power.

Disadvantage:

No voting rights

No claim over surplus

No capital gains

Debenture

Debenture = Acknowledgement of debt issued under common seal setting forth term under which they are issued & to be paid.

The Important Features are:

Acknowledgement of Debt, Refund of Debt, Claim on Income, Claim on Assets.

Bonds

Just like individuals, companies and government bodies need fund for infrastructural development and social programs, for which they issue bonds to the public markets. The interested investors then buy the bonds to help these entities raise money.

In other words, bonds are fixed-income investment options that cover the loan made by an investor to a corporate or governmental borrower.

Government Securities

RBI on behalf of GOI Issue

Dated Government Securities-More than a year.

Treasury Bills-Short term money market instrument.14,28,91,128

Advantages: No Default Risk, Liquidity.

Disadvantages: Higher Interest Rates, Inflation.

Deposits

Bank Deposits: Fixed Deposits (FD) and Recurring Deposits (RD) have continued to be a popular investment among many investors especially those who seek guaranteed returns with minimal risk.

Post Office deposits: These are deposit avenues for investors made available by Post Office. This investment option was once introduced to help people inculcate the habit of disciplined savings in life while also providing investment avenues to aid in financial planning.

Tax Saving Schemes

PPF:

Public Provident Fund is a government backed scheme that provides guaranteed returns based on the applicable interest rate. The PPF interest rate in decided by the Government and liable to change every quarter. The current interest rate from PPF is 7.1% and will be in effect till September 2022.

Although the maturity period of PPF is 15 years, you can start the partial withdrawal of your money after completion of six years. However, you can also use your PPF balance as security to take loans. It falls under the EEE category of tax savings, since the principal amount, interest earned, and maturity amount – all are eligible for tax savings.

NSC:

The NSC scheme is available at all NSC post offices and the Indian Government promotes the NSC scheme. Due to the number of post offices present in India and the easy access to these post offices, the scheme has become very popular in India.

The main aim of the scheme is for individuals to make small or medium savings, and tax benefits are provided for these savings. Since the scheme is encouraged by the Indian Government, the risks of investing in the scheme are low.

Interest Paid: 6.8%, compounded half-yearly, Minimum investment: Rs. 1000,

Duration of investment: 6 years, Tax benefit under Section 80 'C' available.

Tax Saving Bonds Tax benefit under Section 80 'C' available.

Life Insurance

Contract between insurer & uninsured to pay insured or his nominated specified sum of many on an event.

Types-

Whole life insurance plan.

Endowment plan.

Term plan.

Plan for children.

Pension plans.

Advantage-

- Protection
- Easy payment
- Liquidity
- Tax relief

Mutual Fund

Intermediary which gather saving and canalizes them for steady return & capital appreciation.

Pool of resources

Professionally managed

Indirect investment

Agents of investors

They are broadly classified into-Open ended schemes, Closed ended schemes.

National Pension Scheme (NPS)

The National Pension System (NPS) also known as the National Pension Scheme was initially introduced to replace the pension schemes for State and Central Government employees. But from May 1, 2009 onwards NPS investments were made available to all citizens of India.

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Real Assets

Real Estate-Income tax Deduction, Capital Appreciation.

Precious Metal-Gold, Silver.

Hedge against Inflation, Liquidity, Prestige Value.

Precious Stones-Diamonds, Rubies, Emeralds,

Aesthetic appeal and rarity, less liquid, Assets tricky

Art Objects (Antiques)

Painting, Sculpture, Manuscript, Coin, other objects of old days.

Skill, Taste, Creativity, Imagination

Private Equity

Private equity is a broad category that refers to capital investment made into private companies, or those not listed on a public exchange. There are several subsets of private equity, including:

Venture capital, which focuses on startup and early-stage ventures

Growth capital, which helps more mature companies expand or restructure

Buyouts, when a company or one of its divisions is purchased outright.

Hedge Funds

Hedge funds are investment funds that trade relatively liquid assets and employ various investing strategies with the goal of earning a high return on their investment. Hedge fund managers can specialize in a variety of skills to execute their strategies, such as long-short equity, market neutral, volatility arbitrage, and quantitative strategies.

Commodities

Commodities are also real assets and mostly natural resources, such as agricultural products, oil, natural gas, and precious and industrial metals. Commodities are considered a hedge against inflation, as they're not sensitive to public equity markets.

Additionally, the value of commodities rises and falls with supply and demand—higher demand for commodities results in higher prices and, therefore, investor profit.

Collectibles

Collectibles include a wide range of items such as:

Rare wines

Vintage cars

Fine art

Mint-condition toys

Stamps

Coins

Baseball cards

Investing in collectibles means purchasing and maintaining physical items with the hope the value of the assets will appreciate over time.

Structured Products

Structured products usually involve fixed income markets—those that pay investors dividend payments like government or corporate bonds—and derivatives, or securities whose value comes from an underlying asset or group of assets like stocks, bonds, or market indices. Examples of structured products include credit default swaps (CDS) and collateralized debt obligations (CDO).

Structured products can be complex and sometimes risky investment products, but offer investors a customized product mix to meet their individual needs. They're most commonly created by investment banks and offered to hedge funds, organizations, or retail investors.

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1.6 Common Investor Mistakes

- Nobody's perfect. We are all going to have our wins and losses, especially when it comes to investing.

- But some of the mistakes you might make when trading stocks are actually pretty common and by no means reserved exclusively for you alone.
- In fact, the majority of investors make many of the following mistakes.
- You can significantly boost your chances of investment success by becoming aware of these typical errors and taking steps to avoid them.

1. **No Plan:** As the old saying goes, if you don't know where you're going, any road will take you there. Solution?

Have a personal investment plan or policy that addresses the following:

Goals and objectives - Find out what you're trying to accomplish. Accumulating 10,00000 for a child's college education or 2000000 lakh for retirement at age 60 are appropriate goals. Beating the market is not a goal.

Risks - What risks are relevant to you or your portfolio? If you are a 30-year-old saving for retirement, volatility isn't (or shouldn't be) a meaningful risk. On the other hand, inflation - which erodes any long-term portfolio - is a significant risk.

Asset allocation - What percentage of your total portfolio will you allocate to equities, international stocks, bonds, high-yield bonds, etc. Your asset allocation should accomplish your goals while addressing relevant risks.

Diversification - Allocating to different asset classes is the initial layer of diversification. You then need to diversify within each asset class. This means exposure to large-, mid- and small-cap stocks.

1. Constantly watching the markets

Of all the mistakes we heard, this one came up the most.

"I have told many clients to turn off their TVs and stop watching the daily market news," Danielle Harrison, a Missouri-based CFP at Harrison Financial Planning, tells Select.

While it's normal (and generally advised) to keep an eye on what's happening in the overall economy, it's easy to get swept up in the excitement or doom and gloom of it all.

The markets are constantly moving and trying to follow along in real-time can lead you to continuously checking or changing your investments when you're better off leaving them alone for the long haul.

"If we were running a marathon, it wouldn't make sense to track our mileage in quarter-mile increments," Lum says. "The same can be said about long-term investing, particularly in retirement accounts which traditionally have the longest time horizon."

3. Too Short of a Time Horizon

If you are saving for retirement 30 years hence, what the stock market does this year or next shouldn't be the biggest concern. Even if you are just entering retirement at age 70, your life expectancy is likely 15 to 20 years.

Of course, if you are saving for your daughter's college education and she's a junior in high school, then your time horizon is appropriately short and your asset allocation should reflect that fact. Most investors are too focused on the short term.

4. Too Much Attention Given to

Financial Media

There is almost nothing on financial news shows that can help you achieve your goals. Turn them off. There are few newsletter

rs that can provide you with anything of value. Even if there were, how do you identify them in advance?

Think about it - if anyone really had profitable stock tips, trading advice or a secret formula to make big bucks, would they blab it on TV or sell it to you for $49 per month? No - they'd keep their mouth shut, make their millions and not have to sell a newsletter to make a living.

5. Not Rebalancing

Rebalancing is the process of returning your portfolio to its target asset allocation as outlined in your investment plan. Rebalancing is difficult because it forces you to sell the asset class that is performing well and buy more of your worst performing asset classes.

This contrarian action is very difficult for many investors.

6. Overconfidence in the Ability of Managers

From numerous studies, including Burton Malkiel's 1995 study entitled, "Returns From Investing In Equity Mutual Funds", we know that most managers will underperform their benchmarks.

So why are so many investors confident of their abilities to time the market and select outperforming managers?

Fidelity guru Peter Lynch once observed, "There are no market timers in the 'Forbes' 400'." Investors' misplaced overconfidence in their ability to market-time and select outperforming managers leads directly to our next common investment mistake.

There is not enough time to recite many of the studies that prove that most managers and mutual funds underperform their benchmarks.

Index all or a large portion (70-80%) of all your traditional asset classes. If you can't resist the excitement of pursuing the next great performer, set aside a portion (20-30%) of each asset class to allocate to active managers.

This may satisfy your desire to pursue outperformance without devastating your portfolio.

7. Chasing Performance

Many investors select asset classes, strategies, managers and funds based on recent strong performance. The feeling that "I'm missing out on great returns" has probably led to more bad investment decisions than any other single factor.

If a particular asset class, strategy or fund has done extremely well for three or four years, we know one thing with certainty: We should have invested three or four years ago. Now, however, the particular cycle that led to this great performance may be nearing its end.

The smart money is moving out, and the dumb money is pouring in.

Stick with your investment plan and rebalance, which is the polar opposite of chasing performance.

Investors who recognize and avoid these common mistakes give themselves a great advantage in meeting their investment goals.

Most of the solutions above are not exciting, and they don't make great cocktail party conversation. However, they are likely to be profitable. And isn't that why we really invest?

Summary

Investment is a commitment of funds to derive the future income in the form of interest, dividend, rent, premium or appreciation in the value of principal capital. Speculation does not have a precise definition but involves purchasing an asset to profit from subsequent price changes and possible sales. Gambling refers to wagering money in an event that has an uncertain outcome in hopes of winning more money

An investment process is a set of guidelines that govern the behavior of investors in a way which allows them to remain faithful to the tenets of their investment strategy, that is the key principles which they hope to facilitate out-performance. There are different types of investment in the market, and we have bifurcated them into three main categories which are fixed income

investments, market linked investments. You can significantly boost your chances of investment success by becoming aware of these typical errors and taking steps to avoid them.

Keywords

Investment: Investment involves the allocation of money towards purchasing an asset, which is not to be consumed in the present but hoping it will generate stable income or is expected to appreciate in the future.

Debenture: It is acknowledgement of debt issued under common seal setting forth term under which they are issued & to be paid.

Hedge funds: Hedge funds are investment funds that trade relatively liquid assets and employ various investing strategies with the goal of earning a high return on their investment.

Life Insurance: It is contract between insurer & uninsured to pay insured or his nominated specified sum of many on an event.

Active Revision Strategy: It involves frequent changes in an existing portfolio over a certain period of time for maximum returns and minimum risks.

Passive Revision Strategy: Itinvolves rare changes in portfolio only under certain predetermined rules.

SelfAssessment

1. ---------- is a commitment of funds to derive the future income in the form of interest, dividend, rent, premium or appreciation in the value of principal capital.

A. Investment
B. Speculation
C. Gambling
D. None

2. ---------- involves purchasing an asset to profit from subsequent price changes and possible sales.

A. Investment
B. Speculation
C. Gambling
D. None

3. ----------is the ability to instantly trade/sell-off/convert assets into cash with ease in the market and with minimal risk of loss

A. Liquidity
B. Riskiness
C. Both
D. (d)None

4.Investment is ---------- risky then gambling.

A. More
B. Less
C. Equal
D. No difference

5.Gambling takes ----------time then investment.

A. More
B. Less
C. Equal
D. No difference

6. Rate of return should be ---------- inflation.

A. More
B. Less
C. Equal
D. No difference

7. If the "intrinsic/real value" of a stock is above the current market price, the investor would ----------the stock.

A. Purchase
B. Sell
C. Do nothing
D. Can't say

8. If the intrinsic value of a stock was below the market price, the investor would ---------- the stock.

A. Purchase
B. Sell
C. Do nothing
D. Can't say

9. The process of blending together the broad asset classes so as to obtain optimum return with minimum risk is called.

A. Portfolio construction
B. Portfolio revision
C. Portfolio Set
D. Not Applicable

10.The process of addition of more assets in an existing portfolio or changing the ratio of funds invested is called as portfolio revision.

A. Portfolio construction
B. Portfolio Revision
C. Portfolio Set
D. Not Applicable

11.----------involves frequent changes in an existing portfolio over a certain period of time for maximum returns and minimum risks

A. Active revision strategy

B. Passive revision strategy

C. Dynamic revision strategy

D. Not Applicable

12. Rate of return could be defined as total income investors receive during the holding period stated as a percentage of purchasing price at the beginning of the holding period.

A. True

B. False

13.Gambling is a risk taken under certainty, and investing involves risk under uncertain conditions. Gambling solely hinges on luck and investing hinges on patience, practice, and knowledge.

A. True

B. False

14. An investment policy statement provides a plan for achieving investment success.

A. True

B. False

15. Equity is less risky thandebentures.

A. True

B. False

Answers for Self Assessment

l.	A	2.	B	3.	A	4.	B	5.	B
6.	C	7.	A	8.	B	9.	A	10.	B
11.	A	12.	A	13.	A	14.	A	15.	B

Review Questions

1. What do you mean by Investment?
2. State the difference between investment speculation and gambling.
3. Enumerate the various steps in investment process.
4. Differentiate between fundamental and technical analysis.
5. Analyze in detail various alternatives available for investment..

Further Readings

Security Analysis And Portfolio Management By K Sasidharan& Alex K Mathews, Mcgraw Hill Education

Security Analysis And Portfolio Management By Pandian, Punithavathy, Vikas Publishing House.

Web Links

https://sponsored.bloomberg.com/article/yieldstreet/when-will-i-get-paid-questions-to-ask-before-choosing-alternative-investmentshttps://www.grandacademicportal.education/assets/images/documents/20191230074952.pdf

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Unit 02: Meaning and types of Financial Markets

CONTENTS

Objectives

After studying this unit, you should be able

- understanding meaning and role of financial market
- identify the different types of financial markets.
- interpret difference between money and capital markets
- interpret difference between forex and derivative markets.

Introduction

The financial market refers to the market where the sale and purchase of financial products occurs. Such products include stocks, bonds, currencies, derivatives, commodities, cryptocurrencies, etc. It acts as a platform for sellers and buyers to connect and deal in their desired financial assets at a price determined by market forces.

Financial markets facilitate the interaction between those who need capital with those who have capital to invest.

2.1 How Do Financial Markets Work?

Despite covering many different asset classes and having various structures and regulations, all financial markets work essentially by bringing together buyers and sellers in some asset or contract and allowing them to trade with one another.

This is often done through an auction or price-discovery mechanism. Thediagrammatically representation is shows as-

What are the main functions of Financial Markets?

Financial markets exist for several reasons, but the most fundamental function is to allow for the efficient allocation of capital and assets in a financial economy.

By allowing a free market for the flow of capital, financial obligations, and money the financial markets make the global economy run more smoothly while also allowing investors to participate in capital gains over time.

Functions of Financial Markets

1. Liquidity:

The first function of financial market is liquidity. The financial market provides liquidity for tradable assets by allowing for the purchase and sale of securities. Investors can sell the asset at any moment if they feel it is necessary to recoup their investment.

2. Cost determination:

Financial Markets assist in determining the capital worth of securities by allowing market forces to function on their own and determine the pricing of a tradable asset.

3. Platform:

Financial markets also provide as a venue for potential buyers and sellers to meet, interact, agree, and deal. This feature of the financial market not only saves interested parties a lot of time and money, but it also makes trading easier.

4. Mobilization of Savings:

According to another equation, financial markets are aspects in the global economy that reintroduce money into the economy by allowing it to be used in the purchase and sale of securities.

5. The Time Factor:

To be honest, it takes a lot of effort and time to operate in a typical market where people trade. A financial market, on the other hand, makes all of the information necessary for trading financial assets available. In the process, little money, effort, or time is expended in order to produce profitable results.

2.2 Who Are the Main Participants in Financial Markets?

Firms use stock and bond markets to raise capital from investors.

Speculators look to various asset classes to make directional bets on future prices, while hedgers use derivatives markets to mitigate various risks, and arbitrageurs seek to take advantage of mispricing or anomalies observed across various markets. Brokers often act as mediators that bring buyers and sellers together, earning a commission or fee for their services.

Stock Markets

Perhaps the most ubiquitous of financial markets are stock markets. These are venues where companies list their shares and they are bought and sold by traders and investors. Stock markets, or equities markets, are used by companies to raise capital via an initial public offering (IPO), with shares subsequently traded among various buyers and sellers in what is known as a secondary market.

Bond Markets

A bond is a security in which an investor loans money for a defined period at a pre-established interest rate. You may think of a bond as an agreement between the lender and borrower that contains the details of the loan and its payments.

Bonds are issued by corporations as well as by municipalities, states, and sovereign governments to finance projects and operations. The bond market also is called the debt, credit, or fixed-income market.

Money Markets

Typically, the money markets trade in products with highly liquid short-term maturities (of less than one year) and are characterized by a high degree of safety and a relatively low return in interest. At the wholesale level, the money markets involve large-volume trades between institutions and traders. At the retail level, they include money market mutual funds bought by individual investors and money market accounts opened by bank customers.

Derivatives Markets

A derivative is a contract between two or more parties whose value is based on an agreed-upon underlying financial asset (like a security) or set of assets (like an index).

Derivatives are secondary securities whose value is solely derived from the value of the primary security that they are linked to. In and of itself a derivative is worthless.

Forex Market

The forex (foreign exchange) market is the market in which participants can buy, sell, hedge, and speculate on the exchange rates between currency pairs. The forex market is the most liquid market in the world, as cash is the most liquid of assets.

Commodities Markets

Commodities markets are venues where producers and consumers meet to exchange physical commodities such as agricultural products, energy products, precious metals "soft" commodities. These are known as spot commodity markets, where physical goods are exchanged for money.

The bulk of trading in these commodities, however, takes place on derivatives markets that utilize spot commodities as the underlying assets.

Advantages of Functions of Financial Market

It aids in the creation of an open and regulated system for businesses to obtain substantial quantities of capital from the market in order to operate.

It serves as a conduit for potential investors' savings to pour into the economy. This will result in the formation of capital in the country.

It saves the parties' time, effort, and money because the traders do not have to devote their resources to locating possible vendors or buyers of the securities.

Disadvantages of Functions of Financial Markets

There is no financial market function that can determine a stock's genuine intrinsic value. Because of many macroeconomic considerations such as taxation, etc., there is no actual intrinsic value for a stock.

The trader needs a variety of information, which is provided by the financial market. This information must be accurate because the prices of the securities are strongly reliant on informational transparency to ensure that the right prices are established by the market for the assets.

There are many things that financial markets make possible, including the following:

Financial markets provide a place where participants like investors and debtors, regardless of their size, will receive fair and proper treatment.

They provide individuals, companies, and government organizations with access to capital.

Financial markets help lower the unemployment rate because of the many job opportunities it offers

2.3 Money and Capital Markets

FM is composed of two constituents.

(i) The money market,

(ii) The capital markets.

While the money market deals with the provision of short-term credit, the capital market deals in the lending and borrowing of medium-term and long-term and long-term credit.

Money Market:

The money market is "a market for short-term funds with maturity ranging from overnight to one year and includes financial instruments that are deemed to be close substitutes of money."

The money market developed because parties had surplus funds, while others needed cash.

It provides and users of short--term funds, and balances the demand for and supply of short-term funds by providing an equilibrium mechanism. It provides liquidity funding for the global financial system.

The instruments bear differing maturities, currencies, credit risks, and structure.

Features of Money Market

A few general money market features are:

- It is fund-term market funds.
- It's maturity period up to one year.
- It trades with assets that can be transformed into cash easily.
- All the transactions take place through phone, email, text, etc.

Broker not required for the transaction

A few general money market features are:The components of a money market are the Commercial Banks, Non-banking financial companies and Central Bank, etc. The money market functions are:

- transfer of large sums of money
- transfer from parties with surplus funds to parties with a deficit
- allow governments to raise funds
- help to implement monetary policy
- determine short-term interest rates

Types of Money Markets

Money market instruments have different securities, which can be utilised for short term borrowings. A few different types of market money are:

- **Call Money**- It portrays a short-term loan with maturities term starting from one day to fourteen days, and it can be repaid on demand.

- **Treasury Bill**- It is the oldest and traditional money market instrument and is practiced across the globe. The instrument is declared by the Government and does not have to pay any interest. This is available at a discounted rate at the time of issue.
- **Ready Forward Contract (Repo)-** The word repo is acquired from the phrase "repurchase agreement". It is an agreement that specifies the sale and purchase of an asset. In India, this agreement is prepared between different banks and sometimes between bank and RBI for short term loans.
- **Money Market MutualFund**- This is the alternative name for liquid funds and are the lowest risk debt funds.
- **Interest Rate Swaps**- Here, two parties sign an agreement, where one decides to pay a fixed rate of interest, and the other pays a floating rate of interest.

Capital Market

Capital is often defined as "wealth used in the production of further wealth." In simple words, it comprises the money value invested in a business unit.

Market is that place where buyer and sellers are contact to each other. And when these two words are merged together make capital market. A business enterprise can raise capital from various sources which long-term funds and short-term funds can be raised either through issue of securities or by borrowing from certain institutions.

Features of Capital Market

Important features of the capital market are:

- Unites entrepreneurial borrowers and savers
- Deals with long-term investments.
- Agents are required.
- It is controlled by government rules and regulations.
- Deals in both commercial and non-commercial securities.
- Foreign Investors.

Types of Capital Market

The Capital Market instrument involves both the auction market and dealer market. It is classified into two sections: Primary Market and Secondary Market.

Primary Market: Here, fresh contracts are given to the people for the subscription purpose.

Secondary Market: The securities that have already been issued are exchanged among investors.

Role of Capital Market

Mobilization of Savings: Capital market is an important source for mobilizing idle savings from the economy. It mobilizes funds from people for further investments in the productive channels of an economy. In that sense it activates the ideal monetary resources and puts them in proper investments.

Capital Formation: Capital market helps in capital formation. Capital formation is net addition to the existing stock of capital in the economy. Through mobilization of ideal resources, it generates savings; the mobilized savings are made available to various segments such as agriculture, industry, etc. This helps in increasing capital formation.

Provision of Investment Avenue: Capital market raises resources for longer periods of time. Thus, it provides an investment avenue for people who wish to invest resources for a long period of time. It

provides suitable interest rate returns also to investors. Instruments such as bonds, equities, units of mutual funds, insurance policies, etc. definitely provides diverse investment avenue for the public.

Speed up Economic Growth and Development: Capital market enhances production and productivity in the national economy. As it makes funds available for long period of time, the financial requirements of business houses are met by the capital market. It helps in research and development. This helps in, increasing production and productivity in economy by generation of employment and development of infrastructure.

Service Provision: As an important financial set up capital market provides various types of services. It includes long term and medium-term loans to industry, underwriting services, consultancy services, export finance, etc. These services help the manufacturing sector in a large spectrum.

Continuous Availability of Funds: Capital market is place where the investment avenue is continuously available for long term investment. This is a liquid market as it makes fund available on continues basis. Both buyers and seller can easily buy and sell securities as they are continuously available. Basically, capital market transactions are related to the stock exchanges. Thus marketability in the capital market becomes easy.

Money Market versus Capital Market

Basis of comparison	Money market	Capital market
Definition	Money market is a place where we invest for the short term on instruments like trade credit, commercial paper, certificate of deposit, treasury bills etc.	Capital Market is a type of financial market in which the company or government securities invest for the long term in the instruments such as bonds, stocks, etc.
Nature	Money markets are casual in nature.	Capital markets are formal or official. It is known for dealing in mutual stocks and bonds.
Instruments	Commercial Papers, Treasury certificates of deposits, Bills, Trade Credit, etc., are included in the money market.	Bonds, Debentures, splits, Asset Secularization, Retained Earnings, Euro Issues, etc., are included in the capital market.

Types of investors	Commercial banks, non-financial institutions, central banks, chit funds, etc., are the primary investor types.	Stockbrokers, insurance companies, Commercial banks, underwriters, etc., are the primary investor types.
Liquidity of market	Money markets are incredibly fluid.	Capital markets are relatively more minor liquid.
Security	Money markets have low risk.	Capital markets have a significant risk in comparison to money markets.
Time	Instrument matures in a year.	Instruments take much time to get mature.

2.4 Forex and Derivative markets

Forex Market

The foreign exchange market refers to a market where foreign currencies are bought and sold.

It is by far the busiest and most active of the financial markets, with turnover comfortably exceeding that of bonds and equities

In a typical foreign exchange transaction, a party purchases a quantity of one currency by paying a quantity of another currency, i.e., currencies are bought and sold against each other.

The foreign exchange market determines the relative values of different currencies.

The Foreign Exchange Market-Features

The foreign exchange market is unique because of

- its huge trading volume representing the largest asset class in the world leading to high liquidity;
- its geographical dispersion;
- its continuous operation: 24 hours a day except weekends, i.e., trading from The market is open 24 hours a day in different parts of the world, from 5 p.m. EST on Sunday until 4 p.m. EST on Friday;
- The variety of factors that affect exchange rates;
- The low margins of relative profit compared with other markets of fixed income; and
- The use of leverage to enhance profit and loss margins and with respect to account size.

The Foreign Exchange Market-Function

The following are the important functions of a foreign exchange market:

To transfer finance, purchasing power from one nation to another. Such transfer is affected through foreign bills or remittances made through telegraphic transfer. (Transfer Function).

To provide credit for international trade. (Credit Function).

Because the movement of goods between countries takes time, inventory in transit must be financed.

To make provision for hedging facilities, i.e., to facilitate buying and selling spot or forward foreign exchange. (Hedging Function).

The foreign exchange market provides "hedging" facilities for transferring foreign exchange risk to someone else.

Structure of Indian Forex

As per FERA the responsibility and the authority of the foreign exchange administration is vested with the RBI.

They have formed the foreign exchange dealers association of India, which frames rules regarding the conduct of business and coordinates with the RBI in the proper administration of foreign exchange control.

First tier: The first tier covers the transactions between the Reserve Bank (RBI) and authorized dealers (AD'S)

Second Tier Market: The second-tier market is the interbank market where AD'S transact business among themselves. They normally do their business within the country. They do it normally through a recognized broker.

Third Tier Market: The third tier of the forex is represented by the primary market where AD'S transact in foreign currency with the customer.

The tourist exchange currency, exporter and importer exchange currency and all these transactions comes under the primary market.

Derivative Market

Derivative: It is a financial instrument whose value is derived (hence the name derivative) from the value of an underlying asset. Underlying asset: It can be stocks, indices, bonds, commodities, currency, rates, etc.

If the underlying asset of the derivative contract is coffee, wheat, pepper, cotton, gold, silver, precious stone then the derivative is known as a commodity derivative.

If the underlying is a financial asset like debt instruments, currency, share price index, equity shares, etc, the derivative is known as a financial derivative.

Some common examples of derivatives are Forwards, Futures, Options and Swaps.

Why Derivative?

Risk management: The most important purpose of the derivatives market is risk management.

Derivatives are risk-shifting devices. Derivatives help to improve market efficiencies because risks can be isolated and sold to those who are willing to accept them at the least cost.

Market efficiency: Efficient markets are fair and competitive and do not allow an investor to make risk free profits. Derivatives assist in improving the efficiency of the markets, by providing a self-correcting mechanism.

Price discovery: One of the primary functions of derivatives markets is price discovery. Derivative market information helps people make better estimates of future prices. Derivative market information helps people with their production or consumption decisions

Reasons for Derivative Trading?

- To hedge or insure risks; i.e., shift risk.
- To reflect a view on the future direction of the market, i.e., to speculate.
- To lock in an arbitrage profit.

Summary

Financial markets facilitate the interaction between those who need capital with those who have capital to invest.Financial markets exist for several reasons, but the most fundamental function is to allow for the efficient allocation of capital and assets in a financial economy.

Speculators look to various asset classes to make directional bets on future prices, while hedgers use derivatives markets to mitigate various risks, and arbitrageurs seek to take advantage of mispricing or anomalies observed across various markets. By allowing a free market for the flow of capital, financial obligations, and money the financial markets make the global economy run more smoothly while also allowing investors to participate in capital gains over time.

The foreign exchange market refers to a market where foreign currencies are bought and sold. It is by far the busiest and most active of the financial markets, with turnover comfortably exceeding that of bonds and equities. In a typical foreign exchange transaction, a party purchases a quantity of one currency by paying a quantity of another currency, i.e., currencies are bought and sold against each other.

Derivative is a financial instrument whose value is derived from the value of an underlying asset. Underlying asset: It can be stocks, indices, bonds, commodities, currency, rates, etc. If the underlying asset of the derivative contract is coffee, wheat, pepper, cotton, gold, silver, precious stone then the derivative is known as a commodity derivative. If the underlying is a financial asset like debt instruments, currency, share price index, equity shares, etc., the derivative is known as a financial derivative. Some common examples of derivatives are Forwards, Futures, Options and Swaps.

Keywords

Bond: A bond is a security in which an investor loans money for a defined period at a pre-established interest rate.

Call Money- It portrays a short-term loan with maturities term starting from one day to fourteen days, and it can be repaid on demand.

Forex Market: It is market in which participants can buy, sell, hedge, and speculate on the exchange rates between currency pairs.

Hedging: It is a strategy that tries to limit risks in financial assets. It uses financial instruments or market strategies to offset the risk of any adverse price movements.

SelfAssessment

1. Money markets are for the market for----------

A. Short term period
B. Long term period
C. Both
D. None

2. ---------- it is a market where securities are issued for first time.

A. Primary market
B. Secondary market
C. Moth of the above
D. None of the above

3. ----------it is a market where existing securities are traded.

A. Primary market

B. Secondary market

C. Moth of the above

D. None of the above

4.The first tier covers the transactions between the Reserve Bank (RBI) and ----------.

A. Authorized dealers

B. Bank

C. Both

D. None

5. The third tier of the forex is represented by the primary market where AD'S transact in foreign currency with the ----------.

A. Bank

B. Customer

C. (c)Both of the above

D. (d)None of the above

6. ---------- is the largest market in terms of volume.

A. Stock market

B. Forex market

C. Commodity market

D. Not Applicable

7. A person selects a shirt in a shop and agrees on a price, the settlement (exchange of funds for goods) takes place immediately. This is an example of----------

A. Spot market

B. Derivative market

C. Forex market

D. Not Applicable

8. If the underlying asset of the derivative contract is currency it is the example of----------

A. Financial Derivative

B. Commodity Derivative

C. Both of the above

D. Not Applicable

9.If the underlying asset of the derivative contract is coffee it is the example of

A. Financial Derivative

B. Commodity Derivative

C. Both of the above

D. Not Applicable

10. In future market ---------- exist.

A. Counterparty risk
B. No counterparty risks
C. Somewhat Counterparty risk
D. Not applicable

11. In forward market there exist ----------.

A. Counterparty risk
B. No counterparty risks
C. Somewhat Counterparty risk
D. Not applicable

12.Financial markets facilitate the interaction between those who need capital with those who have capital to invest.

A. True

B. False

13. Capital market is an important source for mobilizing idle savings from the economy. It mobilizes funds from people for further investments in the productive channels of an economy.

A. True

B. False

14. Derivatives are risk-taking devices.

A. True

B. False

15. The foreign exchange market provides "hedging" facilities for transferring foreign exchange risk to someone else.

A. True

B. False

Answers for Self Assessment

l.	A	2.	A	3.	B	4.	A	5.	B
6.	B	7.	A	8.	A	9.	B	10.	B
11.	A	12.	A	13.	A	14.	B	15.	A

Review Questions

1. Differentiate between money market and capital market.

2. What do you mean by financial market?
3. What is the structure of forex market?
4. Enumerate implications of International monetary system for finance manager.
5. Explain in detail need and importance of derivative market in the economy.

Further Readings

Security Analysis And Portfolio Management By K Sasidharan& Alex K

Mathews, Mcgraw Hill Education

Security Analysis And Portfolio Management By Pandian, Punithavathy, Vikas Publishing House.

Web Links

https://www.investopedia.com/terms/f/financial-market.asp

https://corporatefinanceinstitute.com/resources/capital-markets/primary-market

https://en.wikipedia.org/wiki/Foreign_exchange_market

https://en.wikipedia.org/wiki/Derivative_(finance)

Unit 03: Equity Markets

CONTENTS

Objectives

After studying this unit, you should be able

- understand the meaning of securities and securities market
- Interpret the issues in the primary and secondary markets.
- analyze how new issue is issued in the market.
- analyze how secondary market works.

Introduction

Securities are fungible and tradable financial instruments used to raise capital in public and private markets. There are primarily three types of securities: equity—which provides ownership rights to holders; debt—essentially loans repaid with periodic payments; and hybrids—which combine aspects of debt and equity.

Security market also called capital market which may be defined as the organized market for effective & efficient transfer of money, capital, or financial resource from investing parties to individuals & institutions engaged in industry or commerce either in the private or public sector of the economy.

3.1 Function of& Segment of Securities Market

The basic functions of securities markets are: capital formation, liquidity, and risk management. Functions of the security market are:

- Link between investors & savers.
- Encouragement to save.
- Encouragement to investment.
- Promotes Economic Growth.
- Stability in security prices.
- Benefits to investors.

The securities market has two inseparable segments and is interdependent.

- Primary Market
- Secondary Market

"The foreign exchange market is a place where foreign currencies are bought and sold"C.

3.2 Primary Market

The primary market, also known as the new issue market, is where issuers raise capital by issuing securities to investors. New securities are issued in this market.

The new issue market deals with the new securities which were not previously available to investing public. i.e., securities that are available to investing public first time. Thus, it mobilizes savings from savers to borrow for production purposes.

The key function of the primary market is to facilitate capital growth by enabling individuals to convert savings into investments. It facilitates companies to issue new stocks to raise money directly from households for business expansion or to meet a financial obligation.

Function of New Issue Market

The main service functions of the primary market are:

1. Origination: Origination is a work that begins before an issue is actually floated in the market. It deals with mainly with:
   - Time of Floating of an Issue
   - Type of Issue
   - Price
2. Underwriting: Underwriting is a kind of guarantee undertaken by an institution or firm of brokers ensuring the marketability of an Issue.
3. Distribution: The third function is that of distribution of Shares. Distribution means the function of selling shares and debentures to the investor which is performed by brokers and agents

There are many ways and means by which a company can issue its shares in the financial market. They are as follows

- Public Issue
- Rights Issue
- Private Placement

Advantages of Primary Market

- A Cost-Effective Way to Raise Capital: Companies can raise capital for their business cost-effectively and seamlessly in a primary market. Also, securities offered in the primary market can almost be instantly sold in the secondary market, thus providing high liquidity.

- fewer Chances of Price Manipulation: As compared to the secondary market, there are fewer chances of price manipulation in the primary market. This leads to better transparency and operations.
- A Cost-Effective Way to Raise Capital: Companies can raise capital for their business cost-effectively and seamlessly in a primary market. Also, securities offered in the primary market can almost be instantly sold in the secondary market, thus providing high liquidity.
- fewer Chances of Price Manipulation: As compared to the secondary market, there are fewer chances of price manipulation in the primary market. This leads to better transparency and operations.
- Offers Diversification: Primary market serves as a potential avenue for diversification for investors, thus bringing down the quantum of risk. Investors can allocate their investments across asset classes in multiple financial instruments.

Disadvantages of Primary Market

- Possibility of deceiving investors
- No historical trading data
- No fixed norms for project appraisal.
- Ineffective role of merchant bankers.

3.3 Secondary Market

The secondary market makes possible trades in already-issued securities, in this manner facilitating investors to exit from an investment or new investors to buy the already existing securities. The primary market makes the possible creation of financial assets, and the secondary market facilitates their marketability/, which makes these two divisions of the Financial Markets - mutually dependent and undividable.

Participants in Stock Market

The stock market participants can generally be categorized into a few groups like,

- Investors,
- Companies,
- Stock exchanges,
- Regulators,
- Financial intermediaries,
- Depository and depository participants,
- Clearing Corporation,
- Transfer Agents,
- Credit Rating Agencies,
- Investment Advisers.

3.4 New Issue Market

The primary market refers to the set-up which helps the industry to raise the funds by issuing different types of securities. This set-up consists of the type of securities available, financial institutions and the regulatory framework.

The primary market discharges the important function of transfer of savings especially of the individuals to the companies, the mutual funds, and the public sector undertakings.

Primary capital market directly contributes in capital formation because in primary market company goes directly to investors and utilizes these funds for investment in buildings, plants, machinery etc.

Features of New Issue Market

1. It is related with New Issues: The new issue market is related to new issues. When an old or new company sells a fixed number of shares which is called Initial public offering (IPO).

2.It has No Particular Place: Another feature of the new issue market is new issues are offered in the market, but there is no specific place to issue the shares.

3. It has Various Methods of Floating Capital: New issue market has numerous methods of floating capital such as an offer for sale, public issue, and private placement.

4. It Comes before Secondary Market: The transactions are first made in the primary market. The turn of the secondary market comes later.

Example:

Say a new IT company has developed a program to make cash exchanges easily available worldwide. It has been successful in both generating revenues and garnering interest from the venture capital community. To grow, however, it believes it needs more capital, approximately $30 million, which it doesn't have on hand. As such, it needs to raise this capital through external sources.

The company engages with investment banks to see what their shares could be worth on the open market, and the banks' underwriters indicate that $19 per share would be a fair IPO price, valuing the company at just under $100 million.

The company's board of directors agrees to list shares of the company and they file for an IPO to release a number of shares worth half the total valuation, so $50 million.

With the new issue, the company raises capital and becomes listed on a stock exchange where its shares are freely tradeable. The new issue resulted in the company raising $50 million, slightly more than the $30 million they estimated that they needed for growth.

Function of New Issue Market

1. Origination: Origination is a work that begins before an issue is actually floated in the market.

2.Underwriting: Underwriting is a kind of guarantee undertaken by an institution or firm of brokers ensuring the marketability of an Issue.

3.Distribution: Distribution means the function of selling shares and debentures to the investor which is performed by brokers and agents

Advantages of Primary Market

- A Cost-Effective Way to Raise Capital: Companies can raise capital for their business cost-effectively and seamlessly in a primary market. Also, securities offered in the primary market can almost be instantly sold in the secondary market, thus providing high liquidity.
- Fewer Chances of Price Manipulation: As compared to the secondary market, there are fewer chances of price manipulation in the primary market. This leads to better transparency and operations.
- Offers Diversification: Primary market serves as a potential avenue for diversification for investors, thus bringing down the quantum of risk. Investors can allocate their investments across asset classes in multiple financial instruments.

Disadvantages of Primary Market

- Possibility of deceiving investors

- No historical trading data
- No fixed norms for project appraisal.
- Ineffective role of merchant bankers.

Flotation- Meaning

It is the method of making shares available to public investors. It is when a company decides to go public for its shares. The floatation of a company gives it a firm grip in the primary and secondary market. It can raise more money for its company and aim towards more development.

The new issue market deals with the new securities which were not previously available to investing public. i.e. securities which are available to investing public first time. Thus it mobilizes savings from savers to borrow for production purpose.

There are many ways and means by which a company can issue its shares in the financial market. They are as follows

Public Issue: Public issue means an invitation by a company to public subscribing the securities through prospectus. When an offer is made by the company so that more and more people become a part of the shareholder's family, it is known as a public issue.

Public issue through prospectus is common and popular method of issue of securities. Public Issue is further divided into:

- Initial Public Offer (IPO)

Through Initial Public Offer or IPO, the specific securities are available for subscription to the public for the very first time. The Initial Public Offering had many methods making it public, including fixed price method, book building method, or an amalgamation of both.

- Further Public Offer (FPO)

When a company issues shares to the public after an IPO, it is called as further (Follow on) public offer. Thus, every issue of shares by a listed company after its IPO is called as FPO. FPO leads to an increase in the subscribed capital of a company.

IPO Process Steps

Step 1: Hiring Of An Underwriter Or Investment Bank. ...

Step 2: Registration For IPO. ...

Step 3: Verification by SEBI: ...

Step 4: Making An Application To The Stock Exchange. ...

Step 5: Creating a Buzz By Roadshows. ...

Step 6: Pricing of IPO. ...

Step 7: Allotment of Shares.

Prospectus

Detailed statement of terms and conditions are known as prospectus. Fixed price & Book Building method

Application Supported by Blocked Amount

ASBA abbreviated as Application Supported by Blocked Amount is an IPO application process developed by SEBI. It is an application containing an authorization to block the application money in the bank account, for subscribing to an IPO issue.You cannot use the blocked amount for any purpose. However, you can continue to earn interest in the blocked amount.

As an investor, if you apply through ASBA, your money gets debited from your bank account only if your application is selected for allotment. It is refunded to your bank account if you do not get the IPO issue or the issue has been withdrawn.

Benefits of ASBA

When money is blocked in your bank account, you do not lose out on interest income. You continue to earn interest on the blocked amount.

The ASBA eliminates the need to pay money via cheques and demand drafts.

The ASBA facility is hassle-free and does not involve any cost. You can easily apply via Net banking without submitting any physical documentation.

The investors need not worry about the refunds. In case there is no allotment of shares, the money is unblocked from your bank account for further use.

Rights Issue

The shares that are being offered to the existing shareholders of any company are termed as a rights issue in the primary market.

However, the shares are offered in a particular proportion and not haphazardly. The amount of funds needed by the company decides the proportion of the securities to be sold to the shareholders.

It is Privileged subscription and is a reward for existing investment.

As per section 81 company has to satisfy certain conditions to issue right issue

When a company is planning an expansion of its operations, it may require a huge amount of capital.

Instead of opting for debt, they may like to go for equity to avoid fixed payments of interest. To raise equity capital, a rights issue may be a faster way to achieve the objective.

Reasons for a Rights Issue

A project where debt/loan funding may not be available/suitable or expensive usually makes a company raise capital through a rights issue. Companies looking to improve their debt-to-equity ratio or looking to buy a new company may opt for funding via the same route. Sometimes troubled companies may issue shares to pay off debt in order to improve their financial health.

Share capital increases depending on the rights issue ratio. The company gets positive cash flow (from financing), which can be used to improve its operations. Effective EPS, book value, and other per-share metrics decline because of the higher number of shares (see diluted EPS). Market price gets adjusted (after book close) after the issuance of rights shares.

Private Placement

As per the name, private placement is the method of placing the shares from a company to a selected number of people. The number of people should not exceed 50 or as prescribed in any case. When the issuing of the shares by the issuer is not a public issue nor a rights issue, it is termed as a private placement in the primary market.

Since the issuing of the shares is private and limited, mainly brokers buy these securities and further sell them to their clients. The brokers are wholesalers of the stocks here.

The promoters can sell a portion of the securities to their family members, friends, or well-wishers. However, the promoters have to make a minimum contribution before the issue is made public. Mutual funds, financial institutions, and other such organisations subscribe to private placement orders.

The private placement in the primary and secondary market can be of two kinds:

Preferential Issue/Allotment

Preferential Issue deals with issuing securities to a selected or specific group of people. It is done on a private placement basis. The issue price should be higher than the average high or low of the closing price.

Qualified Institutions Placement (QIP)

As the name suggests, the Qualified Institutions Placement is only made to the renowned institutions in the financial sector. The shares can be converted to equity.

Numerous methods can achieve floatation in the new issue market.

From the four method of floatation discussed above, offer to public through prospectus and right issue to existing shareholders is popular for the floatation of shares.

3.5 Secondary Market

The secondary market, also called the aftermarket and follow-on public offering, is the financial market in which previously issued financial instruments such as stock, bonds, options, and futures are bought and sold. Securities that investors already own are bought and sold in the secondary market.

Once the new securities are issued in the primary market, they are traded in the stock (secondary) market up and onwards from the listing day. The listing of stock enables liquidity and earning of reputation.

 Examples of popular secondary markets are the National Stock Exchange (NSE), the New York Stock Exchange (NYSE), the NASDAQ, and the London Stock Exchange (LSE).

For example, if you want to buy Apple stock, you will purchase the stock from investors who already own the stock rather than Apple. Apple would not be involved in the transaction.

The secondary market is important for several reasons:

- Investment platform– The secondary market is a platform for investors to enter into buying and selling securities to and from each other.
- Continuous Market for Securities– The secondary market operates continuously to facilitate trading securities between its participants. There are a plethora of securities of many large, medium and small companies. If an investor doesn't like one investment, there are more to choose from.
- Liquidity– Liquidity is the ability of an asset to be converted quickly to cash. Securities are usually more liquid than physical assets, but they are less liquid than cash itself and banks demand deposits. As the volume traded for a security increases, so does liquidity. Liquidity is valuable in complex economies
- Transactions Costs– The secondary market lowers the transaction costs associated with buying and selling financial assets due to the high volume of transactions.
- Safety for Investor's Money– The secondary market is so vital for our economy and its liquidity and capital formation that it is heavily regulated by the government. The regulations ensure that fraud will be at a minimum.
- Reacts Quickly to News– There is very little time lag between economic and company news and its reflection in the price of securities.

Components of the Secondary Market

The securities market is classified into the following markets and further different types of instruments are traded in these markets.

Cash /Equity Markets:

The equity segment allows dealing in shares, debentures, warrants, mutual funds, ETFs.

Equity Derivatives Market:

The derivatives segment allows trading in derivative instruments. It is a product whose value is derived from the value of one or more basic variables and is called bases (underlying asset, index). The underlying asset can be equity, forex, commodity or any other asset.

Debt Market:

The debt market consists of bond markets that provide financing through the issuance of bonds.

Corporate Bond Market:

Bonds issued by firms are Corporate bonds and are issued to meet needs for expansion, modernization, restructuring operations, mergers, and acquisitions.

Forex Market:

The foreign exchange market is where currency trading takes place. Currently, the Forex market is one of the largest and most liquid financial markets in the world and includes trading between large banks, central banks, currency, speculators, corporations, governments, and other financial institutions.

Commodity Derivatives Market:

Commodity markets enable the exchange of raw or, primary products. Raw commodities are traded on standardized commodities exchange in which they are purchased and sold in well–defined contracts. The trading in gold, silver and agricultural goods is also facilitated under this market.

Types of Secondary Market

There are two types of secondary markets–stock exchanges and over-the-counter markets

Stock Exchanges

One will not find direct contact between the seller and the buyer of securities in this type of secondary market. Regulations are in place to ensure the safety of trading. In this case, the exchange is a guarantor, so there is almost no counterparty risk. Exchanges have relatively high transaction costs because of exchange fees and commissions.

Over the Counter Markets

Investors trade among themselves on these decentralised markets. In such markets, there is fierce competition to get higher volumes, which leads to price differences between sellers. Due to the one-to-one nature of the transaction, the risk is higher than with exchanges. Examples of OTC markets include a foreign exchange.

How Secondary Market Works?

The secondary market is where investors buy and sell previously issued securities. It is important to the economy because it promotes capital formation and provides for price discovery based on the economic laws of supply and demand. In addition, it enhances liquidity and, because it is heavily regulated, gives participants a measure of assurance that business can be conducted safely and with a measure of predictability.

After the securities are issued, they are bought and sold in the secondary market. If you buy newly issued stock from Microsoft, you are buying stock released into the primary market. The money from investors who buy Microsoft's new stock is used by the company for financing its operations. After the issuance of the securities, the investors who initially bought them from Microsoft sell them to investors who want to make a profit.

When investors start buying the shares of Microsoft from each other rather than from the company, they are trading in the secondary market. The money from buying and selling the shares of Microsoft in the secondary market provided the price is rising, is a gain for investors.

Microsoft has already received its financing from its equity issue from the investors who purchased the stock directly from the tech giant in the primary market.

Participants in Secondary Equity Market

The following are the major participants in the secondary market-Foreign exchange transactions

3.6 Currency Futures Contract

A future contract is a standardized agreement that calls for the delivery of a currency at some specified future date.Major features of Futures are-

- Organized Exchange
- Standardization
- Clearing House
- Margins
- Marking to Market

A future buyer is said to be in a long position and a future seller is said to be in a short position.

Currency Futures Contract

A currency future, also known as an FX future, is a future contract to exchange one currency for another at a specified date in the future at a price (exchange rate) that is fixed on the purchase date.

On NSE, the price of a future contract is in terms of INR per unit of other currency, e.g. US dollars. Currency future contracts allow investors to hedge against foreign exchange risk.

Currency Derivatives are available on four currency pairs viz. US Dollars (USD), Euro (EUR), Great Britain Pound (GBP) and Japanese Yen (JPY).

3.7 Stock Exchange in India

Indian stock exchange is one of the oldest markets in Asia and is a yardstick to measure the health and progress of the economy of the country. Over the course of the period, the market has transitioned into the electronic market and securities are dealt in dematerialization form. There are two major stock exchanges in India- National Stock Exchange of India (NSE) and Bombay Stock Exchange (BSE). National Stock Exchange was established in Mumbai in 1992 and started trading in 1994. Bombay Stock Exchange was established in 1875 in Mumbai.

Bombay Stock Exchange

Bombay Stock Exchange was started by Premchand Roychand in 1875. While BSE Limited is now synonymous with Dalal Street, it was not always so. In the 1850s, five stock brokers gathered together under a Banyan tree in front of Mumbai Town Hall, where Horniman Circle is now situated.

A decade later, the brokers moved their location to another leafy setting, this time under banyan trees at the junction of Meadows Street and what was then called Esplanade Road, now Mahatma Gandhi Road. With a rapid increase in the number of brokers, they had to shift places repeatedly.At last, in 1874, the brokers found a permanent location, the one that they could call their own. The

brokers group became an official organization known as "The Native Share & Stock Brokers Association" in 1875.

The Bombay Stock Exchange continued to operate out of a building near the Town Hall until 1928. The present site near Horniman Circle was acquired by the exchange in 1928, and a building was constructed and occupied in 1930. The street on which the site is located came to be called Dalal Street in Hindi (meaning "Broker Street") due to the location of the exchange.On 31 August 1957, the BSE became the first stock exchange to be recognized by the Indian Government under the Securities Contracts Regulation Act. Construction of the present building, the Phiroze Jeejeebhoy Towers at Dalal Street, Fort area, began in the late 1970s and was completed and occupied by the BSE in 1980.Initially named the BSE Towers, the name of the building was changed soon after occupation, in memory of Sir Phiroze Jamshedji Jeejeebhoy, chairman of the BSE since 1966, following his death.

In 1986, the BSE developed the S&P BSE SENSEX index, giving the BSE a means to measure the overall performance of the exchange. In 2000, the BSE used this index to open its derivatives market, trading S&P BSE SENSEX futures contracts. The development of S&P BSE SENSEX options along with equity derivatives followed in 2001 and 2002, expanding the BSE's trading platform.

Historically an open outcry floor trading exchange, the Bombay Stock Exchange switched to an electronic trading system developed by Cmc ltd. in 1995. It took the exchange only 50 days to make this transition. This automated, screen-based trading platform called BSE On-Line Trading (BOLT) had a capacity of 8 million orders per day.BSE's current speed of order execution is 10 milliseconds and its online trading system (BOLT) handles more than 20,000 orders per second and 100 million orders every day. Till January 2022, BSE's market cap was 276.713 lakh crore (US$3.7 trillion), with 5439 listings on the exchange.

National Stock Exchange

NSE's sustained leadership positions across asset classes in the Indian and global exchange sectors demonstrates the robustness and liquidity of our exchange. National Stock Exchange has a total market capitalization of more than US$3.4 trillion, making it the world's 9th-largest stock exchange as of August 2021.

R.H. Patil, who founded the National Stock Exchange (NSE) in 1992 and built it into the country's largest bourse, died on Thursday at the age of 74 while undergoing treatment for cancer.NSE was incorporated in 1992. It was recognized as a stock exchange by SEBI in April 1993 and commenced operations in 1994 with the launch of the wholesale debt market, followed shortly after by the launch of the cash market segment.NSE launched electronic screen-based trading in 1994, derivatives trading (in the form of index futures) and internet trading in 2000, which were each the first of its kind in India.

The NIFTY 50 is a benchmark Indian stock market index that represents the weighted average of 50 of the largest Indian companies listed on the National Stock Exchange. It is one of the two main stock indices used in India, the other being the BSE SENSEX. Nifty 50 is owned and managed by NSE Indices (previously known as India Index Services & Products Limited), which is a wholly owned subsidiary of the NSE Strategic Investment Corporation Limited. NSE Indices had a marketing and licensing agreement with Standard & Poor's for co-branding equity indices until 2013.

NSE today can handle up to 15 million trades per day in the capital market segment. Its trading system currently operates with 10 trading engines and handles 50,000 order messages per second for trading across asset classes. It has a capacity to scale it to more than 200,000 messages and manage 10 times the current orders.

The NIFTY 50 index is a free float market capitalization weighted index. The index was initially calculated on a full market capitalization methodology. On 26 June 2009, the computation was changed to a free-float methodology. The base period for the NIFTY 50 index is 3 November 1995, which marked the completion of one year of operations of the National Stock Exchange Equity Market Segment. The base value of the index has been set at 1000 and a base capital of 2.06 trillion.

In 2021, NSE was the world's largest derivatives exchange in terms of the number of contracts traded, based on the statistics maintained by the Futures Industry Association (FIA), a derivatives trade body. NSE is ranked fourth in the world in cash equities by the number of trades as per the

statistics maintained by the World Federation of Exchanges (WFE) for the calendar year 2021.NSE market cap was US$3.4 trillion (as of Aug 2021), with 2,002 listings on the exchange, as of October 2021.

Major Difference between BSE and NSE

BSE- It is the oldest stock exchange. It was founded in 1875. Benchmark Index of BSE is Sensex 30. Total Listed companies in BSE is around 7500. 9th largest in world.

NSE-It was founded in 1992. Largest stock exchange in India in terms of daily turnover and number of trades. Benchmark Index of NSE is NIFTY 50. Total Listed companies in NSE is around 1900. 10th largest in world.

Trading in the stock market in India takes place in between 9:55 AM to 3:30 PM Indian Standard Time, Monday to Friday. Settlement of securities takes places in T+2 period. It means if the transaction has happened on Tuesday, it will be settled on Thursday. In a growing economy like India, the future of stock exchange is bright and the volume of transactions will grow substantially in the coming years. Out of 1.2 billion people, there are only 20 million demat accounts as of now. Government's initiative to bring retail customers in mutual funds and foreign investments in India will help the stock exchange of India.

3.8 Understanding Trading &Settlement Procedure

In the stock market, there is always a buyer and a seller. So, when a person buys a certain number of shares, there is another trader who sells the shares. This trade is settled only when the buyer receives the shares and the seller receives the money.

Let's see in detail how the process takes place. There are three phases in a secondary market transaction:

- Trading
- Clearing
- Settlement

Trading

Before trading the investor should take the following steps

- Selection of a Broker.
- Enter into a broker-client agreement and fill in the client registration form.
- Essentials Accounts- Depository account, Bank account.
- Broker gives you unique client id which will be quoted in future.

Trading: Means putting an order in a system and Execution of Order. Brokers can trade from their offices, as their workstations are connected to a Stock Exchange's central computer via satellite using Very Small Aperture Terminus (VSATs). Order confirmed with quantity and price is confirmed on brokers screen. A contract notes issued in the prescribed format establishes a legally enforceable relationship.

Clearing

Once two orders match and a trade is executed, the clearing process takes place. Clearing is the identification of what security is owed to the buyer and how much money is owed to the seller. The entire process is managed by 'clearing houses. These are independent entities.

ClearingMeans determining obligation whether to give securities or payment arising out of trading. National Securities Clearing Corporation Limited (NSCCL) is the clearing and settlement agency for all deals executed on the Derivatives (Futures & Options) segment. NSCCL acts as legal counter-party to all deals on NSE's F&O segment and guarantees settlement.

A Clearing Member (CM) of NSCCL has the responsibility of clearing and settlement of all deals executed by Trading Members (TM) on NSE, who clear and settle such deals through them. A Clearing Member (CM) of NSCCL has the responsibility of clearing and settlement of all deals executed by Trading Members (TM) on NSE, who clear and settle such deals through them. Primarily, the CM performs the following functions:

Clearing – Computing obligations of all his TM's i.e. determining positions to settle.

Settlement - Performing actual settlement. Only funds settlement is allowed at present in Index as well as Stock futures and options contracts

Risk Management – Setting position limits based on upfront deposits / margins for each TM and monitoring positions on a continuous basis

Types of Clearing Members

Trading Member Clearing Member (TM-CM)

A Clearing Member who is also a TM. Such CMs may clear and settle their own proprietary trades, their clients' trades as well as trades of other TM'

Professional Clearing Member (PCM)

A CM who is not a TM. Typically banks or custodians could become a PCM and clear and settle for TM's.

Self-Clearing Member (SCM)

A Clearing Member who is also a TM. Such CMs may clear and settle only their own proprietary trades and their clients' trades but cannot clear and settle trades of other

Settlement: Means fulfilling contractual obligations by delivering securities against payment of money. Presently in India, stock exchanges follow T+2 days settlement cycle.

On T+2 days all the brokers who has transacted two days before receive shares or give shares to the clearing corporation of exchange.

Participants Involved in the Process

Clearing Corporation

Clearing corporation is one of the major participants involved in clearing and settlement process in stock market. The responsibility for clearing and settlement of trade executed at the stock exchange lies on the National Securities Clearing Corporation Limited (NSCCL). It is also in charge of risk management and is obligated for meeting all settlement regardless of the member defaults.

Clearing Members/Custodians

They are another participant in the clearing and settlement process in Indian stock market. When trading members place deals in the stock exchange, the same is moved to NSCCL, which transfers them to the clearing members. The clearing member is in charge of determining the position of share to suit the trade.

Clearing banks

Clearing banks are responsible for the settlement of funds. There are 13 clearing banks, and each clearing member needs to open a clearing account with either one of them. In case of a pay-out, clearing members receive funds in the clearing account and in case of pay-in they need to make funds available.

Depositories

There are two depositories in India – National Securities Depository Limited (NSDL) and Central Depository Services Limited (CDSL). These two depositories hold your Demat account, and clearing members also need to maintain a clearing pool account with them.

Clearing members need to transfer the securities to the clearing pool account they hold with the depositories on the date of settlement.

Professional Clearing Members

These are special category members appointed by the NSCCL. However, note that they are not allowed to trade, and they can only clear and settle trades executed for their clients. Professional clearing members generally constitute banks, custodians and so on.

Steps for Clearing & Settlement of Trade

The stock exchange transfers the details of every trade to the clearing corporation on the T day when trade is executed. The clearing corporation confirms with the clearing members before they close the trade. Once they receive confirmation, they determine the obligations of the clearing

member. The clearing corporations get funds and securities from clearing banks and depositories for purchase and sale transactions respectively. In the case of the purchase transaction, the clearing member receives securities and in the case of sale transaction, the clearing member receives money in the clearing account. A trade in the stock market takes place in an instant. But for that to happen smoothly and efficiently, all these processes take place in the background. And knowing the whole process may help you understand how the stock market works better.

Summary

Security market also called capital market which may be defined as the organized market for effective & efficient transfer of money, capital, or financial resource from investing parties to individuals & institutions engaged in industry or commerce either in the private or public sector of the economy.

The securities market has two inseparable segments and is interdependent which is primary market and secondary market. The primary market, also known as the new issue market, is where issuers raise capital by issuing securities to investors and the secondary market is market where existing securities are traded. From the four method of floatation, offer to public through prospectus and right issue to existing shareholders is popular for the floatation of shares.

Stock Exchange is a place where traders buy and sell securities. Indian stock exchange is one of the oldest markets in Asia and is a yardstick to measure the health and progress of the economy of the country. Over the course of the period, the market has transitioned into the electronic market and securities are dealt in dematerialization form. There are two major stock exchanges in India-National Stock Exchange of India (NSE) and Bombay Stock Exchange (BSE). National Stock Exchange was established in Mumbai in 1992 and started trading in 1994. Bombay Stock Exchange was established in 1875 in Mumbai.There are three phases in a secondary market transaction such s trading, clearing and settlement

Keywords

Primary market: It is the market where securities re issued for the first time to investor.

Secondary market: primary and secondary market where existing securities are traded.

ASBA:It is an application containing an authorization to block the application money in the bank account, for subscribing to an IPO issue.

Prospectus: Detailed statement of terms and conditions are known as prospectus.

Speculators: Speculators are a class of investors who willingly take price risks to profit from price changes in the underlying assets.

Trading: It is putting an order in system and execution of that order.

SelfAssessment

1. Underwriting is a kind of guarantee undertaken by an institution or firm of brokers ensuring the marketability of an Issue.

A. Underwriting
B. Origination
C. Both
D. None

2. ---------- is the last phase of securities market.

A. Origination
B. Distribution
C. Both of the above

D. None of the above

3. ASBA abbreviated as ----------

A. Application Supported by Blocked Amount
B. Application Service by Blocked Amount
C. Both of the above
D. None of the above

4. Primary market is comes---------- secondary market.

A. Before
B. After
C. Both
D. None

5. ---------- is oldest in India.

A. BSE
B. NSE
C. DSC
D. None of the above

6. Benchmark Index of NSE is ----------.

A. NIFTY 50
B. SENSEX
C. DOW
D. Not Applicable

7. Trading means

A. Putting an order and its execution
B. Determining obligation
C. Settlement
D. Not Applicable

8. Clearing means

A. Putting an order and its execution
B. Determining obligation
C. Both of the above
D. Not Applicable

9. ---------- is one of the major participants involved in clearing and settlement process in stock market.

A. Trading

B. Clearing

C. Settlement

D. Not Applicable

10. ----------Means fulfilling contractual obligations by delivering securities against payment of money.

A. Counterparty risk

B. No counterparty risks

C. Somewhat Counterparty risk

D. Not applicable

11. Professional clearing member is a clearing member who is not a TM.

A. True

B. False

C. Can't say

D. (d) Not applicable

12. The basic functions of securities markets are: capital formation, liquidity, and risk management.

A. True

B. False

13. Origination is a work that begins before an issue is actually floated in the market.

A. True

B. False

14. Bombay Stock Exchange was started by Premchand Roychand in 1875.

A. True

B. False

15. In 1989, the BSE developed the S&P BSE SENSEX index.

A. True

B. False

Answers for Self Assessment

l.	A	2.	B	3.	A	4.	A	5.	A
6.	A	7.	B	8.	C	9.	B	10.	B
11.	A	12.	A	13.	A	14.	A	15.	B

Review Questions

1. Elaborate structure and participants of securities market.
2. Differentiate between primary and secondary market with example.
3. Compare primary and secondary market with their features.
4. What are the options available to float new issue in the market?
5. Differentiate between trading clearing and settlement with example.

Further Readings

Security Analysis And Portfolio Management By K Sasidharan& Alex K

Mathews, Mcgraw Hill Education

Security Analysis And Portfolio Management By Pandian, Punithavathy, Vikas Publishing House.

Web Links

https://en.wikipedia.org/wiki/Securities_market

https://www.indiainfoline.com/knowledge-center/share-market/difference-between-primary-market-and-secondary-market

https://en.wikipedia.org/wiki/Stock_market

https://groww.in/blog/clearing-and-settlement-process-in-stock-market

Unit 04: Fixed Income and Other Investment Alternatives

CONTENTS

Objectives

After studying this unit, you should be able

- understand meaning of bond as an alternative for investment.
- interpret the working of the bond market.
- analyze types of alternative investment.
- interpret the advantage and disadvantage of alternative investment.

Introduction

In finance, a bond is an instrument of indebtedness of the bond issuer to the holders. It is debt security under which the issuer owes the holders a debt and, depending on the terms of the bond, is obliged to pay them interest (the coupon) and/or to repay the principal at a later date, termed the maturity date.

Thus, a bond is a form of loan or IOU (sounded "I owe you"): the holder of the bond is the lender (the creditor), and the issuer of the bond is the borrower (the debtor), and the coupon is the interest.

4.1 Bonds

The key features of bonds are-

- Par value: Nominal, principal, par, or face amount is the amount on which the issuer pays interest and which, most commonly, has to be repaid at the end of the term. Some structured bonds can have a redemption amount that is different from the face amount and can be linked to the performance of particular assets.
- Coupon interest rate – stated interest rate (generally fixed) paid by the issuer. Multiply by par value to get payment of interest.

- Maturity date – years until the bond must be repaid.
- Issue date – when the bond was issued.
- Yield to maturity – the rate of return earned on a bond held until maturity (also called the "promised yield".

Who Issues Bonds?

Bonds are debt instruments and represent loans made to the issuer.

Governments (at all levels) and corporations commonly use bonds to borrow money. Governments need to fund roads, schools, dams, or other infrastructure. The sudden expense of war may also demand the need to raise funds.

Similarly, corporations often borrow to grow their business, buy property and equipment, undertake profitable projects, research and development or hire employees.

The problem that large organizations run into is that they typically need far more money than the average bank can provide.

 **Example:**Consider the case of XYZ Corporation. XYZ wishes to borrow $1 million to finance the construction of a new factory but is unable to obtain this financing from a bank.

Instead, XYZ decides to raise the money by selling investors $1 million worth of bonds.

Under the terms of the bond, XYZ promises to pay its bondholders 5% interest per year for five years, with interest paid semiannually. Each of the bonds has a face value of $1,000, meaning XYZ sells 1,000 bonds.

One popular formula is that the percentage of stocks in your portfolio should be equal to 100 minus your age. So, if you're 30, your portfolio should contain 70% stocks and 30% bonds (or other safe investments). If you're 60, it should be 40% stocks and 60% bonds.

The core idea here makes sense: As you approach retirement age, you can protect your nest egg from wild market swings by allocating more of your funds to bonds and less to stocks. Some argue that 110 or even 120 minus your age is a better approach in today's world.

Bond v/s Stock

Stocks give you partial ownership in a corporation, while bonds are a loan from you to a company or government.

The biggest difference between them is how they generate profit: stocks must appreciate in value and be sold later on the stock market, while most bonds pay fixed interest over time.

Bonds and stocks are both securities, but the major difference between the two is that (capital) stockholders have an equity stake in the company (i.e., they are investors). In contrast, bondholders have a creditor stake in the company (i.e., they are lenders).

Being a creditor, bondholders have absolute priority and will be repaid before stockholders (who are owners) in the event of bankruptcy.

Another difference is that bonds usually have a defined term, or maturity, after which the bond is redeemed, whereas stocks are typically outstanding indefinitely. An exception is an irredeemable bond, which is a no maturity.

Bonds tend to be less volatile than stocks and are typically recommended to make up at least some portion of a diversified portfolio. Because bond prices vary inversely with interest rates, so they tend to rise in value when rates fall.

If bonds are held to maturity, they will return the entire amount of principal at the end, along with the interest payments made along the way. Because of this, bonds are often good for investors who are seeking income and who want to preserve capital. In general, experts advise that as individuals get older or approach retirement, they should shift their portfolio weights more towards bonds.

4.2 Types of Bonds

Organizations in order to raise capital issue bond to investors which is nothing but a financial contract, where the organization promises to pay the principal amount and interest (in the form of coupons) to the holder of the bond after a certain date. (Also called maturity date). Technical factors: Technical factors like release of national statistics, seasonal demands for a currency, slight strengthening of a currency following a prolonged weakness also leads to change in exchange rates.

Government Bonds

A debt security issued by a government to support government spending, most often issued in the country's domestic currency. Government debt is money owed by any level of government and is backed by the full faith of the government. Central and state government issue the bonds through the RBI.

Also called as G-secs, gilt- edged securities.

Corporate Bonds

Companies borrow money by issuing bonds called corporate debenture. These are riskier than the government bonds so interest rate is also high.

Types of Corporate Bonds

Straight bonds

- Plain vanilla bonds
- Fixed interest over life and principal on maturity

Zero coupon bonds

- Does not carry any interest rate
- Issued at discount and redeem at par value

Floating rate bonds

- linked to a benchmark rate such as t- bills

Bonds with embedded options

Convertible bonds

Callable bonds

Puttable bonds – Right with investor

Commodity- Linked bonds

Payoff will depend upon the price of the commodity

Types of Corporate Bonds

Perpetual Bonds

Bonds with no maturity dates are called perpetual bonds. Holders of perpetual bonds enjoy interest throughout.

Subordinated Bonds

Bonds which are given less priority as compared to other bonds of the company in cases of a close down are called subordinated bonds.

Bearer Bonds

Bearer Bonds do not carry the name of the bond holder and anyone who possesses the bond certificate can claim the amount.

War Bonds

War Bonds are issued by any government to raise funds in cases of war.

Serial Bonds

Bonds maturing over a period of time in installments are called serial bonds.

Climate Bonds

Climate Bonds are issued by any government to raise funds when the country concerned faces any adverse changes in climatic conditions.

4.3 Bond Pricing

Bond Price

The value of the bond is equal to the present value of the expected cash flows from it. So, in order to determine the value of a bond requires: An estimate of expected cash flows of the expected return.

Bond valuation is the process of determining the fair price, or value, of a bond. Typically, this will involve calculating the bond's cash flow—or the present value of a bond's future interest payments—as well as its face value (also known as par value), which refers to the bond's value once it matures. At the time of issue of the bond, the interest rate and other conditions of the bond will have been influenced by a variety of factors, such as current market interest rates, the length of the term and the creditworthiness of the issuer.

As above, the fair price of a "straight bond "is usually determined by discounting its expected cash flows at the appropriate discount rate.

Where the market price of bond is less than its face value (par value), the bond is selling at a discount. Conversely, if the market price of bond is greater than its face value, the bond is selling at a premium.

Price- Yield Relationship

Yield is a figure that shows the return you get on a bond. The simplest version of yield is calculated using the following formula:

yield = coupon amount/price.

When you buy a bond at par, yield is equal to the interest rate. When the price changes, so does the yield.

Price- Yield Example

Let's demonstrate this with an example. If you buy a bond with a 10% coupon at its $1,000 par value, the yield is 10% ($100/$1,000). Pretty simple stuff.

But if the price goes down to $800, then the yield goes up to 12.5%. This happens because you are getting the same guaranteed $100 on an asset that is worth $800 ($100/$800). Conversely, if the bond goes up in price to $1,200, the yield shrinks to 8.33% ($100/$1,200).

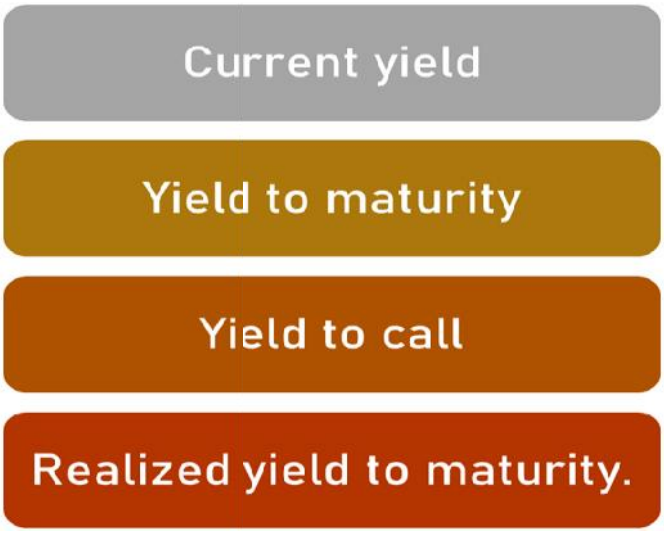
If you are a bond buyer, you want high yields. A buyer wants to pay $800 for the $1,000 bond, which gives the bond a high yield of 12.5%. On the other hand, if you already own a bond, you've locked in your interest rate, so you hope the price of the bond goes up. This way you can cash out by selling your bond in the future.

A basic property of a bond its price varies inversely with yield.

When interest rates rise, the prices of bonds in the market fall, thereby raising the yield of the older bonds and bringing them into line with newer bonds being issued with higher coupons.

When interest rates fall, the prices of bonds in the market rise, thereby lowering the yield of the older bonds and bringing them into line with newer bonds being issued with lower coupons.

Types of yield



Understanding bond yields is key to understanding expected future economic activity and interest rates. That helps inform everything from stock selection to deciding when to refinance a mortgage.

When interest rates are on the rise, bond prices generally fall. When interest rates are lower, bond prices tend to rise. Bond price and bond yield are often inversely related.

4.4 Risk in Bonds

Seasoned investors know the importance of diversification. Creating a portfolio that mixes asset classes—stocks, currencies, derivatives, commodities, and bonds—is probably the best way to generate consistent returns. Although bonds may not necessarily provide the most significant returns, they are considered a reliable investment tool. That's because they are known to provide regular income. But they are also considered to be a stable and sound way to invest your money. That doesn't mean they don't come with their own risks.

As an investor, you should be aware of some of the pitfalls of investing in the bond market. Here's a look at some of the most common risks.

The most well-known risk in the bond market is interest rate risk - the risk that bond prices will fall as interest rates rise.

Example: Say you bought a 5% coupon, a 10-year corporate bond that is selling at a par value of $1,000. If interest rates jump to 6%, the bond's market value will fall below $1,000 because the 5% fixed interest that it pays grows less attractive as newly issued bonds will yield a whole percentage point higher for bondholders. As a result, the original bond will trade at a discount in order to compensate for this difference.

Reinvestment Risk

The risk is that the proceeds from a bond will be reinvested at a lower rate than the bond initially provided. For example, imagine an investor buying a $1,000 bond with an annual coupon of 12%. Each year the investor receives $120 (12%*$1,000), which can be reinvested into another bond. But imagine that over time the market rate falls to 1%. Suddenly, that $120 received from the bond can only be reinvested at 1% instead of the 12% rate of the original bond.

Call Risk

The risk that a bond will be called by its issuer. Callable bonds have call provisions, which allow the bond issuer to purchase the bond back from the bondholders and retire the issue. This is usually done when interest rates have fallen substantially since the issue date. Call provisions allow the issuer to retire the old, high-rate bonds and sell low-rate bonds in a bid to lower debt costs.

Inflation Risk

The risk that the rate of price increases in the economy deteriorates the returns associated with the bond. This has the greatest effect on fixed bonds, which have a set interest rate from inception. For example, if an investor purchases a 5% fixed bond and then inflation rises to 10% a year, the bondholder will lose money on the investment because the purchasing power of the proceeds has been greatly diminished. The interest rates of floating-rate bonds (floaters) are adjusted periodically to match inflation rates, limiting investors' exposure to inflation risk.

Default Risk

The risk is that the bond's issuer cannot pay the contractual interest or principal on the bond promptly or at all. Credit rating services such as Moody's, Standard & Poor's, and Fitch give credit ratings to bond issues, which helps to give investors an idea of how likely a payment default will occur.

For example, most federal governments have very high credit ratings (AAA); they can raise taxes or print money to pay debts, making default unlikely. However, small, emerging companies have some of the worst credit (BB and lower). They are much more likely to default on their bond payments, in which case bondholders will likely lose all or most of their investment.

Bond Rating

What Is It?

- Probability of timely payment of interest & principal by a borrower

What It 'Is not'?

- Not a recommendation
- Not a general evaluation of the issuing organization
- Not a one-time evaluation credit risk, entire valid life

How Is It done?

- Industry & bus analysis. Financial analysis
- Quantitative rating models

What is Credit Rating?

Credit rating is the financial risk associated with entities such as governments, non-profit organisations, and countries.

The rating is given to entities by the credit rating agencies after analyzing their business and finance risk. Then, the agencies prepare a detailed report after considering some additional factors, such as the ability to repay the debt.

Factors in Credit Rating

- Company's history: The credit rating agency looks into the company's history, including their borrowing history and when they have paid back the debt. The credit rating can severely affect a company that has delayed payment or defaulted on loans.
- The future economic potential of the company: The credit rating of a company is also determined based on its future potential. If the company shows that it will be profitable in the near future based on projections, current performance, etc., the credit rating will give them a positive rating; otherwise, a negative rating will be given if the future projections do not look promising.
- The credit rating is evaluated by a credit agency in India that considers the borrower's quantitative and qualitative attributes.

Who evaluates credit ratings in India?

In addition, the credit rating agency looks into various information such as financial statements, annual reports, reports provided by analysts, news pieces, industry analysis, and projections for the next quarter, which in the end helps them determine the rating to be given to the entity.

What are credit rating agencies?

Some of India's top credit rating agencies are Credit Rating Information Services of India Limited (CRISIL), ICRA Limited, Credit Analysis and Research Limited (CARE), India Ratings and Research Private Limited, etc.

AAA : HIGHEST SAFETY

AA : HIGH SAFETY

A : ADEQUATE SAFETY

BBB : LOW SAFETY

BB : INADEQUATE SAFETY

B : HIGH RISK

C : SUBSTANTIAL RISK

D : IN DEFAULT

4.5 Alternative Investments

Alternative investments are those that are not part of traditional investments such as publicly-traded stocks, bonds paying a fixed interest rate over a specific period of time, cash-equivalents such as a CD that can easily be converted into cash, or cash itself. Alternative assets such as real estate, private equity, and private debt are less frequently traded and can be more complex to invest in than traditional stocks and bonds. Alternative investments are used to diversify an investment portfolio and increase potential returns. However, they are not the right choice for every investor, because alternative investments may require a high tolerance for risk and may also be illiquid for long periods of time. As an investor, you should be aware of some of the pitfalls of investing in the bond market. Here's a look at some of the most common risks.

Real Estate as an Alternative Investment

Real estate - including private equity and private debt - is arguably one of the least risky types of alternative investments, depending on the asset the reason that real estate is a good alternative investment in general is that it checks all of the boxes that passive income investors are looking for class invested in.

- **Income**

Real estate investments generate recurring cash flow from rents received from tenants and dividend distributions in private equity investments. In fact, high-quality investment real estate is often described as having "bond-like" characteristics, only better. According to J.P.Morgan Asset Management, core real estate has high quality, relatively transparent income streams that are well above core government bond yields.

- **Appreciation**

Growth in rental rates and asset value is another reason why real estate makes a good alternative investment. In a commercial real estate investment like self-storage, leases are normally on a month-to-month basis. This means that rents can be adjusted to match the rate of inflation and the demand for storage space in a specific market, unlike residential rental property that typically has 12-month lease agreement or other types of commercial real estate where leases of five to ten years are the norm.

- **Stability**

Adding an alternative investment like real estate can also create a more stable, balanced portfolio for the passive income investor.

Bond-like yields from recurring rental income, asset value growth over the long term, and the inflation hedge characteristics of commercial real estate can provide stability and act as a safe haven to investors through all phases of the economic cycle.

Gold as an Alternative Investment

Gold is widely regarded as a tangible inflation hedge, a liquid asset, and a long-term store of value. Gold's position as an investment and a luxury good has allowed it to deliver average returns of approximately 10% for nearly five decades, comparable to stocks and more than bonds and commodities.

There are at least four compelling reasons one might include gold in a retirement portfolio:

- Hedging against inflation
- Tangibility
- Portfolio diversification
- Liquidity

Overall, extensive analysis suggests that adding between 2% and 10% of gold to a US-dollar based portfolio will make a tangible improvement to performance and boost risk-adjusted returns on a sustainable, long-term basis.

Commodities as an Alternative Investment

Commodities are also real assets and mostly natural resources, such as agricultural products, oil, natural gas, and precious and industrial metals. Commodities are considered a hedge against inflation, as they're not sensitive to public equity markets. Additionally, the value of commodities rises and falls with supply and demand—higher demand for commodities results in higher prices and, therefore, investor profit.

Commodities are hardly new to the investing scene and have been traded for thousands of years. Amsterdam, Netherlands, and Osaka, Japan may lay claim to the title of the earliest formal commodities exchange, in the 16th and 17th centuries, respectively. In the mid-19th century, the Chicago Board of Trade started commodity futures trading.

Reasons for Investing in Commodities

#1 Hedge Against Inflation

Most commodities are inversely related to a dip in the currency value. When the value of a currency goes down, investors may turn to investing in commodities, particularly gold.

This may cause the commodity prices to rise, further enhancing the value of the assets held. Hence, commodities act as an effective hedge against inflation.

#2 Hedge Against Stock Market Volatility

When stock markets are volatile, the value of financial assets like equities and mutual funds may experience depreciation. Commodities may help diversify the risk and balance the loss of income or gains on market-related assets.

#3 Liquidity

As an alternative to market-dependent assets, commodities are more liquid than assets like real estate. However, they have lower liquidity in comparison to other financial assets like stocks and bonds.

#4 High Returns

Commodities are known to be extremely volatile in nature. When the securities market is experiencing turbulence, commodity prices tend to swing a lot.

How To Invest In Commodities?

1.Futures Contract

A futures contract is one of the most popular ways of investing in commodities. It is an obligatory contract between the buyer and the seller. It has a fixed price and a fixed date for trading a commodity in the future.

A futures contract ensures absolute transparency in transaction and acts as a hedge against inflation. However, it is still prone to risks arising from geopolitical tensions and natural calamities.

2. Exchanged Traded Funds

Exchanged Traded Funds (ETFs)are mutual funds that can be bought and sold as stocks. ETFs also allow investors to invest directly in futures contracts. However, they can invest in only one commodity.

3. Index Funds

Index funds are mutual funds that invest based on market index tracking. Investors can invest in commodity futures contracts and commodity-linked investment derivatives through Index funds.

4. Mutual Funds

Investors who do not wish to directly trade in commodities can opt for mutual funds that invest in stocks of the companies related to a commodity. It is less risky but gives fair exposure to how the commodities' market works.

The biggest variable in stock market returns is the volatility in the broader market. While it is good to have some investments that can easily be turned into cash, liquidity can also be a double-edge sword when too many investors decide to sell all at the same time. •

Alternative investments tend to have high fees and minimum investments compared to retail-oriented mutual funds and ETFs.

They also tend to have lower transaction costs, and getting verifiable financial data for these assets can be more challenging.

Alternative investments also tend to be less liquid than conventional securities, meaning that it may be difficult even to value some of the more unique vehicles because they are so thinly traded. Some investors seek alternative investments because they have a low correlation with the stock and bond markets, meaning that they maintain their values in a market downturn. Also, hard assets such as gold, oil, and real property are effective hedges against inflation. For these reasons, many large institutions such as pension funds and family offices seek to diversify some of their holdings in alternative investment vehicles.

Difference between Traditional and Alternative Investment

Category	Alternative Investments	Traditional Investments
Liquidity	Low	High
Regulated	Non-regulated	Well-regulated
Investors	Mainly for wealthy accredited investors, HNWIs	For all kinds of investors
Volatility	Less volatile	Highly volatile
Examples	All asset classes that do not belong to the traditional investment category	Individual stocks, bonds, and cash

Private Equity as an Alternative Investment

Private equity is a broad category that refers to capital investment made into private companies or those not listed on a public exchange, such as the New York Stock Exchange. There are several subsets of private equity, including:

Venture capital, which focuses on startup and early-stage ventures. Growth capital, which helps more mature companies expand or restructure. Buyouts, when a company or one of its divisions is purchased outright

An essential part of private equity is the relationship between the investment firm and the company receiving capital. Private equity companies often provide more than capital to the firms they invest in; they also provide benefits like industry expertise, talent sourcing assistance, and mentorship to founders.

Private Debt as an Alternative Investment

Private debt refers to investments that are not financed by banks (i.e., a bank loan) or traded on an open market. The "private" part of the term is important—it refers to the investment instrument itself rather than the borrower of the debt, as both public and private companies can borrow via private debt. Private debt is leveraged when companies need additional capital to grow their businesses. The companies that issue the capital are called private debt funds, and they typically make money in two ways: through interest payments and the initial loan repayment.

Hedge Funds as an Alternative Investment

Hedge funds are investment funds that trade relatively liquid assets and employ various investing strategies with the goal of earning a high return on their investment.Hedge fund managers can be specialized in various skills to execute their strategies, such as long-short equity, market neutral, volatility arbitrage, and quantitative strategies.

Hedge funds are exclusive, available only to institutional investors, such as endowments, pension funds, mutual funds, and high-net-worth individuals.

Venture capital as an Alternative Investment

Venture capital is the type of investment where investors spend on equity capital in private startups with exceptional growth potential. The concept might sound similar to the private equity concept, but it's not as it invests equity capital into mature companies.

Venture capitalists usually invest in seed and early-stage businesses, while some invest at the expansion stage. The investment horizon is typically between 3-7 years. The expected return rate is relatively high, which is a natural outcome owing to the risk quotient associated with the investment

Collectibles as an Alternative Investment

Collectibles include a wide range of items such as: Investing in collectibles means purchasing and maintaining physical items with the hope the value of the assets will appreciate over time.

Structured Products as an Alternative Investment

- Structured products usually involve fixed income markets—those that pay investors dividend payments like government or corporate bonds—and derivatives, or securities whose value comes from an underlying asset or group of assets like stocks, bonds, or market indices.
- Examples of structured products include credit default swaps (CDS) and collateralized debt obligations (CDO).
- Structured products can be complex and sometimes risky investment products but offer investors a customized product mix to meet their individual needs.
- They're most commonly created by investment banks and offered to hedge funds, organizations, or retail investors.

- Structured products are relatively new to the investing landscape, but you've probably heard of them due to the 2007–2008 financial crisis.
- Structured products like CDO and mortgage-backed securities (MBS) became famous as the housing market boomed before the crisis.
- When housing prices declined, those who had invested in these products suffered extreme losses.
- While alternative investments offer compelling pros — portfolio diversification, a counterbalance to traditional financial assets — they aren't without drawbacks.
- The lack of liquidity and transparency is a significant risk even when the buy-ins are within reach.
- Taking on one of the above investments means wading into territory made opaque by the lack of regulation and open pricing.
- It's possible for sophisticated investors to make a lot of money in such an environment.
- But it requires sharp senses, a strong stomach, and endless patience for all the tedious complexities that come with alternative investments.

Task: "Bonds prices are inversely related to interest rates." Do you agree? Elucidate with example.

Summary

- Bonds are debt instruments and represent loans made to the issuer. Bonds are of two types that is government and corporate bonds. The value of the bond is equal to the present value of the expected cash flows from it. So, in order to determine the value of a bond requires: An estimate of expected cash flows of the expected return. Where the market price of bond is less than its face value (par value), the bond is selling at a discount. Conversely, if the market price of bond is greater than its face value, the bond is selling at a premium.
- A basic property of a bond its price varies inversely with yield. When interest rates rise, the prices of bonds in the market fall, thereby raising the yield of the older bonds and bringing them into line with newer bonds being issued with higher coupons. When interest rates fall, the prices of bonds in the market rise, thereby lowering the yield of the older bonds and bringing them into line with newer bonds being issued with lower coupons.
- Alternative investments are those that are not part of traditional investments such as publicly-traded stocks, bonds paying a fixed interest rate over a specific period of time, cash-equivalents such as a CD that can easily be converted into cash, or cash itself. Alternative assets such as real estate, private equity, and private debt are less frequently traded and can be more complex to invest in than traditional stocks and bonds.

Keywords

- Government bonds: A debt security issued by a government to support government spending, most often issued in the country's domestic currency.
- Yield: It is a figure that shows the return you get on a bond.
- Private equity:Private equity is a broad category that refers to capital investment made into private companies or those not listed on a public exchange.

- Default risk: The risk is that the bond's issuer cannot pay the contractual interest or principal on the bond promptly or at all.

SelfAssessment

1. The bonds prices are ……. related to interest rtes.

A. Inversely
B. Directly
C. Not related all
D. Not Applicable

2. The price of bonds will---------- when interest rate will rise.

A. Fall
B. Rise
C. No action can be done
D. Both of the above

3.The price of bonds will---------- when interest rate will fall.

A. Fall
B. Rise
C. (c)Both
D. None

4. Bonds are----------instruments.

A. Debt
B. Equity
C. Both
D. None

5. If you buy a bond with a 10% coupon at its $1,000 par value, the yield is ----------.

A. 20%
B. 30%
C. 10%
D. Not Applicable

6.Probability of timely payment of interest & principal of bond by a borrower is knowns----------.

A. Bond rating
B. Bond view
C. Bond recommendation
D. Not Applicable

7. Commodity market and stock market ----------correlated.

A. Directly
B. Negatively
C. Both of the above
D. None of the above

8. Gold is widely regarded as a tangible inflation hedge, a liquid asset, and a long-term store of value.

A. True
B. False
C. Can't say
D. Not Applicable

9. Hedge funds are investment funds that trade relatively liquid assets and employ various investing strategies with the goal of earning a high return on their investment.

A. True
B. False
C. Can't say
D. Not Applicable

10. Exchanged Traded Funds (ETFs)are mutual funds that can be bought and sold as stocks.

A. True
B. False
C. Both of the above
D. Not Applicable

11. Alternative investments also tend to be ---------- liquid than conventional securities.

A. Less
B. More
C. Equal
D. Not Applicable

12. Zero coupon bonds does not carry any interest rate.

A. True
B. False

13.A basic property of a bond its price varies inversely with yield.

A. True
B. False

14. Puttable bonds have call provisions, which allow the bond issuer to purchase the bond back from the bondholders and retire the issue.

A. True

B. False

15. Alternative investments are those that are not part of traditional investments such as publicly-traded stocks, bonds paying a fixed interest rate over a specific period of time, cash-equivalents such as a CD that can easily be converted into cash, or cash itself.

A. True

B. False

Answers for Self Assessment

1.	A	2.	A	3.	B	4.	A	5.	C
6.	A	7.	B	8.	A	9.	A	10.	A
11.	A	12.	A	13.	A	14.	B	15.	A

Review Questions

1. What do you mean by bonds? Explain features of bonds.
2. Differentiate between bond and stocks.
3. Elaborate various types of risk in bonds.
4. Differentiate between callable bond and puttable bond?
5. Explain the meaning of Alternative investments with appropriate example.

Further Readings

Security Analysis And Portfolio Management By K Sasidharan& Alex K

Mathews, Mcgraw Hill Education

Security Analysis And Portfolio Management By Pandian, Punithavathy, Vikas Publishing House.

Web Links

https://en.wikipedia.org/wiki/Securities_market

https://groww.in/p/bonds

https://www.bajajfinservsecurities.in/what-is-a-bond

https://investor.vanguard.com/investor-resources-education/understanding-investment-types/what-is-a-bond

Unit 5: Depository System

CONTENTS

Objectives

After studying this unit, you should be able:

- understand the concept of scrip based and depository system.
- interpret the process of depository system.
- analyze the features depository system.
- interpret the advantages and disadvantages of depository system.

Introduction

It is a system whereby the transfer and settlement of scrips occur not through the traditional method of transfer deeds and physical delivery of scrips but through the modern design of effecting transfer of ownership of securities using book-entry on the ledgers or the depository without the physical movement of scrips.

The new system, thus, eliminates paperwork, facilitates automatic and transparent trading in scrips, shortens the settlement period and ultimately contributes to the liquidity of the investment in securities. This system is also known as the 'scripless trading system'.

5.1 Depository System

This system came in to force with effect from September 20, 1995. Before depository system there exist scrip based system.

What Is Scrip Based System?

Scrip based system of securities transactions involves enormous paper work involving certificates and transfer deeds. Simply, securities are held in physical form. There is physical movement of securities certificates along with transfer deeds.

Problems with scrip-based system

- Time consuming (processing time by co.)

- Bad deliveries due to signature difference
- Mistakes in completion of transfer deeds
- Tearing and mutilation of certificates
- Fake certificates
- Cost of transfer
- Postal delays and charges etc.

Who is depository?

Depository facilitates holding of securities in the electronic form and enables securities transactions to be processed by book entry by a Depository Participant (DP), who as an agent of the depository, offers depository services to investors.

Features of Depository system

- In the depository system, securities are held in depository accounts, which is more or less similar to holding funds in bank accounts.
- Transfer of ownership of securities is done through simple account transfers.
- This method does away with all the risks and hassles normally associated with paperwork.
- Consequently, the cost of transacting in a depository environment is considerably lower as compared to transacting in certificates.
- In the depository system, securities are held in depository accounts, which is more or less similar to holding funds in bank accounts.
- Transfer of ownership of securities is done through simple account transfers.
- This method does away with all the risks and hassles normally associated with paperwork.
- Consequently, the cost of transacting in a depository environment is considerably lower as compared to transacting in certificates.

Constituents of Depository System

There are basically four participants:

Features of depository system in India

- In the depository system, the apex body is the Depository.
- A depository can be compared with a bank
- Depository services through depository participants.
- Fungibility
- Registered Owner/ Beneficial Owner (two types of owner)

Who can be a depository?

Depository means:

A company formed and registered under the companies Act, 1956, and

Which has got a Certificate of Registration from the SEBI.

The depository model adopted in India provides for a competitive multi-depository system.

There can be various entities providing depository services. Such system is known as Multi-Depository System.

At present two Depositories are registered with SEBI.

National Securities Depositories Limited

- NSDL is the first and largest depository in India, and established in August 1996.
- Wide Network of depository participants across the country.
- National Stock Exchange (NSE), Industrial Development Bank of India (IDBI), and Unit Trust of India (UTI) are its promoters.
- Address:

Trade World, a Wing, 4th &5th Floors

Kamala Mills Compound

Lower Parel

Mumbai 400013

website: nsdl.co.in

Central Depository Services (India) Limited

- This is the second depository in India.
- This was formed and registered in 1999.
- It is primarily a depository for the Bombay Stock Exchange (BSE).
- Major banks of India such as State Bank of India, Union Bank of India, and Axis Bank are their promoters.
- Other popular banks like HDFC Bank, Bank of Baroda, and Standard Chartered Bank also hold shares in them.
- Address:

Phiroz Jeejeebhoy Towers

16th Floor, Dalal Street

Mumbai

website: www.cdslindia.com

Key Differences Between CDSL and NSDL

- Promoters – One of the key differences in their promoters.

  BSE is the main promoter of CDSL whereas IDBI Bank, UTI, and NSE are promoters of NSDL.

- Stock Exchange – NSDL works for NSE and CDSL works for BSE.
  Exchanges can use either depository for settlement and trading of securities.
- Establishment – NSDL was established in 1996.

  It was the first depository of India. While CDSL was established in 1999.

- Demat Account Format – CDSL Demat account numbers are of 16 numeric digits.

  NSDL Demat account numbers are alphanumeric and start with 'IN' and then 14 digit numeric digits.

- Registered Depository Participants – CDSL has 599 registered DPs.

  But 278 DPs are participants of NSDL.

- Investor Accounts – NSDL has 2.25 crore investor accounts.

  Whereas, CDSL has 3.96 crore active investor accounts as of 30th June **2021.**

A Bank-Depository Analogy

Bank	Depository
1.Holds funds in an account on behalf of a customer	1.Holds securities in an account on behalf of an investor.
2.Transfer funds between accounts on the instruction of the account holder.	2.Transfer securities between accounts on the instruction of the account holder.
3.Physical handling of funds is avoided.	3.Physical handling of securities is avoided.
4.Provides safe custody of fund	4.Provides safe custody of securities.

5.2 Who Is Depository Participant?

- A Depository Participant (DP) is an agent of the depository through which it interfaces with an investor.A DP can offer depository services only after it gets proper registration from SEBI.A DP is just like a Branch of a Bank.

Who can be Depository Participant?

In terms of the Depositories Act, 1996, SEBI (Depositories & Participants) Regulations,1996, only the following entities are eligible to become a Depository Participant:

- Financial Institutions,
- Banks, including approved foreign bank
- Custodians,
- Stockbrokers,
- A clearing corporation or a clearing house of a stock exchange
- A non-banking finance company,
- A registrar to an issue or shares transfer agent

Who is registered owner?

- The registered owner is that person whose name is registered in the register of members of the company (issuer)
- For the securities dematerialized, NSDL/CDSL is the Registered Owner in the books of the issuer.
- But Registered Owner does not enjoy any right and liability attached with the security.

Who is the Beneficial owner?

- Beneficial owner is that person who enjoys all rights, duties, and liabilities attached with the security.
- It means voting right, dividend right, bonus share right, right share right etc are all exercised by the Beneficial owner.

5.3 How Can Services of Depository Availed by an Investor?

Account Opening:

In order to avail of depository facilities, an investor has to open a beneficiary account with a depository participant of his choice. This is similar to opening a bank account to use the banking

services. Just as one can hold funds in a bank account and transfer funds across accounts without actually handling cash; one can hold securities in a depository account and transfer securities across depository accounts without actually handling share certificates.

The account holder is called 'beneficial owner' in a depository system and the account is known as 'beneficiary account'. No minimum balance is required to be retained in a beneficiary account.

Features of Beneficiary Account

An investor can close a beneficiary account with one DP and open an account with another DP.

To dematerialize existing physical holdings, the beneficiary account must be opened in the same ownership pattern in which the securities are held in the physical form e.g: If one certificate is in individual name and another certificate is jointly held by X & Y, two different accounts should be opened

Procedure of Opening an Account

Investor will choose a DP for the purposes of opening beneficiary account. The choice of the investor may be based on convenience, comfort, services offered, cost or any other reason.

The investor will obtain the relevant account opening form from the chosen DP.

For the purpose of verification, investor has to submit the following documents along with the prescribed account opening form.

- Proof of Identity (POI) (voter card, pan card, driving license etc.)
- Proof of Address (POA) (ration card, and pass book copy voter id card etc.)
- Passport-size photograph
- The DP will also provide a copy of the DP-Client agreement.

Some other aspects of Account Opening

The demat account cannot be operated on "either or survivor" basis like the bank account. In case of the joint account for the beneficial owners, all the joint holders have to sign the account opening form. The investor will submit to his DP the duly filled in account opening form & DP-client agreement along with the documents. On successful opening of the account, the DP will give-

- Client Id - a number to be used along with DP Id for any future transactions.
- Delivery Instruction slip book.
- More than one demat account can be opened in the similar / identical name and order with the same DP or different DPs.
- A periodical statement of holdings and transactions is provided by DP. This can also be asked for from the DP

What is dematerialization?

Dematerialization is the process by which physical certificates of securities of an investor are converted to an equivalent number of securities in electronic form and credited into the investor's account with his/her DP. It is to be noted that an investor can hold shares in physical form but for the purpose of trading in stock exchanges shares should be in electronic form.

Process of dematerialisation

An investor intending to dematerialize its securities needs to have an account with a DP. The client (registered owner) will submit a request to the DP in the Dematerialization Request Form for dematerialization, along with the certificates of securities to be dematerialized. Before submission, the client has to deface the certificates by writing "SURRENDERED FOR DEMATERIALISATION".

The DP will verify that the form is duly filled in and the number of certificates, number of securities and the security type (equity, debenture etc.) are as given in the DRF. If the form and security count is in order, the DP will issue an acknowledgement slip duly signed and stamped, to the client.

Care to be taken-

- DRF should be signed by all holders (in case of multiple holders)
- Pattern of holdings in the certificates should match with Demat account

Separate DRF should be submitted for -

- Each ISIN (meaning of ISIN in later slide)
- Free and locked in securities
- Securities locked-in for different reasons and different lock-in release dates
- Unique Identification Number for Each Security
- Contains 12 Characters
- Allotted by NSDL in India for all securities except Government securities
- Same ISIN used by both depositories

Process of dematerialization

Example of ISIN - IN E 005A 08 02 0

- IN' stands for India
- E' stands for Company.
- 'F' stands for Mutual Funds
- '005A' for Company Identity
- '08' for Security Code
- 02' Serial No./ Type of Instrument
- 0' Check Digit

Nomination

Nomination can be made only by individuals holding beneficial accounts either singly or jointly. Non-individuals including society, trust, body corporate, Karta of HUF, holder of POA cannot nominate. Nomination is helpful in smooth transmission of shares upon the death of the BO/s. The nomination once made can be changed at a later date as desired by the BO/s.

Trading / Settlement

The procedure for buying and selling dematerialised securities is similar to the procedure for buying and selling physical securities.

The difference lies in the process of delivery (in case of sale) and receipt (in case of purchase) of securities.

In case of purchase -

- The broker will receive the securities in his account on the payout day.
- The broker will give instruction to its DP to debit his account and credit BO's account.
- BO will give 'Receipt Instruction' to DP for receiving credit by filling appropriate form. However, BO can give standing instruction for credit to his account that will obviate the need of giving Receipt Instruction every time.

In case of sale, -

- BO will give delivery instruction through Delivery Instruction Slip (DIS) to
- BO will give 'Receipt Instruction' to DP for receiving credit by filling appropriate form. However, BO can give standing instruction for credit to his account that will obviate the need of giving Receipt Instruction every time.
- DP to debit his account and credit the broker's account. Such instruction should reach the DP's office at least 24 hours before the pay- in, failing which, DP will accept the instruction only at the BO's risk.

Pledging

Pledging dematerialized securities is easier and more advantageous as compared to pledging physical securities. The procedure to pledge electronic securities is as follows,

- Both BOs, investor (pledgor) and the lender (pledgee) must have BO account with the same depository,
- Pledgor will have to instruct DP to create pledge in prescribed standard form (Pledge Request Form) with the details of the securities,
- The lender (pledgee) has to confirm the request through his /her DP,
- Once this is done, securities are pledged.
- All financial transactions between the pledgor and the pledgee arehandled as per usual practice outside the depository system.

Transposition

- When Transposition Form needs to be submitted?
- For rectification of order of names of Joint Demat Account holders.
- When order of names of joint shareholders on the physical share certificate is not same as the order of names on Joint-Demat account.
- Transposition form will have to be signed in the same order as on the Joint Demat account.

Rematerialisation

Rematerialisation is the process by which a client can get his electronic holdings converted into physical certificates. A client can rematerialise his dematerialised holdings at any point of time.

The rematerialisation process is completed within 30 days. The securities sent for rematerialisation cannot be traded.

Procedure of rematerialisation

The client has to submit the rematerialisation request to the DP with whom he has an account. The DP enters the request in its system which blocks the client's holdings to that extent automatically.

The DP releases the request to depository and sends the request form to the Issuer/ R&T agent.

The Issuer/ R&T agent then prints the certificates, dispatches the same to the client and simultaneously electronically confirms the acceptance of the request to NSDL.

Thereafter, the client's blocked balance is debited.

Transmission

Meaning: Securities owned by a person who has died are "transmitted" to his legal heirs.

Legal heirs need to submit necessary documents:

Notarized death certificate

Notarized Succession certificate

Notarized copy of the Probate or Letter of Administration, etc.

Transfer brought about - By operation of law.

Steps for Transmission

Transmission: Documents to be submitted (for Individual accounts)

In both the above-mentioned situations, if Demat Account of claimant is not with DP of deceased, then a copy of Client Master Report of nominee's account to be submitted.

Transmission: Documents to be submitted (for Joint accounts)

Death of a joint holder:

Surviving holders to open a new account with the Depository in the same sequence of surviving holders. If surviving holders already have a Demat account but in different sequence, then Transposition process along with Transmission process must be followed.

Documents to be submitted:

- Duly filled Transmission Request Form (and Transposition Form, if applicable)
- Attested copy of Death Certificate

5.4 What Are Depository Participants?

Since there are a lot of investors and only two depositories, they cannot contact these institutions directly. A need for an intermediary was felt and the concept of depository participants was formed. The role of a depository participant is to act as an intermediary between the depository and the investor. Investors open an account with the depository through a registered Depository Participant. A Depository Participant (DP) is the agent or the registered stockbroker of a depository. While the investor-level accounts in securities are held and maintained by the DP, the company level accounts of securities issued are held and maintained by the depository.

Since there are a lot of investors and only two depositories, they cannot contact these institutions directly. A need for an intermediary was felt and the concept of depository participants was formed. The role of a depository participant is to act as an intermediary between the depository and the investor. A legal agreement between the DP and the depository regulates their relationship. The Depositories Act, 1996 defines a DP as a person registered under Section 12 of the Securities Exchange Board of India ('SEBI') Act, 1992.

Section 12 of the SEBI Act states that no DP shall buy, sell or deal in securities unless registered with SEBI.

Services Provided by Depository Participants

The Depository Participants also provide various other services to investors apart from holding securities on behalf of them. They include:

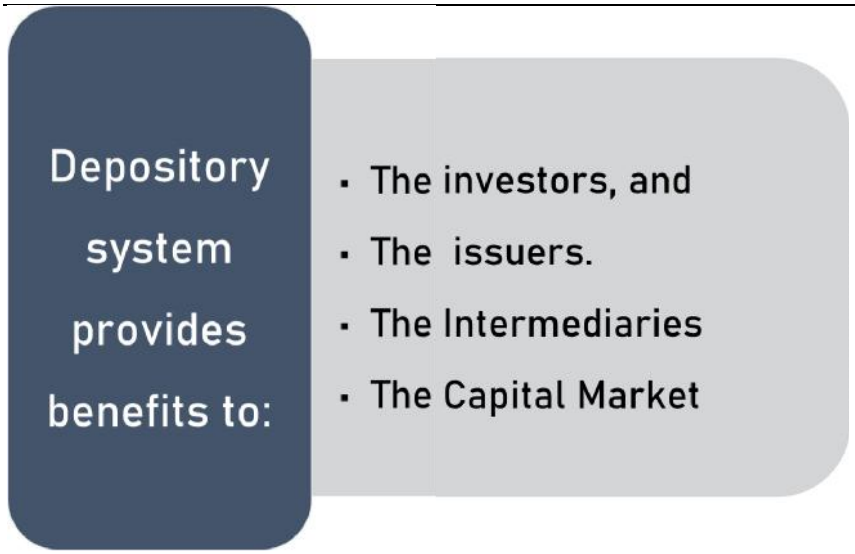
- Opening a Demat account.
- Dematerialization of securities, i.e. converting physical securities into electronic form.
- Rematerialisation of securities, i.e. converting electronic securities balances into physical form.
- Keeping the record of securities in the electronic form held by the Stock Investor.
- Trade Settlement by delivery or receipt of securities.
- Off-market transactions and its settlement between BOs.
- Facilitating loans against shares and pledging of dematerialized securities.
- Freezing of the Demat account.

Regulations relating to Depository participants in India

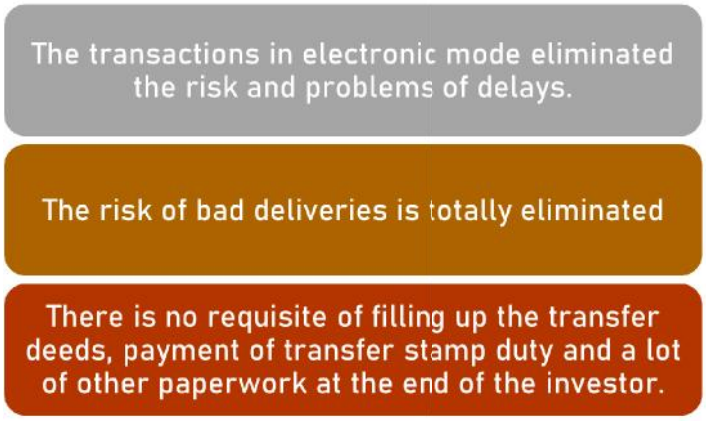
- Anyone who wants to register and work as a Depository Participant in India has to registers with three laws that are:
- A Depository under the Depository Act, 1996.
- SEBI under SEBI Act, 1992 (section-12) (Sub Section-1A)
- It has to follow SEBI (Depositories and Participants) regulations, 1996

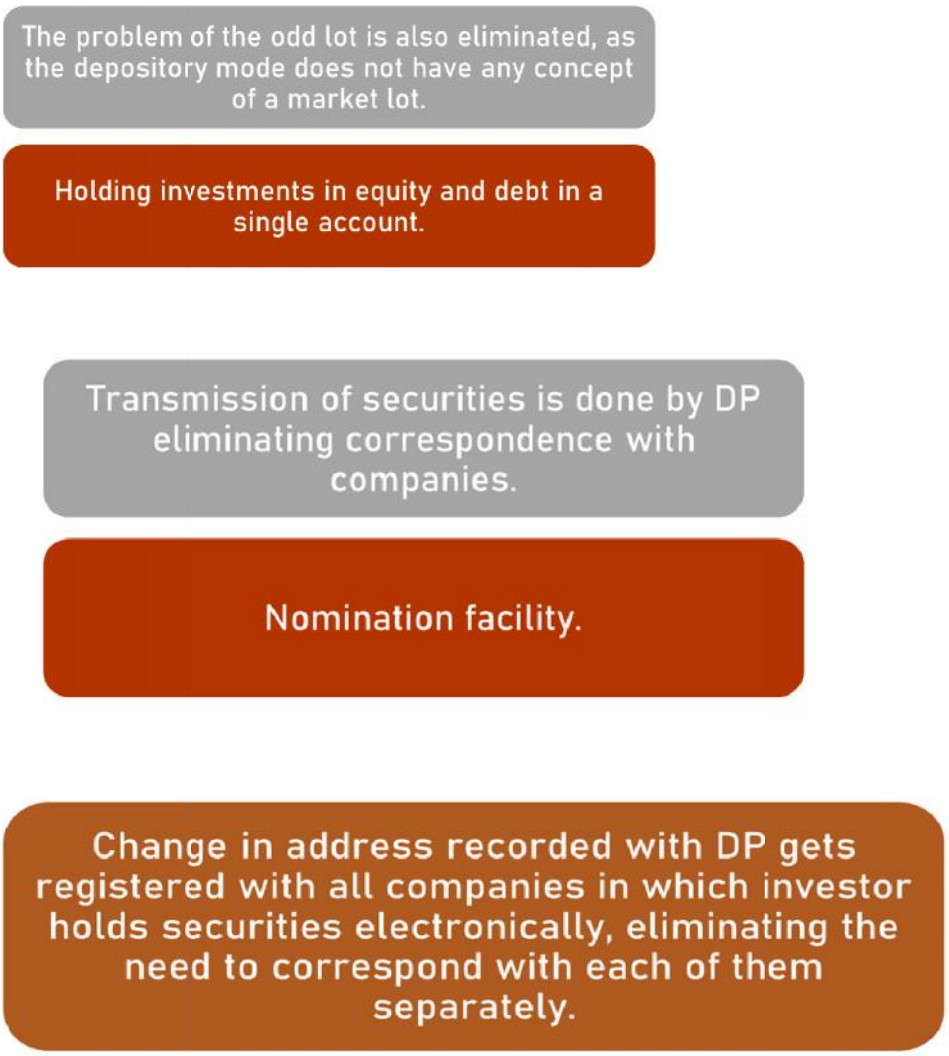
5.5 Advantage& Disadvantage of Depository System

Benefits of Depository System



Benefits to Investors





Benefits to Issuing Company

- The company saves a lot of paper work which otherwise is required in the physical mode.
- The company saves a postal cost for the dispatch of right shares, bonus shares or share certificates after affecting the transfer.
- By offering depository services to its shareholders, a company may send a positive sign to its shareholders about its concern for their welfare.
- Depository services add liquidity to the security, thus fund raising capacity of the company increases.

Benefits to Intermediaries

Intermediaries will benefit from enhanced liquidity, safety and turnover on the stock market, improved cash flow, and elimination of forgery and counterfeit with the elimination of risk from the settlement due to wrong deliveries.

Benefits to Capital Market

Disadvantages of Depository System

Some disadvantages were about the depository system were known beforehand. But since the advantages outweighed the shortcomings of dematerialization, the depository system was given the go-ahead.

Lack of awareness: It is estimated that in India retail investors hold about 30% of the market capitalization. In spite of their considerable share in the capital market, they do not show adequate interest in demat trading. This is mainly due to lack of awareness among the retail investors or the fear of being caught in the tax net. Most of the investors are not aware of the benefits of demat trading. Need for more excellent supervision: It is incumbent upon the capital market regulator to keep a close watch on the trading in dematerialized securities and see to it that trading does not act as a detriment to investors. The role of key market players in dematerialized securities, such as stock brokers, must be supervised as they can manipulate the market.

Complexity of the system: Multiple regulatory frameworks have to be confirmed, including the Depositories Act, Regulations and the various Bye-Laws of various depositories. Additionally, agreements are entered at different levels in the process of dematerialization. These may cause anxiety to the investor desirous of simplicity in terms of transactions in dematerialized securities.

Multiplicity of charges: Under depository system, there are charges for opening of account, dematerialization, rematerialisation, etc. Apart from this, investors who intend to hold their investments in dematerialised form have to pay custody charges to the depository participant. All these charges may deter the retail investors from taking advantages of the system.

Summary

Scrip based system of securities transactions involves enormous paper work involving certificates and transfer deeds. Simply, securities are held in physical form. There is physical movement of securities certificates along with transfer deeds.

Depository facilitates holding of securities in the electronic form and enables securities transactions to be processed by book entry by a Depository Participant (DP), who as an agent of the depository, offers depository services to investors. At present two Depositories are registered with SEBI. In order to avail of depository facilities, an investor has to open a beneficiary account with a depository participant of his choice. This is similar to opening a bank account to use the banking services. Just as one can hold funds in a bank account and transfer funds across accounts without actually handling cash; one can hold securities in a depository account and transfer securities across depository accounts without actually handling share certificates.

The account holder is called 'beneficial owner' in a depository system and the account is known as 'beneficiary account'. No minimum balance is required to be retained in a beneficiary account.

Keywords

Depository: Depository is an entity facilitates holding of securities in the electronic form and enables securities transactions to be processed by book entry by a Depository Participant (DP), who as an agent of the depository, offers depository services to investors.

Depository participant: It is an entity who is n gent of depository.

Rematerialisation:It is the process by which a client can get his electronic holdings converted into physical certificates. Future contract.

Dematerialization:It is the process by which physical certificates of securities of an investor are converted to an equivalent number of securities in electronic form and credited into the investor's account with his/her DP.

SelfAssessment

1. Depository Act in India is passed in----------.

A. 1996

B. 1999

C. 2000

D. Not Applicable

2. NSDL was formed in ----------.

A. 1999

B. 1996

C. 2000

D. Not Applicable

3. CDSL was formed in----------.

A. 1996

B. 1999

C. (c)2000

D. (d)None

4. ---------- is the oldest depository in India.

A. NSDL

B. CDSL

C. FSDL
D. GSDL

5. ISIN stands for
A. International shares identification number
B. Internally shares identification number
C. Both of the above
D. None of the above

6. ----------is opposite of dematerliasation.
A. Rematerlisation
B. Commodity Derivative
C. Tematerlisation
D. None of the above

7. Demat account is similar to
A. Bank account
B. Loan account
C. Somewhat credit account
D. Not Applicable

8. International securities identification number consists of ----------character.
A. 12
B. 11
C. 10
D. Not Applicable

9. Demat account can be operated on either or survivor basis
A. Yes
B. No
C. Can't say
D. Not Applicable

10. NSDL is promoted by
A. NSE
B. BSE
C. CSC
D. Not Applicable

11. CDSLis promoted by
A. NSE
B. BSE
C. CSE
D. Not Applicable

12. Scrip based system of securities transactions involves enormous paper work involving certificates and transfer deeds.

A. True
B. False

13. At present NDSL is having more accounts then CDSL.
A. True
B. False

14. SDL is older than CDSL.
A. True
B. False

15. Nomination facility is there in demat account.
A. True
B. False

Answers for Self Assessment

1.	A	2.	B	3.	B	4.	A	5.	A
6.	B	7.	A	8.	A	9.	B	10.	A
11.	B	12.	False	13.	True	14.	True	15.	True

Review Questions

- What do you mean by depository system? Explain benefits of depository system.
- What do you mean by dematerialization? Explain the whole process.
- Compare and contrast the depository and physical mode of holding securities.
- Elaborate various services offered by depository participants.
- Elaborate the advantage and disadvantage of depository system.

Further Readings

- Security Analysis and Portfolio Management by K Sasidharan & Alex K Mathews, Mcgraw Hill Education
- Security Analysis And Portfolio Management By Pandian, Punithavathy, Vikas Publishing House.

Web Links

- https://www.angelone.in/knowledge-center/demat-account/what-is-demat-account
- https://www.kotaksecurities.com/ksweb/account-types/demat-account
- https://nsdl.co.in/
- https://www.cdslindia.com/

Unit 6: Indices and Listing

CONTENTS

Objectives

- interpret the different features and needs of the Index.
- analyze the objectives of listing securities.
- understand the benefits of listing securities.
- analyze the procedure of listing securities.

Introduction

An Index is a number used to represent change in set of values between a base period and another period. An Index is used to provide information about price movement.

6.1 Stock Market Index

Stock Market Index is meant to capture the overall behavior of the share market. So, the movement of in represents sent overall increase or decrease in prices shares included in the index.

A stock market index combines several stocks to create one aggregate value that investors useful for measuring a market's (e.g.: Bombay Stock Exchange and National Stock Exchange), or a sector's (energy, infrastructure, real estate) performance.

In the Indian context, there are two major stock market indexes used for evaluating markets: SENSEX and NIFTY. Indian investors can track changes in these index values over time and use it as a benchmark against which to compare their own portfolio returns.

S&P BSE SENSEX (also called BSE 30 or SENSEX)

SENSEX (or SENSITIVE INDEX) was created in 1986 and is the oldest stock market index for equities. It comprises shares of 30 well-established and financially sound companies listed on BSE. These companies represent various industrial sectors of the Indian economy.

S&P CNX NIFTY (also called NIFTY 50 or NIFTY)

NIFTY was created in 1996 and comprises of 50 shares listed on the National Stock Exchange. It covers 24 sectors of the Indian economy and offers investors exposure to the Indian market in a single portfolio.

The S&P 500 Index

One of the most well-known indexes, the S&P 500 tracks the performance of 500 top companies in the U.S., as determined by a committee at S&P Dow Jones Indices. The S&P 500 is a market-capitalization-weighted index.

The Dow Jones Industrial Average

The DJIA is relatively narrow in scope, tracking the performance of just 30 U.S. companies as selected by S&P Dow Jones Indices. The stocks within the DJIA come from a range of industries, from healthcare to technology, but are united by all being blue chip stocks. This means they have a history of strong financial performance. The DJIA is one of the few price-weighted market indexes.

The Nasdaq 100

The Nasdaq 100 tracks the performance of 100 of the largest and most actively traded stocks listed on the Nasdaq stock exchange. Companies within the Nasdaq can be in many different industries, but they generally veer toward tech and don't include any members of the financial sector. The Nasdaq 100 uses market-cap weighting.

The NYSE Composite Index

The NYSE Composite Index is a comprehensive index that tracks the performance of all stocks traded on the New York Stock Exchange (NYSE). The index is modified market capitalization weighting.

Use of Stock Market Index

- Use of Stock Market Index:
- Assist in studying price change.
- Assist in making comparisons.
- Assist in Investment decision-making.
- Acts as an economic barometer.

6.2 Features of anIndex

- An index measures the price performance of a basket of stocks/securities.
- An index is used as a benchmark to track the performance of a specific set of securities and compare the returns generated by a mutual fund, portfolio manager, etc.
- Index ETF funds are used to invest in a specific list of securities tracked by the index. For example, the Nippon India ETF Nifty BeES ETF is used to track the performance of Nifty stocks and invest in the index.
- Indices can be broad-based, which track the entire market, or sectoral indices which track a particular sector. The index can also be based on the market cap of the stocks they track, for example, the Nifty Small Cap 100, Nifty Mid Cap 100, etc.

Need of Indexes

The needs for indexes are immense. Some of the advantages are given below: -

- Indexes can track financial data like interest rates, inflation, manufacturing and services output, stock market returns, etc.
- Passive index investing can be done via indexes. ETFs are used for these purposes.
- Indexes are used to track portfolio returns as compared to index returns.

Why are Indexes Useful?

Indexes are useful for providing valid benchmarks against which to measure investment performance for a given strategy or portfolio. By understanding how a strategy does relative to a benchmark, one can understand its true performance.

Indexes also provide investors with a simplified snapshot of a large market sector, without having to examine every single asset in that index. For example, it would be impractical for an ordinary investor to study hundreds of different stock prices in order to understand the changing fortunes of different technology companies. A sector-specific index can show the average trend for the sector.

6.3 Index Calculation Methodology

There are three methodologies by which the index is calculated:

- Value weighted Index or Weighted Market Capitalization Method:
- Price Weighted Index:
- Equal Weighted Index:

Value Weighted Index or Weighted Market Capitalization Method

It is an index that shows aggregate market capitalization of sample stock on certain date in relation to base date.

For example, Total market capitalization is 350cr.

A-200CR; B-100; C-50CR.

Under this method scripts weighted in the scripts is calculated by multiplying the number of share outstanding with the market price of share. The share with higher market capitalization will have higher weightage.

Index-Current Market Capitalization

---------- *Base value

Base market Capitalization

CMC=Sum of (Current market price*Outstanding Share of all securities in index)

BMC=Sum of (Market price*Issue Size) all securities on Base Date

There are two types of Capitalization:

Full market capitalization method

Free Float market capitalization method.

The free Float market capitalization Method-Is defined as the proportion of total share issued by the company that are readily available for trading in the market.

It generally excludes promoters' holding, government holding, strategic holding and other locked-in shares that will not come to the market for trading in the normal course. In other words, the market capitalization of each company in a free-float index is reduced to the extent of its readily available shares in the market

Free Float-

- Gives more rationale trends as it takes only those shares which are readily available.
- Reduce concentration of top few companies.
- Market and sector coverage also improve as it takes flexibility.
- Globally, the Free-float Methodology of index construction is considered to be an industry best practice and all major index providers like MSCI, FTSE, S&P and STOXX have adopted the same. MSCI, a leading global index provider, shifted all its indices to the Free-float Methodology in 2002.

Price Weighted & Equal Weighted Index

Price Weighted Index: It is index which shows ofsum of price of sample stock on certain date in relation to base date. In this method, an index value is calculated on the basis of the company's stock price, and not market capitalization. Stocks with higher prices have greater weightages in the index than stocks with lower prices. The Dow Jones Industrial Average in the US and the Nikkei 225 in Japan are examples of price-weighted indices.

Equal Weighted Index: It is index which shows arithmetic average price of sample stock on certain date in relation to base date.

There are three different types of stock market indices mentioned below:

1.Benchmark Indices

2.Sectoral Indices

3.Market-Cap Based Indices

Benchmark Indices

Nifty 50 – a collection of top 50 best-performing stocks and BSE Sensex – a collection of top 30 best-performing stocks are indictors of the National Stock Exchange and Bombay Stock Exchange, respectively.This collection of stocks is known as benchmark indices respectively because they use the best practices to regulate the companies they pick.Hence they are known as the best point of reference for the working of markets in general.

Sensex-The Barometer of Indian Capital Markets

SENSEX, first compiled in 1986, was calculated on a "Market Capitalization-Weighted" methodology of 30 component stocks representing large, well-established and financially sound companies across key sectors.

Since September 1, 2003, SENSEX is being calculated on a free-float market capitalization methodology. "Free-float Market capitalization" methodology, wherein, the level of index at any point of time reflects the free-float market value of 30 component stocks relative to a base period.

The market capitalization of a company is determined by multiplying the price of its stock by the number of shares issued by the company. This market capitalization is further multiplied by the free-float factor to determine the free-float market capitalization.

- Base Year1978-79
- Base Index Value100
- Date of Launch01-01-1986

Number of scrips30

The closing SENSEX on any trading day is computed taking the weighted average of all the trades on SENSEX constituents in the last 30 minutes of trading session.

During trading hours, value of the Index is calculated and disseminated on real time basis. This is done automatically on the basis of prices at which trades in Index constituents are executed.

S&P CNX Nifty

S&P CNX Nifty is a well diversified 50 stock index accounting for 24 sectors of the economy.

S&P CNX Nifty is owned and managed by India Index Services and Products Ltd. (IISL), which is a joint venture between NSE and CRISIL.

IISL is India's first specialized company focused upon the index as a core product. IISL has a Marketing and licensing agreement with Standard & Poor's (S&P), who are world leaders in index services.

From June 26, 2009, S&P CNX Nifty is computed based on free float methodology.

- Base Year-3, Nov1995
- Base Value-1000
- 0.5% on 2 Crore on 90% observation;10%floating stock;3Month of Listing.

IISL has constituted an Index Policy Committee, which is involved in policy and guidelines for managing the CNX Indices. The Index Maintenance Sub-committee takes all decisions on addition/ deletion of companies in any Index.

Trading in Nifty Index Future-12, June2001;Nifty Options-4June2001.

The S&P 500

The Standard & Poor's 500 Index (known commonly as the S&P 500) is an index with 500 of the top companies in the U.S. Stocks are chosen for the index primarily by capitalization but the constituent committee also considers other factors including liquidity, public float, sector classification, financial viability, and trading history.

The S&P 500 Index represents approximately 80% of the total value of the U.S. stock market.

In general, the S&P 500 Index gives a good indication of movement in the U.S. market as a whole.

The Dow Jones Industrial Average

The Dow Jones Industrial Average (DJIA) is one of the oldest, most well-known, and most frequently used indexes in the world. It includes the stocks of 30 of the largest and most influential companies in the United States.

The DJIA is a price-weighted index. It was originally computed by totaling the per-share price of the stocks of each company in the index and dividing this sum by the number of companies.

The Nasdaq Composite Index

Most investors know that the Nasdaq is the exchange on which technology stocks are traded. The Nasdaq Composite Index is a market-capitalization-weighted index of all the stocks traded on the Nasdaq stock exchange.

This index includes some companies that are not based in the United States.

Known for being heavily tech weighted, this index includes several subsectors across the tech market including software, biotech, semiconductors, and more. Although this index is known for its large portion of technology stocks, it does include some securities from other industries as well.

Sectoral Indices

Both BSE and NSE have some good indicators that measure companies falling under one specific sector.

Indices like S&P BSE Healthcare and NSE Pharma are considered good indicators of their respective changes in the pharmaceutical sector.

Another prominent example could be S&P BSE PSU, and Nifty PSU Bank Indices are indicators of all the listed public sector banks.

However, both the exchanges don't have to have corresponding indices for all the sectors, but this is generally a significant cause.

Few indices choose companies based on their market capitalization. Market capitalization means the market value of any public traded company in the stock exchange.

Market-Cap Based Indices

Few indices choose companies based on their market capitalization. Market capitalization means the market value of any public traded company in the stock exchange.

Indices like S&P BSE and NSE small cap 50 are a collection of companies that have a lower market capitalization in accordance with the rules set by the Security Exchange Board of India (SEBI).

Other Indices

Other Indices

Several other indices like S&P BSE 500, NSE 100, S&P BSE 100, among others, are slightly larger indices and come with a more significant number of stocks listed on them.

You may have a low-risk appetite and stock listed on Sensex may have a high-risk appetite. Investment portfolio are not tailored to meet every need. So investor has to be focused and invest in which they feel safe.

Stock market indices are considered not just an advantage but also a necessity. The importance of stock market indices helps companies to make their investment safer and more accessible.

Having indices reduces the investors' pressure and guides them through the first step in making stock market investment easy.

6.4 Listing of Securities

For trading in the stock market, a company has to list its securities in the stock exchange. It means that the name of the company is registered in the stock exchange.

Listing means formal admission of a security to the trading platform of the Exchange.Listing is not compulsory under the Companies Act 2013/1956. It becomes necessary when a Public Limited Company wants to issue shares or debentures to the public.

The listing provides an exclusive privilege to securities on the stock exchange. Only listed shares are quoted on the stock exchange. Stock exchange provides transparency in transactions of listed securities and equality and competitive conditions. Listing is beneficial for the company, to the investor, and to the public at large.The company has to fulfill certain conditions according to Companies Act. The company has to offer its shares or debentures to the public for subscription. Only then, the company will be allowed to list its security in the stock exchange.

For listing shares in the stock exchange, a company must have minimum of Rs. 5 crores as its equity capital and 60% of this i.e., Rs. 3 crores are offered to the public.All companies seeking listing of their securities on the Exchange are required to enter into a formal listing agreement with the Exchange. The agreement specifies all the quantitative and qualitative requirements to be continuously complied with by the issuer for continued listing.

The Exchange monitors such compliance. Failure to comply with the requirements invites suspension of trading, or withdrawal/delisting, in addition to penalty under the Securities Contracts (Regulation) Act, 1956. The agreement is being increasingly used as a means to improve corporate governance.

Objectives of Listing

- To provide liquidity to securities
- To provide a mechanism for effective control and supervision of trading
- To mobilize savings for economic development
- To provide free negotiability to stocks.
- Ability to raise further capital

Conditions for Listing

Before listing securities, a company has to fulfill the following conditions:

1. Shares of the company must be offered to the public through a prospectus and 25% of each class of securities must be offered.
2. The prospectus should clearly mention opening of subscription, receipt of application, etc.
3. The capital structure of the company should be broad-based and there should-be public interest in securities.
4. The minimum issued capital must be Rs. 3 crores of which Rs. 1.80 crores must be offered to the public.
5. There must be at least five public shareholders for every Rs. 1 lakh of fresh issue of capital and 10 shareholders for every Rs. 1 lakh of offer for sale of existing capital. On the excess application money, the company will have to pay interest from 4% to 15%, if there is delay in refund and delay should not be more than 10 weeks from the date of closure of subscription list.
6. A company with paid up capital of more than Rs. 5 crores should get itself listed in more than one stock exchange, it includes the compulsory listing on regional stock exchange.
7. The auditor or secretary of the company applying for listing should declare that the share certificates have been stamped so that shares belonging to the promoter's quota cannot be sold or hypothecated or transferred for a period of 5 years.
8. Articles of Association of the company must have the following provisions:

- A common form of transfer shall be used

- Fully paid shares shall be used
- No lien on fully paid shares
- Calls paid in advance will not carry a right to dividend and will not be forfeited before the claim becomes time-barred.
- Option to call off shares shall be given only after sanction by the general meeting.

9. Letter of allotment, Letter of regret and letter of rights shall be issued simu1taneously.
10. Receipts for all the securities deposited, whether for registration or split and no charges will be made for the services.
11. The company will issue consolidation and renewal certificates for split certificate, letter of allotment, letter of rights and transfer, etc. when required.
12. The stock exchange should be notified by the company regarding the date of board meeting, change in the composition of board of directors, and any new issue of securities, in place of reissue of forfeited shares.
13. Closing the transfer books for the purpose of declaration of dividend, rights issue or bonus issue. And for this purpose, due notice should be given to stock exchange.
14. Annual return of the company to be filed soon after the annual general body meeting.
15. The company will have to comply with conditions imposed by the stock exchange now and then for 1istmg of security.

Listing improves the confidence of small investors and protects them. The prices are publicly arrived at on the basis of demand and supply; the stock exchange quotations are generally reflective of the real value of the security. Thus, listing helps generate an independent valuation of the company by the market.

6.5 Advantages& Disadvantage of Listing

Listing offers advantages to both the investors as well as the companies. The following are the advantages of listing to investors:

1. It provides liquidity to investments. Security holders can convert their securities into cash by selling them as and when they require.
2. Shares are traded in an open auction market where buyers and sellers meet. It enables an investor to get the best possible price for his securities.
3. Ease of entering into either buy or sell transactions.
4. Transactions are conducted in an open and transparent manner subject to a well-defined code of conduct. Therefore, investors are assured of fair dealings.
5. Listing safeguards investors interests. It is because listed companies have to provide clear and timely information to the stock exchanges regarding dividends, bonus shares, new issues of capital, plans for mergers, acquisitions, expansion or diversification of business. This enables investors to take informed decisions.
6. Listed securities enable investors to apply for loans by providing them as collateral security.
7. Investors are able to know the price changes through the price quotations provided by the stock exchanges in case of listed securities.
8. Listing of shares in stock exchanges provides investors facilities for transfer, registration of rights, fair and equitable allotment.
9. Shareholders are provided due notice with regard to book closure dates, and they can take investment decisions accordingly.

Advantages of Listing to Companies

1. Listed securities are preferred by the investors as they have better liquidity.

2. Listing provides wide publicity to the companies since their name is mentioned in stock market reports, analysis in newspapers, magazines, TV news channels. This increases the market for the securities. As Hasting has observed,
3. Listing provides a company better visibility and improves its image and reputation.
4. It makes future financing easier and cheaper in case of expansion or diversification of the business.
5. Growth and stability in the market through broadening and diversification of its shareholding.
6. Listing attracts interest of institutional investors of the country as well as foreign institutional investors.
7. Listing enables a company to know its market value and this information is useful in case of mergers and acquisitions, to arrive at the purchase consideration, exchange ratios etc.
8. By complying with the listing requirements, the operations of the company become more transparent and investor friendly. It further enhances the reputation of the company.

Disadvantages of Listing Securities

Listing is not without its limitations. The following are the limitations of listing:

1. Listing might enable speculators to drive up or drive down prices at their will. The violent fluctuations in share prices affect genuine investors.
2. In case of excessive speculation, share prices might not reflect its fundamentals. The stock markets may fail to be the true economic barometer of an economy's performance.
3. In case of bear markets share prices might be hammered down, and the standing of a company might be lowered in the eyes of the investors, shareholders, bankers, creditors, employees etc.
4. Listing of securities may induce the management and the top-level employees to indulge in 'insider trading 'by getting access to important information. Such actions adversely affect the common security holders.
5. The management might enter into an agreement with brokers to artificially increase prices before a fresh issue and benefit from that. Common public might be induced to buy shares in such companies, ultimately the prices would crash and the common investors would be left with worthless stock of securities.
6. Listing requires disclosing important sensitive information to stock exchanges such as plans for expansion, diversification, selling of certain businesses, acquisition of certain brands or companies etc. Such information might be used by the competitors to gain advantage.
7. Outsiders might acquire substantial shares in the company and threaten to take over the company or they might demand hefty compensation to sell their shares.
8. Stock exchanges in India still suffer from shortcomings. Listed securities might be utilized by scamsters to indulge in scams.

Listing means formal admission of a security to the trading platform of the Exchange. It provides liquidity to investors without compromising the need of the issuer for capital and ensures effective monitoring of conduct of the issuer and trading of the securities in the interest of investors.

Procedure for Listing

A company has to list its securities on the stock exchange for trading in the stock market. Listing of securities means a company is registered on the stock exchange. The company has to fulfil the conditions mentioned in Companies Act. To list its securities in stock exchange, company has to offer its securities to the public for subscription. A company must have minimum equity capital of Rs. 5 crores and 60% of this amount are offered to the public, for Shares Listing on the stock exchange.

To list its securities in stock exchange, company has to offer its securities to the public for subscription. A company must have minimum equity capital of Rs. 5 crores and 60% of this amount are offered to the public, for Shares Listing on the stock exchange.

The application is made to the listing committee of the stock exchange by the company, and then the listing committee will scrutinize the application form of the company.

Procedure for Shares Listing Stock Exchange will ensure the following:

- Whether the financial position of the company is sound or not;
- Solvency & liquidity positions of the company;

In case the application for listing is accepted then the listing company will have to execute a listing agreement with the stock exchange.

Stock Exchange will ensure the following:

- Whether the financial position of the company is sound or not;
- Solvency & liquidity positions of the company;

In case the application for listing is accepted then the listing company will have to execute a listing agreement with the stock exchange.

- Copies of financial statement & auditor's report for the last 5 years;
- Copy of shares & debentures, letter of allotment and letter of regret;
- Details of the company since incorporation including changes in the capital structure, borrowings, etc.;
- Details of shares or debentures issued for consideration other than cash;
- A statement defining the distribution of shares and other details related to the commission, brokerage, discounts, or terms related to issue of shares;
- Agreement with a financial institution, if any;
- Details of shares forfeited;
- Details of securities about which permission to deal with are applied for;
- A copy of consent from SEBI.

Listing a Company on Stock Exchange & IPO Application Process

Company must be registered as a Public Company under Companies Act 1956 or Companies Act 2013. he issuer has net tangible assets of at least Rs. 3 crores, calculated on a restated and consolidated basis, in each of the preceding three full years

IPO Procedure

Step 1: Hiring ofan Underwriter or Investment Bank

To start with the process, the company shall first one or more underwriters, investment banks. The underwriters assure the company about the capital being raised and act as intermediaries between the company and its investors.

Step 2: Registration for IPO

This next step is to prepare registration statement along with the Red Herring Prospectus (RHP). Submission of RHP is mandatory, as per the Companies Act.

Step 3: Verification by SEBI: Then, after submission of documents SEBI verifies the disclosure of facts by the company. If the application is approved, the company can announce a date for its IPO.

Step 4: Making an Application to The Stock Exchange The company now has to make an application to the stock exchange for approval of its initial issue.

Step 5: Creating a Buzz in the market

Before an IPO opens to the public, the company endeavors to create a buzz in the market about the IPO. Over a period of two weeks, the company will advertise the impending IPO across the country. This move will create awareness among the masses and thus create a demand for its shares.

Step 6: Pricing

The company will have fixed the prices of each shares either through Fixed Price IPO or by Book Binding Offering. In the case of Fixed Price Offering, the price of the company's stocks is announced in advanced. Whereas in Book Binding Offering, a price range of 20% is announced, following which investors can place their bids within the maximum price cap. Accordingly, the investors have to place their bids as per the company's quoted Lot price, which is the minimum number of shares to be purchased. Taking a company public also makes much of that company's information and data public. Not only will board members be held to more stringent standards, periodic audits are required and public reporting can bring on scrutiny from shareholders, which sometimes results in shareholder lawsuits.

Summary

An Index is a number used to represent change in set of values between a base period and another period. Stock Market Index is meant to capture the overall behavior of the share market. So the movement the of in represents sent overall increase or decrease in prices shares included in the index.

An index measures the price performance of a basket of stocks/securities. An index is used as a benchmark to track the performance of a specific set of securities and compare the returns generated by a mutual fund, portfolio manager, etc. Index ETF funds are used to invest in a specific list of securities tracked by the index. For example, the Nippon India ETF Nifty BeES ETF is used to track the performance of Nifty stocks and invest in the index. Indices can be broad-based, which track the entire market, or sectoral indices which track a particular sector. The index can also be based on the market cap of the stocks they track, for example, the Nifty Small Cap 100, Nifty Mid Cap 100, etc.

Keywords

Value Weighted Index or Weighted Market Capitalization Method: It is an index that shows aggregate market capitalization of sample stock on certain date in relation to base date.

Price Weighted Index: It is index which shows of sum of price of sample stock on certain date in relation to base date.

Equal Weighted Index: It is index which shows arithmetic average price of sample stock on certain date in relation to base date.

Listing means formal admission of a security to the trading platform of the Exchange.

SelfAssessment

1. NIFTY comprises of -------- listed on the National Stock Exchange.

A. 100 shares

B. 20 shares

C. 50 shares

D. Not Applicable

2. SENSEX comprises of -------- listed on the National Stock Exchange.

A. 100 shares

B. 30 shares

C. 500 shares

D. Not Applicable

3. NIFTY was created in----------.

A. 1995

B. 1988

C. 2000

D. Not Applicable

4. SENSEX was created in----------.

A. 1992

B. 1986

C. Both of the above

D. None of the above

5. SENSEX is related with----------.

A. BSE

B. NSE

C. DSC

D. LSC

6. NIFTY is related with----------.

A. BSE

B. NSE

C. DSC

D. None of the above

7. Listing ----------liquidity.

A. Increase

B. Decrease

C. Does not affect

D. Not Applicable

8. Since September 1, ----------, SENSEX is being calculated on a free-float market capitalization methodology.

A. 2003,

B. 2004

C. 2005

D. Not Applicable

9. From June 26, 2009, S&P CNX Nifty is computed based on free float methodology.

A. True

B. False

C. All facts are not given

D. Not Applicable

10. Base Value of nifty is ----------.

A. 1000

B. 100

C. 20000

D. Not Applicable

11. Base Value of sensex is ----------.

A. 1000

B. 100
C. 2000
D. Not Applicable

12. An Index is a number used to represent change in set of values between a base period and another period.
A. True
B. False

13. The free Float market capitalization Method-Is defined as the proportion of total share issued by the company that are readily available for trading in the market.
A. True
B. False

14. Value weighted Index is an index that shows aggregate market capitalization of sample stock on certain date in relation to base date.
A. True
B. False

15. For trading in the stock market, a company has to list its securities in the stock exchange. It means that the name of the company is registered in the stock exchange.
A. True
B. False

Answers for Self Assessment

1.	C	2.	B	3.	A	4.	B	5.	A
6.	B	7.	A	8.	A	9.	A	10.	A
11.	B	12.	True	13.	True	14.	True	15.	True

Review Questions

What do you mean by index? State features of index.

Compare the index of both NSE and BSE.

What do you mean by listing? What are the advantages of listing?

Elaborate various advantages and disadvantages of listing to companies.

Further Readings

- Security Analysis And Portfolio Management By K Sasidharan & Alex K Mathews, Mcgraw Hill Education
- Security Analysis And Portfolio Management By Pandian, Punithavathy, Vikas Publishing House.

Web Links

- https://www1.nseindia.com/content/us/fact2006_sec3.pdf
- https://www.bseindia.com/corporates/List_Scrips.html
- https://www.nseindia.com/companies-listing/raising-capital-debt-private-placement-eligibility-criteria
- https://groww.in/indices/sp-bse-sensex

Unit 07:Risk and Return

CONTENTS

Objectives

- understand the concept of return and risk.
- calculate the risk and return.
- understand the concept of measurement of risk.
- analyze the calculated risk for making an investment.

Introduction

Return is a motivating force and reward for investment. An investor wants a maximum return. Assessing return is important as it helps in comparison, analyzing past performance &forecasting future returns.

7.1 The Concept of Return

Income: cash or near-cash that is received as a result of owning an investment

Capital gains (or losses): the difference between the proceeds from the sale of an investment and its original purchase price

Total Return: the sum of the income and the capital gain (or loss) earned on an investment over a specified period of time.

Why Return is Calculated?

- To know the exact reward from investment.
- To compare the performance of two investment alternatives
- To forecast future performance on the basis of past data.

Types of Return:

- Historical Return

It is the return that is already achieved on an investment.

- Expected Return

The Time Value of Money and Returns

- The sooner you receive a return on a given investment, the better.
- A dollar received today is worth more than a dollar received in the future.
- The sooner your money can begin earning interest, the faster it will grow.

Realized Return

Current return actually received by an investor during the given return period.

$$\text{Holding period return} = \frac{\text{Income during period} + \text{Capital gain (or loss) during period}}{\text{Beginning investment value}}$$

$$\text{Capital gain (or loss) during period} = \text{Ending investment value} - \text{Beginning investment value}$$

Question on Realized Rate of Return

The price of Equity Share Idea Cellular at the beginning of the year Rs.60; dividend paid two wards the end of the year is 2.40 and price at the end of the year is 66.

Compute the rate of return.

= "D1 + (P1- P0) X 100" /"P0 "

R = "2.4 + (66- 60) X 100" /"60 "

R = 14%

Question on Realized Rate of Return

Adam is a retail investor and decides to purchase 10 shares of Company A at a per-unit price of $20. Adam holds onto shares of Company A for two years. In that time frame, Company A paid yearly dividends of $1 per share. After holding them for two years, Adam decides to sell all 10 shares of Company A at an ex-dividend price of $25.

Adam would like to determine the rate of return during the two years he owned the shares.

To determine the rate of return, first, calculate the number of dividends he received over the two-year period:

10 shares x ($1 annual dividend x 2) = $20 in dividends from 10 shares

Next, calculate how much he sold the shares for:

10 shares x $25 = $250 (Gain from selling 10 shares)

Lastly, determine how much it cost Adam to purchase 10 shares of Company A:

10 shares x $20 = $200 (Cost of purchasing 10 shares)

Plug all the numbers into the rate of return formula:

= (($250 + $20 – $200) / $200) x 100 = 35%

Therefore, Adam realized a 35% return on his shares over the two-year period

(b) Expected Return

The expected return is the profit or loss that an investor anticipates on an investment that has known historical rates of return.

It is calculated by multiplying potential outcomes by the chances of them occurring and then totaling these results.

Their portfolio contains the following stocks:

- Alphabet Inc., (GOOG): $500,000 invested and an expected return of 15%
- Apple Inc. (AAPL): $200,000 invested and an expected return of 6%

- Amazon.com Inc. (AMZN): $300,000 invested and an expected return of 9%

With a total portfolio value of $1 million, the weights of Alphabet, Apple, and Amazon in the portfolio are 50%, 20%, and 30%, respectively.

Thus, the expected return of the total portfolio is:

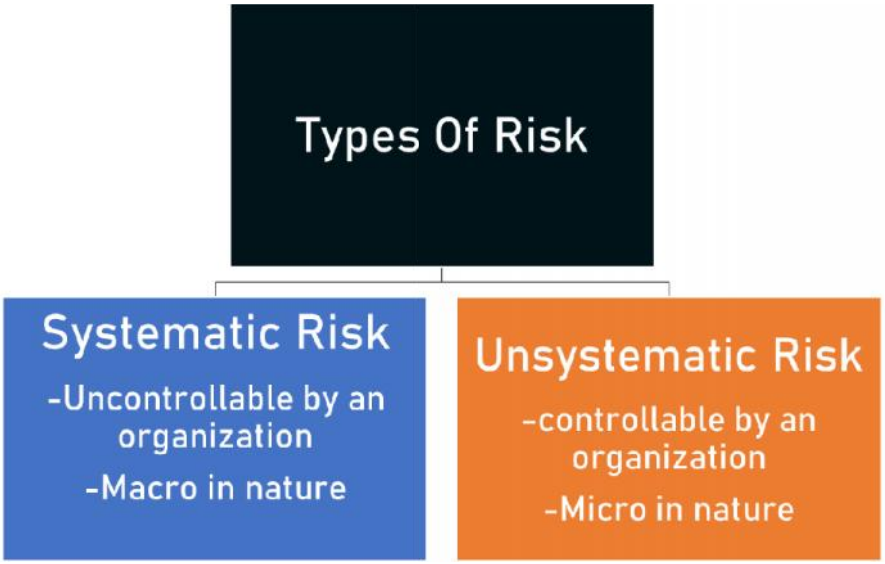
(50% x 15%) + (20% x 6%) + (30% x 9%) = 11.4%

7.2 The Concept of Risk

Risk is the potential for divergence between the actual outcome and what is expected.

In finance, the risk is usually related to whether expected cash flows will materialize, whether security prices will fluctuate unexpectedly, or whether returns will be as expected.

Types of Risk:Broadly speaking, there are two main categories of risk: systematic and unsystematic



Broadly speaking, there are two main categories of risk: systematic and unsystematic

Systematic risk is the market uncertainty of investment, meaning that it represents external factors that impact all (or many) companies in an industry or group. Unsystematic risk represents the asset-specific uncertainties that can affect the performance of an investment.

- Systematic risk is due to the influence of external factors on an organization. Such factors are naturally uncontrollable from an organization's point of view.
- Systematic risk is macro because it affects various organizations operating under a similar stream or domain. It cannot be planned by the organization.

The types of systematic risk are depicted and listed below.

Types of Systematic Risk-

Interest rate risk: Interest-rate risk arises due to variability in the interest rates from time to time. It particularly affects debt securities as they carry a fixed rate of interest. The meaning of price and reinvestment rate risk is as follows:

- Price risk arises due to the possibility that the price of the shares, commodities, or investments may decline or fall in the future.
- Reinvestment rate risk results from the fact that the interest or dividend earned from investment can't be reinvested with the same rate of return as it was acquired earlier.

Market risk

- Market risk is associated with consistent fluctuations seen in the trading price of any particular shares or securities.
- That is, it arises due to a rise or fall in the trading price of listed shares or securities in the stock market.

Purchasing power or inflationary risk

Purchasing power risk is also known as inflation risk. It is so, since it emanates (originates) from the fact that it affects purchasing power adversely. It is not desirable to invest in securities during an inflationary period.

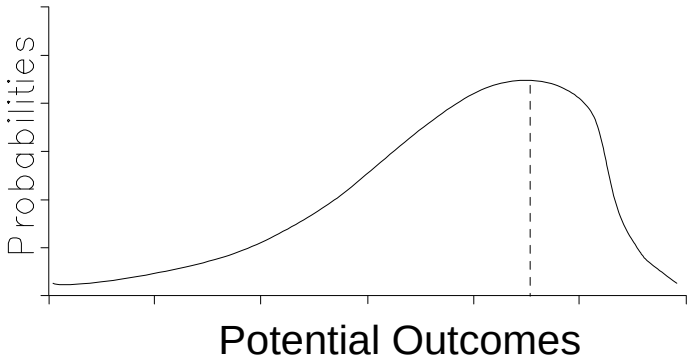
The meaning of demand and cost inflation risk is as follows:

- Demand inflation risk arises due to increasing in price which results from an excess of demand over supply.
  - It occurs when supply fails to cope with the demand and hence cannot expand anymore.
  - In other words, demand inflation occurs when production factors are under maximum utilization.
- Cost inflation risk arises due to a sustained increase in the prices of goods and services.
  - It is actually caused by higher production costs.
  - A high cost of production inflates the final price of finished goods consumed by people.

7.3 Quantification of Risk

Understanding the Nature and type of risk is not sufficient unless quantification is done. reliable way to quantify risk is the degree of risk over expected return. A risky situation is one that has

some probability of loss. The higher the probability of loss, the greater the risk. The riskiness of an investment can be judged by describing the probability distribution of its possible returns.



The Normal Distribution: The normal distribution is a bell-shaped curve with finite variance and mean.

The Expected Value:

- The expected value of a distribution is the most likely outcome
- For the normal dist., the expected value is the same as the arithmetic mean
- All other things being equal, we assume that people prefer higher expected returns

Suppose that a particular investment has the following probability distribution:

25% chance of -5% return

50% chance of 5% return

25% chance of 15% return

This investment has an expected return of 5%

$$E(R) = 0.25(-0.05) + 0.50(0.05) + 0.25(0.15) = 0.05$$

7.4 The Variance & Standard Deviation

The variance and standard deviation describe the dispersion (spread) of the potential outcomes around the expected value.Greater dispersion generally means greater uncertainty and therefore higher risk

Standard Deviation: The formula for the standard deviation when analyzing population data (realized returns) is:

The formula for the standard deviation when analyzing forecast data (ex-ante returns) is it is the square root of the sum of the squared deviations away from the expected value.

The Coefficient of Variation

The coefficient of variation (CV) provides a scale-free measure of the riskiness of the security.

It removes the scaling by dividing the standard deviation by the expected return (risk per unit of return):

$$CV = \frac{\sigma_R}{E(R)}$$

7.5 Questions

The return of X and Y under different market conditions are given. Calculate expected return and standard deviation. In which security will you invest?

particulars	boon	normal	recession
probablity	.3	.5	.2
Rate of return X	25	35	45
Rate of return Y	45	35	25

Calculation of Expected return –

1. For X

	R	P	Sum r*p
Boon	25	.3	7.5
Normal	35	.5	17.5
Recession	45	.2	9
			34

Calculation of Expected return –

2. For Y

	R	P	Sum r*p
Boon	45	.3	13.5
Normal	35	.5	17.5
Recession	25	.2	5
			36

Calculation of Standard Deviation X

State of Economy	R	R bar or Expected return	R-r bar	sqaure	p	P(R-RBAR) suare
Boon	25	34	-9	81	.3	24.3
normal	35	34	1	1	.5	.5
Recession	45	34	11	121	.2	24.2
						49

The standard deviation is the square root of 49 =7

State of Economy	R	R bar or Expected return	R-r bar	sqaure	p	
Boon	25	36	-9	81	.3	24.3
normal	35	36	-1	1	.5	.5
Recession	45	36	11	121	.2	24.2
						49

Calculation of Standard Deviation Y

So both the stocks have the same risk the but return is 36 more than so y is preferable

Question

The return of A and B under different market conditions are given. Calculate expected return and standard deviation.

probablity	Security A	SecurityB	
.5	4	0	
.4	2	3	
.1	0	3	

Calculation of Expected return –

For A

- Expected R=r1p1+r2p2+r3+p3
- =4*.5+2*.4+0*.1=2.8

Calculation of Expected return –

For B

- Expected R=r1p1+r2p2+r3+p3
- =0*.5+3*.4+3*.1=1.5
- So expected return is greater of A

Calculation of Standard Deviation

r	p	(R-rbar)	sqaure	P*r-rbar square	
4	.5	4-2.8	1.44	.720	
2	.4	2-2.8	.64	.256	
0	.1	0-2.8	7.84	.784	1.76

r	p	(R-rbar)	sqaure	P*r-rbar square	
0	.5	0-1.5	2.25	1.125	
3	.4	3-1.5	2.25	.9	
3	.1	3-1.5	2.25	.225	2.25

- Square root of 1.76=1.33 so risk of a is 1.33
- Square root of 2.25=1.5so risk of b is 1.5
- So, security a return is high, and risk is low

Self Assessment

1. _____ is company-specific risk.

A. Inflation risk
B. Diversifiable risk
C. Depends
D. Not applicable

2. It refers to that portion of variation in return due to change in Operating conditions.

A. Market risk
B. Finance risk
C. Business risk
D. Maximizing risk.

3. It is the return that is already achieved on an investment.

A. Historic return
B. (b) Expected return
C. (c) Correlation
D. (d) None

4. Return an investor thinks an investment will earn in the future.

A. Expected return
B. Historic return
C. Both of the above
D. None of the above

5. It refers to that portion of variation in return due to capital structure of the firm.

A. Market risk
B. Finance risk
C. Both of the above
D. None of the above

6. It refers to that portion of variation in return due to change in purchasing power of money to be received in future.
A. Market risk
B. Inflation risk
C. Equal
D. None of the above

7. It refers to that portion of variation in return due to change in interest rate in the economy.
A. Market risk
B. Interest rate risk
C. Equal
D. None of the above

8. The price of Equity Share Idea Cellular at the beginning of the year Rs.60; dividend paid two wards the end of the year is 2.40 and price at the end of the year is 66. Compute the rate of return.
A. 16
B. (b) 12
C. (c) 14
D. (d) None of the above

9. India Zink is evaluating return on two assets, A and B.A was purchased a year ago for Rs.400000 and since then it generated cash inflow of Rs.16000.Presently it can be sold for price of 430000.Asset B was purchased a few year ago and its market value in the beginning and at end of the year was 240000 and Rs.236000 respectively. The asset B has generated cash inflow of 34000 during the year. Find out the rate of return on A and B.
A. 11.15 and 12.5
B. 12.5 and 13.5
C. Not impact at all
D. Not Applicable

10. ---------- of dividend income with capital appreciation will give total return.
A. Adding
B. Subtracting
C. All facts are not given
D. Doing nothing

11. Price risk arises due to the possibility that the price of the shares, commodities, or investments may decline or fall in the future.
A. False
B. True
C. No Impact

D. Not Applicable

12. Total return is the sum of the income and the capital gain (or loss) earned on an investment over a specified period of time.
    A. True
    B. False

13. Risk is the potential for divergence between the actual outcome and what is expected.
A. True
B. False

14. Systematic risk is micro because it affects various organizations operating under a similar stream or domain. It cannot be planned by the organization.
A. True
B. False

15. The higher the probability of loss, the greater the risk.
A. True
B. False

Summary

Return is a motivating force and reward for investment. An investor wants a maximum return. Assessing return is important as it helps in comparison, analyzing past performance & forecasting future returns.

Risk is the potential for divergence between the actual outcome and what is expected. In finance, the risk is usually related to whether expected cash flows will materialize, whether security prices will fluctuate unexpectedly, or whether returns will be as expected. Broadly speaking, there are two main categories of risk: systematic and unsystematic.

Understanding the Nature and type of risk is not sufficient unless quantification is done. reliable way to quantify risk is the degree of risk over expected return. A risky situation is one that has some probability of loss. The higher the probability of loss, the greater the risk. The riskiness of an investment can be judged by describing the probability distribution of its possible returns.

Keywords:

Total Return:It refers to the sum of the income and the capital gain (or loss) earned on an investment over a specified period of time.

The Coefficient of Variation: The coefficient of variation (CV) provides a scale-free measure of the riskiness of the security.

Market risk: Market risk is associated with consistent fluctuations seen in the trading price of any particular shares or securities.

Realized Return: Current return actually received by an investor during the given return period.

Review Questions

1. What do you mean by risk?
2. Elaborate in brief on types of risk.
3. Distinguish between systematic and unsystematic risk.
4. Elaborate on key features and types of return.

5. Distinguish between a historic and expected return.

Answers for SelfAssessment

1.	B	2.	C	3.	A	4.	A	5.	B
6.	B	7.	B	8.	C	9.	A	10.	A
11.	B	12.	True	13.	True	14.	False	15.	True

Further Readings

- Security Analysis And Portfolio Management By K Sasidharan & Alex K Mathews, Mcgraw Hill Education
- Security Analysis And Portfolio Management By Pandian, Punithavathy, Vikas Publishing House.

Web Links

- https://dducollegedu.ac.in/Datafiles/cms/ecourse%20content/Risk%20and%20Return-BMS.pdf
- https://corporatefinanceinstitute.com/resources/capital-markets/risk-and-return/
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Unit 08:Equity Valuation

CONTENTS

Objectives

- understand the concept of the balance sheet valuation method.
- analyze the variables working in the dividend discount model.
- analyze the difference free cash flow to firm and free cash flow to equity.
- interpret the methods advantages and shortcoming of the valuation method.

Introduction

Value is the monetary, material, or assessed worth of an asset, good, or service. 'Value' is a term signifying the material or monetary worth of a thing, which can be estimated in terms of the medium of exchange. In other words, it is an assessment resulting in an expression of opinion rather than arithmetical exactness.

8.1 Valuation

Valuation is a process of appraisal or determination of the value of certain assets: tangible or intangible, securities, liabilities, and a specific business as a going concern or any company listed or unlisted or other forms of organization, partnership or proprietorship. Business valuation requires a working knowledge of a variety of factors, and professional judgment and experience. This includes recognizing the purpose of the valuation, the value drivers impacting the subject company, and an understanding of the industry, competitive and economic factors, as well as the selection and application of the appropriate valuation approach (es) and method(s).

Value of a firm versus the valuation of a firm. These two terms are often used interchangeably, but for investors, the value of a firm is a number, whereas valuation is expressed as a multiple to earnings, EBIT, cash flow, or another operating metric. In corporate finance, the value of a firm is most often derived through discounted cash flow (DCF) analysis, a model which essentially discounts the free cash flows of the firm to the present.

The result will be intrinsic value — a number, whether in hundreds of thousands, millions, or billions. The value per share of the firm can then be calculated by simply dividing the value by the shares outstanding.

Intrinsic Value

Intrinsic Value is the true economic worth of financial assets. That is each financial asset has an intrinsic value that represents its future economic worth. The Fundamental analyst believes that due to temporary disequilibrium, the current market prices may be at variance with the intrinsic value but in the long run market price to move towards its "real value" intrinsic value

If the "intrinsic/real value" of a stock is above the current market price, the investor would purchase the stock because he knows that the stock price would rise and move towards its "intrinsic or real value"

If the intrinsic value of a stock was below the market price, the investor would sell the stock because he knows that the stock price is going to fall and come closer to its intrinsic value.

What is the Balance Sheet Valuation Method?

Asset-based valuation refers to one of the approaches used to calculate the value of a business. It values a business based on the assets it possesses. The method evaluates assets and liabilities, obtains their fair market value, and deducts the liabilities from assets.

To find the value using an asset-based approach, an analyst starts this valuation procedure with an audited balance sheet. All entity assets and liability accounts are subject to revaluation to the valuation assignment standard of value.To prepare a revalued balance sheet, the analyst identifies and capitalizes all of the entity's assets and liabilities. This process includes all of the assets and liabilities that are already recorded on the entity's balance sheet and not recorded on the entity's balance sheet.

Based on the values in the revalued balance sheet in line with the fair market value:

Total assets: $107 billion

Total liabilities: $60 billion

Value: Total assets – Total liabilities = $107 – $60 = $47 billion

Consider another asset-based valuation example where the book value of assets is $50,000 (current assets, fixed assets, and other assets like investment in subsidiaries); the corresponding total derived after adding the fair market value of each item in the asset list is $76,000.

Pros and Cons

Pros

- It is the most preferred method in a critical context like liquidation and M&A.
- It follows simple mathematical formulas.
- Consider off-balance-sheet items.
- Pros and Cons

Cons

- Having innumerable assets does not point to the profitability of the business.
- Valuing the intangible assets requires attention to detail and making the overall process complex.
- The method does not include the earnings of the company.
- Requires revaluation to derive the fair market value.

8.2 Dividend Discount Model

A company produces goods or offers services to earn profits. The cash flow earned from such business activities determines its profits, which gets reflected in the company's stock prices. Companies also make dividend payments to stockholders, which usually originate from business profits. The DDM model is based on the theory that the value of a company is the present worth of the sum of all of its future dividend payments.

The dividend discount model (DDM) is a quantitative method used for predicting the price of a company's stock based on the theory that its present-day price is worth the sum of all of its future dividend payments when discounted back to its present value. It attempts to calculate the fair value

of a stock irrespective of the prevailing market conditions and takes into consideration the dividend payout factors and the market expected returns. If the value obtained from the DDM is higher than the current trading price of shares, then the stock is undervalued and qualifies for a buy, and vice versa.

Time Value of Money

Imagine you gave $100 to your friend as an interest-free loan. After some time, you go to him to collect your loaned money. Your friend gives you two options:

- Take your $100 now
- Take your $100 after a year

Most individuals will opt for the first choice. Taking the money now will allow you to deposit it in a bank. If the bank pays a nominal interest, say 5%, then after a year, your money will grow to $105. It will be better than the second option where you get $100 from your friend after a year. Mathematically,

Future Value=Present Value ∗ (1+interest rate%) (for one year)

The above example indicates the time value of money, which can be summarized as "Money's value is dependent on time." Looking at it another way, if you know the future value of an asset or a receivable, you can calculate its present worth by using the same interest rate model.

Rearranging the equation, Present Value =Future Value/(1+interest rate%)

In essence, given any two factors, the third one can be computed.

The dividend discount model uses this principle. It takes the expected value of the cash flows a company will generate in the future and calculates its net present value (NPV) drawn from the concept of the time value of money (TVM). Essentially, the DDM is built on taking the sum of all future dividends expected to be paid by the company and calculating its present value using a net interest rate factor (also called discount rate).

Expected Dividends

Estimating the future dividends of a company can be a complex task. Analysts and investors may make certain assumptions, or try to identify trends based on past dividend payment history to estimate future dividends.

Discounting Factor

Shareholders who invest their money in stocks take a risk as their purchased stocks may decline in value. Against this risk, they expect a return/compensation. Similar to a landlord renting out his property for rent, the stock investors act as money lenders to the firm and expect a certain rate of return. A firm's cost of equity capital represents the compensation the market and investors demand in exchange for owning the asset and bearing the risk of ownership. Discounting Factor This rate of return is represented by (r) and can be estimated using the Capital Asset Pricing Model (CAPM) or the Dividend Growth Model. However, this rate of return can be realized only when an investor sells his shares. The required rate of return can vary due to investor discretion.

Companies that pay dividends do so at a certain annual rate, which is represented by (g). The rate of return minus the dividend growth rate (r - g) represents the effective discounting factor for a company's dividend. The dividend is paid out and realized by the shareholders. The dividend growth rate can be estimated by multiplying the return on equity (ROE) by the retention ratio (the latter being the opposite of the dividend payout ratio).

Since the dividend is sourced from the earnings generated by the company, ideally it cannot exceed the earnings. The rate of return on the overall stock has to be above the rate of growth of dividends for future years, otherwise, the model may not sustain and lead to results with negative stock prices that are not possible in reality.

DDM Formula

The financial theory states that the value of a stock is worth all of the future cash flows expected to be generated by the firm discounted by an appropriate risk-adjusted rate. We can use dividends to measure the cash flows returned to the shareholder.

The stock's intrinsic value is the present value of all the future cash flow generated by the stock. DDM Formula

Here the CF = Dividends.

The dividend discount model prices a stock by adding its future cash flows discounted by the required rate of return that an investor demands for the risk of owning the stock. However, this situation is theoretical, as investors normally invest in stocks for dividends and capital appreciation. Capital appreciation is when you sell the stock at a higher price than you buy. In such a case, there are two cash flows: –

Future selling price

Dividend Discount Model = Intrinsic Value = Sum of Present Value of Dividends + Present Value of Stock Sale Price.

This dividend discount model or DDM model price is the stock's intrinsic value.

If the stock pays no dividends, then the expected future cash flow will be the sale price of the stock.

Big Brothers Inc. has the following information for every investor –

The estimated dividends for the next period – $50,000

The required rate of return – is 10%

Find out the price of the stock.

Hi-Fi Company has the following information –

Estimated dividends for the next period – $40,000

Required rate of return – 8%

Growth rate – 4%

DDM Example-Constant growth

By using the stock – PV with constant growth formula, we get –

- P0 = Div1 / (r – g)
- Or, P0 = $40,000 / (8% – 4%)
- Or, P0 = $40,000 / 4%
- Or, P0 = $40,000 * 100/4 = $10, 00,000.

DDM Example-Variable growth

Company X has paid a dividend of Rs. 10 per share last year (D) and its dividend is expected to grow at 5 % every year. If an investor's expected rate of return from Company X share is 7 %, what will be the market price of the share as per the dividend discount model?

D0= 10; g = 5% or 0.05; r = 7% or 0.07

D1= D0* (1 +g) = 10 * 1.05 = 10.50

P= D1/(r-g) =525

Shortcomings of the DDM

While the GGM method of DDM is widely used, it has two well-known shortcomings. The model assumes a constant dividend growth rate in perpetuity. This assumption is generally safe for very mature companies that have an established history of regular dividend payments.

However, DDM may not be the best model to value newer companies that have fluctuating dividend growth rates or no dividends at all. One can still use the DDM on such companies, but with more and more assumptions, the precision decreases.

The second issue with the DDM is that the output is very sensitive to the inputs. For example, in the Company X example above, if the dividend growth rate is lowered by 10% to 4.5%, the resulting stock price is $75.24, which is more than a 20% decrease from the earlier calculated price of $94.50.

The model also fails when companies may have a lower rate of return (r) compared to the dividend growth rate (g). This may happen when a company continues to pay dividends even if it is incurring losses or relatively lower earnings. The dividend discount model allows the investor to

determine a reasonable price for a stock based on an estimate of the amount of cash it will return in current and future dividends.

DDM is one way of estimating the intrinsic value of a stock. It is most useful to investors in deciding which dividend-paying stocks to buy and hold long-term.

8.3 Free Cash Flow

Free cash flow (FCF) measures a company's financial performance. It shows the cash that a company can produce after deducting the purchase of assets such as property, equipment, and other major investments from its operating cash flow.

In other words, FCF measures a company's ability to produce what investors care most about: cash that's available to be distributed in a discretionary way. Knowing the company's free cash flow enables management to decide on future ventures that would improve shareholder value.

The most common types include:

Free Cash Flow to the Firm (FCFF), also referred to as "unleveled"

Free Cash Flow to Equity, also known as "levered"

How is FCF Calculated?

There are various ways to compute FCF, although they should all give the same results. The formula below is a simple and the most commonly used formula for levered free cash flow:

Free Cash Flow = Operating Cash Flow (CFO) – Capital Expenditures

Most information needed to compute a company's FCF is on the cash flow statement. As an example, let Company A have $22 million dollars of cash from its business operations and $6.5 million dollars used for capital expenditures, net of changes in working capital. Company A's FCF is then computed as:

FCF = $22 – $6.5 = $15.5m

Free cash flow = sales revenue - (operating costs + taxes) - required investments in operating capital.

Free cash flow = net operating profit after taxes - net investment in operating capital.

Net Income

+ Depreciation/Amortization

- Change in Working Capital

- Capital Expenditure

= Free Cash Flow

Benefits of Free Cash Flow

Because FCF accounts for changes in working capital, it can provide important insights into the value of a company and the health of its fundamental trends.

A decrease in accounts payable (outflow) could mean that vendors are requiring faster payment. A decrease in accounts receivable (inflow) could mean the company is collecting cash from its customers more quickly.

An increase in inventory (outflow) could indicate a building stockpile of unsold products. Including working capital in a measure of profitability provides an insight that is missing from the income statement. For example, assume that a company had made $50,000,000 per year in net income each year for the last decade.

On the surface, that seems stable, but what if FCF was dropping over the last two years as inventories were rising (outflow), customers started to delay payments (inflow), and vendors began demanding faster payments (outflow) from the firm? In this situation, FCF would reveal a serious financial weakness that wouldn't have been apparent from an examination of the income statement alone.

This calculation can be complex, because it involves some assumptions about operational cash flows, capital expenditures, working capital increases and growth. However, the focus does not change.

The focus is to determine the value of the firm's operational cash flows generated over a period of time after removing the necessary asset investments. This value may go to equity holders in particular or to the company in general, but operational cash flows are the drivers.

The FCFF valuation approach estimates the value of the firm as the present value of future FCFF discounted at the weighted average cost of capital:

Firm value=$\infty\sum t=1FCFFt(1+WACC)$ t.

The value of equity is the value of the firm minus the value of the firm's debt:

Equity value = Firm value – Market value of debt.

Dividing the total value of equity by the number of outstanding shares gives the value per share.

- Limitations Associated with Free Cash Flow

The company's net income greatly affects a company's free cash flow because it also influences a company's ability to generate cash from operations. As such, other activities (i.e., those not within the core business operations of a company) from which the company generates income must be scrutinized deeply in order to reflect a more appropriate FCF value.

On the investors' side, they must be wary of a company's policies that affect their declaration of FCF. For example, some companies lengthen the time to settle their debts to maintain cash or, the opposite, shortening the time they collect debts due to them. Companies also have different guidelines on which assets they declare as capital expenditures, thus affecting the computation of FCF.

The FCFF valuation approach estimates the value of the firm as the present value of future FCFF discounted at the weighted average cost of capital.

8.4 Earnings Multiplier

The earnings multiplier is a financial metric that frames a company's current stock price in terms of the company's earnings per share (EPS) of stock, that's simply computed as price per share/earnings per share.

Also known as the price-to-earnings (P/E) ratio, the earnings multiplier can be used as a simplified valuation tool with which to compare the relative costliness of the stocks of similar companies. It can likewise help investors judge current stock prices against their historical prices on an earnings-relative basis.

- **The formula of the Earnings Multiplier**

The earnings multiplier can be calculated using the following formula:

Earnings Multiplier or P/E Ratio = Price Per Share/ Earnings Per Share

- Where:
- Price per share is the prevalent market price of a company's stock. It is the price at which the company's shares are trading in the exchange market.
- Earnings per share is the net profits earned by the company per share outstanding in the stock market.

- **Understanding Earnings Multiplier**

If the price of a stock is historically expensive relative to the company's earnings, it may indicate that it's not an optimal time to purchase this equity because it's overly expensive. Furthermore, comparing earnings multipliers across similar companies can help illustrate how expensive various companies' stock prices are relative to one other.

As an example of a practical application of the earnings multiplier, consider fictitious company ABC. Let's assume this corporation has a current stock price of $50 per share and earnings per share (EPS) of $5.

Under this set of circumstances, the earnings multiplier would be 50 dollars/5 dollars per year = 10 years. This means it would take 10 years to make back the stock price of $50 given the current EPS.

The multiplier can also be verbally expressed by saying, "Company ABC is trading at 10 times earnings," because the current price of $50 is 10x the $5 EPS. If 10 years ago, company ABC had a market price of $50 and EPS of $7, the multiplier would have been 7.14 years. •

Comparing company ABC's earnings multiplier to other similar companies can also provide a simple gauge for judging how expensive a stock is relative to its earnings.

If company XYZ also has an EPS of $5, but its current stock price is $65, it has an earnings multiplier of 13 years. Consequently, this stock may be deemed to be relatively more expensive than the stock of company ABC, which has a multiplier of only 10 years.

- **Types of Earnings Multipliers**

The following are the two most common types of earnings multipliers:

Forward Earnings Multiplier

Also called the estimated earnings multiplier, it is used to compare the present earnings with future earnings. It provides a clear picture of the company's earnings in the future – assuming no changes or adjustments.

However, companies may either overestimate or underestimate their earnings to meet the expected earnings multiplier. Market analysts also come up with estimates for earnings multipliers, which may be very different from the company's estimates, resulting in confusion.

Trailing Earnings Multiplier

It depends on the company's past performance, considering a 12-month period for calculations. It is the most commonly used price-to-earnings indicator, as it is based on facts assuming that the reported earnings are accurate.

If the forward earnings multiplier is lower than the trailing earnings multiplier, it implies that the analysts are predicting an increase in the company's earnings. Conversely, if the forward earnings multiplier is higher, the analysts are predicting a decrease in the company's earnings.

Trailing PE Ratio use the Historical EPS, while Forward PE Ratio uses the Forecast EPS.

Trailing PE Ratio Formula (TTM or Trailing Twelve Months) = Price Per Share / EPS over the previous 12 months.

Forward PE Ratio Formula = Price Per Share / Forecasted EPS over the next 12 months

The capitalization of earnings method is best used for stable or mature business where the benefit stream is expected to grow at a consistent rate into the future. The DCF method is most appropriate for companies with uneven growth in their future benefit streams or businesses with a lack of earnings history.

The major positive of the income approach is that it utilizes in the valuation calculation the benefit streams produced by an enterprise. Since a business's value is commonly considered to be the present value of its future earnings or cash flows, these methods emphasize the elements that are generally valued by the investor in a business.

One significant downside to the income approach is the degree of estimation involved in the calculations. The forecasting of future benefit streams and determination of a capitalization or discount rate often involve a high degree of professional judgment, which can subject the valuation to debate from other parties.

Summary

Value of a firm versus the valuation of a firm. These two terms are often used interchangeably, but for investors, the value of a firm is a number, whereas valuation is expressed as a multiple to earnings, EBIT, cash flow, or another operating metric. In corporate finance, the value of a firm is most often derived through discounted cash flow (DCF) analysis, a model which essentially discounts the free cash flows of the firm to the present. The result will be intrinsic value — a number, whether in hundreds of thousands, millions, or billions. The value per share of the firm can then be calculated by simply dividing the value by the shares outstanding.

Intrinsic Value is the true economic worth of financial assets. That is each financial asset has an intrinsic value that represents its future economic worth. The Fundamental analyst believes that due to temporary disequilibrium, the current market prices may be at variance with the intrinsic value but in the long run market price to move towards its "real value" intrinsic value

If the "intrinsic/real value" of a stock is above the current market price, the investor would purchase the stock because he knows that the stock price would rise and move towards its "intrinsic or real value". If the intrinsic value of a stock was below the market price, the investor would sell the stock because he knows that the stock price is going to fall and come closer to its intrinsic value

Keywords

Value: It is the monetary, material, or assessed worth of an asset, good, or service. '

Intrinsic Value: It is the true economic worth of financial assets. That is each financial asset has an intrinsic value that represents its future economic worth.

The Earnings Multiplier: It is a financial metric that frames a company's current stock price in terms of the company's earnings per share (EPS) of stock, that's simply computed as price per share/earnings per share.

DDM: It is a quantitative method used for predicting the price of a company's stock based on the theory that its present-day price is worth the sum of all of its future dividend payments when discounted back to its present value.

SelfAssessment

1. Value is a term signifying the ---------- worth of a thing, which can be estimated in terms of the medium of exchange.

A. Monetary worth
B. Technical worth
C. Emotional worth
D. No worth

2. If the intrinsic value of a stock was below the market price, the investor would ---------- the stock.

A. Buy
B. Sell
C. Hold,
D. Both A and B

3. If Intrinsic value> market price value then the stock is

A. Undervalued
B. Overvalued
C. Fairly valued
D. Neither a and b

4. FCFE measures how much "cash" a firm can return to its ----------and is calculated after taking care of the taxes, capital expenditure, and debt cash flows.

A. Shareholder
B. Debenture holder
C. Both
D. All of the above

5. Equity value= ---------- - Net Debt

A. Enterprise value
B. Book Value
C. Both of the above
D. None of the above

6. Dividend Yield= Dividend per share

?

A. Market price
B. Book value
C. Equal
D. None of the above

7. ----------dividend discount model assumes that dividends grow at a fixed percentage annually.

A. Variable growth model
B. Skewed growth model
C. Zero growth model
D. Credit Risk

8. If a preferred share of stock pays dividends of Rs.1.80 per year, and the required rate of return for the stock is 8%, then what is its intrinsic value?

A. 32.5
B. 22.5
C. 42.5
D. None of the above

9. Total assets: $107 billion

Total liabilities: $60 billion

Value?

A. $60 billion
B. $47 billion
C. $100 billion
D. Not Applicable

10. The dividend discount model (DDM) is a quantitative method used for predicting the price of a company's stock based on the theory that its present-day price is worth the sum of all of its future dividend payments when discounted back to its present value.

A. True
B. False
C. All facts are not given
D. Not Applicable

11. Future Value=Present Value ∗ (1+interest rate%)

A. True

B. False
C. All facts are not given
D. Not Applicable

12. 'Value' is a term signifying the material or monetary worth of a thing, which can be estimated in terms of the medium of exchange.
A. True
B. False

13. Valuation is a process of appraisal or determination of the value of certain assets: tangible or intangible, securities, liabilities, and a specific business as a going concern or any company listed or unlisted or other forms of organization, partnership, or proprietorship.
A. True
B. False

14. If the "intrinsic/real value" of a stock is above the current market price, the investor would purchase the stock because he knows that the stock price would rise and move towards its "intrinsic or real value"
A. True
B. False

15. If the intrinsic value of a stock was below the market price, the investor would sell the stock because he knows that the stock price is going to fall and come closer to its intrinsic value.
A. True
B. False

Answers for Self Assessment

1.	A	2.	B	3.	A	4.	A	5.	A
6.	A	7.	C	8.	B	9.	B	10.	A
11.	A	12.	True	13.	True	14.	True	15.	True

Review Questions

1. What do you mean by value and valuation?
2. Elaborate in brief about various methods of valuation.
3. What isthe limitation of the DCF approach?
4. Elaboratedividend discount model and earning multiplier method.

Further Readings

- Security Analysis And Portfolio Management By K Sasidharan& Alex K Mathews, Mcgraw Hill Education
- Security Analysis And Portfolio Management By Pandian, Punithavathy, Vikas

Publishing House.

Web Links

- https://corporatefinanceinstitute.com/resources/valuation/valuation/
- https://pages.stern.nyu.edu/~adamodar/New_Home_Page/background/valintro.htm
- https://online.hbs.edu/blog/post/how-to-value-a-company
- https://hbr.org/1997/05/whats-it-worth-a-general-managers-guide-to-valuation

Unit 09: Capital Market Efficiency

CONTENTS

Objectives

- analyze the efficient market hypothesis and its background.
- understand all forms of efficient market hypotheses.
- analyze the anomalies of all forms of efficient market hypothesis.
- interpret the anomalies of all forms of efficient market hypothesis.

Introduction

Some of the most interesting and important academic research during the past 20 years have analyzed whether our capital markets are efficient or not. This extensive research is important because its results have significant real-world implications for investors and portfolio managers.

In addition, the question of whether capital markets are efficient is one of the most controversial areas in investment research. Recently, a new dimension has been added to the controversy because of the rapidly expanding research in behavioral finance that likewise has major implications regarding the concept of efficient capital markets.

9.1 Efficient Market

You need to understand the meaning of the terms efficient capital markets and efficient market hypothesis (EMH) because of the importance and controversy associated with it. The market price of the security is an unbiased estimate of its intrinsic value. But it does not mean that market price = intrinsic value at every point of time.

Efficient market- 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 … on the average, competition will cause the full effects of new information on intrinsic values to be reflected "instantaneously" in actual prices.

Two Types of Market Efficiencies:

Operational efficiency: Operational efficiency is measured by factors like the time taken to execute the order and the number of bad deliveries. The efficient market hypothesis does not deal with this efficiency.

Informational efficiency: It is a measure of the swiftness or the market's reaction to new information. New information in the form of economic reports, company analyses, political statements, and announcements of new industrial policy is received by the market frequently. Security prices adjust themselves very rapidly and accurately.

Efficient Market Hypothesis

The Efficient Market Hypothesis (EMH) essentially says that all known information about investment securities, such as stocks, is already factored into the prices of those securities. If that is true, no amount of analysis can give you an edge over "the market."

At the core of EMH is the theory that, in general, even professional traders are unable to beat the market in the long term with fundamental or technical analysis. That idea has roots in the 19th century and the "random walk" stock theory. EMH as a specific title is sometimes attributed to Eugene Fama's 1970 paper "Efficient Capital Markets: A Review of Theory and Empirical Work."

Random walk theory states that successive stock prices are independent and they do not follow any regular pattern. Originally examined by Maurice Kendall in 1953, the theory states that stock price fluctuations are independent of each other and have the same probability distribution, but that over a period of time, prices maintain an upward trend.

A follower of random walk believes it is impossible to outperform the market without assuming additional risk. In his book, Malkiel preaches that both technical and fundamental analysis are largely a waste of time and are still unproven in outperforming the markets.

9.2 Forms of Efficiencies

They are divided into three categories:

- Weak form
- Semi-strong form
- Strong form

The level of information being considered in the market is the basis for this segregation.

Weak Form EMH:

Weak form EMH suggests that all past information is priced into securities. Current prices reflect all information found in the past prices and volumes. This means that there is no relationship between past and future price movements.

Buying and selling activities of the information traders lead the market price to align with the intrinsic value. Because it assumes that current market prices already reflect all past returns and any other security market information, this hypothesis implies that past rates of return and other historical market data should have no relationship with future rates of return.

This threw cold water on the practice of technical analysis—the study of stock price charts to divine future price movements. Therefore, this hypothesis contends that you should gain little from using any trading rule that decides whether to buy or sell a security based on past rates of return or any other past market data.

The three versions of the efficient market hypothesis are varying degrees of the same basic theory.

The weak form suggests that today's stock prices reflect all the data of past prices and that no form of technical analysis can be effectively utilized to aid investors in making trading decisions.

Advocates for the weak form efficiency theory believe that if the fundamental analysis is used, undervalued and overvalued stocks can be determined, and investors can research companies' financial statements to increase their chances of making higher-than-market-average profits.

Semi-Strong Form

The security price adjusts rapidly to all publicly available information.

The prices not only reflect the past price data, but also the available information regarding the earnings of the corporate, dividend, bonus issues, rightissuese, mergers, acquisitions, and so on.

Semi-Strong Form

To test market efficiency specific investment strategies are examined to see whether they earn an excess return by using CAPM, APT, or some other model.

Efficiency and Anomaly

'Most of the price reaction is completed immediately after earnings are announced.

There is a little delay in the reaction, so there is a little opportunity to earn abnormal returns from the market systematically erring in its response to the announcement.'

Semi-strong form test Stock split: A firm may 'split' its shares by increasing the number of shares of common stock and reducing the par or stated value per share in proportion.

No new money is raised and cash flow is unchanged therefore, prices should not react purely to the stock split.

Apparent market inefficiencies have been identified in specific markets at a particular time. The weak effect, Monday effect, Hour of the day effect, January effect Anomalies (seasonal or cyclical effect)

Small firm Effect ' Smaller firm shares have outperformed those of larger firms over the period of several decades. Investors should search for 'value shares' A share with a price that is low multiple of Eps generate abnormal return Value investing.

Bubbles: Occasionally financial assets go through.

Strong Form

All information is fully reflected on security prices.

It represents an extreme hypothesis not expect that most observers do to be true.

To test the strong form efficient market hypothesis, researchers analyzed the returns earned by certain groups like corporate insiders, specialists on the stock exchange, and mutual fund managers.

Efficiency and Anomaly

To test the strong form efficient market hypothesis, researchers analyzed the returns earned by certain groups like

corporate insiders,

specialists in the stock exchange and mutual fund managers

Fama acknowledged that strong market efficiency could not be an entirely realistic model for the markets since certain non-public information presented a profit opportunity for those who pos-possessed.

Strong Form: All information is fully reflected on security prices.

Semi-Strong Form: The security price adjusts rapidly to all publicly available information.

Weak Form: Current prices reflect all information found in the past prices and volumes.

9.3 Forms & Anomalies

While in standard finance theory, financial market anomaly means a situation in which a performance of stock or a group of stocks deviate from the assumptions of efficient market hypotheses. Such movements or events which cannot be explained by using efficient market hypothesis are called financial market anomalies.

Weak Form of EMH

Current prices reflect all information found in the past prices and volumes. Therefore, this hypothesis contends that you should gain little from using any trading rule that decides whether to buy or sell a security based on past rates of return or any other past market data.

Real World Example of Weak Form Efficiency

Suppose David, a swing trader, sees Alphabet Inc. (GOOGL) continuously decline on Mondays and increase in value on Fridays. He may assume he can profit if he buys the stock at the beginning of the week and sells at the end of the week.

If, however, Alphabet's price declines on Monday but does not increase on Friday, the market is considered weak form efficient.

Similarly, let's assume Apple Inc. (APPL) has beaten analysts' earnings expectation in the third quarter consecutively for the last five years.

Jenny, a buy-and-hold investor, notices this pattern and purchases the stock a week before it reports this year's third quarter earnings in anticipation of Apple's share price rising after the release.

Unfortunately for Jenny, the company's earnings fall short of analysts' expectations. The theory states that the market is weakly efficient because it doesn't allow Jenny to earn an excess return by selecting the stock based on historical earnings data.

Testing the Weak Form of Market Efficiency

This hypothesis confirms that changes in stock price in the future are independent of the changes that happened in the past (random walk of prices).

Therefore, the investor cannot earn an abnormal income on his trading based on past price movements**.**

Run test

An increase in price is represented by +

The decrease in price is represented by –

When there is no change in price, it is represented by zero.

A consecutive sequence of some sign is considered as run changes of sign indicates new run.

$Z= R-\bar{X} / S.d$

Calculated value> table value = no significant difference are found, then the security price changes are considered to be random in nature**.**

Serial correlation

Is the price change in one period is correlated with the price change in some other period?

Serial correlation or auto-correlation studies find the correlation co-efficient in a series of numbers by employing different stocks, different time periods.

Many studies conducted on the security price changes have failed to show any significant correlations.

Empirical Tests: Filter rule

- According to this strategy if a price of a security rises by atleast x per cent, investor should buy and hold the stock until its price declines by atleast x per cent from a subsequent high.
- If the behavior of the stock price changes is random, filter rules should not outperform a simple buy and hold strategy.

Evidences of anomalies in WFH

- Calendar and time anomalies contradict the weak form efficiency because weak form efficiency postulates that markets are efficient in past prices and cannot predict future on theses bases.
- But existence of seasonality and monthly effects contradict market efficiency and in this case investors can earn abnormal return. The Calendar anomalies that they considered in their studies are weekend effect, turn-of-the-month effect, turn-of-the-year effect January effect and end-of-December effect.
- Weekend effect: The stock prices are likely to fall on Monday. Means the closing price of Monday is less than the closing price of previous Friday.

- Turn-of-the-month effect: The prices of stocks are likely to increase in the last trading day of the following month, and the first three days of next month.
- January Effect: The phenomenon of small-company stocks to generate more return than other asset classes and market in the first two to three weeks of January is called January effect.
- Moving Averages: An important technique of technical analysis in which buying and selling signals of stocks are generated by long period averages and short period averages. In this strategy buying stocks when short period averages raise over long period averages and selling the stocks when short period averages falls below the long period averages.
- Moving Averages: An important technique of technical analysis in which buying and selling signals of stocks are generated by long period averages and short period averages. In this strategy buying stocks when short period averages raise over long period averages and selling the stocks when short period averages falls below the long period averages.
- A selling signal is created when prices reaches the support level which is minimum price level. Thus technical analysis recommends buying when the prices raises above last peak and selling when prices falls below last trough. But this strategy is difficult to implement.
- Many researchers have found that when the market holds weak form efficiency, then prices already reflected the past information and technical analysis is of no use.

So, the investor cannot beat the market by earning abnormal returns on the basis of technical analysis and past information. But here are some anomalies that deviate from the findings of these studies.

Semi-strong form hypothesis

The semi-strong form efficiency theory follows the belief that because all information that is public is used in the calculation of a stock's current price, investors cannot utilize either technical or fundamental analysis to gain higher returns in the market.The semi-strong form efficiency theory follows the belief that because all information that is public is used in the calculation of a stock's current price, investors cannot utilize either technical or fundamental analysis to gain higher returns in the market. Those who subscribe to this version of the theory believe that only information that is not readily available to the public can help investors boost their returns to a performance level above that of the general market.

Testing the Semi-Strong Form of Market Efficiency

Event Studies: Steps in Event Studies

Step 1: Identify the event

Pinpoint the announcement date

Markets react to the announcement of an event rather than the event itself Announcement Date

Step 2: Collect returns data around the announcement date Announcement Date - n + n

Step 3: Calculate the abnormal return

- Abnormal return = Ri – E(Ri)
- Calculate the Average Abnormal return for each company for each trading period
- Calculate the Cumulative Average Abnormal return (CAAR)

CAAR = $\sum$ (Average Abnormal returns for all companies)

- If the value of CAAR is close to zero it can be concluded that markets are efficient in the semi strong form.
- Market Reaction Test
- Earning Impact
- Secondary Offering Impact
- Block Trade Impact
- Bonus

Evidences of Anomalies in Semi Strong Form

There are anomalies that the efficient market theory cannot explain and that may even flatly contradict the theory.

For example, the price/earnings (P/E) ratio shows that firms trading at lower P/E multiples are often responsible for generating higher returns.

- The neglected firm effect suggests that companies that are not covered extensively by market analysts.
- These are sometimes priced incorrectly in relation to their true value and offer investors the opportunity to pick stocks with hidden potential.
- Value anomaly occurs due to false prediction of investors. They overly estimate the future earnings and returns of growth companies and underestimate the future returns and earnings of value companies.
- Stocks with high dividend yield outperform the market and generate more return. If the yield is high, then the stock generates more return.
- A firm may 'split' its shares by increasing the number of shares of common stock and reducing the par or stated value per share in the proportion. No new money is raised and cash flow are unchanged therefore prices should not react purely to stock split.
- To test market efficiency specific investment strategies are examined to see whether they earn excess return by using CAPM, APT or some other model.
    - Most of the price reaction is completed immediately after earnings are announced. There is little delay in the reaction, so there is little opportunity to earn abnormal returns from the market systematically erring in its response to the announcement.

Strong Form

The strong form version of the efficient market hypothesis states that all information—both the information available to the public and any information not publicly known—is completely accounted for in current stock prices, and there is no type of information that can give an investor an advantage on the market.Advocates for this degree of the theory suggest that investors cannot make returns on investments that exceed normal market returns, regardless of information retrieved or research conducted.

Evidences of Anomalies in Strong Form

- All information is fully reflected on security prices.
- To test the strong form efficient market hypothesis, researchers analyzed the returns earned by certain groups like corporate insiders, specialists on stock exchange and mutual fund managers.
- Fama acknowledged that strong market efficiency could not be an entirely realistic model for the markets, since certain nonpublic information clearly presented a profit opportunity for those who possessed it.

Implications for Investments Substantial evidence in favour of randomness suggests that technical analysis is of dubious value.

- Routine and conventional fundamental analysis is not ofmuch help in identifying profitable courses of action still held out hope for fundamental analysts.

The key levers for earning superior rates of returns are:

- Early action on any new development.
- Sensitivity to market imperfections and anomalies.
- Use of original, unconventional, and innovative modes of analysis.
- Access to inside information and its sensible interpretation.

- An independent judgment that is not affected by market psychology.

There is evidence that markets are weak-form and semi-strong form efficient, but probably not strong form efficient,Finally, it should be noted that there is some evidence that contradicts the hypothesis. The efficient market hypothesis has not been "proven," however, it is a highly regarded tenant in modern finance.

Summary

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 … on the average, competition will cause the full effects of new information on intrinsic values to be reflected "instantaneously" in actual prices. They are divided into three categories:

- Weak form
- Semi-strong form
- Strong form

The level of information being considered in the market is the basis for this segregation.

There is evidence that markets are weak-form and semi-strong form efficient, but probably not strong form efficient, Finally, it should be noted that there is some evidence that contradicts the hypothesis. The efficient market hypothesis has not been "proven," however, it is a highly regarded tenant in modern finance.

Keywords:

Operational efficiency: It is measured by factors like the time taken to execute the order and the number of bad deliveries. The efficient market hypothesis does not deal with this efficiency.

Informational efficiency: It is a measure of the swiftness or the market's reaction to new information.

Random walk theory: It states that successive stock prices are independent and they do not follow any regular pattern.

SelfAssessment

1. Which of the following statement defines the efficient market?

A. Information is fully reflected in the stock price

B. The stock exchange is fully automated

C. Constant required rate of earning

D. Market is monitored by a regulated authority

2. In weakly efficient market stock price reflects

A. Company financial performance

B. The demand of the script

C. The past price and traded volumes

D. Both A and B

3. If the market are efficient the security price provides

A. Inadequate return for taking risk

B. Normal return for the level of risk

C. Both (a) and (b)

D. Neither (a) nor (b)

4. Run test Serial correlation are the empirical test or inefficiencies of ---------- form of EMH
A. Weak form
B. Semi strong form
C. Strong form
D. All of the above

5. In strong form of efficient market
A. All available information is reflected in price
B. All published available information is reflected in price
C. All past price is reflected in price
D. All of the above

6. A Weak effect, Monday effect, Hour of the day effect, January effect, Small firm Effect, BUBBLES are the empirical test or inefficiencies of ---------- form of EMH
A. Weak form
B. Semi strong form
C. Strong form
D. All of the above

7. Corporate insiders, specialists on stock exchange and mutual fund managers takes abnormal profit which is inefficiencies of ---------- form of EMH
A. Weak form
B. Semi strong form
C. Strong form
D. All of the above

8. EMH deals with which type of Efficiency
A. Operational efficiency
B. Execution efficiency
C. Informational efficiency
D. None of the above

9. Current prices reflect all information found in the past prices and volumes. This is as per
A. Weak form
B. Semi strong form
C. Strong form
D. All of the above

10. Random walk theory states that successive stock prices are independent and they do not follow any regular pattern.
A. True
B. False
C. All facts are not given
D. Not Applicable

11. As per implications of the efficient market hypothesis are that technical analysis is can be used for excess return and could be of

A. Great help
B. No help
C. Small help
D. Not Applicable

12. A follower of random walk believes it is impossible to outperform the market without assuming additional risk.

A. True
B. False

13. Informational efficienciesare a measure of the swiftness or the market's reaction to new information.

A. True
B. False

14. Apparent market inefficiencies have been identified in specific markets at a particular time. The weak effect, Monday effect, Hour of the day effect, January effect Anomalies (seasonal or cyclical effect).

A. True
B. False

15. All information is fully reflected on security prices. It represents an extreme hypothesis not expect that most observers do to be true.

A. True
B. False

Answers for Self Assessment

1.	A	2.	C	3.	B	4.	A	5.	A
6.	B	7.	C	8.	C	9.	A	10.	A
11.	B	12.	True	13.	True	14.	True	15.	True

Review Questions

Discuss in brief meaning and features of efficient market.

Discuss in brief weak form of efficient market.

Discuss in brief about various anomalies in markets in various form?

What are the implications for manager of efficient market hypothesis?

Further Readings

- Security Analysis And Portfolio Management By K Sasidharan & Alex K Mathews, Mcgraw Hill Education

- Security Analysis And Portfolio Management By Pandian, Punithavathy, Vikas Publishing House.

Web Links

- https://www.investopedia.com/news-4427706
- https://en.wikipedia.org/wiki/Efficient-market_hypothesis
- https://www.cfainstitute.org/en/research/cfa-digest/2003/11/the-efficient-market-hypothesis-and-its-critics-digest-summary
- https://www.forbes.com/advisor/investing/efficient-market-hypothesis/

Unit 10: Fundamental Analysis

CONTENTS

Objectives

- understand the meaning and features of fundamental analysis.
- interpret the steps in implementing fundamental analysis.
- interpret industry and economic analysis for a sound investment decision.
- analyze factors of company analysis.

Introduction

Fundamental Analysis in simple terms is the art of evaluating any business to its basics and getting an accurate picture of how financially healthy and sustainable. It involves studying a company's potential for future growth by considering various micro and macroeconomic factors. This analysis assists in deriving at an intrinsic value of stock that investment decisions. The purpose of conducting fundamental analysis is to identify investment opportunities and benefit from them.

10.1 Understanding Fundamental Analysis Basics

The fundamental analysis assesses a company's potential based on financial and non-financial data to obtain the fair value of its security, stock, bond, or derivative. It is a powerful tool for investors and stakeholders to understand the growth prospects and financial health of a company. Therefore, it is one of the most effective ways to evaluate the investment. It involves examining every aspect of a company's operations through its balance sheet, past performance, financial reports, even market goodwill, management, and consumer behavior to arrive at the intrinsic value of its securities.

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The intrinsic value is the actual economic value of a company or an asset based on an underlying perception of its true value including all aspects of the business, in terms of both tangible and intangible factors.

This value may or may not be the same as the current market value.

Criteria for investment decision

If intrinsic value > Market price, Buy the security

If intrinsic value < Market price, Sell the security

If intrinsic value = Market price, No Action

In conducting Fundamental analysis, if an investor deduces that a stock's intrinsic value is greater than its market price, it means the stock is undervalued. In that scenario, the investor buys a such stock and holds it until the market price reaches the intrinsic value. Then, the investor makes a sizeable profit by selling the intrinsic market price. Similarly, an investor may decide to sell or refrain from buying an overvalued security. Being overvalued means that the stock's intrinsic value is less than its market price. In simple words, the fundamental analysis gives the answer to "which security to buy". It studies how lucrative that security is and hence the decision of holding or buying of security is made.

Types of Fundamental Analysis

#1 – Qualitative analysis

Qualitative analysis involves the study of a company's goodwill, consumer behavior, demand, and company recognition in broader markets. It aims to unearth answers to questions like how it is perceived, how management decisions or announcements create a buzz in the market, and how it is different from its substitutes. In addition, its brand value and other common factors depict its socio and economic position in the market.

#2 – Quantitative analysis

Quantitative analysis is inclined toward statistics, reports, and data. It is solely based on its financial statements, quarterly performance, balance sheets, debt, cash flow, etc.

It involves analyzing numbers, ratios, and values to understand the price of the shares and the company's overall financial health.

Steps in Fundamental Analysis

1. Economic, industry, and company analysis

FA considers the industry's structure, economy, industry dynamics, aspects of broader markets, and all the other macroeconomic factors. The experts study the products, commodities, services rendered, and substitutes available along with cost structure and revenue model and composition and the company's future goals and objectives.

Steps in Fundamental Analysis

2. Evaluation of financial statements

Every company report is studied closely – the balance sheets, income statement, cash flow, price to book value of equity, the net market value of assets, and other vital ratios with revenue.

Steps in Fundamental Analysis

3. Study of non-financial aspects

Besides a company's financial statements, on-financial matters like competition, management, business policies, etc., also influence a company. Therefore, in the FA of stocks, experts also look for factors that can influence or undermine the company's performance.

Steps in Fundamental Analysis

4. Use of FA tools

Investors and analysts use financial ratios to determine a company's financial standing. It is used along with the available financial data from past reports to measure future growth, stability, and investment.

Steps in Fundamental Analysis

5. Recommendation

Based on the study, investment decisions are taken. Analysts advise investors to buy, sell, or hold security after carefully assessing its intrinsic value and financial stability.

Does Fundamental Analysis Always Work?

No. Like any other investment strategy or technique, fundamental analysis is not always successful. The fact that fundamentals show a stock to be undervalued does not guarantee that its shares will rise to intrinsic value any time soon. Things are not so simple. In reality, real price behavior is influenced by a myriad of factors that may undermine fundamental analysis. Investors and analysts will frequently use a combination of fundamental, technical, and quantitative analyses when evaluating a company's potential for growth and profitability.

Criticisms of Fundamental Analysis

The biggest criticisms of fundamental analysis come primarily from two groups: proponents of technical analysis and believers of the efficient market hypothesis.

Technical Analysis

Technical analysis is the other primary form of security analysis. Put simply, technical analysts base their investments (or, more precisely, their trades) solely on the price and volume movements of stocks. Using charts and other tools, they trade on momentum and ignore the fundamentals.

One of the basic tenets of technical analysis is that the market discounts everything. All news about a company is already priced into the stock. Therefore, the stock's price movements give more insight than the underlying fundamentals of the business itself.

The Efficient Market Hypothesis

Followers of the efficient market hypothesis (EMH), however, are usually in disagreement with both fundamental and technical analysts.

The efficient market hypothesis contends that it is essentially impossible to beat the market through either fundamental or technical analysis. Since the market efficiently prices all stocks on an ongoing basis, any opportunities for excess returns are almost immediately whittled away by the market's many participants, making it impossible for anyone to meaningfully outperform the market over the long term.

N share market, it is very much possible that a stock may be technically not sound,but fundamentally, the company is quite strong. Fundamental analysis helps in identifying such companies which have a high potential for growth and return on such is also very high. So, if you want to hold your investment in a company for a long period of time, then it is important to understand whether your investment in that company is safe or not. Fundamental analysis helps a lot in filtering out companies that are financially strong and will continue to stay so for a long period of time.

10.2 Industry Analysis

Fundamental analysis consists of three main parts:

- Economic analysis.
- Industry analysis.
- Company analysis.

Industry analysis is a type of investment research that begins by focusing on the status of an industry or an industrial sector.

Industry Analysis -Meaning

Industry means a group of productive or profit-making enterprises or organizations that has similar technical substitute goods, services or sources of income. Industry Analysis is a form of fundamental analysis involving the process of making investment decisions based on the different stages an industry is at during a given point in time.

Why is this important?

Each industry is different, and using one cookie-cutter approach to analysis is sure to create problems. Imagine, for example, comparing the P/E ratio of a tech company to that of a utility. Because you are, in effect, comparing apples to oranges, the analysis is next to useless.

Approach to Industry Analysis

Approach to Industry Analysis: The basic approaches used are

1) Sensitive to business Cycle Approach

2) Industry life cycle Approach

3) Specific features and Characteristics

Sensitive to Business Cycle Approach

It has been well accepted that all industries are not equally sensitive to economic conditions as a business cycle. For Example, food Industries are really sensitive to a business cycle whereas luxurious goods are not.

Investment in higher sensitivity will be riskier. The sensitivity of Industry to a business cycle is determined by the following three factors-

- Sensitive to Business Cycle Approach
- Sensitivity to sales: Food vs. Luxury goods

Operating Leverage: The degree of operating leverage refers to a change in profit in respect of a change in sales. Greater fixed cost greater is operating leverage.

Financial leverage: It is the use of debt in capital structure. A higher proportion of debt higher is financial leverage as debt has to be paid irrespective of sales.

- Industry Life Cycle Approach

Every Industry Passes through four distinct phases-

Primary Stage: It is the first stage characterized by promising demand, low technology, and chaotic competition.

Rapid Growth: Only a few survive, Tech advanced, low-cost good products, stable growth.

Industry Life Cycle Approach

Stagnation Stage: Growth rate moderates, symptoms of obsolesce appear, technological innovation.

Decline Stage: Demand and earnings decline, and growth of the industry also declines.

Specific Features and Characteristics

Profit Potential of Industries: Porter Model

Michael Porter designed various vital frameworks for developing an organization's strategy. According to Porter, the nature of competition in any industry is personified in the following five forces:

Threat of new potential entrants

Profit Potential of Industries: Porter Model

- Threat of substitute product/services
- Bargaining power of suppliers
- Bargaining power of buyers
- Rivalry among current competitors

The five forces mentioned above are very significant from point of view of strategy formulation. The potential of these forces differs from industry to industry.

These forces jointly determine the profitability of industry because they shape the prices which can be charged, the costs which can be borne, and the investment required to compete in the industry. Before making strategic decisions, the managers should use the five forces framework to determine the competitive structure of industry.

Porter's Five Forces Example Uber

- One more example of Porters Five Forces is the analysis of Uber.
- The analysis shows that the ride-hailing app's customers enjoy high bargaining power, lower transaction costs and shorter waiting time.
- At the same time, competition is high as there are multiple players in the market and the customer is well-informed. It's highly likely that a customer will book a different cab if demand and prices are high.
- Porter's Five Forces Example Starbucks Coffee

With Porter's Five Forces example, Starbucks Coffee tracked the key characteristics of the industry competition. Starbucks faces stiff competition due to a large number of organizations in the market, a moderate variety of products and high probability of customers switching. They have a smaller size of buyers and high prices, coupled with substitute products, which increase the chances of customers switching. Using Porter's Five Forces example Starbucks Coffee also evaluated the bargaining power of suppliers. They buy from different sources to avoid monopoly.

SWOT Analysis

When you're analyzing your internal strengths, weaknesses, opportunities, and threats in a SWOT analysis, having access to the industry data keeps you connected to the bigger picture and provides key information about external opportunities to optimize your business plan.

- SWOT Analysis Example- Coca-Cola Company

In SWOT analysis of The Coca-Cola Company noted strengths such as its globally famous brand name, vast distribution network, and opportunities in emerging markets.

However, it also noted weaknesses and threats such as foreign currency fluctuations, growing public interest in "healthy" beverages, and competition from healthy beverage providers.

Although a useful planning tool, SWOT has limitations. It is one of several business planning techniques to consider and should not be used alone.

Also, each point listed within the categories is not prioritized the same. SWOT does not account for the differences in weight. Therefore, a deeper analysis is needed, using another planning technique.

PEST Analysis

This type of analysis stands for Political, Economic, Social, and Technological or PEST analysis.

It is a highly useful framework with which we can gain an understanding of the environment within which we operate.

In order to perform the complete PEST analysis, each of the four factors that make it up must be analyzed in detail:

Economic factors: These are the economic forces that govern the industry and the country within which the business operates. They include such factors as the ability to access capital, the GDP growth rate, the interest rates, the exchange rates, and so on.

Political factors: These are the factors that affect an industry, which are determined by the authorities. They include regulations and policies that affect the industry either directly or indirectly, such as trade policies, tariffs, environmental regulation, taxes, the ease of doing business, labor laws, and the political stability of the country or region within which the business and industry operate.

Social factors: These are prevalent trends in the society within which the business and industry operate. They include such aspects of society as social movements, fashion, health, demographics and population.

Technological factors: This includes all factors that have to deal with any developments or advancements in technology that could change the mode of operation of the industry or business, or even disrupt the industry entirely.

10.3 Economic Analysis

Every company function in an environment that shapes its future. This environment influences the stock's intrinsic value.

Economic Analysis relates to the analysis of the economy. This is related to study about the economy in detail and analyzing whether economic conditions are favorable for the companies to prosper or not.

An investor in a security market can give a prediction about the future of the share price of a company based on the study of forces affecting the economic environment of the country.

Take an example of the Indian economy; when India is increasing its goodwill and building a positive identity internationally, it has led to an increase in investors' confidence in the economy and in industries.

Factors of Economic Analysis

For the Economic Analysis, the Macro Economic Factors are studied to know about the condition of an economy or performance of the security market of any country.

Gross Domestic Product

GDP is the measure of the value of goods and services produced within the domestic boundary of a country. The GDP is one of the most important indicators used for the measurement of the strength of a country's economy. This value added by each firm is measured to determine the health of the economy. We can understand it in this way also that an increase in GDP means an increase in the production of goods and services, which in turn will result in an increase in sales of a company and thus an increase in profits of the company. This increase in profit will lead to more returns to equity shareholders, and thus it affects share prices.

Fiscal Policy

In economics and political science, fiscal policy is the use of government expenditure and revenue collection (taxation) to influence the economy.Fiscal policy involves the use of government spending, taxation, and borrowing to influence both the pattern of economic activity and also the level and growth of aggregate demand, output, and employment.

There are two types of fiscal policy:

Expansionary fiscal policy:

The goal of expansionary fiscal policy is to reduce unemployment. Therefore, the tools would be an increase in government spending and/or a decrease in taxes.

Contractionary fiscal policy:

The goal of contractionary fiscal policy is to reduce inflation. Therefore, the tools would be a decrease in government spending and/or an increase in taxes.

Fiscal policy has a multi-dimensional role. It helps in directing the flow of funds into certain priority channels, either directly through public expenditure or indirectly by various means of various fiscal incentives or disincentives. This tool has been used to achieve the socioeconomic goals of society.

Monetary Policy

Monetary policy is concerned with the changes in the supply of money and credit. It refers to the policy measures undertaken by the government or the central bank to influence the availability, cost, and use of money, and credit with the help of monetary techniques to achieve specific objectives.

There are two methods that the Central bank uses to

control the money supply in the economy-

Qualitative Method

Quantitative Method

During a period of inflation, the central bank tightens its policies to restrict the one supply, whereas during deflation it allows the commercial bank to pump money in the economy.

Saving Rate

Changes in individual saving rates affect the flow of funds into investments.

Thus, there will be a reduction in share price A lower saving rate means lesser disposal of funds by households into the equity market, which will reduce the demand for equity. es, and market will be bearish.

Vice versa will happen if there is an increase in the saving rate.

Trade Deficit

A trade deficit occurs when countries imports are more than its export. In other words, we can see that a country is buying more foreign goods than it is selling to them. Thus this will impact domestic producers. More imports mean more purchases of foreign goods and fewer purchases of domestic goods. This will result in more profitability for foreign companies than domestic producers.

Exchange Rate

The exchange rate is also another factor that affects the trade or net exports between the countries. This, in turn, will also affect the trade and business of the companies having a global presence that is related to any foreign market, whether for buying raw materials, selling goods, or in any other way.

Economic analysis, as we have discussed, is an indicator of how changes in economic factors will influence a company. It is a true fact that changes in economic policies and the environment will affect the environment in which business is done and companies operate. Thus a good understanding and eye on economic variables like GDP rate of growth, Monetary policy, FiscalPolicy, exchange rate, business cycle, imports, exports etc will give a valuable insight into the future of a business and company's performance.

Thus economic analysis helps the investors to get an idea about the direction of change in the capital market as economic analysis deals with forces operating in the overall economy. Economic analysis has an important role to play in investment decisions. In fact, in this era of globalization when businesses are no more operating in thedomestic arena only it is very important that one should also study the international economic environment and situation to make a good judgment.

10.4 Company Analysis

The specific market and economic environment may enhance the performance of a company for a period but ultimately the firm's own capabilities that will judge its performance over a period of time.

For this reason, firms in the same industry are compared with one another to find the best performer. It is the last leg of EIC framework. Company analysis is a process carried out by investors to evaluate securities, collecting info related to the company's profile, products and services as well as profitability.

It is method of assessing the competitive position of the company, its earning, profitability and its future aspects with respect to earning of its shareholders.

Factors Affecting Company Analysis

Factors affecting company analysis are qualitative factors and quantitative factors.

Qualitative factors are business models, competitive advantage, Management, and corporate governance.

Quantitative factors deal with company growth and industry growth along with its peers.

Qualitative Factors

Under the business model, we need to see what the company does, what does it sell along the prices at which it sells. Let's say, for example, HUL is an industry leader in the FMCG space which knows how to tackle economic downturns.

When the consumption slowdown happened in the late FY19 and the early FY20, most of the FMCG company's revenues and profitability were impacted, wherein HUL was able to report stable growth which was due to its presence in a wide range of products in the FMCG which no other company had.

Competitive advantage shows the uniqueness of the company from its peers. The above example, also shows that how HUL has a competitive advantage over others of being present in the lowest category of products to the highest category of products.

If the company is doing something different then it will affect its profitability to a large extent in the long term. These kinds survive better than their peers.

Management and Corporate Governance generally go hand in hand. As we know that the management is the people who are driving the company.

HDFC Bank, Tata Group are good examples of strong and ethical management along with good corporate governance where the company takes efforts to inform investors about updates.

Thus, it is important to get an idea of the company's quality of management as to how experienced are they and whether they are guilty of any kind of fraud in the past.

n the quantitative factors, we deal with the Industry growth and the company's growth along with its peers. There will be a few times when the company will outperform the industry but also some times when it will underperform the industry.

For example, HUL is the industry leader in the FMCG industry, which has grown at 8.48% CAGR over the past 5 years whereas, Marico which is a much smaller player compared to HUL has grown by 18.05% CAGR over the past 5 years. This shows that smaller companies tend to grow faster as they have more room for growth.

Quantitative Factors

Along with these, the other quantitative factors affecting the analysis are the financial statements. A company with very good growth but with a weak balance sheet can be considered to be a risky investment.

Ratio analysis is a quantitative method of gaining insight into a company's liquidity, operational efficiency and profitability by studying its financial statements such as the balance sheet and income statement. Ratio analysis is a cornerstone of fundamental equity analysis. The various kinds of financial ratios based on the sets of data they provide are categorized as:

1. Liquidity Ratios: Liquidity ratios measure a company's ability to pay off its short-term debts as they become due, using the company's current or quick assets.

The various kinds of financial ratios based on the sets of data they provide are categorized as:

2. Solvency Ratios: Also called financial leverage ratios, solvency ratios compare a company's debt levels with its assets, equity, and earnings, to evaluate the likelihood of a company staying afloat over the long haul, by paying off its long-term debt as well as the interest on its debt.

The various kinds of financial ratios based on the sets of data they provide are categorized as:

3. Profitability Ratios: These ratios convey how well a company can generate profits from its operations.

4. Efficiency Ratios: Also called activity ratios, efficiency ratios evaluate how efficiently a company uses its assets and liabilities to generate sales and maximize profits.

5. Coverage Ratios: Coverage ratios measure a company's ability to make the interest payments and other obligations associated with its debts. Examples include the times interest earned ratio and the debt-service coverage ratio.

6. Market Prospect Ratios: These are the most commonly used ratios in fundamental analysis. They include dividend yield, P/E ratio, earnings per share (EPS), and dividend payout ratio. Investors use these metrics to predict earnings and future performance.

Hence we need to take into account both qualitative as well as quantitative factors in order to get an in-depth understanding of the company.

Checklist for Company Analysis

A checklist for company analysis includes a thorough investigation of:

Spreadsheet modeling of financial statements to analyze and forecast revenues, operating and net income, and cash flows have become one of the most widely used tools in company analysis.

Spreadsheet modeling can be used to quantify the effects of the changes in certain swing factors on the various financial statements.

Steps in The Company Analysis Process

Identify the company and industry's economic characteristics.

Identify and know about the products and/or services.

Understanding the risks and concerns of the company.

Steps in The Company Analysis Process

Analyzing the Financial Statements.

Qualitative Factors.

Quantitative Factors.

Top Down Approach.

Bottom-Up Approach.

In company analysis, analysts consider the basic financial variables for the estimation of the intrinsic value of the company. Thus. it is done to make sound investment decisions after analyzing the true value.

Summary

A commonly advocated procedure for fundamental analysis involves a 3-step analysis: macro-economic analysis, industry analysis, and company analysis. In a globalized business environment, the top-down analysis of the prospects of a firm must begin with the global economy.

There are two broad classes of macroeconomic policies, viz. demand-side policies and Supply-side policies. Fiscal and monetary policies are the two major tools of demand-side economics.

The macro-economy is the overall economic environment in which all firms operate. After conducting an analysis of the economy and identifying the direction, it is likely to take in the short intermediate, and long term, the analyst must look into various sectors of the economy in terms of various industries. An industry is a homogenous group of companies.

Keywords:

Cyclical Industry: In this category of the industry, the firms included are those that move closely with the rate of industrial growth of the economy and fluctuate cyclically as the economy fluctuates.

Defensive Industry: It is a grouping that includes firms, which move steadily with the economy and less than the average decline of the economy in a cyclical downturn.

Growth Industry: This is an industry that is expected to grow consistently and its growth may exceed the average growth of the economy.

Net Asset Value: Net asset value (NAV) is a term used to describe the value of an entity's assets less the value of its liabilities.

SelfAssessment

1. What is fundamental analysis?

A. A method used to analyze the intrinsic value of a security

B. A technical analysis tool used to predict future stock prices

C. An analysis of market trends and sentiment

D. A method used to analyze the external factors that affect a security

2. Excess of current assets over current liabilities is known as----------.

A. Gross Working capital

B. Net Working capital

C. Both of the above

D. Not Applicable

3. Higher the level of operation ----------is the working capital required.

A. Larger

B. Smaller
C. Medium
D. Not Applicable

4. Lower the level of operation ----------is the working capital required.
A. Larger
B. Smaller
C. Both of the above
D. None of the above

5. ---------- require a firm to conduct its business in the ordinary course
A. Transaction Motive
B. Precautionary Motive
C. Both of the above
D. None of the above

6. ---------- for investment in profit making opportunities as and when arise.
A. Transaction Motive
B. Precautionary Motive
C. Speculative Motive
D. None of the above

7. Floods, Strike and failure of important customer are the part of which motive of holding cash?
A. Transaction Motive
B. Precautionary Motive
C. Does not effect
D. Not Applicable

8. Centralization of Payments can be one of the methods of.
A. Accelerating cash flow
B. Decelerating cash flow
C. Both of the above
D. Not Applicable

9. Decentralized collections can be one of the methods of
A. Accelerating cash flow
B. Decelerating cash flow
C. Both of the above
D. Not Applicable

10. Which of the following is not a motive to hold cash?
A. Transaction Motive
B. Precautionary Motive
C. Capital Investment
D. Not Applicable

11. ----------is defined as investment in current assets.

A. Gross Working capital

B. Net Working capital

C. Does not effect

D. Not Applicable

12. Current assets refer to those assets which in the ordinary course of business can be, or will be, converted into cash within one year without undergoing a diminution in value and without disrupting the operations of the firm.

A. True

B. False

13. Operating cycle refers to the time elapsed between procurement of raw material to realization of cash from the finished goods.

A. True

B. False

14. When there is short working capital there are chances that favorable market condition cannot be exploited by the organization.

A. True

B. False

15. The longer the length of operating cycle, the higher the requirement for working capital and vice versa.

A. True

B. False

Answers for Self Assessment

1.	A	2.	B	3.	A	4.	B	5.	A
6.	C	7.	B	8.	B	9.	A	10.	C
11.	A	12.	True	13.	True	14.	True	15.	True

Review Questions

What are the opportunities and threats in the macroeconomic environment? Explain in detail.

Why should a security analyst carry out industry analysis?

Why does a portfolio manager do the industry analysis?

What is the need for company analysis? Do we need the company analysis?

Further Readings

- Security Analysis And Portfolio Management By K Sasidharan & Alex K Mathews, Mcgraw Hill Education
- Security Analysis And Portfolio Management By Pandian, Punithavathy, Vikas

Publishing House.

Web Links

- https://www.investopedia.com/fundamental-analysis-4689757
- https://www.5paisa.com/finschool/course/fundamental-analysis-beginners-module/steps-in-fundamental-analysis/
- https://corporatefinanceinstitute.com/resources/management/industry-analysis-methods/
- https://www.wallstreetmojo.com/industry-analysis-guide/

Unit11: Technical Analysis

CONTENTS

Objectives

- understand the meaning of technical indicators.
- analyze the various types of technical indicators.
- interpret the various types of chart patterns for trading.
- analyze the advantages and disadvantages of technical analysis.

Introduction

The methods used to analyze securities and make investment decisions fall into two very broad categories: fundamental analysis and technical analysis. Fundamental analysis involves analyzing the characteristics of a company in order to estimate its value. Technical analysis takes a completely different approach; it doesn't care one bit about the 'value' of a company or a commodity. Technicians (sometimes called chartists) are only interested in the price movements in the market.

The term technical analysis is used to mean a fairly wide range of techniques, all based on the concept that past information on prices and trading volume of stocks give the enlightened investor a picture of what lies ahead. It attempts to explain and forecast changes in security prices by studying only the market data rather than information about a company or its prospects as is done by the fundamental analyst.

11.1 What is Technical Analysis?

Technical analysis is a method of evaluating securities by analyzing the statistics generated by market activity, such as past prices and volume. Technical analysts do not attempt to measure a security's intrinsic value, but instead use charts and other tools to identify patterns that can suggest future activity.

Just as there are many investment styles on the fundamental side, there are also many different types of technical traders. Some rely on chart patterns, others use technical indicators and oscillators, and most use some combination of the two. In any case, technical analysts' exclusive use of historical price and volume data is what separates them from their fundamental counterparts. Unlike fundamental analysts, technical analysts don't care whether a stock is undervalued - the only thing that matters is a security's past trading data and what information this data can provide about where the security might move in the future.

Technical Indicator

In a technical analysis in finance, a technical indicator is a mathematical calculation based on historic price, volume, or (in the case of futures contracts) open interest information that aims to forecast financial market direction. Technical indicators are a fundamental part of technical analysis and are typically plotted as a chart pattern to try to predict the market trend.

Indicators generally overlay on price chart data to indicate where the price is going, or whether the price is in an "overbought" condition or an "oversold" condition. Many technical indicators have been developed and new variants continue to be developed by traders with the aim of getting better results.

New Indicators are often back-tested on historic price and volume data to see how effective they would have been to predict future events.

Most chart patterns show a lot of variation in price movement. This can make it difficult for traders to get an idea of a security's overall trend. One simple method traderuses to combat this is to apply moving averages.

Moving Averages

A moving average is the average price of a security over a set amount of time. By plotting a security's average price, the price movement is smoothed out. Once the day-to-day fluctuations are removed, traders are better able to identify the true trend and increase the probability that it will work in their favor.

How do 50-day, 100-day, and 200-day Moving Averages Differ?

These are the most important SMAs in technical analysis. SMA 50 is considered a medium-term moving average SMA but 100 SMA and 200 SMA both are considered as ong-term moving average.

The main difference lies in the calculation of these SMAs. SMA 50 requires 50 time periods to calculate, in case of 100 MA and 200 MA 100time periods and 200 time periods are required.

Moving averages can be used to quickly identify whether a security is moving in an uptrend or a downtrend depending on the direction of the moving average.

Advantages

Provide clear market signals

No guessing as to chart formation

Good if there are trends in the data

Disadvantage

May generate multiple trades

Don’t perform well in choppy (sideways) markets

The moving average indicator is very useful. They suggest good entry and exit points while trading. The simplicity of this indicator makes it popular among the traders. But it has some drawbacks too. In a highly volatile market condition, short-term MAs generate false trade signals which lead to a loss. Moving Average does not work well in choppy market condition and it is advisable to not to use shorter- or medium-term MAs during that period. Every indicator has different drawbacks but it is also true that they work well if they are combined with other indicators and oscillators. RSI and Stochastics are one of the most commonly used indicators and oscillator to combine with a moving average indicator.

RSI-Relative Strength Index

The relative strength index (RSI) is a momentum indicator used in technical analysis. RSI measures the speed and magnitude of a security's recent price changes to evaluate overvalued or undervalued conditions in the price of that security.

The RSI is displayed as an oscillator (a line graph) on a scale of zero to 100. The indicator was developed by J. Welles Wilder Jr. and introduced in his seminal 1978 book, New Concepts in Technical Trading Systems.

The RSI can do more than point to overbought and oversold securities. It can also indicate securities that may be primed for a trend reversal or corrective pullback in price. It can signal when to buy and sell.

Traditionally, an RSI reading of 70 or above indicates an overbought situation. A reading of 30 or below indicates an oversold condition.

The RSI uses a two-part calculation that starts with the following formula:

RS = Average Gain / Average Loss

- First Average Gain = Sum of Gains over the past 14 periods / 14.
- First Average Loss = Sum of Losses over the past 14 periods / 14

$$RSI = 100 - \frac{100}{1 + RS}$$

Broad Rule

RSI > 70

- Market is thought to be over bought

RSI < 30

- Market is thought to be over sold

If RSI is rising in overbought Zone it would indicate downfall in prices.

Overbought is a situation when price momentum no longer be maintained and oversold is a situation in which price momentum is declined at unreasonable level.

Why Is RSI Important?

- Traders can use RSI to predict the price behavior of a security.
- It can help traders validate trends and trend reversals.
- It can point to overbought and oversold securities.
- It can provide short-term traders with buy and sell signals.
- It's a technical indicator that can be used with others to support trading strategies.

Limitations of the RSI

The RSI compares bullish and bearish price momentum and displays the results in an oscillator placed beneath a price chart. Like most technical indicators, its signals are most reliable when they conform to the long-term trend.

True reversal signals are rare and can be difficult to separate from false alarms. A false positive, for example, would be a bullish crossover followed by a sudden decline in a stock. A false negative would be a situation where there is a bearish crossover, yet the stock suddenly accelerated upward.

The limitations of RSI all have to do with the trading period. As a momentum indicator, the trend lines are much more reliable in the macro than in the micro. It's difficult to see trend reversals, sell signs or overbought levels accurately in short time periods.Relying too heavily on RSI indicators to let you know if a stock is trending up or down can lead to false signals. For example, say a stock appears to have bullish momentum within the trading period you are analyzing. But the following week it has a sharp price decline. That would be a false positive.

Likewise, a false negative could show a security trending bearish, then it miraculous trends upwards in price. Potential reversals and directional price movements like these are hard to see.

Rate of change

Rate of change (ROC) refers to how quickly something changes over time. It is thus the acceleration or deceleration of changes (i.e., the rate) and not the magnitude of individual changes themselves.

In finance, rate of change is used to understand price returns and identify momentum in trends.

It measures the rate of change between current price and the prices of n number of days.

ROC helps in finding overbought and oversold position. RoC of 12 week and month is popular.

Basically, it helps in overbought and oversold Zone

The price rate of change (ROC) indicator is used in technical analysis to measure momentum. A positive ROC can confirm a bullish trend while a negative ROC indicates a bearish one. When the price is consolidating, the ROC will hover near zero.

Rate of change (ROC) is an important concept that tells us not just that things are changing, but how fast things are changing.

Breadth of Market

The breadth of market theory is a technical analysis methodology that measures the strength of the market according to the number of stocks that advance or decline in a particular trading day, or how much upside volume there is relative to downside volume.

A technical analysis theory that predicts the strength of the market according to the number of stocks that advance or decline in a particular trading day.

- Advance-Means number of shares whose price increased from previous day.
- Decline-Means number of shares whose price decreased from previous day.

Net Difference-A-D is the Breadth of market.

For example, if a market is comprised of 150 stocks and 95 stocks experience price gains while 55 stocks either experience no change or decline in price, according to the breadth of market theory, the market is currently considered strong or rising.

If the breadth indicator is strong, this theory predicts that the market will be rising and vice versa.

If the advance/decline falls while major stock indexes rise, this indicates that fewer stocks are participating in the rally and could forewarn of a fall in the indexes. As fewer and fewer stocks rise, the index's performance will eventually begin to suffer as well.

It can be drawn on graph. It will not show when reaction will occur but it will defiantly show that reaction will occur soon.

On-Balance Volume

On-balance volume indicator (OBV) to measure the positive and negative flow of volume in a security over time.

The indicator is a running total of up volume minus down volume. Up volume is how much volume there is on a day when the price rallied. Down volume is the volume on a day when the price falls. Each day volume is added or subtracted from the indicator based on whether the price went higher or lower.

When OBV is rising, it shows that buyers are willing to step in and push the price higher. When OBV is falling, the selling volume is outpacing buying volume, which indicates lower prices. In this way, it acts like a trend confirmation tool. If price and OBV are rising, that helps indicate a continuation of the trend.

Traders who use OBV also watch for divergence. This occurs when the indicator and price are going in different directions.

If the price is rising but OBV is falling, that could indicate that the trend is not backed by strong buyers and could soon reverse.

Accumulation/Distribution Line

One of the most commonly used indicators to determine the money flow in and out of a security is the accumulation/distribution line (A/D line).

It is similar to the on-balance volume indicator (OBV), but instead of considering only the closing price of the security for the period, it also takes into account the trading range for the period and where the close is in relation to that range. If a stock finishes near its high, the indicator gives volume more weight than if it closes near the midpoint of its range. The different calculations mean that OBV will work better in some cases and A/D will work better in others.

If the indicator line is trending up, it shows buying interest, since the stock is closing above the halfway point of the range. This helps confirm an uptrend.

On the other hand, if A/D is falling, that means the price is finishing in the lower portion of its daily range, and thus volume is considered negative. This helps confirm a downtrend.

Traders using the A/D line also watch for divergence. If the A/D starts falling while the price is rising, this signals that the trend is in trouble and could reverse. Similarly, if the price is trending lower and A/D starts rising, that could signal higher prices to come.

The Odd Lot Theory

The odd lot theory is a technical analysis hypothesis based on the assumption that the small individual investor is usually wrong and that individual investors are more likely to generate odd-lot sales.

Therefore, if odd lot sales are up and small investors are selling a stock, it is probably a good time to buy, and when odd-lot purchases are up, it may indicate a good time to sell.

Odd Lots are transaction involving less than 100 shares (Dumb Money). Round lots are the opposite of odd lots. They begin at 100 shares and are divisible by 100. These trade orders are seen to be more compelling as an indicator as they are typically made by professional traders or institutional investors.

It is considered to be yardstick of uninformed sentiments or a index of contrarian theory assumes that odd lotters are inexperienced and therefore likely to go wrong.

A high reading of this indicator could be seen as bearish and the other way round.

Overall, the theory is no longer as valid as many researchers and academics once opined. Author Burton Malkiel, credited for popularizing Random Walk Theory has stated that the individual investor, also known as the odd lotter, is generally not as uninformed or as incorrect as had been previously thought.

Average Directional Index

The average directional index (ADX) is a trend indicator used to measure the strength and momentum of a trend.

When the ADX is above 40, the trend is considered to have a lot of directional strength, either up or down, depending on the direction the price is moving.

The ADX is the main line on the indicator, usually colored black. There are two additional lines that can be optionally shown. These are DI+ and DI-. These lines are often colored red and green, respectively. All three lines work together to show the direction of the trend as well as the momentum of the trend.

- ADX above 20 and DI+ above DI-: That's an uptrend.
- ADX above 20 and DI- above DI+: That's a downtrend.
- ADX below 20 is a weak trend or ranging period, often associated with the DI- and DI+ rapidly crisscrossing each other.

Aroon Indicator

The Aroon oscillator is a technical indicator used to measure whether a security is in a trend, and more specifically if the price is hitting new highs or lows over the calculation period (typically 25). The indicator can also be used to identify when a new trend is set to begin. The Aroon indicator comprises two lines: An Aroon Up line and an Aroon Down line.

When the Aroon Up crosses above the Aroon Down, that is the first sign of a possible trend change. If the Aroon Up hits 100 and stays relatively close to that level while the Aroon Down stays near zero, that is positive confirmation of an uptrend. The reverse is also true. If Aroon Down crosses above Aroon Up and stays near 100, this indicates that the downtrend is in force.

Super trend

As the name suggests, Super trend is a trend indicator and indicates that the direction of the price movement in a market is trending,

A super-trend indicator is plotted either above or below the closing price. The indicator changes colour based on the change in the direction of the trend.

If the super-trend indicator moves below the closing price, then the indicator turns green and gives a buy signal. Conversely, if a super-trend closes above, the indicator shows a sell signal in red.

Bollinger Bands

Bollinger Bands consist of 3 bands: the upper, lower and middle bands. The middle band is the 20 days or bars moving average, the upper band is +2 Standard Deviation, and the lower band is the -2 Standard Deviation of the middle band.

When the Volatility in the market increases, these bands expand, and when the Volatility decreases, these bands contract. Traders can trade with the Bollinger bands when the prices break out from either side of the upper or lower bands after the low Volatility or consolidation phase.

Average True Range (ATR)

The ATR measures the true range of a particular number of price bars, usually 14. ATR is a pure volatility measure that does not necessarily indicate a trend.

Volatile price movement can occur inside a choppy market during an important news event.

The best way of using the ATR is to indicate the change in the market's nature. A rise in ATR indicates higher trading ranges and, thus, an increase in Volatility. In contrast, low readings from the ATR indicate periods of quiet or uneventful trading.

Put Call Ratio

Call option gives holder right to buy share at fixed strike price.Put option gives holder right to sell share at fixed strike price.

A ratio of outstanding put option to outstanding call option is called put call ratio.Historically it is calculated on one-year data. If Deviation occurs, it gives indicators.

For example, if put call ratio is.65 it means for every 65 put options for every 100 call purchased.

Generally, at 80 it is bearish and at 30 bullish.

In general:

- A rising put-call ratio, or a ratio greater than 0.7 or exceeding 1, means that equity traders are buying more puts than calls. It suggests that bearish sentiment is building in the market. Investors are either speculating that the market will move lower or are hedging their portfolios in case there is a sell-off.
- A falling put-call ratio, or below 0.7 and approaching 0.5, is considered a bullish indicator. It means more calls are being bought versus puts.

Contrarian investors use the put-call ratio to help them determine when market participants are getting overly bullish or too bearish.

An extremely high put-call ratio means the market is extremely bearish. To a contrarian, that can be a bullish signal that indicates the market is unduly bearish and is due for a turnaround. A high ratio can be a sign of a buying opportunity to a contrarian.

Short Sell

Short selling is an investment or trading strategy that speculates on the decline in a stock or other security's price. It is an advanced strategy that should only be undertaken by experienced traders and investors.It is selling shares not owned. It is sold on the hope to cover at lower price in future. When an investor goes long on an investment, it means that he or she has bought a stock believing its price will rise in the future.

Conversely, when an investor goes short, he or she is anticipating a decrease in share price. Generally, the two main reasons to short are to either speculate or to hedge. An investor makes money only when a shorted security falls in value. Short selling is done on margin, and so is subject to the rules of margin trading.

Pros

- Possibility of high profits
- Little initial capital required
- Leveraged investments possible
- Hedge against other holdings

Cons

- Potentially unlimited losses
- Margin account necessary
- Margin interest incurred
- Short squeezes

Mutual Fund Liquidity

A mutual fund liquidity ratio is a ratio that compares the amount of cash in a mutual fund relative to its total assets. Depending on how a mutual fund ratio is calculated by a specific fund, the cash levels can include just cash or also cash equivalents.

Low cash position indicated fully investible position resulting into low buying power at their end.

High cash position means they are bearish and waiting for investment.

Most funds keep approximately 3% to 5% of their total assets in cash.

Investors may follow mutual fund industry liquidity ratios to get a sense of money managers' collective perspective on the market. Liquidity ratios greater than 5% indicate a bearish outlook while ratios below 5% indicate a bullish outlook.

The goal of every short-term trader is to determine the direction of a given asset's momentum and to attempt to profit from it.

There have been hundreds of technical indicators and oscillators developed for specific purpose.

11.2 Dow Theory

The Dow Theory is one of the oldest and most famous technical tools. It was originated by Charles Dow, who founded the Dow Jones company and was the editor of The Wall Street Journal. Charles Dow passed away in 1902.

The Dow Theory was developed by W.P. Hamilton and Robert Rhea from the editorial written by Dow during 1900-02. Numerous writers have altered, extended and in some cases abridged the original Dow Theory. It is the basis for many other techniques used by technical analysts.

The Dow Theory is credited with having forecast the Great Crash of 1929. On October 23, 1929, The Wall Street Journal published a still famous editorial "A Twin in the Tide" which correctly stated that the bull market was then over and a bear market had started. The horrendous market crash which followed the forecast drew much favorable attention to the Dow Theory. Greiner and Whitecombe assert that "The Dow Theory provides a time-tested method of reading the stock market barometer."

There are many versions of this theory, but essentially it consists of three types of market movements: the major market trend, which can often last a year or more; a secondary intermediate trend, which can move against the primary trend for one to several months; and minor movements lasting only for hours to a few days. The determination of the major market trend is the most important decision for the Dow believer.

The Theory: According to Dow, "The market is always considered as having three movements, all going at the same time. The first is the narrow movement from day-to-day. The second is the short swing running from two weeks to a month or more, the third is the main movement covering at least four years in duration".

These movements are called:

Daily fluctuations (minor trends)

Secondary movements (trends), and

Primary trends

The primary trends are the long-range cycle that carries the entire market up or down (bull or bear markets). The secondary trend acts as a restraining force on the primary trend. It ends to correct deviations from its general boundaries. The minor trends have little analytical value, because of their short duration and variations in amplitude.

Criticism of Dow Theory

Several criticisms are leveled against the Dow Theory.

1. It is not a theory but an interpretation of known data. A theory should be able to explain why a phenomenon occurs. No attempt was made by Dow or his followers to explain why the two averages should be able to forecast future stock prices.
2. It is not acceptable in its forecast. There was a considerable lag between the actual turning points and those indicated by the forecast.
3. It has poor predictive power. According to Rosenberg, the Dow Theory could not forecast the bull market which had preceded the 1929 crash. It gave a bearish indication in early1926. The 3years which followed the forecast of Hamilton's editorials for the 26-year

period, from 1904 to 1929. Of the 90 recommendations Hamilton made for a change in attitude towards the market (55% were bullish, 18% bearish and 29% doubtful) only 45 were correct. Such a result an investor may get by flipping a coin).

Elliott Wave Principle

One theory that attempts to develop a rationale for a long-term pattern in the stock price movements is the Elliott Wave Principle (EWP), established in the 1930s by R.N. Eliott and later

11.3 Charting Techniques

One school of thought led by William L. Jiler developed a comprehensive technique called "Chart Reading". Charts provide visual assistance detecting the emerging and changing patterns and changing patterns of price Behaviour.

1Technical Analysts use Three Basic Types of Charts

1. Line Charts
2. Bar Charts
3. Candlestick Charts
4. Point and Figure Charts

1. Line Chart: The most basic of the four charts is the line chart because it represents only the closing prices over a set period of time. The line is formed by connecting the closing prices over the time frame. Line charts do not provide visual information of the trading range for the individual points such as the high, low and opening prices. However, the closing price is often considered to be the most important price in stock data compared to the high and low for the day and this is why it is the only value used in line charts.

2.Bar Charts: Most investors interested in charting use bar charts - primarily because they have meanings familiar to a technical analyst, but also because these charts are easy to draw. The procedure for preparing a vertical line or bar chart is simple. Suppose an

3.Candlestick Charts: The Candlestick chart is similar to a bar chart, but it differs in the way that it is visually constructed. Similar to the bar chart, the candlestick also has a thin vertical line showing the period's trading range. The difference comes in the formation of a wide bar on the vertical line, which illustrates the difference between the open and close. And, like bar charts, candlesticks also rely heavily on the use of colors to explain what has happened during the trading period. A major problem with the candlestick color configuration, however, is that different sites use different standards; therefore, it is important to understand the candlestick configuration used at the chart site you are working with. There are two color constructs for days up and one for days that the price falls. When the price of the stock is up and closes above the opening trade, the candlestick will usually be white or clear. If the stock has traded down for the period, then the candlestick will usually be red or black, depending on the site. If the stock's price has closed above the previous day's close but below the day's open, the candlestick will be black or filled with the color that is used to indicate an up day.

4. Point - and - Figure Chart: Bar chartists count on discovering certain buying and selling forces in the market, on the basis of which they predict future price trends. These forces consist of three factors – time, volume and price. Members of another school, known as the point-and-figure chartists, question the usefulness of the first two factors. They argue that the way to predict future price fluctuations is to analyze price changes only. Consequently, they assert, no volume action need be recorded, and the time dimension (day, week, or month) should also be ignored. If only significant price changes are important, then one need only capture the significant (say, one point

or more, ignoring all fractions) price changes in a stock, no matter how long it takes for the stock to register this change.

Charts are one of the most fundamental aspects of technical analysis. It is important that you clearly understand what is being shown on a chart and the information that it provides. Now that we have an idea of how charts are constructed, we can move on to the different types of chart patterns. A chart pattern is a distinct formation on a stock chart that creates a trading signal, or a sign of future price movements. Chartists use these patterns to identify current trends and trend reversals and to trigger buy and sell signals.

1.Head and Shoulders: This is one of the most popular and reliable chart patterns in technical analysis. Head and shoulders are a reversal chart pattern that when formed, signals that the security is likely to move against the previous trend. As you can see in Figure 6.7, there are two versions of the head and shoulders chart pattern. Head and shoulders top (shown on the left) is a chart pattern that is formed at the high of an upward movement and signals that the upward trend is about to end. Head and shoulders bottom, also known as inverse head and shoulders. Head and shoulders top is shown on the left. Head and shoulders bottom, or inverse head and shoulders, are on the right.

2.Cup and Handle: A cup and handle chart is a bullish continuation pattern in which the upward trend has paused but will continue in an upward direction once the pattern is confirmed.

As you can see from the below, this price pattern forms what looks like a cup, which is preceded by an upward trend. The handle follows the cup formation and is formed by a generally downward/sideways movement in the security's price. Once the price movement pushes above the resistance lines formed in the handle, the upward trend can continue. There is a wide-ranging time frame for this type of pattern, with the span ranging from several months to more than a year.

3.Double Tops and Bottoms: This chart pattern is another well-known pattern that signals a trend reversal - it is considered to be one of the most reliable and is commonly used. These patterns are formed after a sustained trend and signal to chartists that the trend is about to reverse. The pattern is created when a price movement tests support or resistance levels twice and is unable to break through. This pattern is often used to signal intermediate and long-term trend reversals. A double top pattern is shown on the left, while a double bottom pattern is shown on the right.

4.Flag and Pennant: These two short-term chart patterns are continuation patterns that are formed when there is a sharp price movement followed by a generally sideways price movement. This pattern is then completed upon another sharp price movement in the same direction as the move that started the trend. The patterns are generally thought to last from one to three weeks.

As you can see in the above figure, there is little difference between a pennant and a flag. The main difference between these price movements can be seen in the middle section of the chart pattern. In a pennant, the middle section is characterized by converging trendlines, much like what is seen in a symmetrical triangle. The middle section on the flag pattern, on the other hand, shows a channel pattern, with no convergence between the trendlines. In both cases, the trend is expected to continue when the price moves above the upper trendline.

5.Triangles: Triangles are some of the most well-known chart patterns used in technical analysis. The three types of triangles, which vary in construct and implication, are the symmetrical triangle, ascending and descending triangle. These chart patterns are considered to last anywhere from a couple of weeks to several months.

Summary

The term technical analysis is used to mean a fairly wide range of techniques; all based on the concept that past information on prices and trading volume of stocks gives the enlightened investor a picture of what lies ahead.

It attempts to explain and forecast changes in security prices by studying only the market data rather than information about a company or its prospects, as is done by fundamental analyst.

Keywords:

Confidence Index: It is the ratio of a group of lower-grade bonds to a group of higher-grade bonds.

Indicators: Indicators are calculations based on the price and the volume of a security that measure such things as money flow, trends, volatility and momentum.

Odd Lots: Stock transactions of less than, close to 100 shares.

Trendline: A charting technique that adds a line to a chart to represent the trend in the market or a stock.

SelfAssessment

1. If RSI > 70 market is said to be in----------.

A. Overbought situation

B. Oversold situation

C. (c)Both of the above

D. (d)None of the above

2. If RSI <30 market is said to be in----------.

A. Overbought situation

B. Oversold situation

C. Both of the above

D. (d)None of the above

3. If market price>Intrinsic value then.

A. Undervalued

B. Overvalued

C. Fairly valued

D. Not Applicable

4. If market price=Intrinsic value then.

A. Undervalued

B. Overvalued

C. Fairly valued

D. Not Applicable

5. If a stock's earnings are Rs5 per year and its P/E ratio is 15, then what is the stock's current price?

A. 75

B. 100

C. 150

D. Not Applicable

6. High cash position with Mutual fund means fund managers are---------- and waiting for investment.

A. Bullish

B. Bearish

C. Both

D. Not Applicable

7. A support is a barrier to ----------.

A. Price Decline

B. Price Advancement
C. Both
D. Not Applicable

8. A resistance is a barrier to----------.
A. Price Decline
B. (b) Price Advancement
C. (c) Both
D. (d) Not Applicable

9. The time value is the ---------- of actual price over intrinsic value.
A. Excess
B. Less
C. Equal
D. None of the above

10. Double Top forms shape M. It gives ---------- trend
A. Bullish
B. Bearish
C. Directionless
D. Not Applicable

11. Double Bottom forms shape W. It gives ---------- trendand sellers of call options anticipate the value of the underlying asset will _____
A. Bullish
B. Bearish
C. Directionless
D. Not Applicable

12. Traditionally, an RSI reading of 70 or above indicates an overbought situation. A reading of 30 or below indicates an oversold condition.
A. True
B. False

13. Advance-Means number of shares whose price increased from the previous day.
A. True
B. False

14. The Candlestick chart is similar to a bar chart, but it differs in the way that it is visually constructed.
A. True
B. False

15. Net Difference-A-D is the Breadth of the market.
A. True
B. False

Answers for Self Assessment

1.	A	2.	B	3.	A	4.	C	5.	A
6.	B	7.	A	8.	B	9.	A	10.	B
11.	A	12.	True	13.	True	14.	True	15.	True

Review Questions

Technical analysis has been around for more than 100 years, and it is not likely to disappear from the investment scene anytime soon. Comment.

Make a detailed critical evaluation of the Technical Analysis.

Distinguish between Dow theory and Elliot wave theory.

What do you think are the limitations of charts?

Moving averages are used to identify current trends and trend reversals as well as to set up support and resistance levels. Comment.

Further Readings

- Security Analysis And Portfolio Management By K Sasidharan & Alex K Mathews, Mcgraw Hill Education
- Security Analysis And Portfolio Management By Pandian, Punithavathy, Vikas Publishing House.

Web Links

- https://zerodha.com/varsity/chapter/dow-theory-part-1/
- https://www.wallstreetmojo.com/dow-theory/
- https://www.investopedia.com/terms/e/elliottwavetheory.asp
- https://www.fidelity.com/learning-center/trading-investing/technical-analysis/technical-indicator-guide/overview

Unit 12:Asset Pricing

CONTENTS

Objectives

- understand the meaning of the capital asset pricing model.
- analyze the capital asset pricing model.
- interpret the practical value of the capital asset pricing model.
- interpret the practical value of arbitrage ricing theory.

Introduction

In the valuation of investments, one has to consider his assets in the portfolio as a part of his total investments. In considering the portfolio, not only returns are to be considered as in the case of single investments but their risks also. Two plus two will not make it four in the aggregation of risks, as shown by famous author Markowitz.

So the risks in a portfolio of assets will not be the total of individual risks of investments, made; it can be more or less than the total. The objective of an investor is to minimize the risk for a given return and capital market theory deals with that subject.

12.1 Capital Asset Pricing Model

No matter how much we diversify our investments, it's impossible to get rid of all the risk. As investors, we deserve a rate of return that compensates us for taking on risk. The (CAPM) helps us to calculate investment risk and what return on investment we should expect. Birth of a Model: The model was introduced by Jack Treynor (1961, 1962), William Sharpe (1964), John Lintner (1965a, b) and Jan Mossin (1966) independently, building on the earlier work of Harry Markowitz on diversification and modern portfolio theory.

Sharpe, Markowitz and Merton Miller jointly received the Nobel Memorial Prize in Economics for this contribution to the field of financial economics.

His model starts with the idea that individual investment contains two types of risk:

Systematic Risk - These are market risks that cannot be diversified away. Interest rates, recessions and wars are examples of systematic risks.

Unsystematic Risk - Also known as "specific risk," this risk is specific to individual stocks and can be diversified away as the investor increases the number of stocks in his or her portfolio.

Modern Portfolio Theory shows that specific risk can be removed through Diversification. The trouble is that diversification still doesn't solve the problem of systematic risk; even a portfolio of all the shares in the stock market can't eliminate that risk.

Therefore, when calculating a deserved return, systematic risk is what plagues investors most. CAPM, therefore, evolved as a way to measure this systematic risk.

In finance, the capital asset pricing model (CAPM) is used to determine a theoretically appropriate required rate of return of an asset, if that asset is to be added to an already well-diversified portfolio, given that asset's non-diversifiable risk.

A model that describes the relationship between risk and expected return and that is used in the pricing of risky securities.

$$\overline{r_a} = r_f + \beta_a(\overline{r_m} - r_f)$$

Where:

r_f = Risk free rate

β_a = Beta of the security

$\overline{r_m}$ = Expected market return

The general idea behind CAPM is that investors need to be compensated in two ways: time value of money and risk.

The time value of money is represented by the risk-free (rf) rate in the formula and compensates the investors for placing money in any investment over a period of time.

The other half of the formula represents risk and calculates the amount of compensation the investor needs for taking on additional risk. This is calculated by taking a risk measure (beta) that compares the returns of the asset to the market over a period of time and to the market premium (Rm-rf).

Assumptions of CAPM

- Aim to maximize economic utilities.
- Are rational and risk-averse.
- Are broadly diversified across a range of investments.
- Are price takers, i.e., they cannot influence prices.
- Can lend and borrow unlimited amounts under the risk free rate of interest.
- Trade without transaction or taxation costs.
- Deal with securities that are all highly divisible into small parcels.
- Assume all information is available at the same time to all investors

Problems of CAPM

This model presents a very simple theory that delivers a simple result. The theory says that the only reason an investor should earn more, on average, by investing in one stock rather than another is that one stock is riskier.

Not surprisingly, the model has come to dominate modern financial theory. But does it really work?

It's not entirely clear. The big sticking point is beta. When professors Eugene Fama and Kenneth French looked at share returns on the New York Stock Exchange, the American Stock Exchange and Nasdaq between 1963 and 1990, they found that differences in betas over that lengthy period did not explain the performance of different stocks. The linear relationship between beta and individual stock returns also breaks down over shorter periods of time. These findings seem to suggest that CAPM may be wrong.

While some studies raise doubts about CAPM's validity, the model is still widely used in the investment community. Although it is difficult to predict from beta how individual stocks might react to particular movements, investors can probably safely deduce that a portfolio of high-beta stocks will move more than the market in either direction, and a portfolio of low-beta stocks will move less than the market.

This is important for investors - especially fund managers - because they may be unwilling to or prevented from holding cash if they feel that the market is likely to fall.

If so, they can hold low-beta stocks instead. Investors can tailor a portfolio to their specific risk-return requirements, aiming to hold securities with betas in excess of 1 while the market is rising, and securities with betas of less than 1 when the market is falling.

Not surprisingly, CAPM contributed to the rise in use of indexing - assembling a portfolio of shares to mimic a particular market - by risk averse investors.

This is largely due to CAPM's message that it is only possible to earn higher returns than those of the market as a whole by taking on higher risk (beta).

The capital asset pricing model is by no means a perfect theory. But the spirit of CAPM is correct. It provides a usable measure of risk that helps investors determine what return they deserve for putting their money at risk.

The model is based on the relationship between an asset's beta, the risk-free rate (typically the Treasury bill rate), and the equity risk premium, or the expected return on the market minus the risk-free rate. CAPM evolved as a way to measure this systematic risk. It is widely used throughout finance for pricing risky securities and generating expected returns for assets, given the risk of those assets and cost of capital.

$ERi=Rf+\beta i(ERm-Rf)$

Where

ERi=expected return of investment

Rf=risk-free rate

βi=beta of the investment

(ERm−Rf)=market risk premium

The CAPM calculation works on the existence of the following elements

#1 – Risk-free return (Rrf)

Risk-Free Rate of Return

is the value assigned to an investment that guarantees a return with zero risks. Generally, the value of the risk-free return is equivalent to the yield on a 10-year US government bond. Investments in US securities are considered zero risks since there is a minimal chance of the government defaulting.

#2 – Market Risk Premium (Rm – Rrf)

Market Risk Premium

is the expected return an investor receives (or expects to receive in the future) from holding a risk-laden portfolio instead of risk-free assets? The premium rate allows the investor to decide if the investment in the securities should occur and, if yes, the rate he will earn beyond the risk-free return offered by government securities.

Investors expect to be compensated for risk and the time value of money. The risk-free rate in the CAPM formula accounts for the time value of money. The other components of the CAPM formula account for the investor taking on additional risk. The goal of the CAPM formula is to evaluate whether a stock is fairly valued when its risk and the time value of money are compared with its expected return. In other words, by knowing the individual parts of the CAPM, it is possible to gauge whether the current price of a stock is consistent with its likely return.

Suppose a stock has the following information. It is listed on the London stock exchange and operates throughout Europe. The yield on a UK 10-year treasury is 2.8%. The stock in question will earn 8.6% as per historical data. The Beta for the stock is 1.4, i.e., it is 140% volatile to the changes in the general stock market.

The expected rate of return of the stock will be calculated as below.

CAPM Formula (Expected return) = Risk free return (2.8%) + Beta (1.4) * Market risk premium (8.6%-2.8%)

= 2.8 + 1.4*(5.8)

Thomas has to decide to invest in either Stock Marvel or Stock DC using the CAPM model illustrated by the following screenshot from work. Thomas has to decide to invest in Stock Marvel or Stock DC with the given information available to him.

Marvel – Return 9.6%, Beta 0.95. DC – Return 8.7%, Beta 1.2. As measured by the return on government stock, a risk-free return in the market is 5.6%.

The expected rate of return of the stock marvel will be calculated below.

Formula – Expected return = Risk free return (5.60%) + Beta (95.00) * Market risk premium (9.60%-5.60%)

Expected Rate of Return = 9.40%

The expected rate of return of the stock DC will be calculated as below.

Formula – Expected return = Risk free return (5.6%) + Beta (1.2) * Market risk premium (8.7%-5.6%)

Expected Rate of Return = 9.32%

Thus, the investor should invest in Stock Marvel.

The expected return of the stock based on the CAPM formula is 9.5%:

$9.5\%=3\%+1.3\times (8\%-3\%)$

Practical Value of the CAPM

Considering the critiques of the CAPM and the assumptions behind its use in portfolio construction, it might be difficult to see how it could be useful.

However, using the CAPM as a tool to evaluate the reasonableness of future expectations or to conduct comparisons can still have some value.

The CAPM uses the principles of modern portfolio theory to determine if a security is fairly valued. It relies on assumptions about investor behaviors, risk and return distributions, and market fundamentals that don't match reality.

However, the underlying concepts of CAPM and the associated efficient frontier can help investors understand the relationship between expected risk and reward as they strive to make better decisions about adding securities to a portfolio.

12.2 Arbitrage Pricing Theory

Arbitrage is the simultaneous purchase and sale of the same asset in different markets in order to profit from tiny differences in the asset's listed price. It exploits short-lived variations in the price of identical or similar financial instruments in different markets or in different forms.

In finance, arbitrage pricing theory (APT) is a general theory of asset pricing, that has become influential in the pricing of stocks.

In financial economics, arbitrage pricing theory (APT) assumes that market inefficiencies arise from time to time but are kept in check through the work of arbitrageurs who identify and immediately eliminate such opportunities as they arise.

The theory was initiated by the economist Stephen Ross in 1976.

Arbitrage pricing theory (APT) is a multi-factor asset pricing model based on the idea that an asset's returns can be predicted using the linear relationship between the asset's expected return and a number of macroeconomic variables that capture systematic risk.

It is a useful tool for analyzing portfolios from a value investing perspective, in order to identify securities that may be temporarily mispriced.

Arbitrage Mechanics-

In the APT context, arbitrage consists of trading in two assets – with at least one being mispriced. The arbitrageur sells the asset which is relatively too expensive and uses the proceeds to buy one which is relatively too cheap.

Under the APT, an asset is mispriced if its current price diverges from the price predicted by the model. The asset price today should equal the sum of all future cash flows discounted at the APT rate, where the expected return of the asset is a linear function of various factors, and sensitivity to changes in each factor is represented by a factor-specific beta coefficient.

When the investor is long the asset and short the portfolio (or vice versa) he has created a position which has a positive expected return (the difference between asset return and portfolio return) and which has a net-zero exposure to any macroeconomic factor and is therefore risk free (other than for firm specific risk). The arbitrageur is thus in a position to make a risk-free profit:

Where today's price is too low:

The implication is that at the end of the period the portfolio would have appreciated at the rate implied by the APT, whereas the mispriced asset would have appreciated at more than this rate. The arbitrageur could therefore:

Today:

1. short sell the portfolio

2. buy the mispriced asset with the proceeds.

At the end of the period:

1. sell the mispriced asset

2. use the proceeds to buy back the portfolio

3. pocket the difference.

Where today's price is too high:

The implication is that at the end of the period the portfolio would have appreciated at the rate implied by the APT, whereas the mispriced asset would have appreciated at less than this rate. The arbitrageur could therefore:

Today:

1. short sell the mispriced asset

2. buy the portfolio with the proceeds.

At the end of the period:

1. sell the portfolio

2. use the proceeds to buy back the mispriced asset

3.pockets the difference.

Arbitrage Pricing Theory

Created in 1976 by Stephen Ross, this theory predicts a relationship between the returns of a portfolio and the returns of a single asset through a linear combination of many independent macro-economic variables.

It is often viewed as an alternative to the capital asset pricingmodel (CAPM), since the APT has more flexible assumption requirements.

Whereas the CAPM formula requires the market's expected return, APT uses the risky asset's expected return and the risk premium of a number of macro-economic nomic factors.

Arbitrageurs use the APT model to profit by taking advantage of mispriced securities. A mispriced security will have a price that differs from the theoretical price predicted by the model.

APT holds that the expected return of a financial asset can be modeled as a linear function of various macroeconomic factors or theoretical market indices, where sensitivity to changes in each factor is represented by a factor-specific beta coefficient.

The basis of arbitrage pricing theory is the idea that the price of a security is driven by a number of factors. These can be divided into two groups: macro factors, and company-specific factors. The name of the theory comes from the fact that this division, together with the no-arbitrage assumption can be used to derive the following formula:

$r = rf + \beta 1f1 + \beta 2f2 + \beta 3f3 + \cdots$

where r is the expected return on the security,

rf is the risk-free rate,

Each f is a separate factor and

each β is a measure of the relationship between the security price and that factor.

12.3 Relationship with the Capital Asset Pricing Model

Relationship with the Capital Asset Pricing Model

The APT along with the (CAPM) is one of two influential theories on asset pricing.

The APT differs from the CAPM in that it is less restrictive in its assumptions. It allows for a

The difference between CAPM and arbitrage pricing theory is that CAPM has a single non-company factor and a single beta, whereas arbitrage pricing theory separates out non-company factors into as many as proves necessary. Each of these requires a separate beta. The beta of each factor is the sensitivity of the price of the security to that factor.

n explanatory (as opposed to statistical) model of asset returns. It assumes that each investor will hold a unique portfolio with its own particular array of betas, as opposed to the identical "market portfolio". In some ways, the CAPM can be considered a "special case" of the APT in that the sml represents a single-factor model of the asset price, where beta is exposed to changes in value of the market.

Additionally, the APT can be seen as a "supply-side" model, since its beta coefficients reflect the sensitivity of the underlying asset to economic factors. Thus, factor shocks would cause structural changes in assets' expected returns, or in the case of stocks, in firms' profitability.

On the other side, the CML is considered a "demand side" model. Its results, although similar to those of the APT, arise from a maximization problem of each investor's utility function, and from the resulting market equilibrium (investors are considered to be the "consumers" of the assets).

Arbitrage pricing theory does not rely on measuring the performance of the market. Instead, APT directly relates the price of the security to the fundamental factors driving it. The problem with this is that the theory in itself provides no indication of what these factors are, so they need to be empirically determined. Obvious factors include economic growth and interest rates. For companies in some sectors other factors are obviously relevant as well - such as consumer spending for retailers.

The potentially large number of factors means more betas to be calculated. There is also no guarantee that all the relevant factors have been identified. This added complexity is the reason arbitrage pricing theory is far less widely used than CAPM.

For example, the following four factors have been identified as explaining a stock's return and its sensitivity to each factor and the risk premium associated with each factor have been calculated:

- Gross domestic product (GDP) growth: ß = 0.6, RP = 4%
- Inflation rate: ß = 0.8, RP = 2%
- Gold prices: ß = -0.7, RP = 5%
- Standard and Poor's 500 index return: ß = 1.3, RP = 9%
- The risk-free rate is 3%
- Using the APT formula, the expected return is calculated as:
- Expected return = 3% + (0.6 x 4%) + (0.8 x 2%) + (-0.7 x 5%) + (1.3 x 9%) = 15.2%

Arbitrage pricing theory (APT) is a multi-factor asset pricing model based on the idea that an asset's returns can be predicted using the linear relationship between the asset's expected return and a number of macroeconomic variables that capture systematic risk. Unlike the CAPM, which

assumesmarkets are perfectly efficient, APT assumes markets sometimes misprice securities, before the market eventually corrects and securities move back to fair value.

Using APT, arbitrageurs hope to take advantage of any deviations from fair market value.

Summary

CAPM explains the behavior of security prices and provides a mechanism whereby investors could assess the impact of a proposed security investment on the overall portfolio risk and return. CAPM suggests that the prices of securities are determined in such a way that the risk premium or excess returns are proportional to systematic risk, which is indicated by the beta coefficient. The model is used for analyzing the risk-return implications of holding securities.

APT holds that the expected return of a financial asset can be modelled as a linear function of various macro-economic factors or theoretical market indices, where sensitivity to changes in each factor is represented by a factor specific beta coefficient. The model-derived rate of return will then be used to price the asset correctly – the asset price should equal the expected end of period price discounted at the rate implied by model.

In the APT context, arbitrage consists of trading in two assets – with at least one being mispriced. The arbitrageur sells the asset, which is relatively too expensive and uses the proceeds to buy one that is relatively too cheap. The APT differs from the CAPM in that it is less restrictive in its assumptions. It allows for an explanatory (as opposed to statistical) model of asset returns.

Keywords:

Arbitrage: The practice of taking advantage of a state of imbalance between two (or possibly more) markets and thereby making a risk-free profit, Rational Pricing.

Beta: The measure of asset sensitivity to a movement in the overall market.

CAPM: A model that explains relative security prices in terms of a security's contribution to the risk of the whole portfolio, not its individual standard deviation.

Security Characteristic Line (SCL): It represents the relationship between the market return (rM) and the return of a given asset i(ri) at a given time t.

SelfAssessment

1. A beta of less than 1 means that the security will be ---------- volatile than the market.

A. Less
B. More
C. Multiply
D. Divide

2. A beta of greater than 1 indicates that the security's price will be ---------volatile than the market.

A. Less
B. More
C. Multiply
D. Divide

3. The .....sells the asset that is relatively too expensive and uses the proceeds to buyone which is relatively too cheap.

A. Arbitrager
B. Speculator
C. Both (a) and (b)

D. Neither (a) nor (b)

4. If the risk-free rate is 3%, the beta (risk measure) of the stock is 2 and the expected market return over the period is 10% as per CAPM.

A. 17
B. 16
C. 13
D. All of the above

5. The linear relationship between beta and individual stock returns also breaks down over shorter periods of time. These findings seem to suggest that CAPM may be wrong.

A. True
B. False
C. Both of the above
D. None of the above

6. One of the assumptions of CAPM Can lend and borrow unlimited amounts under the risk-free rate of interest.

A. True
B. False
C. Both of the above
D. None of the above

7. ----------which is also known as "specific risk," this risk is specific to individual stocks and can be diversified away as the investor increases the number of stocks in his or her portfolio.Factoring is a financial service designed for

A. Systematic risks
B. Unsystematic risks
C. Both (a) and (b)
D. All of the above

8. In case of overpriced futures Arbitrageurs should do-

A. Buy futures, Sell spot
B. Sell futures, Buy Spot
C. Both of the above
D. None of the above

9. In case of underpriced futures Arbitrageurs should do-

A. (a))Buy futures, Sell spot
B. (b) Sell futures, Buy Spot
C. (c) All facts are not given
D. (d) Not Applicable

10. A ----------involve holding a long position in the futures market.

A. Short hedge
B. Long hedge
C. All facts are not given

D. Not Applicable

11. A ----------involve holding a short position in the futures market.

A. Short hedge

B. Long hedge

C. Nor buyer or seller

D. Not Applicable

12. APT holds that the expected return of a financial asset can be modeled as a linear function of various macroeconomic factors or theoretical market indices, where sensitivity to changes in each factor is represented by a factor-specific beta coefficient.

A. True

B. False

13. The goal of the CAPM formula is to evaluate whether a stock is fairly valued when its risk and the time value of money are compared with its expected return.

A. True

B. False

14. If the stock's Beta is 1.2, it would cause a 130% change due to any change in the general market.

A. True

B. False

15. For Beta, which is equal to 1, the stock is in sync with the changes in the market.

A. True

B. False

Answers for Self Assessment

1.	A	2.	B	3.	B	4.	A	5.	A
6.	A	7.	A	8.	B	9.	A	10.	B
11.	A	12.	True	13.	True	14.	False	15.	True

Review Questions

Can an investor receive a higher expected return for the same level of systematic risk? If yes, explain under which conditions, if no- answer why not.

Examine the concept of the Beta factor of a market portfolio.

What do you analyze as the benefits and limitations of CAPM?

Do you think that the assumptions of CAPM are practical? Why/why not?

Critically evaluate Arbitrage Pricing Model.

Further Readings

- Security Analysis And Portfolio Management By K Sasidharan & Alex K Mathews, Mcgraw Hill Education
- Security Analysis And Portfolio Management By Pandian, Punithavathy, Vikas Publishing House.

Web Links

- https://www.pmi.org/certifications/certified-associate-capm
- https://hbr.org/1982/01/does-the-capital-asset-pricing-model-work
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- https://corporatefinanceinstitute.com/resources/wealth-management/arbitrage-pricing-theory-apt/

Unit 13: Portfolio Construction and Management

CONTENTS

Learning Outcome

- understand the meaning and significance of portfolio risk and return,
- analyze the various calculation of portfolio risk and return,
- analyze the various types of diversification,
- interpret the way to reduce portfolio risk and increase portfolio return.

Introduction

There's a widespread assumption in investing that more risk equals increased potential returns. The theory behind the efficient frontier and optimal portfolios states that there's an optimal combination of risk and return.

13.1 The Efficient Frontier

Using the Theory, a single asset or portfolio of assets is considered to be efficient if no other asset or portfolio of assets offers higher expected return with the same (or lower) risk, or lower risk with the same (or higher) expected return.

The composite of all stock sets constitutes the efficient frontier.

The efficient frontier theory was introduced by Nobel Laureate Harry Markowitz in 1952 and is a cornerstone of modern portfolio theory (MPT). The efficient frontier rates portfolios (investments) on a scale of return (y-axis) versus risk (x-axis). The compound annual growth rate (CAGR) of an investment is commonly used as the return component while standard deviation (annualized) depicts the risk metric.

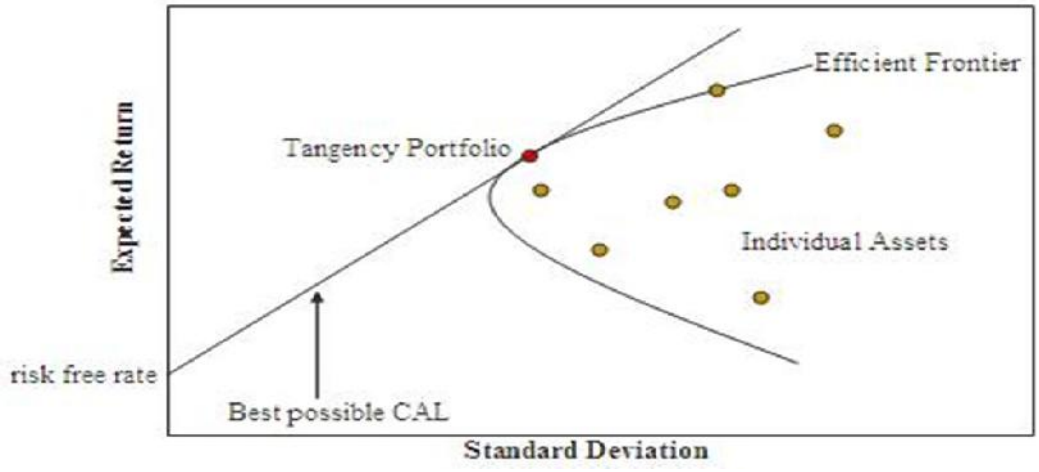
The efficient frontier graphically represents portfolios that maximize returns for the risk assumed. Returns are dependent on the investment combinations that make up the portfolio. A security's standard deviation is synonymous with risk. Ideally, an investor seeks to fill a portfolio with securities offering exceptional returns but with a combined standard deviation that is lower than the standard deviations of the individual securities.

The less synchronized the securities (lower covariance), the lower the standard deviation. If this mix of optimizing the return versus risk paradigm is successful, then that portfolio should line up along the efficient frontier line.

A key finding of the concept was the benefit of diversification resulting from the curvature of the efficient frontier. The curvature is integral in revealing how diversification improves the portfolio's risk/reward profile. It also reveals that there is a diminishing marginal return to risk.

Notes

An optimal portfolio is one designed with a perfect balance of risk and return. The optimal portfolio looks to balance securities that offer the greatest possible returns with acceptable risk or the securities with the lowest risk given a certain return.



The Efficient Frontier and Investor Utility

- The optimal portfolio has the highest utility for a given investor
- It lies at the point of tangency between the efficient frontier and the utility curve with the highest possible utility.
- This theory portrayed the importance of diversification.
- This efficient frontier graph helps investors choose the portfolio combinations with the highest and least possible returns.
- It represents all the dominant portfolios in the risk-return space.

Criticisms of the Efficient Frontier

- The assumption that all investors are rational and make sound investment decisions may not always be true because not all investors would have enough knowledge about the markets.
- The theory can be applied, or the frontier can be constructed only when a concept of diversification is involved. If there is no diversification, the theory would certainly fail.
- Also, the assumption that investors have unlimited borrowing and lending capacity is faulty.
- The assumption that the assets follow a normal distribution pattern might not always stand true. In reality, securities may have to experience returns far from the respective standard deviations, sometimes like three standard deviations away from the mean.
- The real costs, like taxes, brokerage, fees, etc., are not considered while constructing the frontier.

To sum up, the efficient frontier displays a combination of assets with the optimal expected return level for a given level of risk. It depends on the past and keeps changing every year; there is new data. After all, the past figures need not necessarily continue in the future.

All the portfolios on the line are 'efficient,' and the assets that fall outside the line are not optimal because either they offer a lower return for the same risk or riskier for the same level of return.

13.2 Portfolio risk

Portfolio risk is a chance that the combination of assets or units, within the investments that you own fails to meet financial objectives.

Each investment within a portfolio carries its own risk, with higher potential return typically meaning higher risk.

In theory, portfolio risk can be eliminated by successful diversification: holding combinations of investments that do not depend on the same circumstances to return a profit. In reality, though, it is more probable that risks will be minimized and not eliminated entirely. Portfolio risk is just one of the risks that traders should be wary of. Most risks apply to individual investments, but it is also important to ensure that your portfolio as a whole doesn't end up working against you.

How to Calculate Portfolio Risk?

There are many mathematical ways to identify portfolio risk.

You can calculate the risk of an individual investment by using the Standard Deviation method. Standard Deviation statistically measures the variation of specific returns to the average of those returns. The portfolio risk is also measured by taking the Standard Deviation of variance of actual returns of that portfolio over time. The variability of returns is proportional to the portfolio's risk.

The portfolio standard deviation can be thought of as a weighted average of the individual standard deviations plus terms that account for the co-movement of returns

For a two-security portfolio:

$$\sigma_P = \sqrt{w_1^2\sigma_1^2 + w_2^2\sigma_2^2 + 2r_{1,2}\sigma_1\sigma_2 w_1 w_2}$$

How to Reduce Portfolio Risk?

You cannot eradicate the risk but minimize it. The stock market does both – gives high returns and experiences high volatility. Hence, your primary concern should be to diversify your portfolio by investing across various asset groups.

The idea is that investors will always want high returns with minimum risk. Investors will look for investments with returns where the risk and volatility are particularly low. The way this risk is lowered is by investing in non-correlated assets. If an asset linked with high risk is paired with an investment whose value rises with the downfall of other investments, the risk of the overall portfolio is low.

You can add liquid assets to your portfolio as well. Let us say that you need money urgently, and your highly volatile investment is performing poorly. However, you are left with no option but to sell that investment. This will result in a substantial loss.

High volatility assets perform well with high investment horizons. With liquid assets, you can let the highly volatile assets mature in due time to produce good returns.

13.3 Portfolio return

Portfolio return refers to the gain or loss realized by an investment portfolio containing several types of investments.

Portfolios aim to deliver returns based on the stated objectives of the investment strategy, as well as the risk tolerance of the type of investors targeted by the portfolio.

How to calculate Portfolio Return?

To calculate the expected rate of return, you multiply the expected rate of return for each asset by that asset's weight as part of the portfolio.

You then add each of those results together.

$$E(R_P) = \sum_{i=1}^{N} w_i R_i$$

	Relative Weight	Expected Return	Weighted Return
Stock X	0.400	8.0%	0.03
Stock Y	0.350	15.0%	0.05
Stock Z	0.250	25.0%	0.06
	Expected Portfolio Return =		**14.70%**

Question on Portfolio risk & return

Probability	Return Y	Return z
.20	22%	5%
.60	14%	15%
.20	-4%	25%
Variance	73.6	40

Coefficient correlation=.22

Determine Expected rate of return, and standard deviation.

Is Y comparatively riskless?

If financial analyst wishes to invest half in Z and half in Y would it reduce risk?

Solution

1. Expected Return as =Sum of (P*R)

Expected Return of Y=.2*22+.60*14+.20(-4)

=4.4+8.4-.8=12

Expected Return of z=.2*5+.60*15+.20*25=1

2. Variance of Y is 73.6

therefore, standard deviation y=Square root of 73.6=8.6

The variance of Z is 40

therefore, standard deviation z=Square root of 40=6.32

Square root of 34.5=5.86

Combining both securities will reduce risk as it as they have lesser degree of positive correlation coefficient.

Like all things in life, your investments have risks too. Risk in investments could lead to scarring your finances terribly. Since there is no sure- shot way to eliminate the risk, you can undoubtedly lower it by diversifying your investments across several assets or allocating assets with the help of an investment professional.

13.4 Diversification- Meaning

In finance, diversification is the process of allocating capital in a way that reduces the exposure to any one particular asset or risk.

A common path towards diversification is to reduce risk or volatility by investing in a variety of assets.

The principle of allocating funds among several eligible securities is known as diversification.

Diversification in the following forms

Different Assets, instruments, industries, and companies.

It helps in reducing risk.

All securities do not move exactly together.

Variability in one will be offset by reverse variability in another.

It is something like what happens when all the kids in the hide-and-seek game hide in the same spot. When the seeker comes looking, everyone gets caught and the game is over.

Just imagine what would happen if you invested all your money in a single security. Everything would be great as long as the stock's performance is good. But in case the market takes a sudden U-turn, you could stand to lose your entire investment in a single blow.

The probability of losing some or all of your investment.

Risk is a function of the dispersion of possible future outcomes.

SYSTEMATIC RISK (MARKET RISK)	UNSYSTEMATIC RISK (SPECIFIC)
• Associated with being a market participant	• Unique to a specific security or asset class
• Cannot be avoided	• Can be reduced through diversification

Types of Diversification

Two types-

Naïve or simple diversification.

Markowitz diversification.

Naïve or simple diversification:

Company or Industries

Statistical error of choosing the wrong company comes down.

But it also gives the following problems-

Markowitz diversification-

Modern portfolio theory was initiated by University of Chicago graduate student, Harry Markowitz in 1952.

Markowitz showed how the risk of a portfolio is NOT just the weighted average sum of the risks of the individual securities…but rather, also a function of the degree of co-movement of the returns of those individual assets.

Prior to the establishment of Modern Portfolio Theory, most people only focused on investment returns…they ignored risk.

With MPT, investors had a tool that they could use to dramatically reduce the risk of the portfolio without a significant reduction in the expected return of the portfolio.

The degree to which the returns of two stocks co-move are measured by the correlation coefficient.

The correlation coefficient between the returns on two securities will lie in the range of +1 through -1.

+1 is a perfect positive correlation.

-1 is a perfect negative correlation.

The lower the correlation, the

more risk reduction (diversification) you will achieve.

Right number and right kind of securities which are negatively correlated or not correlated at all.

Unsystematic risk is reduced to optimum level or even can be reduced to zero, if 10-15 stocks are added to one's portfolio.

Positive and negative correlated.

By combining negatively correlated securities variability of return of risk can be reduced.

According to Warren Buffett, "wide diversification is only required when investors do not understand what they are doing."

In other words, if you diversify too much, you might not lose much, but you won't gain much either

Markowitz diversification challenges benefits and disadvantages

Markowitz emphasized for the first time was that some measure of risk, and not just the expected rate of return, should be considered when dealing with investment decision.

Markowitz's approach to portfolio analysis and selection attracted a number of academicians and practitioners, who subsequently began to adjust the basic framework so that practicalapplication could be more readily considered.

Another interesting thing happened. Following the presentation of the model, there had been a widespread widespread realization of how computers could be utilized in investment decision-making. As a final remark, we may mention that Markowitz's work marks the beginnings of what is today known as modern portfolio theory.

The main takeaway of MPT is that losses experienced by individual assets likely won't "crash" a portfolio, thanks to diversification. Diversification can also help reduce portfolio volatility, potentially generating fairly steady rates of return.

Another advantage to modern portfolio theory is that it can lead to more efficient portfolios.

This is because calculations used to find a suitable blend of stocks, bonds, and other securities can lead to a portfolio that meets investor goals and objectives.

One main criticism of MPT is that portfolios are assessed on variance, rather than downside risk. Quick definition: variance is a measure of volatility (or measure of thedispersion) of returns, over time. The challenge of MPT is that two different portfolios could show the same variance levels, but for different reasons.

One might show variance because of small, frequent losses, while the other could demonstrate a similar variance, because of two or three larger declines. Both of these variances fit into different investment strategies.

Another potential MPT issue is that it models expected returns, based on mathematical calculations based on past data. But it doesn't model market fluctuations. Furthermore, MPT doesn't take extra costs into consideration, such as broker commissions or taxes.

Finally, modern portfolio theory assumes that investors are risk-averse, completely rational, and have realistic investment returns. Anyone who follows the stock market for any length of time understands that trades aren't always conducted for rational reasons; emotion can drive irrational activities.

SelfAssessment

1. Portfolios lying on the upper right portion of the efficient frontier are likely to be chosen by.

A. Aggressive investor
B. Conservative investor
C. Conservative investor
D. Not Applicable

2. Planning one's portfolio as per risk-return profile & managing it efficiently so as to secure highest return for the lowest risk at a particular level of investment is called ----------

A. Portfolio Management
B. Investment Management
C. Receivable Management
D. Inventory Management

3. Portfolio Management is a..... Concept

A. Dynamic
B. Static
C. Both
D. None

4. Allocation of funds to various eligible assets is known as----------,

A. Diversification
B. Allocation
C. Correlation
D. None

5. If we can find stocks with either ..... correlation or ..... correlation, the portfolio risk would be low.

A. Negative, No
B. Positive, Great
C. Negative, Little
D. None

6. ..... may be used synonymously with the expression 'collection of assets.

A. Portfolio
B. Investment
C. Diversification
D. None

7. Smaller the correlations..... will be the risk in the portfolio.

A. Lower
B. Greater
C. No impact
D. None

8. The composite of all stock sets constitutes the efficient frontier.

A. No
B. Yes
C. Can't say
D. Not Applicable

9. As per Markowitz, you should select securities that have a negative correlation.

A. True
B. False
C. Can't say
D. None

10. Security returns are much less correlated across countries than within a country.

A. True
B. False
C. Can't say
D. None

11. Expected return is Sum of Probabilities multiplied by return associated with probabilities.

A. True
B. False
C. Can't say
D. None

12. To calculate the expected rate of return, you multiply the expected rate of return for each asset by that asset's weight as part of the portfolio.

A. True

B. False

13. The correlation coefficient between the returns on two securities will lie in the range of +1 through - 1.

A. True

B. False

14. The higher the correlation, the more risk reduction (diversification) you will achieve.

A. True

B. False

15. Prior to the establishment of Modern Portfolio Theory, most people only focused on investment returns…they ignored risk.

A. True

B. False

Answer for Self Assessment

1.	A	2.	A	3.	A	4.	A	5.	A
6.	A	7.	A	8.	B	9.	A	10.	A
11.	A	12.	A	13.	A	14.	B	15.	A

Summary

Whenever an investor employs resources, be it in the form of hiring employees for his company, establishing a charitable fund or investing money in an investment fund he will want to measure the performance of his investment. In any of the above-named cases, the investor will establish an evaluation system that provides him with the feedback needed to determine whether the investment generates the predetermined utility.

The investment manager will be bound to the investment policy and subject to a constant evaluation of his achievements. His achievement will be the return on the capital the investor provided. The first question the investor will want to address is the question of performance.

Keywords

Benchmark Portfolio: A tool for the meaningful evaluation of the performance of a portfolio manager.

An optimal portfolio: It is one designed with a perfect balance of risk and return. The optimal portfolio looks to balance securities that offer the greatest possible returns with acceptable risk or the securities with the lowest risk given a certain return.

Diversification: The principle of allocating funds among several eligible securities is known as diversification.

Review Questions

1. What do you mean by portfolio?
2. Differentiate between simple diversification and Markowitz diversification.
3. What do you mean by efficient frontier?
4. Explain how to measure portfolio risk and return.

Further Readings

- SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT By K SASIDHARAN & ALEX K MATHEWS, MCGRAW HILL EDUCATION
- SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT by PANDIAN, PUNITHAVATHY, VIKAS PUBLISHING HOUSE.

Web Links

- https://www.investopedia.com/terms/p/portfolio.asp#:~:text=A%20portfolio%20is%20a%20collection,the%20core%20of%20a%20portfolio.
- https://groww.in/p/portfolio
- https://www.investopedia.com/terms/d/diversification.asp
- https://www.wallstreetmojo.com/markowitz-model/

Dr. Mahesh Kumar Sarva, Lovely Professional University

Unit 14:Portfolio Evaluation and Revision

CONTENTS

Learning Outcome

- understand International banking & its perspective,
- interpret reasons for International banking.

Introduction

In the entire process of portfolio management, portfolio revision is as important as portfolio analysis and selection. Keeping in mind the risk-return objectives, an investor selects a mix of securities from the given investment universe. In a dynamic world of investment, it is only natural that the portfolio may not perform as desired or opportunities might arise turning the desired into less that desired. In every such situation, a portfolio revision is warranted. Portfolio revision involves changing the existing mix of securities. The objective of portfolio revision is similar to the objective of portfolio selection i.e. maximizing the return for a given level of risk or minimizing the risk for a given level of return. The process of portfolio revision may also be similar to the process of portfolio selection. This is particularly true where active portfolio revision strategy is followed. Where passive portfolio revision strategy is followed, use of mechanical formula plans may be made.

14.1 Need for Portfolio Revision

No plan can be perfect to the extent that it would not need revision sooner or later. Investment plans are certainly not. In the context of portfolio management, the need for revision is ever more because the financial markets are continually changing. Thus the need for portfolio revision might simply arise because the market witnessed some significant changes since the creation of the portfolio. Further, the need for portfolio revision may arise because of some investor- related factors such as

1. Availability of additional wealth,
2. Change in the risk attitude and the utility function of the investor,
3. Change in the investment goals of the investors and
4. The need to liquidate a part of the portfolio to provide funds for some alternative uses.

The other valid reasons for portfolio revision such as short-term price fluctuations in the market do also exist. There are, thus, numerous factors, which may be broadly called market related and investor-related, which spell need for portfolio revision.

14.2 Evaluation:

Notes

The Sharpe ratio is an investment measurement that is used to calculate the average return beyond the risk-free rate of volatility per unit. In other words, it's a calculation that measures the actual return of an investment adjusted for the riskiness of the investment. This measurement is particularly important when comparing two or more investment opportunities because it levels out the volatility in the market and flattens out the returns as if the risk was eliminated.

Take a high-risk investment for example. This investment is much more volatile, increasing and decreasing in value much more, than a low-risk investment. Assume that the high-risk investment had a higher return than the lower investment for a given year. Was this because the high-risk management or investment outperformed the low-risk investment or is this higher return simply based on the higher risk and volatility of the high-risk investment? You would never be able to know without this ratio.

It is defined as the difference between the returns of the investment and the risk-free return, divided by the standard deviation of the investment returns. It represents the additional amount of return that an investor receives per unit of increase in risk.

$$S_a = \frac{E\left[R_a - R_b\right]}{\sigma_a}$$

What the Sharpe Ratio Can Tell You

The ratio is useful in determining to what degree excess historical returns were accompanied by excess volatility. While excess returns are measured in comparison with an investing benchmark, the standard deviation formula gauges volatility based on the variance of returns from their mean.

A higher Sharpe metric is always better than a lower one because a higher ratio indicates that the portfolio is making better investment decisions and not being swayed by the risk associated with it. Here is a list of sharpe ratio grades and what they mean.

Sharpe Ratio Grading Thresholds

<1: Not Good

1 – 1.99: Ok

2 – 2.99: Really Good

>3: Exceptional

Take a portfolio that only invests in Treasure bills for example. These are considered risk-free investments, so there is no volatility and no earnings in excess of the risk-free rate. Thus, the Sharp Ratio would be zero for this portfolio.

The greater a portfolio's Sharpe ratio, the better its risk-adjusted performance. A negative Sharpe ratio means the risk-free or benchmark rate is greater than the portfolio's historical or projected return, or else the portfolio's return is expected to be negative.

Sharpe Ratio Pitfalls

The Sharpe ratio can be manipulated by portfolio managers seeking to boost their apparent risk-adjusted returns history. This can be done by lengthening the return measurement intervals, which results in a lower estimate of volatility. For example, the standard deviation (volatility) of annual returns is generally lower than that of monthly returns, which are in turn less volatile than daily returns. Financial analysts typically consider the volatility of monthly returns when using the Sharpe ratio.

Calculating the Sharpe ratio for the most favorable stretch of performance rather than an objectively chosen look-back period is another way to cherry-pick the data that will distort the risk-adjusted returns.

The Sharpe ratio also has some inherent limitations. The standard deviation calculation in the ratio's denominator, which serves as its proxy for portfolio risk, calculates volatility based on a normal distribution and is most useful in evaluating symmetrical probability distribution curves. In contrast, financial markets subject to herding behavior can go to extremes much more often than a normal distribution would suggest is possible. As a result, the standard deviation used to calculate the Sharpe ratio may understate tail risk. Market returns are also subject to serial correlation. The simplest example is that returns in adjacent time intervals may be correlated because they were influenced by the same market trend. But mean reversion also depends on serial correlation, just like market momentum. The upshot is that serial correlation tends to lower volatility, and as a result investment strategies dependent on serial correlation factors may exhibit misleadingly high Sharpe ratios as a result.

Treynor's Performance Index

The Treynor ratio, also known as the reward-to-volatility ratio, is a performance metric for determining how much excess return was generated for each unit of risk taken on by a portfolio.

The Treynor ratio is a risk/return measure that allows investors to adjust a portfolio's returns for systematic risk.

Excess return in this sense refers to the return earned above the return that could have been earned in a risk-free investment. Although there is no true risk-free investment, treasury bills are often used to represent the risk-free return in the Treynor ratio.

Risk in the Treynor ratio refers to systematic risk as measured by a portfolio's beta. Beta measures the tendency of a portfolio's return to change in response to changes in return for the overall market.A higher Treynor ratio result means a portfolio is a more suitable investment.

The Treynor ratio is similar to the Sharpe ratio, although the Sharpe ratio uses a portfolio's standard deviation to adjust the portfolio returns.

In the Treynor ratio formula, we don't consider the entire risk. Instead of that, systematic risk is considered. Treynor ratio formula is given as:

$$T = R_i - R_f / \beta_i$$

How Does the Treynor Ratio Work?

Treynor ratio calculation is done by considering the beta of an investment to be its risk. The β value of any investment is the measure of the investment's volatility in the current stock market position. The more the volatility of the stocks included in the portfolio, the more the β value of that investment will be. Stocks with a higher beta value have more chances to rise and fall more easily than other stocks in the stock market with a relatively lower beta value.

Sowhen considering the market, the average comparison of beta values cannot give a fair result. So comparing investments with this measure is not practical. So here comes the utility of the Treynor ratio because it helps compare investments or stocks with nothing common to get a clear performance analysis.

Limitations of Treynor Ratio

Although the Treynor ratio is considered a better method to analyze and find out the better-performing investment in a group of investments, it does not work in several cases. The treynor ratio does not consider any values or metrics calculated utilizing the management of portfolios or investments. So this makes the Treynor ratio just a ranking criterion with several drawbacks, making it useless in different scenarios.

Limitations of Treynor Ratio

Further, the Treynor ratio can be effectively used for analyzing multiple portfolios only if given that they are a subset of a larger portfolio. In cases where the portfolios have varying total risk and similar systematic risks, they will be ranked the same, making Treynor ratio useless in the performance analysis of such portfolios.

Another limitation of the Treynor ratio occurs because of the past consideration done by the metric. Treynor ratio gives importance to how the portfolios behaved in the past. In reality, the investments or portfolios are ever-changing. We can't analyze one with just past knowledge as the portfolios may behave differently in the future due to changes in market trends and other changes. For example, if a stock has been giving the firm a 12% rate of return for the past several years, it is not guaranteed that it will go on doing the same thing in the years to follow. The rate of return can go either way, which is not considered by the Treynor ratio. The Treynor ratio formula has an inherent weakness: its backward-looking design. It's possible, maybe even more likely, for an investment to perform differently in the coming periods from how it has done in the past. For instance, a stock with a beta of 3 might not essentially have the market's volatility thrice forever. Likewise, you should not expect a portfolio to make money at an 8% rate of return over the coming ten years just because it did so over the past ten years.

Jensen's Performance Index

The Jensen's measure, or Jensen's alpha, is a risk-adjusted performance measure that represents the average return on a portfolio or investment, above or below that predicted by the capital asset pricing model (CAPM), given the portfolio's or investment's beta and the average market return. This metric is also commonly referred to as simply alpha. of an investment portfolio by analyzing a portfolio's excess return per unit of risk.

Excess return refers to the return earned above the return that could have been earned in a risk-free investment.

To accurately analyze the performance of an investment manager, an investor must look not only at the overall return of a portfolio but also at the risk of that portfolio to see if the investment's return compensates for the risk it takes. For example, if two mutual funds both have a 12% return, a rational investor should prefer the less risky fund. Jensen's measure is one of the ways to determine if a portfolio is earning the proper return for its level of risk.

If the value is positive, then the portfolio is earning excess returns. In other words, a positive value for Jensen's alpha means a fund manager has "beat the market" with their stock-picking skills.

Interpreting Jensen's Alpha

The value of alpha – the excess returns – can range from being positive, negative, or zero.

Positive Alpha: Outperformance

Negative Alpha: Underperformance

Zero Alpha: Neutral Performance (i.e. Tracks Benchmark)

The value of alpha – the excess returns – can range from being positive, negative, or zero.

Positive Alpha: Outperformance

Negative Alpha: Underperformance

The value of alpha – the excess returns – can range from being positive, negative, or zero.

However, if the security were to earn more than the risk-adjusted returns, the alpha will be positive.

By contrast, negative alha suggests the security (or portfolio) fell short in achieving its prequired return.

For return-oriented portfolio managers, a higher alpha is nearly always the desired outcome.

The objective of investors is to go for investments that offer maximum returns with minimal risks which means that between two mutual fund schemes that are offering similar returns, the one with less risk would be more attractive to the investors than the one with higher risk.

14.3 Passive vs. Active Portfolio Management

Investors have two main investment strategies that can be used to generate a return on their investment accounts: active portfolio management and passive portfolio management.

Active portfolio management focuses on outperforming the market in comparison to a specific benchmark such as the Standard & Poor's 500 Index.

Passive portfolio management mimics the investment holdings of a particular index in order to achieve similar results.

The investor who follows an active portfolio management strategy buys and sells stocks in an attempt to outperform a specific index, such as the Standard & Poor's 500 Index or the Russell 1000 Index.

An actively managed investment fund has an individual portfolio manager, co-managers, or a team of managers all making investment decisions for the fund. The success of the fund depends on in-depth research, market forecasting, and the expertise of the management team.

For example, active managers may rely on investment analysis, research, and forecasts, which can include quantitative tools, as well as their own judgment and experience in making decisions on which assets to buy and sell. Their approach may be strictly algorithmic, entirely discretionary, or somewhere in between.

Advantages and Disadvantages of Active Management

The most significant benefit of actively managing a portfolio is that it offers an opportunity for fund managers to generate much higher returns than the benchmark and thereby keeping the alpha on a higher side. Also, actively managing investments helps fund managers to make full utilization of the risk profile of the investors. Actively managed portfolio of investments comes with a higher cost as it includes a relentless activity of selling and buying of securities and thereby incurring a transactional cost every time a trade is placed. Also, there is no guarantee that the call made by the fund manager turns out to be beneficial for the investors.

Passive Portfolio Management

Passive portfolio management can be referred to as index fund management. This is because a passive portfolio is typically designed to parallel the returns of a particular market index or benchmark as closely as possible. The purpose of passive portfolio management is to generate a return that is the same as the chosen index. A passive strategy does not have a management team making investment decisions and can be structured as an exchange-traded fund (ETF), a mutual fund, or a unit investment trust (UIT). Index funds are branded as passively managed rather than unmanaged because each has a portfolio manager who is in charge of replicating the index. Because this investment strategy is not proactive, the management fees assessed on passive portfolios or funds are often far lower than active management strategies.

Followers of passive management believe in the efficient market hypothesis. It states that at all times, markets incorporate and reflect all information, rendering individual stock picking futile.

As a result, the best investing strategy is to invest in index funds, which have historically outperformed the majority of actively managed funds.

Advantages and Disadvantages of Passive Management

As passive management of investments does not involve continuous selling and buying of securities; therefore, the cost involved is lesser. Also, it is easy to track the performance as knowing how well the underlying index has performed will give the required insights.

As passive management of investments does not involve continuous selling and buying of securities; therefore, the cost involved is lesser. Also, it is easy to track the performance as knowing how well the underlying index has performed will give the required insights.

Parameter	Active Portfolio Management	Passive Portfolio Management
Overall cost	High	Low
Returns	High	Low
Risk	High	Low
Suitability	For those willing to take some risk	For those who are risk-avers

What is Rupee Cost Averaging?

As investors, we often speculate when to enter the market. But even experienced professionals find it difficult to determine accurately the right moment to enter (buy) or exit (sell) the market for their investments.

We often rely on our emotions, get swayed by market sentiments and end up buying when the markets are going higher and selling when they are lower. This is exactly what we should NOT be doing.

In a marathon, participants are advised to go easy on sudden bursts of high speed during the race, especially at the beginning. This may sound like conservative advice and one may wonder how, without speed, can one cover and win such a long distance? However, it would be fruitless for the runner if he/she starts with a very high speed sprint and loses stamina mid-way.

Similarly, investors gain when they go steady with regular investments instead of looking at high speed sprints too often in the market. Investing modestly but regularly ensures that even in the worst of scenarios, the impact on your investments is relatively low and it rebounds when the market picks up. Experts suggest that you should buy when the markets are low and reap profit when they are high. How do you find out when the market hits its lowest or peaks in value? It is next to impossible to time the market accurately. Rupee Cost Averaging works to steer away this dilemma.

Rupee cost averaging helps us to minimize this guessing game. In the rupee cost averaging approach, you invest a fixed amount of money at regular intervals irrespective of whether the markets are going high or low.

This ensures that you buy more units when the markets are low and lesser units when they are high. This approach brings down your average cost per unit over the long-term.

Advantages of Rupee Cost Averaging

By investing through SIPs, market volatility is mitigated to some extent, and as a result, the overall gains will increase.

Rupee cost averaging works out best in choppy markets but is useful even when the markets are in a bull run. It mainly helps you buy less when the markets are expensive and buy more when the markets are cheap. A SIP is an easy way of doing this due to this benefit of rupee cost averaging.

Formula plans are a type of investment strategy that makes use of pre-determined rules for the nature and timing of change in one's portfolio as the market rises or falls.

Such rules ignore prevalent market moods of optimism or pessimism and help you automatically reallocate funds from one asset class to another with changing circumstances, thus helping you automatically buy low and sell high.

Following are the three important types of formula plans that are found useful in making portfolio investment decisions;

The Constant Rupee Value

The Constant Ratio

The Variable Ratio Formula Plans

The constant rupee value plan specifies that the rupee value of the stock portion of the portfolio will remain constant.

Thus, as the value of the stock rises, the investor must automatically sell some of the shares in order to keep the value of his aggressive portfolio constant. If the price of the stock falls, the investor must buy additional stock to keep the value of aggressive portfolio constant. By specifying that the aggressive portfolio will remain constant in money value, the plan also specifies that remainder of the total fund be invested in the conservative fund.

The constant-rupee -value plan's major advantage is its simplicity. The investor can clearly see the amount that he needed to have invested.

The constant rupee value plan specifies that the rupee value of the stock portion of the portfolio will remain constant. Thus, as the value of the stock rises, the investor must automatically sell some of the shares in order to keep the value of his aggressive portfolio constant.

A constant ratio plan is an example of a long-term formula investing strategy, which does not involve security analysis and forecasting, or market timing.

It is able to leverage active-like management qualities through systematic rebalancing according to a prescribed formula, as the market rises and falls. A constant ratio plan would ensure that a 70/30 or 80/20 asset allocation (stocks to bonds) remains 70/30 or 80/20 even as markets move.

The cost of these rebalancing transactions reduces investment returns. But constant ratio plans aim to smooth out investment returns over a longer time horizon by adjusting the portfolio counter-cyclically, and taking profits on speculative stocks that have rallied strongly. By selling outperforming stocks and buying underperforming ones, constant ratio plans run counter to momentum investing strategies that sell underperforming assets and buy outperforming ones. This is why they work best in volatile markets with a general mean-reverting pattern.

Variable-ratio plan is a more flexible variation of constant ratio plan.

Under the variable ratio plan, it is provided that if the value of aggressive portfolio changes by certain percentage or more, the initial ratio between the aggressive portfolio and conservative portfolio will be allowed to change as per the pre-determined schedule.

Variable-ratio plan is a more flexible variation of constant ratio plan.

Under the variable ratio plan, it is provided that if the value of aggressive portfolio changes by certain percentage or more, the initial ratio between the aggressive portfolio and conservative portfolio will be allowed to change as per the pre-determined schedule.Instead of maintaining a constant rupee amount in stocks or a constant ratio of stocks to bonds, the variable ratio plan user steadily lowers the aggressive portion of the total portfolio as stock prices rise, and steadily increase the aggressive portion as stock prices fall.

Indeed, none of the formula plans are a royal road to riches, First, as an effort to provide mechanical rules for portfolio revision, they make no provision for what securities should be selected for investment.

Second formula plans by their nature are inflexibility makes it difficult to know if and when to adjust the plan to new conditions emerging in the investment environment.

Summary

The portfolio revision strategies adopted by investors can be broadly classified as 'active' and 'passive' revision strategies.

This unit also points out that while both 'active' and 'passive' revision strategies are followed by investors and portfolio managers, "passive' strategy is followed by believers of market efficiency or those who lack portfolio analysis and selection skills and resources.

Major constraints, which come in the way of portfolio revision, are transaction costs, taxes, statutory stipulations and lack of ideal formula. This unit also discusses and illustrates three formula plans of portfolio revision, namely, constant-dollar-value plan, constant-ratio plan and variable-ratio plan.

Before closing the discussion about formula plans, it is noted that these formula plans are not a royal road to riches. They have their own limitations.

The choice of portfolio revision strategy or plan is, thus, no simple question. The choice will involve cost benefit analysis. No plan can be perfect to the extent that it would not need revision sooner or later. Investment plans certainly are not.

Keywords

Formula Plan: The buying and/or selling of securities according to a predetermined formula. This approach to investment decisions is intended to eliminate the investor's emotions and instead to follow a mechanical set of rules.

Variable-ratio Plan: It is a more flexible variation of constant ratio plan. Under the variable ratio plan, it is provided that if the value of aggressive portfolio changes by certain percentage or more, the initial ratio between the aggressive portfolio and conservative portfolio will be allowed to change as per the pre-determined schedule.

Constant Dollar Value Plan: An investment strategy designed to reduce volatility in which securities, typically mutual funds, are purchased in fixed dollar amounts at regular intervals, regardless of what direction the market is moving.

Constant-ratio Plan: This is an investment strategy in which the portfolio's composition by asset class is maintained at a certain level through periodic adjustments.

SelfAssessment

1. ----------refers to the investor's attempt to construct a portfolio that resembles the overall market returns.
   A. Passive management
   B. Active Management
   C. Bad debt Management
   D. None

2. ---------- is holding securities based on the forecast about the future.
   A. Passive management
   B. Active Management
   C. Bad debt Management
   D. None

3. The greater a portfolio's Sharpe ratio, the better its risk-adjusted performance.
   A. Yes
   B. No
   C. Emotional Risk
   D. None of these

4. A higher Treynor ratio result means a portfolio is a more suitable investment.
   A. Yes
   B. No
   C. Depends on market
   D. None of the above

5. Positive Alpha is-
   A. Outperformance in market
   B. Underperformance in market
   C. Both of the above
   D. None of the above

6. Negative Alpha is-
   A. Outperformance in market
   B. Underperformance in market
   C. Both of the above
   D. None of the above

7. Zero Alpha is-
   A. Outperformance in market
   B. Underperformance in market
   C. Neutral performance
   D. None of the above

8. ---------- focuses on outperforming the market in comparison to a specific benchmark such as the Standard & Poor's 500 Index.
   A. Active portfolio management
   B. Passive portfolio management
   C. Both of the above
   D. None of the above

9. ---------- mimics the investment holdings of a particular index in order to achieve similar results.
   A. Active portfolio management
   B. Passive portfolio management

C. Both of the above
D. Not Applicable

10. In the rupee cost averaging approach, you invest a----------amount of money at regular intervals irrespective of whether the markets are going high or low.
    A. Fixed
    B. Variable
    C. Neither more or less
    D. Not Applicable

11. By investing through SIPs, market volatility is mitigated to some extent, and as a result, the overall gains will increase.
    A. Yes
    B. No
    C. Can't say
    D. Not Applicable

12. The Sharpe ratio is an investment measurement that is used to calculate the average return beyond the risk-free rate of volatility per unit.
A. True
B. False

13. Variable-ratio plan is a more flexible variation of constant ratio plan.
A. True
B. False

14. Formula plans are a type of investment strategy that makes use of pre-determined rules for the nature and timing of change in one's portfolio as the market rises or falls.
A. True
B. False

15. Rupee cost averaging works out best in choppy markets but is useful even when the markets are in a bull run. It mainly helps you buy less when the markets are expensive and buy more when the markets are cheap. A SIP is an easy way of doing this due to this benefit of rupee cost averaging.
A. True
B. False

Answer for Self Assessment

1. A	2. B	3. A	4. A	5. A
6. B	7. C	8. A	9. B	10. A
11. A	12. A	13. A	14. A	15. A

Review Questions

1. What do you think as the need for portfolio revision?
2. Examine various portfolio revision strategies.
3. Critically evaluate various portfolio revision practices.
4. How would you overcome the constraints in portfolio revision?
5. What are the basic assumptions and ground rules of formula plans? Are they realistic

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- SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT by PANDIAN, PUNITHAVATHY, VIKAS PUBLISHING HOUSE.

 **Web Link**

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- https://accountlearning.com/3-types-formula-plans-portfolio-revision/

Dr. Mahesh Kumar Sarva, Lovely Professional University

Unit 15: Investment Avenues for Foreign Portfolio Investors

CONTENTS

Objectives

- understand the meaning of foreign portfolio investment,
- analyze the difference between foreign portfolio investment& foreign direct investment,
- interpret the avenues of foreign portfolio investment.
- analyze and interpret the types of risk in foreign portfolio investment,

Introduction

What is Foreign Portfolio Investment?

Foreign Portfolio Investment (FPI) involves an investor buying foreign financial assets. FPI holdings can include stocks, ADRs, GDRs, bonds, mutual funds, and exchange traded funds. Along with foreign direct investment (FDI), FPI is one of the common ways for investors to participate in an overseas economy, especially retail investors. Unlike FDI, FPI consists of passive ownership; investors have no control over ventures or direct ownership of property or a stake in a company.

It involves an array of financial assets like fixed deposits, stocks, and mutual funds. Investors who invest in foreign portfolios are known as Foreign Portfolio Investors. Foreign portfolio investment increases the liquidity of domestic capital markets, and can help develop market efficiency as well.

As markets become more liquid, as they become deeper and broader, a wider range of investments can be financed. Savers have more opportunity to invest with the assurance that they will be able to manage their portfolio, or sell their financial securities quickly if they need access to their savings. In this way, liquid markets can also make longer-term investment more attractive.

15.1 Understanding Foreign Portfolio Investment

Portfolio investment involves the making and holding of a hands-off—or passive—investment of securities, done with the expectation of earning a return. In foreign portfolio investment, these

securities can include stocks, (ADRs), or global depositary receipts of companies headquartered outside the investor's nation.

Holding also includes bonds or other debt issued by these companies or foreign governments, mutual funds, or exchange traded funds (ETFs) that invest in assets abroad or overseas.

An individual investor interested in opportunities outside their own country is most likely to invest through an FPI. On a more macro level, foreign portfolio investment is part of a country's capital account and shown on its balance of payments (BOP). The BOP measures the amount of money flowing from one country to other countries over one monetary year.

Benefits of Foreign Portfolio Investment

- Investment Diversity

FPI provides investors an opportunity to diversify their portfolio. As an investor, you can diversify your portfolio to achieve high returns. Suppose if you incur major losses in investment assets of a Country X, you can accrue profits in investment assets of a country Y. In this way, you can experience less volatility in your investments and increase chances of profits.

- International Credit

Investors can get access to increased amounts of credit in foreign countries. They can broaden their credit base. By expanding their credit base, investors can secure their line of credit. In case the domestic credit score is unfavorable, having an international credit score can be beneficial. This allows the investor to utilize more leverage and get high returns on equity investment.

- Access to a Bigger Market

Sometimes, foreign market can be less competitive than the domestic market. Hence, FPI gives you an exposure to a wider market. The foreign markets are comparatively less saturated and hence, they may offer higher returns and more diversity as well.

- High Liquidity

Foreign Portfolio Investments provides high liquidity. An investor can buy and sell foreign portfolios seamlessly. This offers buying power for investors to act when good buy opportunities arise. Investors can buy and sell trades in a quick and seamless manner.

- Exchange Rate Benefit

An investor can leverage the dynamic nature of international currencies. Some currencies can drastically rise or fall, and a strong currency can be used in investor's favour.

15.2 FPIs vs FDIs: A Detailed Comparison

There are several substantial differences between these two channels of foreign investments. The major ones are as follows –

An FDI, by default, establishes a tangible and direct business interest in the target country. This 'interest' could be anything from a single warehouse to managing a company remotely. An FPI does not entail any such hands-on business interest. It is a passive form of investing.

Unlike FDIs, financial portfolio investment does not require any transfer of IP, technology, or know-how. There is no need to enter a joint venture with a partner company.

It has been noted that Foreign Direct Investments comprise significantly larger sums and any tie-ups or operations tend to last longer than portfolio investors.

Lastly, FDIs are usually the domain of major players in the industry, venture capital ecosystems, and investment branches of globally-recognized financial institutions. Most financial portfolio investment include smaller players who invest in a foreign country's assets and securities for short-term profits.

15.3 Categories in Foreign Portfolio Investment

One can register FPI in one of the below categories:

Category I:This includes investors from the Government sector. Such as central banks, Governmental agencies, and international or multilateral organizations or agencies.

Category II: This category includes:

Regulated broad-based funds such as mutual funds, investment trusts, insurance/reinsurance companies.

Also include regulated banks, asset management companies, portfolio managers, investment advisors, and managers.

Category III: It includes those who are not eligible in the first two categories. It includes endowments, charitable societies, charitable trusts, foundations, corporate bodies, trusts, individuals.

Who Regulates FPI in India?

Securities and Exchange Board of India (SEBI) operates the FPIs. Recently, SEBI has introduced the Foreign Portfolio Investors Regulations, 2019. FPIs also need to follow the Income-tax Act, 1961 and Foreign Exchange Management Act, 1999.

15.4 Eligibility Criteria for Foreign Portfolio Investment

An individual must fulfill the following conditions to register as FPI:

As per the Income-tax Act 1961, the applicant should not be a non-resident Indian

Should not be a citizen of a country that falls under the public statement of FATF.

Must be eligible to invest in securities outside the country.

To invest in securities, he/she must have the approval of the MOA / AOA / Agreement.

A certificate that grants the applicant holds an interest of the development of the securities market.

In case the bank is the applicant, it must belong to a nation whose central bank is a member of the Bank for International Settlements.

Factors Affecting Foreign Portfolio Investment

Some factors affecting Foreign Portfolio Investment:

Growth Prospects

The economy of a country plays a crucial role in foreign investments. If an economy is robust and growing, investors are more inclined to investing in the financial assets of that country. On the other hand, if the country goes through a financial turmoil or a recession, investors tend to withdraw their investments.

Interest Rates

Investors yearn for a high return on investment. Hence, investors prefer to invest in countries with high interest rates.

Tax Rates

The tax is levied on capital gains. Higher tax rates reduce the return on investments. Hence, investors prefer to invest in countries which have lower tax rates.

Foreign Portfolio Investments Cross Rs 51,000 Crore In 2021

Waves of foreign portfolio investments worth over Rs 51,000 crore splashed into the Indian market in 2021 as overseas investors turned net buyers of domestic securities for the third straight year while excess global liquidity and other factors steered the ebb and flow of their investing ways.

Data with the depositories showed that overseas investors pumped in Rs 26,001 crore into equities, Rs 23,222 crore into debt segment and Rs 1,848 crore in hybrid instruments.

Foreign portfolio investors (FPIs) settled the year 2022 as net sellers

Foreign portfolio investors (FPIs) settled the year 2022 as net sellers amidst

macroeconomic concerns, rising interest rates trends, and geopolitical tension. Notably, FPIs purchased around 24,608 crore through the primary market in 2023. That took the total outflow in the Indian stocks in the year 2022 to more than 1.21 lakh crore.

The main trigger for the FPI net selling in 2022 is the rising interest rates in the US and INR depreciation.

Global diversification helps lower average portfolio volatility over the long term. In the short term, investors can also participate in whichever regional market is outperforming.

15.5 Benefits &Risks of Foreign Portfolio Investment

Generally, foreign portfolio investments consist of securities and alternative foreign financial assets that are passively held by a foreign investor. It involves an investor purchasing foreign financial assets.

Foreign portfolio investors are normally exposed to increased share price volatility, which increases their risk, and investors expect to receive compensation for the risk they take on. Foreign portfolio investors can access equities, bonds, derivatives, mutual funds, and guaranteed investment certificates, among other instruments.

Foreign portfolio investing is popular among several different types of investors. Common transacts of foreign portfolio investment include:

- Individuals
- Companies
- Foreign governments

Benefits of Foreign Portfolio Investment

Portfolio diversification

International credit

Access to markets with different risk-return characteristics

Increases the liquidity of domestic capital markets

Promotes the development of equity markets

15.6 Risks of Foreign Portfolio Investment

The primary risks faced by a foreign portfolio investor are:

Volatile asset pricing

Across international financial markets, some are riskier than others. For example, consider the DeutscherAktienindex (DAX). The DAX is a stock market index of 30 major German companies trading on the Frankfurt Stock Exchange. The DAX is historically more volatile than the S&P 500 Index.

Jurisdictional risk

Jurisdictional risk can result from investing in a foreign country. For example, if a foreign country that you were invested in drastically changes its laws, it could result in a material impact on the investment's returns.

Moreover, many countries struggle with financial crime, such as money laundering. Investing in countries where money laundering is prevalent increases the jurisdictional risk faced by the investor.

Currency exchange risk

The investor also faces currency exchange risk, which may decrease the value of the investment when converted from the country's currency to the home currency or U.S. dollars.

For example, a foreign company may report 25% earnings growth, but if its local currency depreciates by 10% relative to the U.S. dollar, the real growth rate is just 15%

when the profits are converted back into U.S. dollars.

Higher Transaction Costs

Expenses on foreign transactions tend to be substantially higher. The biggest barrier to investing in international markets is the added transaction cost. Yes, we live in a relatively globalized and connected world, but transaction costs still vary greatly depending on which foreign market you are investing in.

Liquidity Risks

Another risk inherent in foreign markets, especially in emerging markets, is liquidity risk. This is the risk of not being able to sell an investment quickly at any time without risking substantial losses due to a political or economic crisis.

There is no easy way for the average investor to protect against liquidity risk in foreign markets. Investors must pay particular attention to foreign investments that are or may become illiquid by the time they want to sell.

Political Risk

This risk is associated with foreign governments and politics.

For example, Brazil's Petrobras was involved in a corruption scandal that led to jail time for several company executives and high-profile politicians, including the popular former President Luiz Inácio Lula da Silva. The scandal contributed to catastrophic losses for the company from 2014 to 2016, including $10 billion in losses in 2015 alone.

Interest Rate Risk

This risk consists of unfavorable changes to monetary policy. For instance, an emerging market economy may decide that it is growing too quickly and act to contain inflation by hiking interest rates. These dynamics could have a negative impact on the value of financial assets that are priced based upon those interest rates.

Foreign portfolio investment is inherently volatile, and rigorously regulated financial markets are needed to manage the risk effectively. Furthermore, the financial system must be capable of identifying and mitigating risks for prudent and efficient allocation of foreign or domestic capital flows.

Key Takeaways

Economic growth and development are enabled by successful financial intermediation and the efficient allocation of credit. Financial systems can maintain their health through the identification and management of business risks. Moreover, the financial system must also withstand economic shocks. Global investing has become increasingly necessary over time, but investors should carefully consider global investment risks. The good news is that there are many different tools available to measure these risks and ensure the right mix for any portfolio.

Summary

International banking is an arrangement of financial services by a residential bank of one country to the residents of another country. There are several reasons for International banking like low marginal costs, knowledge advantage etc. There are several types of International banking office each having its own reasons and advantages.

The banking industry is also facing several types of challenges which include security and technology. The same applies to risk in International banking like foreign exchange risk, political risk, credit risk, operational risk market risk and liquidity risk. The trends in International banking is also changing and banking needs to be updated as per the trends.

Keywords

Foreign Portfolio Investment: Foreign Portfolio Investment (FPI) involves an investor buying foreign financial assets. FPI holdings can include stocks, ADRs, GDRs, bonds, mutual funds, and exchange traded funds

Foreign Direct Investment: An FDI, by default, establishes a tangible and direct business interest in the target country. This 'interest' could be anything from a single warehouse to managing a company remotely.

Currency exchange risk: It is risk which involves decrease the value of the investment when converted from the country's currency to the home currency or U.S. dollars.

Liquidity Risk: It is the risk which involves not being able to sell an investment quickly at any time without risking substantial losses due to a political or economic crisis.

SelfAssessment

1. FPI consists of --------.

A. Passive ownership
B. Direct ownership
C. Both of the above
D. Not Applicable

2. FDI consists of -------- .

A. Passive ownership
B. Direct ownership
C. Both of the above
D. Not Applicable

3. Investing in ETF is an example of

A. FPI
B. FDI
C. Both of the above
D. Not Applicable

4. ----------is direct ownership of property or a stake in a company.

A. FPI
B. FDI
C. Both of the above
D. Not Applicable

5. ----------is the risk of not being able to sell an investment quickly at any time without risking substantial losses due to a political or economic crisis.

A. Liquidity risk
B. Foreign exchange risk
C. Both of the above
D. None of the above

6. ----------this risk in FPI is associated with foreign governments and politics.

A. Liquidity risk
B. Foreign exchange risk

C. Both of the above
D. None of the above

7. ----------risk in FPI occurs when the value of an investment fluctuates due to changes in a currency's exchange rate.
A. Political risk
B. Credit risk
C. Foreign exchange risk
D. None of the above

8. ---------- risk in FPI consists of unfavorable changes to monetary policy.
A. Political risk
B. Credit risk
C. Foreign exchange risk
D. None of the above

9. ----------is also considered s hot money which come fast and goes out of the economy fast.
A. FPI
B. FDI
C. Both of the above
D. Not Applicable

10. If an economy is robust and growing, investors are more ---------- to investing in the financial assets of that country. On the other hand, if the country goes through a financial turmoil or a recession, investors tend to ---------- their investments.
A. Inclined, Withdraw
B. Withdraw, Inclined
C. Both of the above
D. Not Applicable

11. FPI gives you an exposure to a wider market. The foreign markets are comparatively less saturated and hence, they may offer higher returns and more diversity as well.
A. Higher
B. Lower
C. Both of the above
D. Not Applicable

12. Securities and Exchange Board of India (SEBI) operates the FPIs. Recently, SEBI has introduced the Foreign Portfolio Investors Regulations, 2019.
A. True
B. False

13. Category Iin FPI includes investors from the government sector such as central banks, Governmental agencies, and international or multilateral organizations or agencies.
A. True
B. False

14. Category II in FPI includes regulated broad-based funds such as mutual funds, investment trusts, insurance/reinsurance companies

A. True

B. False

15. Portfolio diversification is one of the benefits of FPI.

A. True

B. False

Answers for Self Assessment

1.	A	2.	B	3.	A	4.	B	5.	A
6.	A	7.	C	8.	A	9.	A	10.	A
11.	A	12.	True	13.	True	14.	True	15.	True

Review Questions

- What do you mean by FPI?
- Enumerate the difference between FPIand FDI.
- Elaborate various risks in Foreign Portfolio Investment.
- Enumerate the types of categories of FPI.

Further Readings

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Unit 16: Introduction to Mutual Funds

CONTENTS

Objectives

- understand the meaning and concept of mutual funds.
- analyze the working of mutual funds.
- interpret the advantage and disadvantage of mutual funds.
- analyze the entities of regulations in mutual funds.

Introduction

A mutual fund is a common pool of money into which investors place their contributions that are to be invested in different types of securities in accordance with the stated objective. Different investment avenues are available to investors. Mutual funds also offer good investment opportunities to the investors. Like all investments, they also carry certain risks.

The investors should compare the risks and expected yields after adjustment of tax on various instruments while taking investment decisions. The investors may seek advice from experts and consultants including agents and distributors of mutual funds schemes while making investment decisions.

16.1 Mutual fund and its Concept

According to the Mutual Fund Fact Book (published by the Investment Company Institute of the US)- "A MF is a Financial Service Organization that "A MF is a Financial Service Organization that receives money from shareholders, invests it, earns returns on it, attempts to make it grow and agrees to pay the shareholder cash on demand for the current value of his investment."

Example: An equity fund would buy equity assets – ordinary shares, preference shares, warrants etc. A bond fund would buy debt instruments such as debenture bonds, or government securities/money market securities.

Important Characteristics

The ownership is in the hands of the investors who have pooled in their funds.

It is managed by a team of investment professionals and other service providers.

The pool of funds is invested in a portfolio of marketable investments.

The investors share is denominated by 'units' whose value is called as Net Asset Value (NAV) which changes every day.

The investment portfolio is created according to the stated investment objectives of the fund.

History of Mutual Funds in India

The Mutual Fund industry in India started in 1963 with formation of UTI in 1963 by an Act of Parliament and functioned under the Regulatory and administrative control of the Reserve Bank of India (RBI).

The year 1987 marked the entry of public sector mutual funds set up by Public Sector banks and Life Insurance Corporation of India (LIC) and General Insurance Corporation of India (GIC).

The erstwhile Kothari Pioneer (now merged with Franklin Templeton MF) was the first private sector MF registered in July 1993.

With the entry of private sector funds in 1993, a new era began in the Indian MF industry, giving the Indian investors a wider choice of MF products.

In February 2003, following the repeal of the Unit Trust of India Act 1963, UTI was bifurcated into two separate entities, viz., the Specified Undertaking of the Unit Trust of India (SUUTI) and UTI Mutual Fund which functions under the SEBI MF Regulations.

With the bifurcation of the erstwhile UTI and several mergers taking place among different private sector funds, the MF industry entered its fourth phase of consolidation.

Following the global melt-down in the year 2009, securities markets all over the world had tanked and so was the case in India. Most investors who had entered the capital market during the peak, had lost money and their faith in MF products was shaken greatly.

The abolition of Entry Load by SEBI, coupled with the after-effects of the global financial crisis, deepened the adverse impact on the Indian MF Industry, which struggled to recover and remodel itself for over two years, in an attempt to maintain its economic viability which is evident from the sluggish growth in MF Industry AUM between 2010 to 2013.

SEBI introduced several progressive measures in September 2012 to "re-energize" the Indian Mutual Fund industry and increase MFs' penetration.

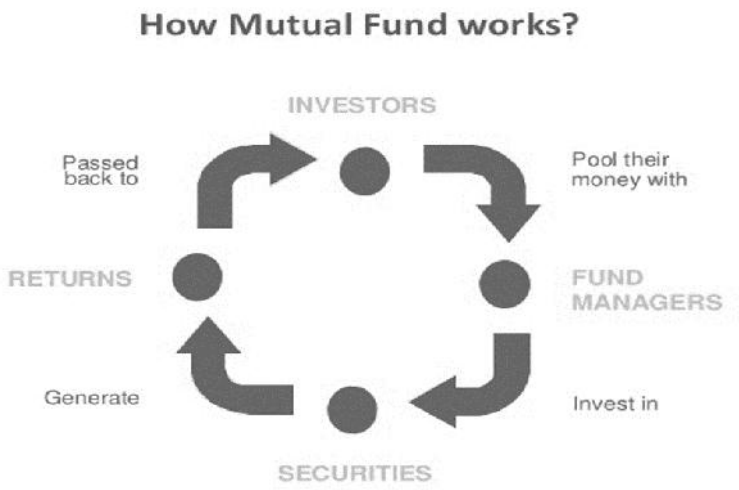
In due course, the measures did succeed in reversing the negative trend that had set in after the global melt-down and improved significantly after the new Government was formed at the Center. Since May 2014, the Industry has witnessed steady inflows and increase in the AUM as well as the number of investor folios (accounts).

The overall size of the Indian MF Industry has grown from 7.30 trillion as on 31st July 2012 to 37.75 trillion as on 31st July 2022, more than 5-fold increase in a span of 10 years.

On an average 12.69 lakh new folios are added every month in the last 5 years since July 2017.

MF distributors have also had a major role in popularizing Systematic Investment Plans (SIP) over the years. In April 2016, the no. of SIP accounts has crossed 1 crore mark and as on 31st July 2022 the total no. of SIP Accounts is 5.62 crore.

How Mutual Fund works?



Types of Mutual Fund Schemes

Mutual funds come in many varieties, designed to meet different investor goals. Mutual funds can be broadly classified based on –

Organization Structure – Open ended, Close ended, Interval

Management of Portfolio – Actively or Passively

Investment Objective – Growth, Income, Liquidity

Underlying Portfolio – Equity, Debt, Hybrid, Money market instruments, Multi Asset

Thematic / solution oriented – Tax saving, Retirement benefit, Child welfare, Arbitrage

Exchange Traded Funds

Overseas funds

Fund of funds

Net Asset Value

NAV stands for Net Asset Value. The performance of a mutual fund scheme is denoted by its NAV per unit.

NAV per unit is the market value of securities of a scheme divided by the total number of units of the scheme on a given date. For example, if the market value of securities of a mutual fund scheme is 200 lakh and the mutual fund has issued 10 lakh units of 10 each to the investors, then the NAV per unit of the fund is 20 (i.e., 200 lakh/10 lakh).

Since market value of securities changes every day, NAV of a scheme also varies on day-to-day basis. NAVs of mutual fund schemes are published on respective mutual funds' websites as well as AMFI's website daily.

Objectives of Mutual Funds

Convenience: Adjusting the denomination of securities to suit the requirement of individual savers.

Diversification: Small investors can obtain better diversification through mutual funds than by directly purchasing securities.

Expert management: Benefit of trained, experienced & specialized management

Low cost due to economies of scale: Able to exploit economies of scale in investing

Portfolio diversification

Professional management

Reduction in risk

Reduction in transaction costs

Liquidity

Convenience and flexibility

Safety – well regulated by SEBI

16.2 Regulations of Mutual funds

Securities and Exchange Board of India (SEBI) is a legal body that regulates the Indian capital markets including mutual funds.

SEBI supervises and controls the securities market, but most importantly, it protects your interests as an investor by enforcing firm rules and regulations.

Legally speaking, a mutual fund comprises 5 entities - Sponsor, Trustee, AMC, Custodian and RTA.

To protect financial transactions SEBI mandates that every investor must comply with KYC norms.

Some Important Regulations to Know are

A single mutual fund can float different schemes but they have to be individually approved by the trustees and all offer documents have to be filed with the SEBI.

SEBI lays down certain restrictions on the fees that AMCs can charge for mutual funds and there is also a cap on the expenses that can be added to the fund.

Mutual funds can advertise, but advertisements cannot have statements that are misleading. For instance, no mutual fund can guarantee a return since returns depend on market performance.

SEBI stipulates the following for open-ended and close-ended funds:

An open-ended scheme needs a minimum corpus of 50 crores

A closed-ended scheme needs at least 20 crores corpus

SEBI checks mutual funds every year in order to make it in compliance with the regulations and guidelines.Mutual funds offer investors returns in two forms; dividends and capital gains. Dividends are paid out of the profits of the company if any. When the companies are left with surplus cash, they may decide to share the same with investors in the form of dividends. Investors receive dividends proportional to the number of mutual fund units held by them. A capital gain is the profit realized by investors if the selling price of the security held by them is greater than the purchase price. In simple terms, capital gains are realized due to the appreciation in the price of the mutual fund units. Both dividends and capital gains are taxable in the hands of investors of mutual funds.

As per the amendments made in the Union Budget 2020, dividends offered by any mutual fund scheme are taxed in the classical manner. That is, dividends received by investors are added to their taxable income and taxed at their respective income tax slab rates.

The taxation rate of capital gains of mutual funds depends on the holding period and type of mutual fund. The holding period is the duration for which the mutual fund units were held by an investor. In simple words, the holding period is the time between the date of the purchase and sale of mutual fund units.

Equity funds are those mutual funds whose portfolio's equity exposure exceeds 65%. As mentioned above, you realize short-term capital gains on redeeming your equity fund units within a holding period of one year. These gains are taxed at a flat rate of 15%, irrespective of your income tax bracket.

You make long-term capital gains on selling your equity fund units after a holding period of one year or more. These capital gains of up to Rs 1 lakh a year are tax-exempt. Any long-term capital gains exceeding this limit attracts LTCG tax Long-term capital gains are realized when you sell units of a debt fund after a holding period of three years. These gains are taxed at a flat rate of 20% after indexation. Also, you are levied with applicable cess and surcharge on tax.

At the rate of 10%, and there is no benefit of indexation provided.

Debt funds are those mutual funds whose portfolio's debt exposure is in excess of 65%. As mentioned in the table above, you get short-term capital gains on redeeming your debt fund units

within a holding period of three years. These gains are added to your taxable income and taxed at your income tax slab rate.

Disadvantages of Mutual Funds

Costs: The investor pays fees as long as he remains with the fund.

No tailor-made portfolios: High net-worth individuals may find this to be a constraint as they will not be able to build their own portfolio of shares.

Managing a portfolio of Choice: large number of funds can provide too much choice for the investor. He may need advice on how to select a fund.

Delay in redemption: It takes 3-6 days for redemption of the units and the money to flow back into the investor's account.

Lower-than-market performance: Consistently beating the market is difficult. Many mutual funds just keep even with overall stock market index

16.3 Structure of Mutual funds

Mutual funds are created as baskets of investments, which invest in financial instruments like stocks and bonds according to their defined investment objectives. Investing in them allows an investor to gain access to asset classes like equities, bonds or fixed income securities, commodities, and even bullion.

The primary watchdog in all these transactions is the Securities Exchange Board of India ('SEBI') under whom each entity is required to be registered with. The inception of SEBI (Mutual Funds) Regulations, 1996, revolutionized the structure of mutual funds and since then all the entities are regulated under it. Currently, mutual funds comprise of five basic participants, namely a Sponsor, Mutual Fund Trustee, Asset Management Company, Custodian & Registrar and a Transfer Agent.

The Fund Sponsor

A 'sponsor' is any person who, acting alone or in combination with another body corporate, establishes a MF. The sponsor of a fund is similar to the promoter of a company.

A sponsor has to approach SEBI to seek permission for a setting up a Mutual Fund. Once SEBI agrees to the inception, a Public Trust is formed under the Indian Trust Act, 1882 and is registered with SEBI. Trustees are appointed to manage the trust and an asset management company is created complying with the Companies Act, 1956.

Considering that sponsor is the primary entity that promotes the mutual fund company and that the mutual funds are going to regulate public money, there are eligibility criteria given by SEBI for the fund sponsor:

The sponsor must have experience in financial services for a minimum of five years with a positive Net worth for all the previous five years.

The net worth of the sponsor in the immediate last year has to be greater than the Capital contribution of the AMC. The sponsor must show profits in at least three out of five years which includes the last year as well.

The sponsor must have at least 40% share in the net worth of the asset management company. As clear as it could be, the role of a sponsor is quite vital and must carry highest amount of credibility.

The strict and rigorous norms define that the sponsor must have adequate liquidity as well as faithfulness to return the money of investors in case there is any financial crisis or meltdown. Thus, any entity that fulfills the above criteria can be termed as a sponsor of the Mutual Fund.

Trust and Trustees

Trust and trustees form the second layer of the structure of Mutual Funds in India. A trust is created by the fund sponsor in favour of the trustees, through a document called a trust deed. The trust is managed by the trustees and they are answerable to investors. They can be seen as primary guardians of fund and assets. Trustees can be formed by two ways – a Trustee Company or a Board of Trustees. The trustees work to monitor the activities of the Mutual Fund and check its compliance with SEBI (Mutual Fund) regulations.

The trustees have to report to SEBI every six months about the activities of the AMC. Also, SEBI has established tightened transparency rules to avert any type of conflict of interest between the AMC

and the sponsor. Therefore, it is critical for trustees to behave independently and take satisfactory measures to keep the hard-earned money of investors protected. Even trustees have to get registered under SEBI. And furthermore, SEBI regulates their registration by revoking or suspending the registry if any condition is found to be breached.

Asset Management Companies

Asset Management Companies are the third layer in the structure of Mutual Funds.

Asset management companies (AMCs) are firms pooling funds from various individual and institutional investors and investing in various securities. The company invests the funds in capital assets such as stocks, real estate, bonds, and so on. The asset management companies have professionals called fund managers who manage the investment and the research team selects the right securities. A small fee is paid to the AMC for managing the fund.

The AMC is bound to manage funds and provide services to the investor. It solicits these services with other elements like brokers, auditors, bankers, registrars, lawyers, etc. and works with them.

To ensure that there is no conflict between the AMCs, there are certain restrictions imposed on the business activities of the companies.

How does an AMC manage the funds?

You may invest in mutual funds directly with an AMC or asset management company. The company is principally responsible for driving the mutual fund and making decisions that benefit the investors.

Under the leadership of a fund manager, it invests the money in line with the investment objectives of the scheme. The process is broadly listed below.

- Asset Allocation
- Research and Analysis
- Portfolio Construction
- Performance Review

Custodian

A custodian is responsible for the safekeeping of the securities of the Mutual Fund. They manage the investment account of the Mutual Fund, ensure the delivery and transfer of the securities.

They also collect and track the dividends & interests received on the Mutual Fund investment.

Registrar and Transfer Agents (RTAS)

These are the entities who provide services to Mutual Funds. RTAs are more like the operational arm of Mutual Funds.

Example of Three-Tiered Fund House Structure

Although there are several companies and organizations that are running according to this system, however, one of the major companies is the Aditya Birla Sun Life Mutual Fund. Its structure goes the following way:

Sponsor A joint venture between Sun Life (India) AMC Investment Inc. and Aditya Birla Capital Limited that is based in Canada.

Trustee Aditya Birla Sun Life Trustee Pvt. Ltd.

AMC Aditya Birla Sun Life AMC Limited.

16.4 Legal and Regulatory Framework for Mutual Funds

The Securities and Exchange Board of India (SEBI) is the apex regulator of Indian capital markets.

Issuance and trading of capital market instruments and regulation of capital market intermediaries are under the purview of SEBI.

SEBI is the primary regulator of mutual funds in India.

Along with SEBI, mutual funds are regulated by RBI, Companies Act, Stock exchange, Indian Trust Act, and Ministry of Finance.

RBI acts as a regulator of Sponsors of bank-sponsored mutual funds, especially in the case of funds offering guaranteed returns.

In order to provide a guaranteed returns scheme, a mutual fund needs to take approval from RBI.

The Ministry of Finance acts as a supervisor of RBI and SEBI and the appellate authority under SEBI regulations.

Mutual funds can appeal to the Ministry of finance on the SEBI rulings.

SEBI

The Securities and Exchange Board (SEBI) is the designated regulatory body for securities markets in India.

The primary function of the board is to protect the interest of the investors in securities and promote, and regulate the securities market.

SEBI has laid the ground rules for investors to become aware of the functioning of the mutual funds by providing necessary information.

They serve to simplify the broad spectrum of mutual fund schemes that may often seem quite confusing to investors.

The guidelines on the merger and consolidation of mutual fund schemes issued by SEBI are aimed at simplifying the process of comparing various mutual fund schemes that are on offer by fund houses.

Association of Mutual Funds in India

The Association of Mutual Funds in India has been established to develop the industry of Mutual funds in India.

It aims to make this industry professional, ethical, and healthy lines.

This is done to enhance this industry and maintain standards so that the interests of the shareholders are promoted and protected.

AMFI was incorporated on 22nd August 1995 as a non-profit organization.

It is an association of SEBI-registered mutual funds in India of all the registered Asset Management Companies.

Currently, it comprises 43-member Asset Management Companies (AMC) that are registered with SEBI.

We have seen many cases where investors' money is misused.

In the case where the AMC does not follow transparency norms or

If the investor is facing trouble in dealing with his fund house the next step would be to inform the AMFI which has been set up for the protection of investors' interests.

AMFI will ensure among the mutual fund segment in India.

It lays stress on ensuring ethical practices and transparency in the mutual fund industry

AMFI will make MF investments accessible to new investors by ensuring transparency

AMFI will ensure among the mutual fund segment in India.

Every fund house or fund advisor, or agent should seek approval from AMFI if they are involved in mutual fund operations and management

Sebi Guidelines for Mutual Funds

SEBI has enacted the SEBI (Mutual Funds) Regulations, 1996, which provides the scope of the regulation of mutual funds in India. Mutual funds must be registered with SEBI.

The categorization of schemes into five groups – Equity, Debt, Hybrid, Solution-Oriented, and Others

Large, mid and small-cap mutual funds have been defined clearly

There is a lock-in period specified for solution-oriented schemes These regulations and guidelines must be followed to set up a mutual fund and maintain it. in India.

The SEBI guidelines define the guarantor as one who, in his capacity as an individual or partnership with a different entity or entities, launches a mutual fund.

The role of the guarantor is to generate revenues by putting together a mutual fund and handing it to the fund manager.

A sponsor sets up the mutual funds as per the guidelines of the Indian Trust Act, 1882, for Public Trust.

They are responsible for listing with the SEBI, having provisions for resource management, and ensuring the functioning of the fund takes place as per the SEBI guidelines. The Trustee or Trust is established through a trust deed that is implemented by the sponsors of the funds and is accountable to all the investors of the mutual fund.

The trustee company is regulated by the Indian Companies Act 1956, while the firm and the board members are overseen by the Indian Trust Act 1882.

The investment management of the trust is done through an Asset Management Company, which is to be listed as per the regulations of the Companies Act of 1956.

Summary

As far as mutual funds are concerned, SEBI is the policymaker and also regulates the industry. It lays guidelines for mutual funds to safeguard the investors' interests.

Mutual funds are very distinct in terms of their investment strategy and asset allocation activities.

Keywords

NAV:NAV stands for Net Asset Value. The performance of a mutual fund scheme is denoted by its NAV per unit.

Sponsor: A 'sponsor' is any person who, acting alone or in combination with another body corporate, establishes a MF.

Trust: A trust is created by the fund sponsor in favour of the trustees, through a document called a trust deed. The trust is managed by the trustees and they are answerable to investors.

SelfAssessment

1. Any long-term capital gains exceeding one lakh attracts LTCG tax at the rate of ----------.

A. 10%

B. 15%

C. Both of the above

D. Not Applicable

2. Short-term capital gains attract tax at the rate of ----------.

A. 10%

B. 15%

C. Both of the above

D. Not Applicable

3. Equity funds are those mutual funds whose portfolio's equity exposure exceeds----------.

A. 65%

B. 75%

C. 85%

D. None of the above

4. Every mutual fund must be registered with----------.

A. SEBI
B. RBI
C. Depends on market
D. None of the above

5. Considering that sponsor is the primary entity that promotes the mutual fund company and that the mutual funds are going to regulate public money, there are eligibility criteria given by SEBI for the fund sponsor.
A. True
B. False
C. Can't say
D. None of the above

6. The sponsor must have experience in financial services for a minimum of ---------- years with a positive Net worth for all the previous years.
A. 5
B. 3
C. 2
D. None of the above

7. The sponsor must have at least ----------share in the net worth of the asset management company.
A. 40%
B. 50%s
C. Do nothing
D. None of the above

8. The trustees have to report to SEBI every ---------- months about the activities of the AMC.
A. 6 Month
B. 5 Month
C. 1 Year
D. None of the above

9. The investment management of the trust is done through an Asset Management Company, which is to be listed as per the regulations of the Companies Act of 1956.
A. False
B. True
C. Can't say
D. Not Applicable

10. SEBI has enacted the SEBI (Mutual Funds) Regulations, 1996, which provides the scope of the regulation of mutual funds in India. Mutual funds must be registered with SEBI.
A. False
B. True
C. Can't say
D. Not Applicable

11. The AMC is bound to manage funds and provide services to the investor.

A. False

B. True

C. Can't say

D. Not Applicable

12. The investors share is denominated by 'units' whose value is called as Net Asset Value (NAV) which changes every day.

A. True

B. False

13. A single mutual fund can float different schemes but they have to be individually approved by the trustees and all offer documents have to be filed with the SEBI.

A. True

B. False

14. A custodian is responsible for the safekeeping of the securities of the Mutual Fund. They manage the investment account of the Mutual Fund, ensure the delivery and transfer of the securities.

A. True

B. False

15. SEBI is the primary regulator of mutual funds in India. Along with SEBI, mutual funds are regulated by RBI, Companies Act, Stock exchange, Indian Trust Act, and Ministry of Finance.

A. True

B. False

Answers for Self Assessment

1.	A	2.	B	3.	A	4.	A	5.	A
6.	C	7.	A	8.	A	9.	B	10.	B
11.	B	12.	True	13.	True	14.	True	15.	True

Review Questions

What do you mean by Mutual Fund?

Enumerate the various entitiesworking in mutual fund.

Elaborate the concept and use of Net Asset Value.

How mutual fund re regulated in the market?

Further Readings

- Security Analysis And Portfolio Management By K Sasidharan & Alex K

- Mathews, Mcgraw Hill Education
- Security Analysis And Portfolio Management By Pandian, Punithavathy, Vikas Publishing House.

Web Links

- https://www.investor.gov/introduction-investing/investing-basics/investment-products/mutual-funds-and-exchange-traded-1
- https://www.axismf.com/
- https://www.kotaksecurities.com/ksweb/mutual-funds/how-mutual-funds-work
- https://groww.in/blog/taxation-in-mutual-funds

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Unit 17: Derivative and Regulatory Aspect

CONTENTS

Objectives

- analyze the reason for derivatives in the economy.
- understand different types of derivatives.
- analyze the difference between future and option
- understand the regulatory framework of the derivative market.

Introduction

In the last 30 years, derivatives have become increasingly important in finance. Futures and options are actively traded on many exchanges throughout the world. Many different types of forward contracts, swaps, options, and other derivatives are entered into by financial institutions, fund managers, and corporate treasurers in the over-the-counter market.Whether you love derivatives or hate them, you cannot ignore them!The derivatives market is huge—much bigger than the stock market when measured in terms of underlying assets.

The value of the assets underlying outstanding derivatives transactions is several times the world's gross domestic product. They play a key role in transferring a wide range of risks in the economy from one entity to another. The derivatives markets have come under a great deal of criticismbecause of their role in the credit crisis that started in 2007.Derivative products were created from portfolios of risky mortgages in the United States using a procedure known as securitization.Many of the products that were created became worthless when house prices declined. Financial institutions, and investors throughout the world, lost a huge amount of, money and the world was plunged into the worst recession it had experienced for many generations.

Origin

To help participants in foreign exchange markets hedge their risks under the new floating exchange rate system, foreign currency futures were introduced in 1972 at the Chicago Mercantile Exchange.In 1973, the Chicago Board of Trade (CBOT) created the Chicago Board Options Exchange (CBOE) to facilitate the trade of options on selected stocks. The first stock index futures contract was traded at Kansas City Board of Trade. Currently the most popular stock index futures contract in the world is based on S&P 500 index, traded on Chicago Mercantile Exchange. During the mid-eighties, financial futures became the most active derivative instruments generating volumes many times more than the commodity futures. Index futures, futures on T-bills and Euro

Dollar futures are the three most popular futures contracts traded today.Other popular international exchanges that trade derivatives are LIFFE in England, DTB in Germany, SGX in Singapore, TIFFE in Japan, MATIF in France etc.

Derivatives in India

India has been trading derivatives contracts in silver, gold, spices, coffee, cotton and oil etc. for decades in the grey market. Trading derivatives contracts in organized market were legal before Morarji Desai's government (1977) which banned forward contracts.Derivatives on stocks were traded in the form of Teji andMandi in unorganized markets. In June 2000, the National Stock Exchange and theBombay Stock Exchange startedtrading in futures on Sensex and Nifty. Options trading on Sensex and Nifty commenced in June 2001. Very soon thereafter, trading began on optionsand futures in 31 prominent stocks in the month of July and November respectively.

To begin with, SEBI approved trading in index futures contracts based on S&P CNX Nifty and BSE-30 (Sensex) index. This was followed by approval for trading in options based on these two indices andoptions on individual securities. The trading in index options commenced in June. 2001 and the trading in options on individual securities commenced in July 2001. Futures contracts on individual stocks were launched in November 2001.

Derivatives- Definition

Derivative: It is a financial instrument whose value is derived (hence the name derivative) from the value of an underlying asset. Underlying assets: These can be stocks, indices, bonds, commodities, currency, rates, etc.In the Indian context, the Securities Contracts (Regulation) Act, 1956 (SC(R)A) defines "derivative" to include –

- A security derived from a debt instrument, share, loan whether secured or unsecured, riskinstrument or contract for differences, or any other form of security.
- A contract that derives its value from the prices, or index of prices, of underlying securities.
- Derivatives are securities under the SC(R)A and hence the trading of derivatives is governed by the regulatory framework under the SC(R)A.

Reason for derivative market

Risk management:

The prices of derivatives are related to their underlying assets, as mentioned before. They can thus be used to increase or decrease the risk of owning the asset. For example, you can reduce your risk by buying a spot item and selling a futures contract or call option. This is how it works.

If there is a fall in the spot price, the corresponding futures and options contract will also fall. You can repurchase the contract at a lower price, which will result in a gain. This can partially offset the loss on the spot item. The ease of speculation in the derivatives market makes it easier for an investor seeking to protect a position or an anticipated position in the spot market.

Price discovery:

The derivative market serves as an important source of information about prices. Prices of derivative instruments such as futures and forwards can be used to determine what the market expects future spot prices to be. In most cases, the information is accurate and reliable. Thus, the futures and forward markets are especially helpful in the price discovery mechanisms.

Market efficiency:

Efficient markets are fair and competitive and do not allow an investor to make risk-free profits. Derivatives assist in improving the efficiency of the markets, by providing a self-correcting mechanism.

Arbitrageurs are one section of market participants who trade whenever there is an opportunity to make risk-free profits till the opportunity ceases to exist. Their actions quickly narrow the prices and thereby reduce inefficiencies.

Operational advantages:

Derivative markets have greater liquidity than spot markets. The transaction costs, therefore are lower. This means commissions and other costs for traders are lower in derivatives markets. Further, unlike securities markets that discourage shorting, selling short is much easier in derivatives.

Who participates in the derivatives market?

Hedgers:These are risk-averse traders in stock markets. They aim at derivative markets to secure their investment portfolio against market risk and price movements. They do this by assuming an opposite position in the derivatives market. In this manner, they transfer the risk of loss to those others who are ready to take it. In return for the hedging available, they need to pay a premium to the risk-taker.

Speculators:These are risk-takers of the derivative market. They want to embrace risk in order to earn profits. They have a completely opposite point of view as compared to the hedgers. This difference of opinion helps them to make huge profits if the bets turn correct. In the above example, you bought a put option to secure yourself from a fall in stock prices. Your counterparty i.e. the speculator will bet that the stock price won't fall. If the stock prices don't fall, then you won't exercise your put option. Hence, the speculator keeps the premium and makes a profit.

Arbitrageurs: These utilize low-risk market imperfections to make profits. They simultaneously buy low-priced securities in one market and sell them at a higher price in another market. This can happen only when the same security is quoted at different prices in different markets.

Suppose an equity share is quoted at Rs 1000 in the stock market and at Rs 105 in the futures market. An arbitrageur would buy the stock at Rs 1000 in the stock market and sell it at Rs 1050 in the futures market. In this process, he/she earns a low-risk profit of Rs 50.

The misconceptionof Derivatives:

There is a wrong feeling that derivatives would bring in financial collapse. There is enormous negative publicity in the wake of incidents of financial misadventure. Derivatives themselves cannot cause such mishaps. But the improper handling of these instruments is the main cause for this and one cannot simply blame derivatives for all these miss happenings.

Leveraging:
One of the important characteristic features of derivatives is that they lend themselves to leveraging. That is, they are 'high risk - high reward vehicles'. There is a prospect of either a high return or a huge loss in all-derivative instruments.

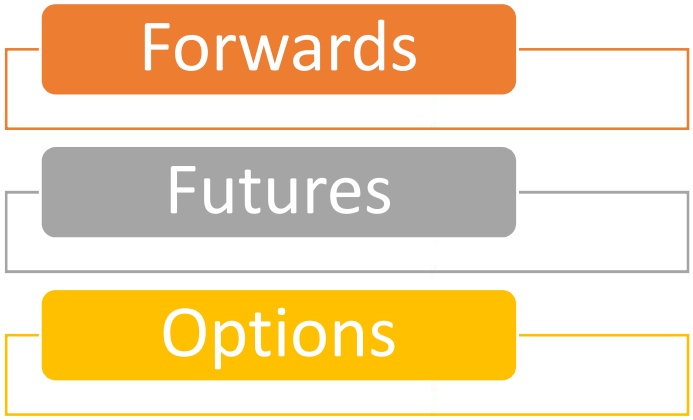
Off-Balance Sheet Items:

Invariably, derivatives are off-balance sheet items. For instance, swap agreements for substituting fixed interest rate bonds by floating rate bonds or for substituting fixed rate interest-bearingassets by floating rate interest paying liability. Hence, accountants, regulators, and others look down upon derivatives.

Absence of Proper Accounting System:

To achieve the desired results, the derivative must be strongly supported by proper accounting systems, efficient internal control, and strict supervision. Unfortunately, they are all at the infancy level as far as derivatives are concerned.

17.1 Types of Financial Derivative



Forward Contracts-Meaning

In most cases we acquire assets and pay for them simultaneously. The price of the asset and the settlement (exchange of asset and its consideration) are done at the same point in time. A forward contract is an agreement to buy or sell an asset at a price determined now but is settled later at a predetermined date. Forward contracts mean two parties come together and enter into an agreement to buy and sell an underlying asset set at a fixed date and agreed on a price in the future.

In simpler words, it is an agreement formed between both parties to sell their asset on an agreed future date.

- Contract whereby parties are committed:To buy (sell)
- An underlying asset
- At some future date (maturity)
- At a delivery price (the forward price) set in advance
- When the contract is initiated: No cash flow is made between the parties.

Here are a few terms, that a trader should be knowing before trading in forwards:

- Underlying Asset: This is the underlying asset that is mentioned in the contract. This underlying asset can be e commodity, currency, stock, and so on.
- Quantity: This mainly refers to the size of the contract, in units of the asset that is being bought and sold.
- Price: This is the price that will be paid on the expiration date that must also be specified.
- Expiration Date: This is the date when the agreement is settled and the asset is delivered and paid.

Forward Contracts-Pay off

The terminal payoff of a financial contract is defined as the payoff of the contract at its maturity date. The terminal payoff of the forward contract with the maturity date T is given by: What is the payoff of a forward?

Long forward = commitment to BUY at forward price = spot price at expiration – forward price

The terminal payoff of a financial contract is defined as the payoff of the contract at its maturity date. The terminal payoff of the forward contract with the maturity date T is given by: What is the payoff of a forward?

Long forward = commitment to BUY at forward price = spot price at expiration – forward price

You need gold, one year from now. The current price of a gold is $1000.You have 3 options, to fulfill your requirement:

- Buy it now at $1000, and use it after a year
- Buy it a year from now at the market price prevailing one year from now (unknown price).
- Enter into an agreement with the vendor so as to purchase the gold a year from now at a price of $1000.
- In each of the three scenarios, what would be your profit/loss if the price of the gold after one year is:
- $500
- $1000
- $1500

Why is forward contracting useful?

Forward contracting is very valuable in Hedging and speculation.

- The classic hedging application would be that of a wheat farmer forward -selling his harvest at a known price in order to eliminate price risk. Conversely, a bread factory may want to buy bread forward in order to assist production planning without the risk of price fluctuations.

- If a speculator has information or analysis which forecasts an upturn in a price, then he can go long on the forward market instead of the cash market. The speculator would go long on the forward, wait for the price to rise, and then take a reversing transaction making a profit.

Forward Contracts-Settlement

There are two ways for a settlement to occur in a forward contract: delivery or cash basis.

If the contract is on a delivery basis, the seller must transfer the underlying asset or assets to the buyer. The buyer then pays the seller the agreed-upon price in cash**.**

What are the problems of forward markets?

One basic problem of forward markets is that of too much flexibility and generality.

- The forward market is like the real estate market in that any two consenting adults can form custom–designed contracts against each other. This often makes them design terms of the deal which are very convenient in that specific situation; this can make the contracts non-tradable since others might not find those specific terms useful.
- In addition, forward markets are like the real estate market in that buyers and sellers find each other using telephones. This is inefficient and time–consuming. Every user faces the risk of not trading at the best price available in the country
- Forward markets worldwide are afflicted by several problems:

Future Contract -Meaning

A contract between two parties for one party to buy something from the other at a later date at a price agreed upon today; subject to a daily settlement of gains and losses and guaranteed against the risk that either party might default

Features

A contract whereby parties are committed:

- To buy (sell)
- An underlying asset
- At some future date (maturity)
- At a delivery price (the forward price) set in advance
- Subject to a daily settlement of gains and losses
- Guaranteed against the risk that either party might default

Use of Futures Contracts

Futures contracts are used by two market participants: hedgers, speculators and Arbitrageurs. Producers or purchasers of an underlying asset hedge or guarantee the price at which the commodity is sold or purchased. At the same time, portfolio managers and traders may also bet on an underlying asset's price movements using futures.

Arbitrageurs trade futures contracts in or across related markets, taking advantage of theoretical mispricing that may exist temporarily.

Hedging is a strategy to minimize price risk in case of adverse movement. Or, we can say that it helps investors reduce or even eliminate the chances of loss because of a significant movement in the underlying asset's price. A trader needs to take opposite positions in two separate markets to execute hedging. In this way, a loss in one market could be offset by a gain in the other.

Speculation is buying and selling assets with expectations of making a profit from the change in the price. Thus, speculators/traders here enter into trading by identifying opportunities in the market to gain monetary benefit from fluctuations in the underlying asset price. The underlying asset could be stock, bonds, derivatives, currencies, etc.

Example of Futures Contracts

Let's say a trader wants to speculate on the price of crude oil by entering into a futures contract in May with the expectation that the price will be higher by year-end. The December crude oil futures contract is trading at $50, and the trader buys the contract.

Since oil is traded in increments of 1,000 barrels, the investor now has a position worth $50,000 of crude oil (1,000 x $50 = $50,000). However, the trader will only need to pay a fraction of that amount up front—the initial margin that they deposit with the broker.

From May to December, the price of oil fluctuates as does the value of the futures contract. If oil's price gets too volatile, the broker may need to ask that additional funds to be deposited into the margin account. This is called maintenance margin.

In December, the end date of the contract is approaching (the third Friday of the month). The price of crude oil has risen to $65. The trader sells the original contract to exit the position. The net difference is cash-settled. They earn $15,000, less any fees and commissions owed the broker ($65 - $50 = $15 x 1000 = $15,000).

However, if the price oil had fallen to $40 instead, the investor would have lost $10,000 ($50 - $40 = a loss of $10 x 1000 = a loss of $10,000).

Forward Versus Futures

Features	Futures	Forwards
Location	Exchange	Over the Counter
Counter party	Unknown to each other, Exchange serves counter party	Counter parties are known t each other
Counter party risk	Minimal	Exists
Initial Cash flow	Initial margin required	None
Explicit cost	Brokerage required to be paid	No intermediary and no cos
Settlement	Implicitly daily by marking to the market	No marking to the market
Final settlement	By delivery or cash settled	By delivery
Exit prior to maturity	Possible by entering an opposite contract to square up the position	Generally not possible unless both the parties agree.
Quantity specification	Fixed standard size/lot	Any quantity
Time of Delivery	On fixed dates	Any time mutually decided b the parties concerned

Future Contracts-Specification

1. Expiration: Expiration (also known as maturity orexpiry date) refers to the last trading day of the futures contract.
2. Contract Size: Contract size, or lot size, is the minimum tradable size of a contract. It is often one unit of the defined contract.
3. Initial Margin: Initial margin is the minimum collateral required by the exchange before a trader is allowed to take a position.
4. Price Quotation: Price Quotation is the units in which the traded price of a contract is displayed. It can be different from the trading size of a contract and is often based on industry practices and conventions.
5. Tick Size: Tick Size is the minimum movement allowed by the exchange in Price.
6. Price Quotation: Price Quotation is the units in which the traded price of a contract is displayed. It can be different from the trading size of a contract and is often based on industry practices and conventions.
7. Tick Size: Tick Size is the minimum movement allowed by the exchange in Price.
8. Delivery Date: Delivery date or delivery period refers to the time specified by the exchange during or by which the seller has to deliver according to contract specifications and regulations.

9. Daily Settlement: Daily settlement refers to the process whereby the exchange debits and credits all accounts with daily profits and losses as calculated by the mark-to-market process.

Future Contracts-Types

Futures are broad of two types; Commodity futures, and Financial futures

Commodity futures are those where the underlying asset is a commodity. Contracts are available in India on agricultural commodities like Wheat, Rice, Soya, Coffee, Sugar, Tea, Jeera, Pepper, Cotton, Coconut, etc.

- Contracts on metals Gold, and Silver, are also available.
- Futures contracts on Crude oil are also commodity futures.

Financial futures are those where the underlying asset is a financial product. These are:

- Currency Futures: where the underlying assets are currencies. Stocks/Index futures: where the underlying is stocks or indices. Stock futures were introduced in India on June 12, 2000, for Indices and on November 9, 2001, on select individual securities, at NSE.
- Interest Rate futures: where underlying assets are interest rates. In India, interest rate futures were launched on June 24, 2003, at NSE.

Value of a Futures Contract

Futures contracts like forward contracts have no value at the origination

Since futures contracts are marked to market daily, they differ from forward contracts as futures do not accrue value over the term of the contract; hence the value of a futures contract will always be zero

The value of a futures contract diverges from zero only during the trading hours between the times at which the account is marked to market (MTM):

Value of futures contract = current futures price – previous mark-to-market price

If the future price increase, the value of the Long position also increases, and at the end of the MTM period, the value is set back to zero by the Mark to market**.**

Closing Out the Position

Three options:

Offsetting position: take identical, but opposite contract to existing position (>90% of all contracts)

Delivery: holder of an oldest long contract to accept delivery

Accepts delivery and pays the previous day's settlement price to the short.

Cash settlement: Let position expire, and margin accounts are settled for final marking to market.

Complications: high transactions cost for physical delivery, short can often determine when what, and where to deliver.

Exchange for physicals: arrangement of alternative delivery procedure acceptable to the exchange.

17.2 OptionMeaning

An option is defined as "the right, not the obligation, to buy (or sell) an asset at a fixed price before a predetermined date."

Let's have a look at that definition and see if we can pick out the component parts:

Buying Gives, You the Right

- Buying an option (call or put) conveys the right, not the obligation, to buy (call) or sell (put) an underlying instrument (for example, a share).
- Buying Gives You the Right
- When you buy an option, you are NOT obligated to buy or sell the underlying instrument — you simply have the right to do so at the fixed (exercise or strike) price.
- Your risk when buying an option is simply the price you paid.
- Selling an option (call or put) obliges you to buy from (with sold puts) or deliver (with sold calls) to the option buyer if he or she exercises the option.
- Selling options naked gives you an unlimited risk profile.
- Combined with the fact that you are obliged to do something, this is generally NOT a preferable position in which to put yourself. Only advanced traders should contemplate selling naked options, and even then, they should have a protective strategy in mind to cover the downside

Exercise (or Strike) Price

- The exercise (strike) price is the fixed price at which the option can be exercised.
- So, if you buy a call option with a strike price of 50.00, you have bought yourself the option to buy the asset at a price of $50.00.
- However, in the real world, you want to exercise your right to buy that asset only at $50 if the underlying asset is actually worth MORE than $50 in the market. Otherwise, there would be no point. It would mean buying the asset for $50 when it's only actually worth, say, $40 in the marketplace. No one would do that because they could buy it for $40 in the market.
- This leads us to the words, "before a predetermined date."

Expiration Date

- This is the date before which the option can be exercised.
- At expiration, the call option's own value is worth only the price of the asset less the strike price, and at expiration, the put option's own value is only worth the strike price less the price of the asset.
- The expiration dates for U.S. equity monthly options fall on the Saturday after the third Friday of every month.Weekly options have gained in popularity, but they are still not quite as actively traded as the traditional monthly options and often have wider bid/ask spreads.

17.3 Types of Options

A call is an option to BUY.

A put is an option to SELL. Therefore,

A call option is a right, not the obligation, to BUY an asset at a fixed price before a predetermined date.

A put option is a right, not the obligation, to SELL an asset at a fixed price before a predetermined date

Call Option

A call option gives the option holder the right to buy an asset by a certain date (expiration date/maturity) for a certain price (exercise/strike price).

Example of Call Option

- Suppose A has "bought a call option" of 2000 shares of Hindustan Unilever Limited (HLL) at a strike price of Rs 260 per share at a premium of Rs 10.
- This option gives A, the buyer of the option, the right to buy 2000 shares of HLL from the seller of the option, on or before August 27, 2022 (expiry date of the option).
- The seller of the option has an obligation to sell 2000 shares of HLL at Rs 260 per share on or before August 27, 2022 (i.e., whenever asked by the buyer of the option).

Put Option

- A put option gives the holder the right to sell an asset by maturity for the strike price.
- A put option is a contract that gives the owner of the put option the right, but not the obligation, to sell an underlying asset, at a fixed price, on (or sometimes before) a pre-specified day, known as the expiration day (T).
- Suppose A has "sold a put option" on 100 Reliance Industries (RIL) shares at a strike price of Rs 2000 at a premium of Rs 8.
- This option is an obligation to A to buy 100 shares of Reliance Industries (RIL) at a price of Rs 2000 per share on or before August 27 (expiry date of the option), i.e., as and when asked by the buyer of the put option.
- It depends on the option buyer as to when he exercises the option. As stated earlier, the buyer does not have an obligation to exercise the option.

Future Versus Options

Futures	**Options**
Both the buyer and the seller are under an obligation to fulfill the contract.	The buyer of the option has the right and not an obligation whereas the seller is under obligation to fulfill the contract if and when the buyer exercises his right.
The buyer and the seller are subject to unlimited risk of loss.	The seller is subjected to unlimited risk of losing whereas the buyer has limited potential to lose (which is the option premium).
The buyer and the seller have potential to make unlimited gain or loss.	The buyer has potential to make unlimited gain while the seller has a potential to make unlimited gain. On the other hand the buyer has a limited loss potential and the seller has an unlimited loss potential.

Moneyness In Options

- In-the-money options (ITM) - An in-the-money option is an option that would lead to positive cash flow to the holder if it were exercised immediately.
- A Call option is said to be in the money when the current price stands at a level higher than the strike price.
- If the Spot price is much higher than the strike price, a Call is said to be deep- an in-the-money option.
- In the case of a Put, the put is in the money if the Spot price is below the strike price.
- At-the-money-option (ATM) - An at-the-money option is an option that would lead to zero cash flow if it were exercised immediately.
- An option on the index is said to be "at the money" when the current price equals the strike price.
- Out-of-the-money-option (OTM) - An out-of-the-money Option is an option that would lead to negative cash flow if it were exercised immediately.
- A Call option is out-of-the-money when the current price stands at a level that is less than the strike price.
- If the current price is much lower than the strike price, the call is said to be deep out of the money.
- In the case of a Put, the Put is said to be out-of-money if thecurrent price is above the strike price.

Pay off in Options

	Call	Put
Long	Max $(S_T - K, 0)$	Max $(K - S_T, 0)$
Short	$-$Max $(S_T - K, 0)$	$-$Max $(K - S_T, 0)$

17.4 Regulation of Derivative Market

With the amendment in the definition of 'securities' under SC(R)A (to include derivative contracts in the definition of securities), derivatives trading takes place under the provisions of the Securities Contracts (Regulation) Act, 1956, and the Securities and Exchange Board of India Act, 1992.

Dr. L.C Gupta Committee, constituted by SEBI, had laid down the regulatory framework for derivative trading in India.

SEBI has also framed a suggestive bye-law for Derivative Exchanges/Segments and their Clearing Corporation/House, laying down the provisions for trading and settlement of derivative contracts.

The Rules, Bye-laws & Regulations of the Derivative Segment of the Exchanges and their Clearing Corporation/House have to be framed in line with the suggestive Bye-laws.

SEBI has also laid the eligibility conditions for Derivative Exchange/Segment and its Clearing Corporation/House.

The eligibility conditions have been framed to ensure that Derivative Exchange/Segment & Clearing Corporation/House provides a

– transparent trading environment,

– safety & integrity

– and provide facilities for the redressal of investor grievances.

Some of the important eligibility conditions are

– Derivative trading to take place through an onlinescreen-based Trading System.

– The Derivatives Exchange/Segment shall have online surveillance capability to monitor positions, prices, and volumes on a real-time basis so as to deter market manipulation.

– The Derivatives Exchange/ Segment should have arrangements for the dissemination of information about trades, quantities, and quotes on a real-time basis through at least two information vending networks,which are easily accessible to investors across the country.

– The Derivatives Exchange/Segment should have an arbitration and investor grievances redressal mechanism operative in all the four areas/regions of the country.

– The Derivatives Exchange/Segment should have a satisfactory system of monitoring investor complaints and preventing irregularities in trading. The Derivative Segment of the Exchange would have a separate Investor Protection Fund.

The Clearing Corporation/House shall perform full notations, i.e., the Clearing Corporation/House shall interpose itself between both legs of every trade, becoming the legal counterparty to both or alternatively should provide an unconditional guarantee for settlement of all trades.

– The Clearing Corporation/House shall have the capacity to monitor the overall position of Members across both the derivatives market and the underlying securities market for those Members who are participating in both.

The level of initial margin on Index Futures Contracts shall be related to the risk of loss on the position. The concept of value-at-risk shall be used in calculating the required level of initial margins. The initial margins should be large enough to cover the one-day loss that can be encountered on the position on 99% of the days.

The Clearing Corporation/House shall establish facilities for electronic funds transfer (EFT) for swift movement of margin payments.

– In the event of a Member defaulting in meeting its liabilities, the Clearing Corporation/House shall transfer client positions and assets to another solvent Member or close out all open positions.

The Clearing Corporation/House should have capabilities to segregate initial margins deposited by Clearing Members for trades on their own account and on account of their client. The Clearing Corporation/House shall hold the clients' margin money in trust for the client's purposes only and should not allow its diversion for any other purpose.

– The Clearing Corporation/House shall have a separate Trade Guarantee Fund for the trades executed on Derivative Exchange / Segment.

– Presently, SEBI has permitted Derivative Trading on the Derivative Segment of BSE and the F&O Segment of NSE.

ContractSpecifications for IndexOptions (Nifty Options)

On NSE's index options market, contracts at different strikes, having one-month, two-month, and three-month expiry cycles, are available for trading.

There are typically one-month, two-month, and three-month options, each with a minimum of seven different strikes available for trading.Hence at a given point in time, there is a minimum of 3*7*2 or 42 options for products.

Trading in stock futures commenced on the NSE in November 2001. These contracts are cash-settled on a T+1 basis.

The expiration cycle for stock futures is the same as for the index. Futures, index options and stock options.

A new contract is introduced on the trading day following the expiry of the near-month contract.

Summary

A derivative is a financial instrument whose value is derived (hence the name derivative) from the value of an underlying asset. Underlying assets: These can be stocks, indices, bonds, commodities, currency, rates, etc. In the last 30 years, derivatives have become increasingly important in finance. Futures and options are actively traded on many exchanges throughout the world. Many different types of forward contracts, swaps, options, and other derivatives are entered into by financial institutions, fund managers, and corporate treasurers in the over-the-counter market.

Keywords

Derivative: It is a financial instrument whose value is derived (hence the name derivative) from the value of an underlying asset.

Hedgers: These are risk-averse traders in stock markets. They aim at derivative markets to secure their investment portfolio against market risk and price movements.

Speculators: These are risk-takers of the derivative market. They want to embrace risk in order to earn profits.

Arbitrageurs: These simultaneously buy low-priced securities in one market and sell them at a higher price in another market. This can happen only when the same security is quoted at different prices in different markets.

SelfAssessment

1. A person selects a shirt in a shop and agrees on a price, the settlement (exchange of funds for goods) takes place immediately. This is an example of----------.

A. Spot market
B. Derivative Market
C. Exotic market
D. Red market

2. Which of the following is False?

A. Derivatives assist in improving the efficiency of the markets, by providing a self-correcting mechanism
B. (b One of the primary functions of derivatives markets is price discovery
C. c)Spot Market is the same as from derivative market
D. (d) A derivative is a financial instrument whose return is derived from the return on its other instrument.

3. Derivatives assist in improving the efficiency of the markets, by providing a self-correcting mechanism.

A. True
B. False
C. All facts are not given
D. None of the above

4. This of the following is applicable to future Market

A. Counterparty Risk
B. No Initial Margin
C. Illiquidity
D. Centralization of trading

5. Long forward = commitment to buy at the forward price. The long position will make a profit if the spot price is ----------then strike price.
A. Greater
B. Smaller
C. © Equal
D. (d)Not Applicable

6. Which of the following can be underlying for a commodity derivative contract?
A. Interest Rate
B. Euro-Indian Rupee
C. Gold
D. NIFTY

7. In the future market ---------- exist.
A. Counterparty risk
B. No counterparty risks
C. Somewhat Counterparty risk
D. Not applicable

8. Mark to Margin is the feature of
A. (a)Forward contract
B. (b) Future contract
C. (c) Real contract
D. (d) Hybrid contract

9. he option---------- would lead to a positive cash flow to the holder if it were exercised immediately.
A. An in-the-money (ITM) option
B. An at-the-money (ATM) option
C. An out-of-the-money (OTM) option
D. Exotic option

10. The option would lead to a negative cash flow to the holder if it were exercised immediately.
A. An in-the-money (ITM) option
B. An at-the-money (ATM) option
C. An out-of-the-money (OTM) option
D. Exotic option

11. The option would lead to equal cash flow to the holder if it were exercised immediately.
A. An in-the-money (ITM) option
B. An at-the-money (ATM) option

C. An out-of-the-money (OTM) option

D. Exotic option

12. An option is defined as "the right, not the obligation, to buy (or sell) an asset at a fixed price before a predetermined date."

A. True

B. False

13. One basic problem of future markets is that of too much flexibility and generality.

A. True

B. False

14. If the Spot price is much higher than the strike price, a Call is said to be deep- an in-the-money option.

A. True

B. False

15. In the case of a Put, the put is in the money if the Spot price is below the strike price.

A. True

B. False

Answers for SelfAssessment

1.	A	2.	B	3.	A	4.	D	5.	A
6.	C	7.	B	8.	B	9.	A	10.	C
11.	B	12.	True	13.	False	14.	True	15.	True

Review Questions

What do you mean by Derivatives?

Enumerate the difference between forward and futures.

Elaborate on various risks in forward market.

Enumerate the types of participants in derivative market.

Further Readings

- Security Analysis And Portfolio Management By K Sasidharan & Alex K
- Mathews, Mcgraw Hill Education
- Security Analysis And Portfolio Management By Pandian, Punithavathy, Vikas Publishing House.

Web Links

- https://www.investopedia.com/terms/d/derivative.asp
- https://www.investopedia.com/ask/answers/06/forwardsandfutures.asp
- https://www.kotaksecurities.com/ksweb/Research/Investment-Knowledge-

Bank/what-is-options-trading

- https://www.nseindia.com/regulations/exchange-market-regulations-rules-byelaws-nseil

Unit 18:Management of Market Risk

CONTENTS

Objectives

- understand option greeks and risk management.
- interpret the use of greeks for risk management.
- analyze how futures are used for hedging.
- understand the meaning of order and its management.

Introduction

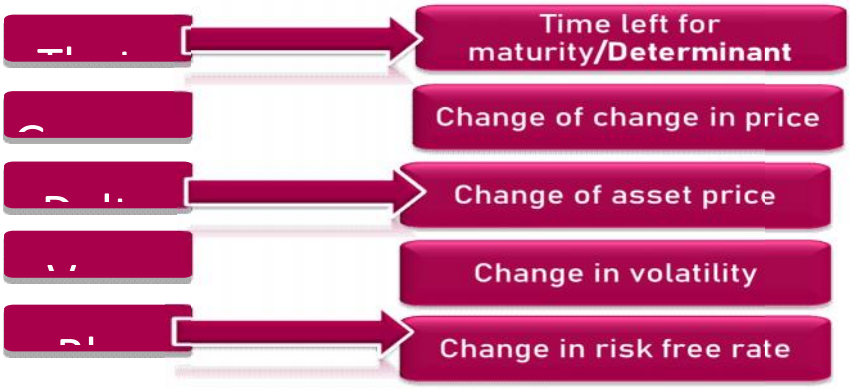
An order consists of instructions to a broker or brokerage firm to purchase or sell a security on an investor's behalf. Orders are typically placed over the phone or online through a trading platform, although orders may increasingly be placed through automated trading systems and algorithms. When an order is placed, it follows a process of order execution.There are multiple order types, which will affect what price the investor buys or sells at, when they will buy or sell, or whether their order will be filled or not.

18.1 Risk Management & Option Greeks

Options are financial derivatives that are used as risk management tools for hedging the portfolios. That is, the goal is to offset potential unfavorable moves in other investments. Options contracts are also used for speculating on whether an asset's price might rise or fall.

An option's price can be influenced by a number of factors that can either help or hurt traders, depending on the type of positions they have taken.

Option greeks refer to the sensitivity of option prices with respect one of the determinants of price as listed.



Option Delta

- Option delta represents the sensitivity of the option price with respect to a change in the price of the underlying asset.
- Delta for an option is calculated as:

$$\Delta S \qquad \text{Delta} = \frac{C_1 - C_0}{S_1 - S_0} = \frac{\Delta C}{\Delta S}$$

Where = change in price of the call over a short time interval

= change in price of the underlying stock over a short interval

Example:

An option delta of 0.5724 means that if the value of the underlying changes by Rs 1, the value of the option would change by Rs 0.5724.

For example, suppose that one out-of-the-money option has a delta of 0.25, and another in-the-money option has a delta of 0.80. A $1 increase in the price of the underlying asset will lead to a $0.25 increase in the first option and a $0.80 increase in the second option. Traders looking for the greatest traction may want to consider high deltas, although these options tend to be more expensive in terms of their cost basis since they're likely to expire in-the-money.

Delta Interpretation

- In effect, at delta values of -1.00 and 1.00, the option behaves like the underlying security in terms of price changes. This behavior occurs with little or no time value as most of the value of the option is intrinsic.
- Call has a positive delta and Put has a negative delta.
- Puts generate a negative delta because they have a negative relationship with the underlying security—put premiums fall when the underlying security rises, and vice versa.

Option Gamma

- Gamma is the rate of change in an option's delta per 1-point move in the underlying asset's price. Think of gamma as the delta of the delta.
- Gamma captures the rate of delta change; it helps us get an answer to a question such as "What is the expected value of delta for a given change in underlying."
- As an analogy to physics, the delta of an option is its "speed," while the gamma of an option is its "acceleration."

Example:

The calculation of gamma is complex and requires financial software or spreadsheets to find a precise value. However, the following demonstrates an approximate calculation of gamma.

Consider a call option on an underlying stock that currently has a delta of 0.4. If the stock value increases by $1, the option will increase in value by $0.40, and its delta will also change. After the $1 increase, assume the option's delta is now 0.53. The 0.13 difference in deltas can be considered an approximate value of gamma.

Gamma Behavior

- As the underlying moves away from the strike price, the gamma decreases. As the underlying moves towards the strike price, the gamma increases.
- When the option is near or at the money, gamma is at its largest.
- All options that are in a long position have a positive gamma, while all short options have negative gamma.
- Gamma is an important metric because it corrects for convexity issues when engaging in hedging strategies. Some portfolio managers or traders may be involved with portfolios of such large values that even more precision is needed when engaged in hedging

Option Theta

- The term theta refers to the rate of decline in the value of an option due to the passage of time. It can also be referred to as the time decay of an option.
- This means an option loses value as time moves closer to maturity, as long as everything is held constant. Theta represents the time value decline of an options contract. To help you remember: the "T" in theta stands for "Time."
- Theta is generally expressed as a negative number and can be thought of as the amount by which an option's value declines every day.

For example, if the value of an option is 7.50 and the option has a theta of .02. After one day, the option's value will be 7.48, 2 days, and 7.46. etc.

Let's assume an investor purchases a call option with a strike price of $1,150 for $5. The underlying stock is trading at $1,125. The option has five days until expiration, and theta is $1. In theory, the value of the option drops by $1 per day until it reaches the expiration date. This is unfavorable to the option holder.

How Theta Behave

- Theta is highest for at-the-money (ATM) options and lower the further out-the-money or in-the-money the option is.
- The absolute value of theta of an option that is at or near the money rises as the option approaches expiration. Theta for an option that is deep in or out, the money falls as the option approaches expiration.

18.2 Vega

- Vega falls under the series of sensitivity measures called the Greeks. Vega is not a Greek letter; however, it is denoted by the Greek letter nu (v).
- Vega measures an option’s sensitivity to the underlying asset’s volatility. Vega measures the amount of increase or decrease in an option premium based on a 1% change in implied volatility.

Vega & Implied volatility

- Implied volatility refers to the expected volatility of the underlying asset. Implied volatility can be shortened to IV or just volatility.
- A higher IV means there is more uncertainty around the price of the stock. As IV increases, you would expect to see larger swings in the price.
- IV is expressed as an annualized percentage change associated with one standard deviation. Implied volatility of 20% would mean that the standard deviation over the next year would be a 20% change in price.

Example:

Assume hypothetical stock ABC is trading at $50 per share in January and a February $52.50 call option has a bid price of $1.50 and an ask price of $1.55. Assume that the Vega of the option is 0.25 and the implied volatility is 30%. The call options are offering a competitive spread: the spread is smaller than the Vega.

That does not mean the option is a good trade or that it will make the option buyer money. This is just one consideration, as too high of a spread could make getting into and out of trades more difficult or costly.

Vega Behavior

Vega is the maximum for options that are at the money. The longer an option contract has until it expires, the more volatility affects the price. Vega falls as the option gets closer to expiration and increases as the underlying moves closer to the strike. In other words, Vega is centered around at-the-money and falls as it is out of the money or in the money.

How to Interpret Vega?

Let us look at a hypothetical call option with a premium of $5 and an underlying asset with a price of $100. If the IV is 20% and the Vega of the option is 0.10, what would happen to the option price if the IV rose to 22%? The 2% increase should mean that the change in price would be an increase of 2 x 0.10 = $0.20.

You would expect the price to increase from $5.00 to $5.20. If the IV instead fell by 2%, you would expect a decrease in the price of $0.20, resulting in a price of $4.80.

Rho

- Rho is the rate at which the price of derivative changes relative to a change in the risk-free rate of interest. For example, if an option or options portfolio has a rho of 1.0, then for every one-percentage-point increase in interest rates, the value of the option (or portfolio) increases by 1 percent.
- Rho may also refer to the aggregated risk exposure to interest rate changes that exist for a book of several options positions.
- For example, assume that a call option is priced at $4 and has a rho of 0.25. If the risk-free rate rises 1 percent, say from 3 percent to 4 percent, the value of the call option would rise from $4 to $4.25.

Successful traders understand the factors that influence options pricing, which include the so-called "Greeks"—a set of risk measures so named after the Greek letters that denote them, which indicate how sensitive an option is to - time-value decay, changes in implied volatility, and movements in the price of its underlying security.

18.3 Hedging

A hedge is an investment that is made with the intention of reducing the risk of adverse price movements in an asset.

Normally, a hedge consists of taking an offsetting or opposite position in a related security.

How a Hedge Works

Hedging is somewhat analogous to taking out an insurance policy. If you own a home in a flood-prone area, you will want to protect that asset from the risk of flooding—to hedge it, in other words—by taking out flood insurance.

In this example, you cannot prevent a flood, but you can plan of time to mitigate the dangers if a flood did occur. However, hedging is not free. In the case of the flood insurance policy example, the monthly payments add up, and if the flood never comes, the policyholder receives no payout. Still, most people would choose to take that predictable, circumscribed loss rather than suddenly lose the roof over their head.

In the investment world, hedging works in the same way. Investors and money managers use hedging practices to reduce and control their exposure to risks.

In order to appropriately hedge in the investment world, one must use various instruments in a strategic fashion to offset the risk of adverse price movements in the market. The best way to do this is to make another investment in a targeted and controlled way.

The most common way of hedging in the investment world is through derivatives. Derivatives are securities that move in correspondence to one or more underlying assets.

They include options, swaps, futures and forward contracts. The underlying assets can be stocks, bonds, commodities, currencies, indices or interest rates.

How are Futures used to Hedge a Position?

A futures contract is a standardized, legal agreement to buy or sell an asset at a predetermined price at a specified time in the future. At this specified date, the buyer must purchase the asset and the seller must sell the underlying asset at the agreed-upon price, regardless of the current market price at the expiration date of the contract.

Hedging in the futures market can be done through two positions, viz. short hedge and long hedge.

Long hedge

A long hedge is one where a long position is taken on a futures contract. It is typically appropriate for a hedger to use when an asset is expected to be bought in the future.

Alternatively, it can be used by a speculator who anticipates that the price of a contract will increase.

For example, assume an oil producer plans on purchasing 2,000 barrels of crude oil in August for a price equal to the spot price at the time. The producer can hedge in the following manner by using crude oil futures from the NYMEX. Currently,

- An August oil futures contract is purchased for a price of $59 per barrel
- Spot prices are currently $60
- What happens when the spot price in August decreases to $55?
- Producer gains $4 per barrel on the purchase from the decreased price
- Producer loses $4 by buying the futures contract for $59 and immediately selling (to close out) for $55
- Effective price of the sale is $59

What happens when the spot price in August increases to $65?

- Producer loses $6 per barrel on the purchase from the increased price
- Producer gains $6 by selling the futures contract for $59 and immediately buying (to close out) for $65
- Effective price of the sale is $59

The producer has effectively locked in on the price prior to the sale by offsetting gains/losses.

Now assume the same for a speculator who takes a long position on a March futures contract at $59

- If the price increases to $65, the speculator sells for $59 and immediately buys for $65, leading to a gain of $6 per barrel [$12,000 gain

  in value for five contracts]

- If the price increases to $55, the speculator loses $12,000

Short Hedge

A short hedge is one where a short position is taken on a futures contract. It is typically appropriate for a hedger to use when an asset is expected to be sold in the future.

Alternatively, it can be used by a speculator who anticipates that the price of a contract will decrease.

For example, assume a cattle rancher plans to sell a pen of feeder cattle in March based on the spot prices at that time. The rancher can hedge in the following manner. Currently,

- A March futures contract is purchased for a price of $150
- For simplicity, assume the rancher anticipates (and does sell) selling 50,000 pounds (1 contract)
- Spot prices are currently $155
- What happens when the spot price is March decreases to $140?
- Rancher loses $10 per 100 pounds on the sale from the decreased price
- Rancher gains $10 by selling the futures contract for $150 and immediately buying (to close out) for $140
- Effective price of the sale is $150

What happens when the spot price is March increases to $160?

- Rancher gains $10 per 100 pounds on the sale from the increased price
- Rancher loses $10 by buying the futures contract for $150 and immediately selling (to close out) for $160
- Effective price of the sale is $150

The seller has effectively locked in on the price prior to the sale by offsetting gains/losses.

Now assume the same for a speculator who takes a short position on a March futures contract at $150

- If the price falls to $140, the speculator sells for $150 and immediately buys for $140, leading to a gain of $10 per 100 pounds [$5,000 gain in value for one contract]
- If the price increases to $160, the speculator loses $5,000

Option Hedging Strategies

The following are option hedging strategies commonly used by portfolio managers to reduce risk. Many options strategies are designed to minimize risk by hedging existing portfolios.

While options act as safety nets, they're not risk free. Since transactions usually open and close in the short term, gains can be realized quickly. Losses can mount as quickly as gains

Protective Put

Long put refers to buying a put option, typically in anticipation of a decline in the underlying asset.

A long put could also be used to hedge a long position in the underlying asset. If the underlying asset falls, the put option increases in value helping to offset the loss in the underlying.

Downside risk is limited using a long put options strategy.

Example:

You own 100 shares in ABC Corp, with each share valued at $100.

You believe that the price of your shares will increase in the future. However, you want to hedge against the risk of an unexpected price decline. Therefore, you decide to purchase one protective

put contract (one put contract contains 100 shares) with a strike price of $100. The premium of the protective put is $5.

The following scenarios are possible:

Scenario 1: Share price above $105: If the share price goes beyond $105, you will experience an unrealized gain. The profit can be calculated as Current Share Price – $105 (it includes initial share price plus put premium). The put will not be exercised.

Scenario 2: Share price between $100 and $105: In this scenario, the share price will remain the same or slightly rise. The small loss is caused by the premium you paid for the put contract. Similar to the previous scenario, the put will not be exercised

Scenario 3: Share price below $100: In this case, you will exercise the protective put option to limit the losses. After the put is exercised, you will sell your 100 shares at $100. Thus, your loss will be limited to the premium paid for the protective put.

Covered Call

- A covered call strategy involves selling out of the money call options against a long equity position. This doesn't actually reduce downside risk, but the premium earned does offset potential losses to an extent.
- A covered call is constructed by holding a long position in a stock and then selling (writing) call options on that same asset, representing the same size as the underlying long position.

Example:

The concept is that in owning the stock, you then sell an Out of the Money call option on a monthly basis as a means of collecting rent (or a dividend) while you own the stock. If the stock rises above the call strike, you'll be exercised, and the stock will be sold . . . but you make a profit anyway.

If the stock remains static, then you're better off because you collected the call premium. If the stock falls, you have the cushion of the call premium you collected.

Collar

A collar entails buying a put option and selling a call option. By selling a call option, part of the cost of the put option is covered. The trade-off is that the upside will be capped.

A collar position is created by holding an underlying stock, buying an out-of-the-money put option, and selling an out-of-the-money call option. It limits the return of the portfolio to a specified range and can hedge a position against the potential volatility of the underlying asset.

Let us now look at an example: Say you are holding a long position on an asset that has just recently appreciated to a price of $100. You are unsure about the price stability in the near-term future and want to utilize a collar strategy.

You buy a put option with a strike price of $90 at a premium of $5. You also sell a call option for $5 with a strike price of $110.

What is your payoff if the price of the asset falls to $80?

- The call option you've sold will not be exercised by the buyer and you will end with a payoff of $5.
- The put option you've bought for $5 will be exercised with a strike price of $90 meaning a payoff of $5.
- The underlying asset will be worth $80 meaning a loss of $20.
- The protective put option you've purchased reduced the losses experienced from a drop in the price of the underlying asset. In total your net loss will be:
- $5 + $5 – $20 = -$10.
- Rather than experiencing the full loss of
- $80 – $100 = -$20, you have ended with a net loss of only $10.

Spread

In options trading, an option spread is created by the simultaneous purchase and sale of options of the same class on the same underlying security but with different strike prices and/or expiration dates.

Any spread that is constructed using calls can be refered to as a call spread. Similarly, put spreads are spreads created using put options.

Types of Spreads

Vertical spreads are constructed using options of the same class, same underlying security, same expiration month, but at different strike prices.

Horizontal or calendar spreads are constructed using options of the same underlying security, same strike prices but with different expiration dates.

Diagonal spreads are created using options of the same underlying security but different strike prices and expiration dates.

Bull & Bear Spreads

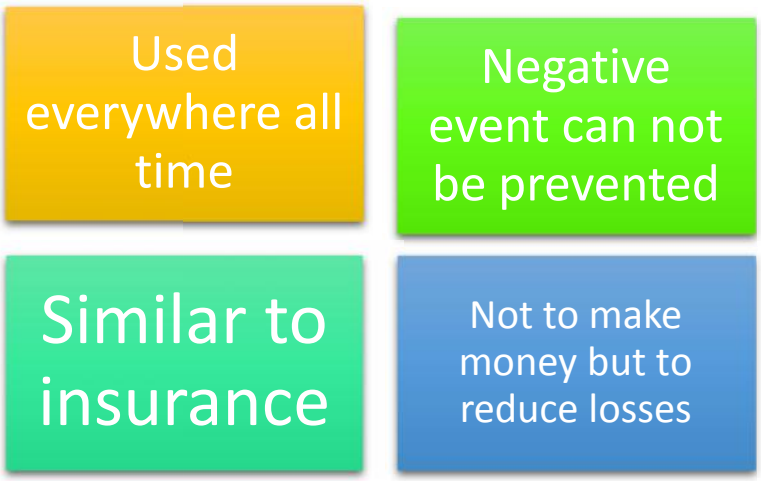
If an option spread is designed to profit from a rise in the price of the underlying security, it is a bull spread. Conversely, a bear spread is a spread where favorable outcome is attained when the price of the underlying security goes down

Credit & Debit Spreads

Option spreads can be entered on a net credit or a net debit. If the premiums of the options sold is higher than the premiums of the options purchased, then a net credit is received when entering the spread. If the opposite is true, then a debit is taken. Spreads that are entered on a debit are known as debit spreads

Hedging Objectives

The objective of hedging is to offset risk arising from a position.



18.4 What Is a Stop-Loss Order?

- A stop-loss order instructs that a stock be bought or sold when it reaches a specified price known as the stop price.
- Once the stop price is met, the stop order becomes a market order and is executed at the next available opportunity.
- Stop-loss orders are used to limit loss or lock in profit on existing positions.
- They can protect investors with either long or short positions.
- It's an order placed once you've taken a position in a security (on the buy side or sell side) with instructions to close out your position by selling (or buying) the security at the market if the price of the security reaches a specific level.

- For instance, if you have bought a stock at Rs 100 and you want to limit the loss at 95, you can place an order in the system to sell the stock as soon as the stock comes to 95. Such an order is called 'Stop Loss', as you are placing it to stop a loss more than what you are ready to risk.

Stop-Limit Orders

Stop-limit orders are similar to stop-loss orders. But as their name states, there is a limit on the price at which they will execute.

There are two prices specified in a stop-limit order: the stop price, which will convert the order to a sell order, and the limit price. Instead of the order becoming a market order to sell, the sell order becomes a limit order that will only execute at the limit price or better.

Types of Stop-Loss Orders

There are two types of stop-loss orders: one to protect long positions (sell-stop order), and one to limit losses on short positions (buy-stop order).

Sell-Stop Orders

Sell-stop orders protect long positions by triggering a market sell order if the price falls below a certain level.

Buy-Stop Orders

Buy-stop orders are conceptually the same as sell-stop orders. However, they are used to protect short positions. A buy-stop order price will be above the current market price and will trigger if the price rises above that level.

Example of Stop Loss Order

There are 2 types of Stop-Loss orders

1. SL order (Stop-Loss Limit) = Price + Trigger Price

2. SL-M order (Stop-Loss Market) = Only Trigger Price

Case 1 > if you have a buy position, then you will keep a sell SL

Case 2 > if you have a sell position, then you will keep a buy SL

Case 1 > If You Have a Buy Position, Then You Will Keep a Sell SL

In Case 1, if you have a buy position at 100 and you wish to place an SL at 95.

a. SL-M order type - You will place a Sell SL-M order with trigger price = 95.

Here, when the price of 95 is triggered, a sell market order will be sent to the exchange and your position will be squared off at market price.

b. SL order type - You will place a Sell SL order with price and trigger price. Since your order needs to be triggered first, the (trigger price ≥ price.) Here, this order type gives you a range of Stop-Loss.

Let's assume a range of Rs 0.10 (10 paise). Here, you can keep trigger price = 95 and price = 94.90.

When the price of 95 is triggered, the sell limit order is sent to the exchange and your order will be squared off at the next available bid above 94.90. So, your SL order may get executed at 95 (or higher) or 94.95 but not below 94.90.

The disadvantage of this order is that if the market falls steeply, then after 95 is triggered and before the Sell Limit order of 94.90 is sent to the exchange if the stock price is already below 94.90, then your Stop-Loss order will still be open and your losses could be much higher.

Case 2 > If You Have a Sell Position, Then You Will Keep a Buy SL

In Case 2, if you have a sell position at 100 and you wish to place an SL at 105.

a. SL-M order type - You will place a Buy SL-M order with trigger price = 105.

Here, when the price of 105 is triggered, a buy market order will be sent to the exchange and your position will be squared off at market price.

b. SL order type - You will place a Buy SL order with price and trigger price. Since your order needs to be triggered first, (the trigger price ≤ price.) Here, this order type gives you a range of the stop-loss.

Let's assume a range of Rs.0.10 (10 paise). Here, you can keep trigger price = 105 and price = 105.10.

When the price of 105 is triggered, the buy limit order is sent to the exchange and your order will be squared off at the next available offer below 105.10. So, your SL order may get executed at 105.05 or 105 but not above 105.10.

Benefits of Stop-Loss Orders

Advantage Over a Stop-Limit Order

A stop-loss order becomes a market order to be executed at the best available price if the price of a security reaches the stop price. A stop-limit order also triggers at the stop price.

However, the limit order might not be executed because it is an order to execute at a specific (limit) price. Thus, the stop-loss order removes the risk that a position won't be closed out as the stock price continues to fall.

Potential Disadvantages

One disadvantage of the stop-loss order concerns price gaps. If a stock price suddenly gaps below (or above) the stop price, the order would trigger. The stock would be sold (or bought) at the next available price even if the stock is trading sharply away from your stop loss level.

Another disadvantage concerns getting stopped out in a choppy market that quickly reverses itself and resumes in the direction that was beneficial to your position.

Investors can create a more flexible stop-loss order by combining it with a trailing stop. A trailing stop is an order whose stop price, rather than being a fixed price, is instead set at a certain percentage or dollar amount below (or above) the current market price. So, for instance, as the price of a security that you own moves up, the stop price moves up with it, allowing you to lock in some profit as you continue to be protected from downside risk.

Some Basic Order Types

- A market order instructs the brokerage to complete the order at the best available price.
- A limit order is an order to buy or sell a stock at a specific price or better. Limit orders ensure that a buyer pays only a specific price to purchase a security. Limit orders can remain in effect until they are executed, expire, or are canceled.
- A day order must be executed during the same trading day that the order is placed.
- Good-'til-canceled (GTC) orders remain in effect until they are filled or canceled.
- Immediate or cancel (IOC) means that the order only remains active for a very short period of time, such as several seconds.

- An all-or-none (AON) order specifies that the entire size of the order be filled, and partial fills will not be accepted.
- A fill-or-kill (FOK) order must be completed immediately and completely or not at all and combines an AON order with an IOC order.

The main purposes of a stop-loss order are to reduce risk exposure (by limiting potential losses) and to make trading easier (by already having an order in place that will automatically be executed if the market trades at a specified price).Traders are strongly urged to always use stop-loss orders whenever they enter a trade, in order to limit their risk and avoid a potentially catastrophic loss. In short, stop-loss orders serve to make trading less risky by limiting the amount of capital risked on any single trade.

18.5 Scenario Analysis

Changes that impact the business environment can happen unexpectedly and suddenly—as demonstrated in magnified ways by the global pandemic in 2020. Scenario analysis allows organizations to analyze and quantify the potential business impacts of such events, so they can plan accordingly.

It can also be used to assess the benefit and risks of different business decisions, such as the potential impact on revenue and profitability of building new facilities. It helps businesses avoid diving blindly into a risky investment or project.

How Scenario Analysis Works

Let's take the imaginary example of Kooky Cooks Inc., a maker of innovative kitchen equipment. The company comes up with an idea for a new appliance that not only cooks food but also cleans itself afterward. However, it will take at least a year to get the product to market and financial analysts are predicting worsening economic conditions over that period.

The company could use scenario analysis to examine the potential impacts of economic conditions on the revenues and profits generated by the new product. Economic conditions may affect a variety of factors, from customer demand to the cost of raw materials. The company could consider a range of scenarios, each generating a different set of assumptions.

In one scenario, sales might fall by 20% because customer demand declines due to the economic conditions, while the cost of raw materials rises because some suppliers go out of business and there's less competition among the remaining providers.

However, rent on manufacturing facilities could fall by 10% and the company might be able to borrow money at a lower interest rate to fund manufacturing start-up costs. Scenario analysis could consider the impact of all these factors.

Example:

One type of scenario analysis that looks specifically at worst-case scenarios is stress testing.

Stress testing is often employed using a computer simulation technique to test the resilience of institutions and investment portfolios against possible future critical situations. Such testing is customarily used by the financial industry to help gauge investment risk and the adequacy of assets.

Stress testing is also used to help evaluate internal processes and controls. In recent years, regulators have also required financial institutions to carry out stress tests to ensure their capital holdings and other assets are adequate.

Cases in Scenario Analysis

A scenario analysis generally considers at least three types of scenarios:

- Base-case scenario: A baseline scenario based on current, commonly accepted assumptions.
- Worst-case scenario: The most negative set of assumptions.
- Best-case scenario: The ideal projected scenario to achieve goals and objectives.

Difference Between Scenario Analysis and Sensitivity Analysis

Scenario analysis looks at a wide range of possible outcomes, but it analyzes the effect of manipulating all variables at the same time. The result is typically a base-case scenario, a best-case scenario, and a worst-case scenario.

On the other hand, sensitivity analysis assesses the impact of changing just one variable at a time.

Steps to Perform a Scenario Analysis

Taking a methodical approach to scenario analysis can help to ensure that the company focuses on the most important scenarios, considers the most relevant factors, and gets the most benefit from the process. Here are six key steps:

- Define the issue and the decisions that you need to make

Gather data and identify key factors, trends and uncertainties that may affect the plan. This may include external factors and internal factors.

- Develop a scenario planning template

This is generally a financial model that enables the company to plug in various assumptions and examine the impact on key metrics such as revenue or net income.

- Develop scenarios

Develop base, worst and best-case scenarios, plus others if desired.

- Evaluate the scenarios

Analyze the potential impact of each scenario.

- Plan accordingly

Use the scenarios you have developed in your planning, weighing the most likely risks and rewards.

Applications for Scenario Analysis

Here are different ways that companies apply scenario analysis to their business:

- Risk management
- Investment strategy
- Competitive strategy
- Strategic proposals

What are the Benefits of Performing Scenario Analysis?

Future planning – gives investors a peek into the expected returns and risks involved when planning for future investments. The goal of any business venture is to increase revenue over time, and it is best to use predictive analysis when deciding to include an investment in a portfolio.

Proactive – Companies can avoid or decrease potential losses that result from uncontrollable factors by being aggressively preventive during worst-case scenarios by analyzing events and situations that may lead to unfavorable outcomes. As the saying goes, it is better to be proactive than reactive when a problem arises.

Avoiding risk and failure – To avoid poor investment decisions, scenario analysis enables businesses or independent investors to assess investment prospects. Scenario analysis takes the best and worst probabilities into account so that investors can make an informed decision.

Projecting investment returns or losses – The analysis makes use of tools to calculate the values or figures of potential gains or losses from an investment. This gives concrete, measurable data that investors can base the approaches they take on, for a better outcome.

Requires a high level of skill – Scenario analysis tends to be a demanding and time-consuming process that requires high-level skills and expertise.

Unforeseen outcomes – Due to the difficulty in forecasting what may occur in the future, the actual outcome may be fully unexpected and not foreseen in the financial modeling.

Cannot model every scenario – It may be very difficult to envision all possible scenarios and assign probabilities to them. Investors must understand that there are risk factors associated with the

outcomes, and they must consider a certain amount of risk tolerance in order to be able to attain the desired goal.

Scenario analysis is the process of estimating the expected value of a portfolio after manipulating a number of key variables. The method can be used in both investment strategy and corporate finance. While it's a great tool for investors and managers to utilize, scenario analysis is only as good as the assumptions and inputs made by the user.

18.6 Risk Quantification

Risk quantification is a process of evaluating identified risks to produce data that can be used in deciding a response to corresponding risks. Quantifiably, the risk is usually assessed by considering historical behaviors and outcomes. In finance, the standard deviation is a common metric associated with risk.

Standard deviation provides a measure of the volatility of asset prices in comparison to their historical averages in a given time frame.

One way of quantifying risk is to describe outcomes and probability of occurrence in terms of a probability distribution.

Most people have heard of the normal or bell-shaped distribution.

The normal distribution can be described by its mean and standard deviation.

- Risk is measured as the standard deviation of returns.
- Then translated into dollar amounts for a particular situation.
- A tolerance for risk is defined either in terms of a probability or number of standard deviations. For example, there is a 66% probability of a one standard deviation movement either way.

Value-at-risk

Value at risk (VaR) is a statistic that quantifies the extent of possible financial losses within a firm, portfolio, or position over a specific time frame

The Question Being Asked in VaR-

"What loss level is such that we are X% confident it will not be exceeded in N business days?"

Investment and commercial banks most commonly use this metric to determine the extent and probabilities of potential losses in their institutional portfolios.

Risk managers use VaR to measure and control the level of risk exposure. One can apply VaR calculations to specific positions or whole portfolios or use them to measure firm-wide risk exposure.

VaR is a useful device for measuring the market risk of a portfolio.

It is useful in management reporting.

Three attributes are required when reporting a VaR:

- A dollar amounts
- A level of confidence
- A time horizon or planning horizon

Example:

The Value at Risk measures the potential loss in value of a risky asset or portfolio over a defined period for a given confidence interval.

Thus, if the VaR on an asset is $ 100 million at a one-week, 95% confidence level, there is only a 5% chance that the value of the asset will drop more than $ 100 million over any given week.

Advantages:

- It captures an important aspect of risk in a single number
- It is easy to understand
- It asks the simple question: "How bad can things get?"

VaR– Methods

- There are three main approaches to the calculation of a VaR number for a portfolio
- The analytical method, also called the variance-covariance method
- The historical simulation method
- The Monte Carlo simulation method,

Each method has strengths and weaknesses

Historical Method: The Historical Method is the simplest method among the three to calculate Value at Risk.

Historical market data is used to measure the percentage change of each risk factor for each day and then is applied to current market prices, which generate a hypothetical data set. This method is based on the assumption that history would repeat itself.

The Advantages and limitations of the historical method are-

The historical method is a simple and fast method to calculate VaR. For a portfolio, it eliminates the need to estimate the variance-covariance matrix and simplifies the computations, especially in portfolios with many assets. This method is also intuitive.

VaRcorresponds to a significant loss sustained over a known historical period. Hence users can go back in time and explain the circumstances behind the VaR measure.

On the other hand, the historical method has a few drawbacks. The assumption that the past represents the immediate future is highly unlikely in the real world. Also, if the horizon window omits important events (like stock market booms and crashes), the distribution will not be well represented.

Its calculation is only as strong as the number of correct data points measured that fully represent changing market dynamics, even capturing crisis events that may have occurred, such as the Covid-19 crisis in 2020 or the financial crisis in 2008.

In fact, even if the data does capture all possible historical dynamics, it may not be sufficient because the market will never entirely replicate past movements. Finally, the method assumes that the distribution is stationary. In practice, there may be significant and predictable time variations in risk.

Parametric method: The most common way of calculating VaR is the parametric method, also known as the variance-covariance method. This method assumes that the return of the portfolio is normally distributed and can be completely described by expected return and standard deviations.

Monte Carlo Method: In this method, value at risk is measured by creating a number of different scenarios for the future using a nonlinear pricing model. This method is suited when a large variety of risk measurement problems are present.

Monte Carlo simulation is a computerized mathematical technique that allows people to account for risk in quantitative analysis and decision making. The technique is used by professionals in such widely disparate fields.

What Is the Disadvantage of Using Value at Risk?

While VAR is useful for predicting an investment's risks, it can be misleading. One critique is that different methods give different results: you might get a gloomy forecast with the historical method while Monte Carlo Simulations are relatively optimistic.

It can also be difficult to calculate the VAR for large portfolios: you can't simply calculate the VAR for each individual asset since many of those assets will be correlated. Finally, any VAR calculation is only as good as the data and assumptions that go into it.

VaR Conclusion

VaR is a powerful tool for consolidating in a single number, risk across a portfolio of assets. It provides a mechanism for containing risk within acceptable limits.

It is a powerful communication tool for consolidating a measure of risk across portfolios.

Summary

With the option greeks' knowledge, the trader can play safe in the options market. An option's price is influenced by a number of factors that can either help or hurt traders depending on the type of positions they have taken. There are several options in Greek like delta, theta, gamma, vega, and Rho. Every option Greeks influences the price of a stock, the understanding of which will improve the skill for a favorable position. A stop-loss order instructs that a stock be bought or sold when it reaches a specified price known as the stop price. Once the stop price is met, the stop order becomes a market order and is executed at the next available opportunity.

Keywords:

Gamma: It is the rate of change in an option's delta per 1-point move in the underlying asset's price.

Theta: It is the rate of decline in the value of an option due to the passage of time.

Delta neutrality: It means that the small change in the price of the underlying would have no impact on the value of the portfolio.

Stop-loss order: A stop-loss order instructs that a stock be bought or sold when it reaches a specified price known as the stop price.

SelfAssessment

1. Rho measures

A. Measures expected to change in an option's price per one percentage point change in interest rates

B. Measures how the implied volatility of a stock affects the price of the options on that stock.

C. Measures the change in the price of an option for a one-day decrease in its time to expiration.

D. Measures the degree to which an option is exposed to shifts in the price of the underlying asset

2. Delta measures

A. Measures expected to change in an option's price per one percentage point change in interest rates

B. Measures how the implied volatility of a stock affects the price of the options on that stock.

C. Measures the change in the price of an option for a one-day decrease in its time to expiration.

D. Measures the degree to which an option is exposed to shifts in the price of the underlying asset

3. Theta measures

A. Measures expected change in an option's price per one percentage point change in interest rates

B. Measures how the implied volatility of a stock affects the price of the options on that stock.

C. Measures the change in the price of an option for a one-day decrease in its time to expiration.

D. Measures the degree to which an option is exposed to shifts in the price of the underlying asset

4. Gamma measures

A. Measures expected change in an option's price per one percentage point change in interest rates

B. Measures how the implied volatility of a stock affects the price of the options on that stock.

C. Measures the change in the price of an option for a one-day decrease in its time to expiration.

D. Measures the degree to which an option is exposed to shifts in the price of the underlying asset

5. Vega measures

A. Measures expected change in an option's price per one percentage point change in interest rates

B. Measures how the implied volatility of a stock affects the price of the options on that stock.

C. Measures the change in the price of an option for a one-day decrease in its time to expiration.

D. Measures the degree to which an option is exposed to shifts in the price of the underlying asset

6. Call has a ---------- delta and Put has a ---------- delta

A. Positive, Negative

B. Negative, Positive

C. Both of the above

D. None of the above

7. As the underlying moves away from the strike price, the gamma ----------. As the underlying moves towards the strike price, the gamma ----------.

A. Decrease, Increases

B. Increases, Decrease

C. Both of the above

D. None of the above

8. An option's profitability ---------- as time goes on.

A. Increases

B. Decreases

C. Both of the above

D. None of the above

9. The value of the longer-term option is ----------since there is a greater chance or more time that the option could move beyond the strike price.

A. Higher

B. Lower

C. Will not react

D. Not Applicable

10. Long options have a ---------- Vega and short options have a negative vega.

A. Positive, Negative

B. Negative, Positive

C. Both of the above
D. None of the above

11. ----------volatility generally means a higher extrinsic value priced into the premium of an option.
A. Higher
B. Lower
C. No Impact
D. Not Applicable

12. Delta neutrality means that the small change in price of the underlying would have no impact on the value of the portfolio.
A. True
B. False

13. When the option is near or at the money, gamma is at its lowest.
A. True
B. False

14. Implied volatility refers to the expected volatility of the underlying asset.
A. True
B. False

15. A higher IV means there is more uncertainty around the price of the stock.
A. True
B. False

Answers for SelfAssessment

1.	A	2.	D	3.	C	4.	D	5.	B
6.	A	7.	A	8.	B	9.	A	10.	A
11.	A	12.	True	13.	False	14.	True	15.	True

Review Questions

- What do you mean by option Greeks?
- Enumerate the various types of option Greeks.
- What do you mean by stop loss order?
- Elaborate on concept of value at risk and its methods.

Further Readings

- Security Analysis and Portfolio Management By K Sasidharan& Alex K
- Mathews, Mcgraw Hill Education
- Security Analysis And Portfolio Management By Pandian, Punithavathy, Vikas

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Dr. Mahesh Kumar Sarva, Lovely Professional University

Unit 19:Regulatory Framework in Investments

CONTENTS

Objectives

- understand the role of SEBI in the capital market.
- understand the role of AMFI in the capital market.
- analyze the objectives of AMFI.
- analyze objectivesand organization of PFRDA.

Introduction

The Securities and Exchange Board of India (frequently abbreviated SEBI) is the regulator ofthe securities market in India. The Securities and Exchange Board of India is the regulatory body for the securities and commodity market in India under the ownership of the Ministry of Finance, Government of India. It was established on 12 April 1988 as an executive body and was given statutory powers on 30 January 1992 through the SEBI Act, 1992.

Stock Market Regulation was a pre-Independence Phenomenon. There Existed a Defense rule of India in 1943 to check the flow of capital into the production of essential commodities during World War Two.These were continued after the war and resulted inthe Capital Issue Control Act, of 1947. This rulewas inadequate in changing the market situation so it resulted in Company Act,1956 and SCRA,1956.

SEBI established in 1988 get statutory recognition in 1992. With Head Quarter in Mumbai, it has Northern, Eastern, Southern, and Western regional offices in New Delhi, Kolkata, Chennai and Mumbai.

19.1 Purpose and Aim

The Preamble of the Securities and Exchange Board of India describes the basic functions of the Securities and Exchange Board of India as-

- To protect the interests of investors.
- To promote the development of the securities market.
- To regulate the securities market.

Organization & Management

- one member from amongst the officials of the Reserve Bank
- two members from amongst the officials of the Ministry] of the Central Government dealing with Finance and administration of the Companies Act, 1956(1 of 1956)
- five other members of whom at least three shall be the whole-time members to be appointed by the Central Government.

It is divided into various departments –

a. Primary Market Department
b. Issue Management and Intermediate Department
c. Secondary Market Department
d. Institutional Investment Department

19.2 Functions of SEBI

Regulatory function

a. Registration of brokers and sub-brokers and other players in the market
b. Registration of collective investments schemes and Mutual Funds
c. Prohibition of all fraudulent and unfair trade practices.
d. Controlling Insider Trading and takeover bids and imposing penalties for such practices.

Development Functions

a. InvestorEducation
b. Training of intermediaries
c. Promotion of fair practices and Code of conduct for all S.R.O.s.
d. Conducting Research and Publishing information useful to all market participants.

Powers of SEBI

i. Quasi-Judicial: SEBI has the authority to deliver judgments related to fraud and other unethical practices in terms of the securities market. This helps to ensure fairness, transparency, and accountability in the securities market.

ii. Quasi-Executive: SEBI is empowered to implement the regulations and judgments made and to take legal action against the violators. It is also authorized to inspect Books of accounts and other documents if it comes across any violation of the regulations.

iii. Quasi-Legislative: SEBI reserves the right to frame rules and regulations to protect the interests of the investors. Some of its regulations consist of insider trading regulations, listing obligations, and disclosure requirements.

These have been formulated to keep malpractices at bay. Despite the powers, the results of SEBI's functions still have to go through the Securities Appellate Tribunal and the Supreme Court of India.

Conclusion

- SEBI plays an important role in regulating all the players operating in the Indian capital market.

- It attempts to protect the interest of investors and aims at developing the capital markets by enforcing various rules and regulations.

19.3 Role of the Association of Mutual Funds

The Indian mutual fund industry has grown by leaps and bounds in the last few years. As per the latest figure, the Indian mutual fund segment has assets under management of Rs.3.80 trillion or close to $500 billion. There is a total of 9.78 crore mutual fund folios in India of which SIP folios are close to 5 crores. MFs have emerged as an important intermediary.

When it comes to investing, there are several cases wherein the channelization of savings into mutual funds does not happen properly. That is because either the investor's money is misused or the product is mis-sold to the end customer, defeating the purpose of investor education. For such investor disputes or queries, the AMFI helps protect investor interest.

While Mutual Funds in India started in 1963 by an Act of Parliament, it was only 30 years later (in 1993) that private sector Mutual Funds came into India and the industry opened up.

As the Mutual Fund industry was expanding, there was a need to develop the market on professional and ethical lines, additionally, there was also a need to maintain standards to protect the interests of investors and Mutual Funds.

19.4 Objectives

- To define and maintain high professional and ethical standards in all areas of operation of the mutual fund industry.
- To recommend and promote best business practices and code of conduct to be followed by members and others engaged in the activities of mutual fund and asset management including agencies connected or involved in the field of capital markets and financial services.
- To interact with the Securities and Exchange Board of India (SEBI) and to represent SEBI on all matters concerning the mutual fund industry.
- To represent the Government, Reserve Bank of India, and other bodies on all matters relating to the Mutual Fund Industry.
- To undertake nationwide investor awareness programs as to promote understanding of the concept and working of mutual funds.
- To disseminate information on Mutual Fund Industry and to undertake studies and research directly and/or in association with other bodies.
- To take regulate the conduct of distributors including disciplinary actions (cancellation of ARN) for violations of the Code of Conduct.
- To protect the interest of investors/unit holders.

AMFI has a lot of committees to ensure it progresses on each of its objectives. Some of the prominent committees are:

a. Committee on Valuation
b. Committee on Operations & Compliance
c. Committee on Registration of Certified Distributors
d. Committee on Financial Literacy.

19.5 ARNWhat is AMFI Registration Number or ARN?

AMFI Registration Number (ARN) is a unique number assigned to mutual fund agents, distributors, and brokers. Only those whom clear NISM Certification can get one.

AMFI issues ARN ID cards to companies and individuals engaged in mutual fund trading. Remember, the NISM certificate is valid only for three years. It entailsthename of the AMC, a photo

of the cardholder, the ARN number, the address of the corporate, and validity (three years). Therefore, it is easier for investors to cross-check.

How and why must Intermediaries Take AMFI Registration?

Intermediaries are the backbone of the mutual fund industry in India. They play a significant role in establishing and nurturing the mutual fund cult in India.

To ensure that individual agents, brokers, and other intermediaries carry out MF selling with ethics and transparency, AMFI ARN registration is mandatory in India.

- The minimum age for obtaining ARN (AMFI Registration Number) is 18 years
- Getting an ARN number is essential for agents and advisors to get in touch with the AMC for empanelment as agents/advisors for mutual fund schemes.
- The ARN is like a license number for selling mutual funds and indicates that you are eligible to engage in mutual fund selling and advising.
- In the case of senior citizens, they are required to clear the Continuing Professional Education (CPE) test to get ARN.
- AMFI issues ARN certification only upon clearing the National Institute of Securities Market (NISM) certificate, which is valid for 3 years.

Can You Sell Mutual Funds Without the ARN, and can ARN be Withdrawn?

If a fund manager, broker, or agent wishes to market mutual funds, they must first obtain an AMFI permit, granting them a unique AMFI registration number or ARN. The AMFI ARN certifies that a company is qualified to market mutual funds.

No one may sell or suggest mutual funds to investors without an ARN license. AMFI can revoke the ARN license in one of three scenarios.

- If a violation of the code of conduct has occurred,
- If the registered entity is found guilty of a major crime

A negligence case is filed, and a consumer court upholds it.

- The sole purpose of AMFI is to work for the benefit of investors by offering them transparency in mutual fund practices.
- AMFI plays a key role in restoring the faith of the investors in case they face any issues in the Indian Mutual Fund Industry, including key disputes. AMFI works under the guidance of SEBI.

19.6 PFRDA

PFRDA Purpose

Initially, the PFRDA (Pension Fund Regulatory and Development Authority) was launched only for the Government employees of the country. In the later stage, the services were extended to all the citizens of India, including the Non-Resident Indians (NRIs) and the self-employed citizens.

The main agenda behind the PFRDA launch was to promote, expand, and regulate the pension industry in India. The Pension Fund Regulatory and Development Authority (PFRDA) is an organization under the Ministry of Finance to promote old age income security by establishing, developing, regulating pension funds, and protecting subscribers' interests in pension funds schemes and for matters connected therewith or incidental thereto.

Functions of PFRDA

Headquartered in New Delhi, the PFRDA also regulates and administers the National Pension Scheme (NPS) and the Atal Pension Yojana (APY) schemes

Here are some critical functions related (to PFRDA)-

- To protect pension fund subscriber's interest
- Promote, Regulate, and Develop pension funds

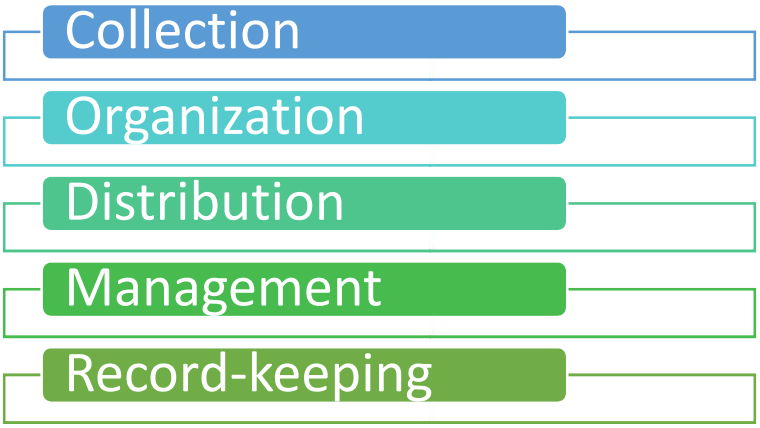
- Tier-I and Tier-II of the National Pension Scheme are governed under the PFRDA
- To promote the purchase of pension schemes in order to cater to senior citizen's financial needs
- PFRDA helps in educating citizens about the importance of pensions in old age
- Addresses any grievances related to pension schemes
- Resolves disputes between various intermediaries
- Train and inform intermediaries about the pension schemes and their functioning

Members of PFRDA

- It consists of a chairperson and six members.
- Out of 6 members, at least three shall be whole-time members.
- Members are appointed by the Central Government.

Intermediaries of PFRDA

The PFRDA appoints different intermediaries to carry out various purposes like,



19.7 National Pension Scheme

What Is the National Pension Scheme (NPS)?

- It is a social security initiative by the Central Government.
- This pension program is open to employees from the public, private, and even unorganized sectors except those from the armed forces.
- It encourages people to put money into a pension account at regular periods during their working lives.
- Subscribers can withdraw a set amount of the corpus after they retire. After retirement, an NPS account holder will receive the leftover amount as a monthly pension.
- For anyone who works in the private sector and needs a monthly pension after retirement, the NPS system is invaluable.
- The scheme is portable across jobs and locations, with tax benefits under Section 80C and Section 80CCD.

NPS Benefits

- NPS offers returns higher than traditional instruments like the PPF (Public Provident Fund).
- It offers many investment options to subscribers who also have a say in where their funds are invested.
- The NPS reduces the retirement liabilities of the government.

- If the subscriber has been investing for at least three years, he/she can withdraw up to 25% for certain purposes before retirement (age 60).
- This withdrawal can be made up to 3 times with a gap of at least 5 years between each withdrawal. These restrictions are only for tier I and not tier II accounts.
- The entire amount cannot be withdrawn by the account-holder on retirement [Changes to be introduced].
- As of April 2021, 60% can be withdrawn, which has now been made tax-free. The rest, 40%, has to be kept aside so that the subscriber can receive a regular pension from an insurance firm.

19.8 Atal Pension Yojana

What Is Atal Pension Yojana?

- It is a pension plan intended mostly for unorganized workers such as maids, gardeners, and delivery boys.
- The former SwavalambanYojana, which was not well received by the public, was replaced by this scheme.
- Its goal is to ensure that no Indian person, regardless of age, has to worry about illness, accidents, or diseases, providing a sense of security.
- Employees in the private sector or those who work for a company that does not offer a pension plan can also apply for the scheme.
- There is an option of getting a fixed pension of Rs 1000, Rs 2000, Rs 3000, Rs 4000, or Rs 5000 upon attaining the age of 60.
- The pension will be determined based on the individual's age and the contribution amount.
- The contributor's spouse can claim the pension upon the contributor's death. Upon the contributor's death and his/her spouse, the nominee will be given the accumulated corpus.

The passing of the PFRDA Bill at the end of 2013 has empowered the PFRDA with the necessary statutory authority to supervise and monitor the institutions of the NPS. Such a regulator can build trust in the system by ensuring that the interests of the NPS customers are the primary focus.

PFRDA can also set the next step of policy initiatives in motion to ensure increased coverage of the wider informal workforce. With this, the NPS will move the country closer to providing social and income security for citizens in their old age.

19.9 Reserve Bank of India

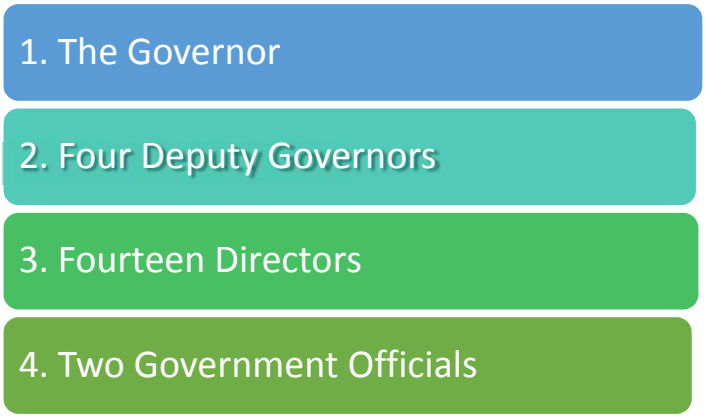
History

The origin of this central bank goes back to the British Era. In 1926, the Royal Commission of Indian Currency and Finance, also known as the Hilton Young Commission, recommended the creation of a Central Bank in erstwhile British India. Based on these recommendations, a bill was introduced in the Legislative Assembly but was withdrawn due to a lack of consensus between different sections. Then due to the recommendations of boththe Indian Central Banking Enquiry Committee in 1931 and the White Paper on Indian Constitutional Reforms in 1933, the issue was revived.

This resulted in the introduction of a new bill, which was passed through the Legislative assembly and received the Governor General's assent on 5th March 1934. The Act, called the Reserve Bank of India Act, 1934 (II of 1934), forms the statutory basis for establishing the central bank. It commenced operations as India's Central Bank on 1st April 1934. Also, it was set up as a private shareholder's bank before being nationalized in 1949 under the Reserve Bank (Transfer of Ownership) Act, 1948.

Originally headquartered in Kolkata (then Calcutta), it shifted its base to Mumbai (then Bombay) in 1937, from where it currently operates and functions. Organizational Structure of the Bank. The organizational structure of the Central Bank of India, the Reserve Bank, is as follows:The main

managing authority of the bank is the Central Board of Directors, which consists of the following 21 members–



Among these, the Governor and the Deputy Governors are appointed by the Central Government for a maximum period of five years, and the fourteen Directors, four of which are nominated from each of the four Local Boards, in accordance with the RBI Act, for a period of maximum four years, but can be re-elected.

- The Deputy Governors are responsible for specific operations of the bank. The RBI also consists of Local Boards responsible for region-specific control and monitoring.
- These are Western headquarters in New Delhi, Divided into four parts – Northern, Southern, Eastern Chennai, Kolkata, and Mumbai, respectively. These Local Boards consist of five members with a Chairman.

Functions Of RBI

Issue of Currency

- To ensure adequate quantity of supplies of currency notes and coins of good quality.
- Issues new currency and destroy currency and coins not fit for circulation.

- It has to keep in the forms of gold and foreign securities as per statutory rules against notes & coins issued.

Developmental Role

- To develop the quality of the banking system in India. Performs a wide range of promotional functions to support national objectives.
- To establish financial institutions of national importance, e.g., NABARD, IDBI, etc.

Banker to the Government

- Performs all banking functions for the central and the state governments and also acts as their banker, except that of Jammu and Kashmir.
- It makes loans and advances to the States and local authorities.
- It acts as an adviser to the Government on all monetary and banking matters.

Banker To Banks

- Maintains banking accounts of all scheduled banks.
- RBI also regulates the opening /installation of ATM. and supplies fresh currency notes for ATMs.
- RBI regulates the opening of branches by banks. It ensures that all the N.B.F.S follow the Know Your Customer guidelines.
- The Reserve Bank of India also regulates the trade of gold.
- Collection and publication of data. At issues guidelines and directives for the commercial banks

Role of RBI in Inflation Control

- Inflation arises when the demand increases and there is a shortage of supply. There are two policies in the hands of the RBI.
- Monetary Policy: It includes the interest rates. When the bank increases the interest rates, there is a reduction in the borrowers, and people try to save more as the interest rate has increased.
- Fiscal Policy: It is related to direct taxes and government spending. When direct taxes increase and government spending increases, then the people's disposable income reduces, hence the demand.

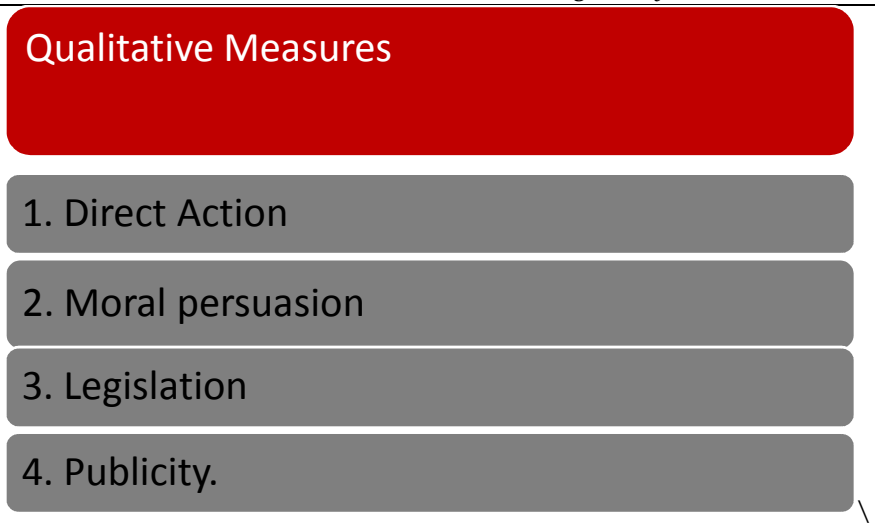
Formulate Monetary Policy

- Maintain price stability and ensurean adequate flow of credit in the economy.
- It formulates, implements, and monitorsmonetary policy.
- Instruments: qualitative & quantitative
- Quantitative Measures “BANK RATE" is also called "Discount Rate."

It also includes "Repo Rate."

"Open Market Operations" buying and selling of government securities.

“Variable Reserve Ratio" includes C.R.R and S.L.R.



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Manager of Foreign Exchange

To facilitate external trade and payment and promote orderly development and maintenance of the foreign exchange market in India.

It acts as a custodian and Manages the Foreign Exchange Management 1999.

RBI buys and sells foreign currency to maintain the exchange rate of the Indian Rupee v/s foreign currencies like the US Dollar, Euro, Pound, and Japanese yen.

Clearing House Functions

The RBI operates clearing houses to settle banking transactions.

The RBI manages 14 major clearing houses in the country situated in different major cities. The State Bank of India and its associates look after clearing houses function in other parts of the country as an agent of RBI.

Regulation of the Banking System

- The reserve Bank's prime duty is to regulate our country's banking system in such a way that the country's people can trust the banking Up to perform its duty.
- The Reserve Bank has the following powers in this regard:
- Licensing: According to section 22 of the Banking Regulation Act, every bank has to obtain a license from the Reserve Bank. The Reserve Bank issues such licenses only to those banks that fulfil the bank's condition.
- Management: Section 10 of the Banking Regulation Act empowered the Reserve Bank to change the manager or director of any bank if it considers it necessary or desirable.
- Branch Expansion: Section 23 requires every bank to take prior permission from the Reserve Bank to open new places of business in India.
- Power of inspection of Bank: Under Section 35, the Reserve Bank may inspect any bank and its books and accounts either at its own initiative or at the instance of the Central Government.

Thus, RBI is the central bank of the country. It is the apex institution of the country's monetary and financial system. It plays a leading role in organizing, running, supervising, regulating, and developing the monetary and financial system.

Summary

The Securities and Exchange Board of India is the regulatory body for the securities and commodity market in India under the ownership of the Ministry of Finance, Government of India. It was established on 12 April 1988 as an executive body and was given statutory powers on 30 January 1992 through the SEBI Act, 1992. The Indian mutual fund industry has grown by leaps and bounds

in the last few years. As per the latest figure, the Indian mutual fund segment has assets under management of Rs.3.80 trillion or close to $500 billion. The reserve Bank's prime duty is to regulate our country's banking system in such a way that the country's people can trust the banking Up to perform its duty.

Keywords

ARN: It is a unique number assigned to mutual fund agents, distributors, and brokers. Only those whom clear NISM Certification can get one.

Monetary Policy: It is the policy with respect to the cost and availability of money in the economy.

Fiscal Policy:It is the policy with respect to government spending revenue and tax in the economy.

Implied volatility: It refers to the expected volatility of the underlying asset

SelfAssessment

1. SEBI established in 1988 get statutory recognition in----------.

A. 1992

B. 1991

C. 1990

D. 1989

2. AMFI, the association of all the Asset Management Companies of SEBI registered mutual funds in India, was incorporated on August 22, ----------.

A. 1992

B. 1995

C. 1990

D. 1989

3. ---------- is a unique number assigned to mutual fund agents, distributors, and brokers. Only those whom clear NISM Certification can get one.

A. ARN

B. GRN

C. PRN

D. SRN

4. The Central Bank of India was established on "1st April ----------".

A. 1930

B. 1935.

C. 1920.

D. 1960

5. The Governor and the Deputy Governors are appointed by the Central Government for a maximum period of ---------- years.

A. 5

B. 3

C. 2

D. 1

6. Inflation arises when the demand increases---------- and there is a shortage of ----------.

A. Increases, Decreases

B. Decreases, Increases

C. Both of the above

D. None of the above

7. Fiscal Policy is related to direct taxes and government spending.

A. True

B. False

C. Both of the above

D. None of the above

8. Monetary Policy is related to the availability and cost of funds.

A. True

B. False

C. Both of the above

D. None of the above

9. ---------- controls the banking system of India.

A. RBI

B. DHFI

C. LIC

D. Not Applicable

10. ---------- controls the mutual funds in India.

A. RBI

B. AMFI

C. Both of the above

D. None of the above

11. ---------- controls the financial market in India.

A. AMFI

B. SEBI

C. LIC

D. Not Applicable

True/False

12. Monetary policy maintains price stability and ensures an adequate flow of credit in the economy.

A. True

B. False

13. Fiscal Policyis related to direct taxes and government spending.

A. True

B. False

14 AMFI regulates the insurance business in India.

A. True

B. False

15. PFRDA control insurance business in India.

A. True

B. False

Answers for Self Assessment

1.	A	2.	B	3.	A	4.	B	5.	A
6.	A	7.	A	8.	A	9.	A	10.	B
11.	B	12.	True	13.	True	14.	False	15.	False

Review Questions

What are the entities with respect to the financial market regulation of the economy?

Enumerate the functions of SEBI in the economy.

Enumerate the functions of AMFI in the economy.

Elaborate the difference in monetary and fiscal policy.

Further Readings

- Security Analysis And Portfolio Management By K Sasidharan& Alex K
- Mathews, Mcgraw Hill Education
- Security Analysis And Portfolio Management By Pandian, Punithavathy, Vikas Publishing House.

Web Links

- https://www.clearias.com/functions-of-rbi/
- https://www.fisdom.com/what-is-amfi-how-does-it-function/
- https://www.careerlauncher.com/rbi-grade-b/functions-of-rbi/
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Unit 20:Contemporary Issues

CONTENTS

Objectives

- understand the meaning & significance of financial technology,
- interpret the practical implications and challenges of algo trading.
- understand the meaning and working of robo-advisors.
- analyze the benefits and disadvantages of high-frequency trade.

Introduction:

Fintech is a portmanteau of the terms "finance" and "technology" and refers to any business that uses technology to enhance or automate financial services and processes. That is "New financial industry that applies technology to improve financial activities." The term encompasses a rapidly growing industry that serves the interests of both consumers and businesses in multiple ways.

Automation and financial deregulation have changed the way of doing transactions in financial markets. It has made the system more transparent and cost-effective. When a person startsa new business, he analyzes the competitive advantage for future growth and survival. For the person in the securities, market this competitive advantage can be a good trading strategy the as, the latest technologies, infrastructure, research, and risk management tools. Algorithmic trading is one of the tools of competitive advantage for the person in the securities mark. A setinstructionis placed automatically in trading decisions in algorithm trade.

20.1 Fintech

Brief History

While fintech seems like a recent series of technological breakthroughs, the basic concept has existed for some time. Early credit cards in the 1950s generally represent the first fintech products available to the public, in that they eliminated the need for consumers to carry physical currency in their day-to-day lives.From there, fintech evolved to include bank mainframes and online stock trading services. In 1998, PayPal was founded, representing one of the first fintech companies to operate primarily on the internet — a breakthrough that has been further revolutionized by mobile technology, social media, and data encryption.

This fintech revolution has led to the mobile payment apps, blockchain networks, and social media-housed payment options we regularly use today.

How Does Fintech Work?

Broadly speaking, fintech strives to streamline the transaction process, eliminating potentially unnecessary steps for all involved parties. For example, a mobile service like Venmo or CashApp allows you to pay other people at any time of day, sending funds directly to their desired bank account.

Modern fintech is primarily driven by AI, big data, and blockchain technology — all of which have completely redefined how companies transfer, store, and protect the digital currency.

Specifically, AI can provide valuable insights on consumer behavior and spending habits for businesses, allowing them to better understand their customers.Big data analytics can help companies predict changes in the market and create new, data-driven business strategies. Blockchain, a newer technology within finance, allows for decentralized transactions without inputs from a third party; tapping a network of blockchain participants to oversee potential changes or additions to encrypted data.

Typical Fintech Users

Business-to-Business (B2B)

Fintech is used by businesses to obtain loans, financing and other financial services through smartphones. Additionally, cloud-based platforms and customer relationship management services like Salesforce provide enterprise-oriented services that allow companies to access and manage financial data, with B2B-focused cross-border payments startups like Airwallex catering to businesses' international transfer needs.

Business-to-Consumer (B2C)

Fintech is used in several B2C applications like PayPal, Venmo, and Apple Pay, which allow users to transfer money through the Internet. Budgeting apps like Mint allow users to track their finances. In a third category, companies like Zhong An Insurance and Lufax provide services like insurance and credit digitally.

Application of Fintech

Though the industry conjures up images of startups and industry-changing technology, traditional companies and banks are also constantly adopting fintech services for their own purposes.

Here's a quick look at how the industry is both disrupting and enhancing some areas of finance.

Banking

Mobile banking is a large part of the fintech industry. In the world of personal finance, consumers have increasingly demanded easy digital access to their bank accounts, especially on mobile devices. Most major banks now offer some kind of mobile banking feature, especially with the rise of digital-first banks, or "Neobanks".Neobanks are essentially banks without any physical branch locations, serving customers with checking, savings, payment services, and loans on completely mobile and digital infrastructure.

Cryptocurrency & Blockchain

Running parallel to fintech is the birth of cryptocurrency and blockchain. Blockchain is the technology that allows cryptocurrency mining and marketplaces to exist, while advancements in cryptocurrency technology can be attributed to both blockchain and fintech.Though blockchain and cryptocurrency are unique technologies that can be considered outside the realm of fintech, in theory, both are necessary to create practical applications that move fintech forward.

Investment & Savings

Fintech has caused an explosion in the number of investing and savings apps in recent years. While these apps differ in approach, each uses a combination of savings and automated small-dollar investing methods, such as instant round-up deposits on purchases, to introduce consumers to the markets.

Machine Learning & Trading

Being able to predict where markets are headed is the Holy Grail of finance. With billions of dollars to be made, it's no surprise machine learning has played an increasingly important role in fintech.

The power of this AI subset lies in its ability to run massive amounts of data through algorithms designed to spot trends and risks, allowing consumers, companies, banks, and additional organizations to have a more informed understanding of investment and purchasing risks earlier on in the process.

Heard of a bot assisting you via telephonic IVR or guiding you on a website for what you want on the website or from the company? Yes, they are bots, in short, that do Robo-advising for customers. In effect, Robo-advising has increased portfolio management's efficiency while also cutting costs.

Financial advisers may now evaluate many portfolio possibilities more quickly and efficiently, 24 hours a day, seven days a week. There is nothing as surprising as seeing that a large number of Robo-advice providers have suddenly started to offer services.

Robo-advising provides algorithm-based asset management recommendations and portfolio management at a lower cost than an individual would face as compared to working with a traditional wealth manager.

While some investors may still prefer the face-to-face experience when it comes to managing their wealth, many people–particularly younger people investing smaller amounts–are willing to experiment with robo-advisory.

Payments

In the last few years, use of mobile payment apps like Apple Pay, Alipay, and Paytm has increased exponentially. All these apps use sophisticated financial technology, and in some cases their adoption was accelerated by external circumstances.

For example, India-based Paytm and other cashless payment operators achieved phenomenal growth after the government invalidated over 80% of the cash in circulation in a move known as 'demonetization.'

Lending

Fintech is also overhauling credit by streamlining risk assessment, speeding up approval processes, and making access easier. Billions of people around the world can now apply for a loan on their mobile devices, and new data points and risk modeling capabilities are expanding credit to underserved populations. Additionally, consumers can request credit reports multiple times a year without dinging their score, making the entire backend of the lending world more transparent for everyone.

Insurance

While insurance is quickly becoming its own industry, it still falls under the umbrella of fintech. Insurance is a somewhat slow adopter of technology, and many fintech startups are partnering with traditional insurance companies to help automate processes and expand coverage. From mobile car insurance to wearables for health insurance, the industry is staring down tons of innovation.

Advantages of Fintech

The rapid development of Fintech is also helping to bring new opportunities to increase transparency, reduce costs, and also make information more accessible.

- Savings: Not only for companies that are avoiding the hiring of local rental staff the operating costs are reduced exponentially.
- Flexibility: Allows you to save information, and query data in different alternatives that you could not previously, it also gives you the flexibility to be able to do it anywhere, anytime.
- Transparency: Companies can manage in a transparent and fast way. All in one click on your home community from a computer.
- Customer services & revenue: Fintech improves the quality of traditional financial institutions by increasing efficiency and productivity. Furthermore, by delivering better and more contemporary services, firms' client retention rates are certain to rise, resulting in increased revenues.

- Efficiency: This is an unsaid benefit of fintech technology that it can offer efficiency with all other obvious benefits. Fintech is known for adding efficiency to the process. Automation doesn't involve humans and hence automation offers a high level of specialization. As a result, it has a high degree of efficiency and service quality.

Disadvantages of Fintech

Security: Data that is available online can easily be stolen by third parties. they could be used for lucrative purposes or even for identity theft.

Compliance with government regulations: Finance is one of the most regulated sectors. There will always be interference from the government even if you leverage the traditional Fintech software that doesn't use blockchain and other crucial technologies.

It can ruin privacy: Current fintech often only works because it strongly digitizes our way. When you use an app like Uber or book Airbnb, you create extensive knowledge. At an even more essential level, those who have a way to your financial information can also get a picture of your actions.

Lack of Mobile and Tech Expertise: In the fintech industry, some of the finance companies or banks don't have proper or convenient mobile banking services. However, some banks try to replicate websites, but in this digital world, nobody would prefer a mobile application. Every user wants a seamless and convenient option to use.

However, there are many challenges we face and yet to overcome in the FinTech industry. Regulations and various government policies are challenging for fintech companies. However, we should always keep a balance between new technologies and compliance with the traditional system in order to disrupt the financial industry.

Although, it's not easy to adopt new trends and technologies. But with time, mobile technologies will become even more common in the financial sector, as they're impactful and convenient for people while helping to work more efficiently.

Fintech, the application of digital technology to financial services, is reshaping the future of finance– a process that the COVID-19 pandemic has accelerated. The ongoing digitization of financial services and money creates opportunities to build more inclusive and efficient financial services and promote economic development.

Fintech is transforming the financial sector landscape rapidly and is blurring the boundaries of both financial firms and the financial sector.

20.2 Algorithmic Trading

In conventional broking, humans analyze data, and reports and decide when to buy and sell. Today computers can analyze data based on programs by which they can automatically buy and sell. Algorithmic trading uses a defined set of instructions to generate trading signals and place the order in an automated way. It is a combination of human intelligence and artificial intelligence to place orders in an automated manner. That is, it uses the mathematical model and after analysisconverts, it intoa set of instructions for intelligent trading decisions.

Algorithmic trading initially entered stock markets in 1980 and today it has taken 70 percent of trading volume in developed markets.Algorithmic trading was introduced and allowed in India in 2008 by the Securities and Exchange Board of India (SEBI).

Initially, it started with Direct Market Access (DMA) which was restricted to institutional investors only, but due to the cost advantage and better execution, the trading community adopted it.Exchanges also played an important role in the adoption of algorithmic trading by offering co-location server 'racks' on lease to broking firms in June 2010. The leasing out of server racks helped the brokers to improve trading speed and align with international markets.

In today's time, most of the leading brokerages as Citi, Merrill Lynch, Morgan Stanley, JP Morgan, Goldman Sachs, CLSA, and Deutsche Equities have their DMA software to synchronize it with the systems at the stock exchange.

How Does Algorithmic Trading Work?

- Algorithmic trading, also known as algo trading, is an advanced technique that works on advanced coding and formula and is based on a mathematical model.

- ,Unlike conventional trading methods, this process is fully automated.
- The human brains develop codes to instruct systems to make situation-driven decisions.
- The mathematical models and algorithms are so created that computerized devices efficiently assess market situations.
- For example, as per the automated analysis, traders open-close or enter-exit trades.
- Investors widely use algo trading in scalping as it involves rapid purchasing and selling of assets to earn quick profits out of small increments at the prices.
- As a result, traders can participate in multiple trades throughout the day and reap profits with the quick execution of the trades.

Strategies

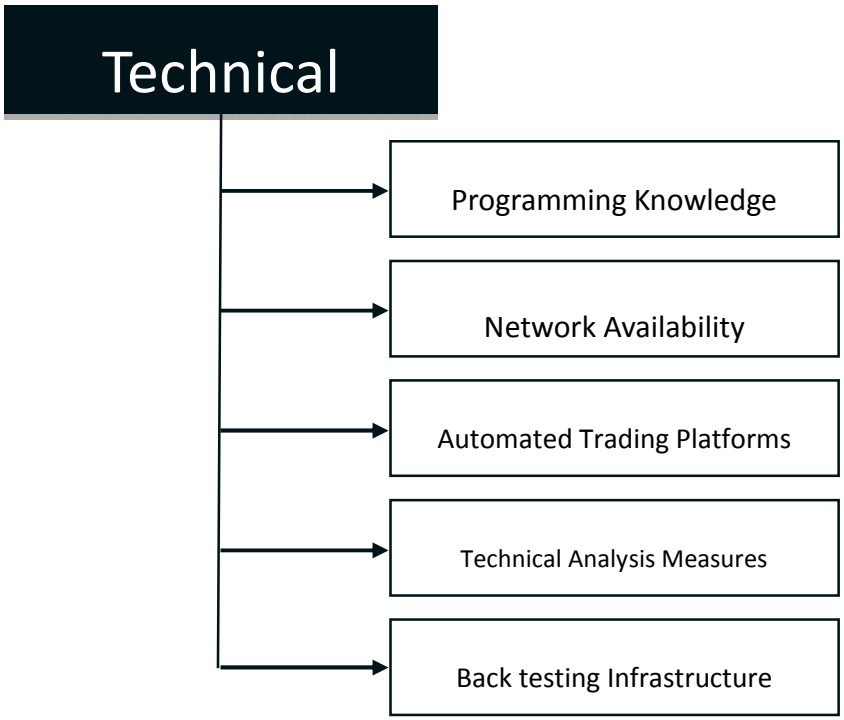
- Algorithm trading includes various strategies based on which the developers develop coded instructions and make the algorithm work reliably.
- Some of the algorithmic trading strategies are as follows:
- **Trend Detection**
    - The first strategy on the list that drives algo trading is trend identification.
    - The codes help analyze market trends depending on the price, support, resistance, volume, and other factors influencing investment decisions.
    - As the algorithms work on technology and formula, it is more likely for the automated systems to identify accurate trends.
- **Mean Reversion**
    - It is the method that monitors the average highs and lows of a stock, helping investors decide whether to spend on a company's stock or not.
    - Based on the average fluctuations in the prices, the software determines the price that is most likely to drive the stocks at a particular trade.
    - When the prices are expected to rise, the deal could be booked. On the other hand, if the market prices fluctuate beyond the average level, such stocks are considered less trustworthy.
- **Arbitrage**
    - The automated trading facility gives investors arbitrage opportunities.
    - Arbitrage involves purchasing dual-listed security.
    - An investor can buy stock in one market at a lower price and sell the same at a higher rate in another market simultaneously with speedy execution of trades.
- **Index Fund Rebalancing**
    - The index fund portfolios undergo frequent changes, given the price fluctuations of the underlying assets.
    - This rebalancing helps traders operate via algo trading to book deals for better returns.
    - In short, the changing portfolios help investors get stocks at the right time and the best prices with lower transaction costs.
- **Mathematical Model:**
    - Investors use proven mathematical models to simultaneously trade on the same underlying asset's stock and derivative.

- Since it can be a complex set of transactions, they use algorithmic trading to identify such assets and execute orders among various asset classes based on price fluctuations.

- **Volume Weighted Average Price:**
  - Investors aim to execute their orders as close as possible to the volume-weighted average price.
  - Algorithmic trading allows the investors to break up big order volumes into dynamically smaller chunks and ensure the closing price goals are achieved.
- **Time Weighted Average Price:**
- This type of strategy also breaks up big order volumes into dynamically smaller chunks.
- However, investors use divided time slots between the start and end time to execute the strategy through algorithmic trading.
- The aim is to minimize the market impact by executing an order as close as possible to the average price between the start and the end time.

Components

- For algorithmic trading to work, there needs to be a human brain and proper hardware and software infrastructure
- For algorithms to work as coded instructions, one needs to have complete knowledge of programming knowledge. The human brains with programming skills are the best source of developing such coded instructions for algo trading with if-else and other clauses.



How Is An Algorithm Made?

- The initial step in the algo making is to clear on what strategy should be taken.
- The second step is to determine statistical significance of strategy based on market view.

- The third step is to make code or instructions based on logic to generate buy/sell signal in the strategy.
- The fourth stage is to decide whether the instructions will be quote based or hitting based.
- The last step in making of algorithm is back testing & optimization.

Example 1

- Suppose a trader follows a trading criterion that always purchases 100 shares whenever the stock price moves beyond and above the double exponential moving average.
- Simultaneously, it places a sell order when the stock price goes below the double exponential moving average.
- Moving Average (MA), commonly used in capital markets, can be defined as a succession of mean that is derived from a successive period of numbers or values and the same would be calculated continually as the new data is available.
- This can be a lagging or trend-following indicator as this would be based on previous numbers.
- The trader can hire a computer programmer who can understand the concept of the double exponential moving average.
- The programmer develops a computer code to perform trading activities based on the above two instructions. The computer program is so dynamic that it can monitor the live prices of the financial markets and, in turn, trigger activities as per the above instructions. It saves the trader's time as they don't have to go to the trading platforms to monitor prices, and place the trading orders.

Examples 2

- The flash crash of 2010 is an example of algorithm trading. There was an immediate placement of sell orders for securities in this crisis. There were also fast withdrawals of trade orders for deposits and high-frequency trades.
- The regulatory authorities later placed circuit breakers to prevent a flash crash in the financial markets. They also prevented algo-trades from having direct access to the exchanges.

Examples 3

Royal Dutch Shell (RDS) is listed on the Amsterdam Stock Exchange (AEX) and London Stock Exchange (LSE). We start by building an algorithm to identify arbitrage opportunities.

Here are a few interesting observations:

- AEX trades in euros while LSE trades in the British pound sterling.
- Due to the one-hour time difference, AEX opens an hour earlier than LSE followed by both exchanges trading simultaneously for the next few hours and then trading only in LSE during the last hour as AEX closes.
- Can we explore the possibility of arbitrage trading on the Royal Dutch Shell stock listed on these two markets in two different currencies?

Requirements:

- A computer program that can read current market prices.
- Price feeds from both LSE and AEX.
- A forex (foreign exchange) rate feed for GBP-EUR.
- Order-placing capability that can route the order to the correct exchange.
- Backtesting capability on historical price feeds.

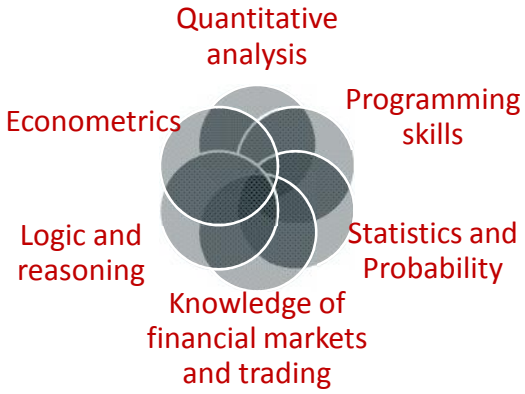
The computer program should perform the following:

- Read the incoming price feed of RDS stock from both exchanges.
- Using the available foreign exchange rates, convert the price of one currency to the other.

- If there is a large enough price discrepancy (discounting the brokerage costs) leading to a profitable opportunity, then the program should place the buy order on the lower-priced exchange and sell the order on the higher-priced exchange.
- If the orders are executed as desired, the arbitrage profit will follow.
- Simple and easy! However, the practice of algorithmic trading is not that simple to maintain and execute. Remember, if one investor can place an algo-generated trade, so can other market participants. Consequently, prices fluctuate in milli- and even microseconds
- There are additional risks and challenges such as system failure risks, network connectivity errors, time-lags between trade orders and execution and, most important of all, imperfect algorithms. The more complex an algorithm, the more stringent backtesting is needed before it is put into action.

Skill Sets for Algorithmic Trader

Skill sets required to become an algorithmic trader, which go as follows:



Benefits

- One of the advantages of algo trading is that there is no time lag as soon as signal is generated order is executed. In case of manual transaction there is time lag between signal generation and execution.
- The speed of execution is faster than human intervention.
- Human Emotions are not involved. Once instruction given algo will follow the instruction blindly which is difficult to execute with human intervention.

Challenges

- Knowledge of programming is needed to give set of instructions.
- Skills and technology used in algo trading is costly and complex. This is the reason algo trading was mostly used by hedge funds and institutions.
- The algo should be first back tested to be sure so that it can be eliminated.
- Retail investor generally avoid any stop loss as they do not want to suffer loss on account of loss aversion phenomenon.
- Algo trading execution is also dependent on legal regulation. In United States algo trading has been used from decades but in India SEBI allowed in 2008.

Future of Algorithmic Trading

The future of algorithmic trading predicts that the resources for algorithmic trading will evolve and become structured and efficient as the market grows.India has a 50-60% penetration of algorithmic trading in the markets but it is also perceived that algorithmic trading in Indian markets will continue to grow.

Also, there are these two predictions for algorithmic trading in India-

It is expected that the equities might contribute $8.61 billion in the algorithmic trading market share in 2027.

The algorithmic trading market can grow at a CAGR of 11.23% between 2021-2026.

Algorithmic trading brings together computer software, and financial markets to open and close trades based on programmed code. Investors and traders can set when they want trades opened or closed. They can also leverage computing power to perform high-frequency trading. With a variety of strategies traders can use, algorithmic trading is prevalent in financial markets today.

Although India was not an early mover in the world of algorithmic trading, its popularity has been on the rise ever since SEBI allowed the usage of advanced technology to be followed by the equity markets.

20.3 Robo-Advisors

Robo-advisors are automated portfolio managers. You can think of them as autopilots for investors. After initially answering a series of questions about your resources and financial goals, the robo-advisor will make ongoing decisions about how to invest your money.

Robo-advisors are automated portfolio managers that use algorithms to offer financial advice. You can think of these apps as autopilots for investors. When you sign up to use one, you will first answer a series of questions about your risk tolerance, financial resources, and goals. Then, the robo-advisor will make ongoing decisions about investing your money and will monitor any changes in the future.

Robo-advisors are software products that can help you manage your investments. It's all done without the need for you to consult a financial advisor or manage your portfolio. Robo-advisors are alternatives to traditional financial advisors, and they're often much more cost-effective. These products are also alternatives to simply picking and choosing investments on your own.

Robo-advisors are digital platforms that provide automated, algorithmic investment services with minimal human supervision.Robo-advisors are often inexpensive and require low opening balances, making them available to retail investors.

They often automate and optimize passive indexing strategies based on modern portfolio theory.They are best suited for traditional investing and are not the best options for more complex issues, such as estate planning.Robo-advisors have been criticized for their lack of empathy and complexity.

Understanding Robo-Advisors

The first robo-advisor, Betterment, launched in 2008, with the initial purpose of rebalancing assets within target-date funds. It sought to help manage passive, buy-and-hold investments through a simple online interface

The technology itself was nothing new. Human wealth managers have been using automated portfolio allocation software since the early 2000s. But until Betterment launched, they were the only ones who could buy the technology, so clients had to employ a financial advisor to benefit from the innovation.

Today, most robo-advisors use passive indexing strategies optimized using some variant of modern portfolio theory (MPT).

Some robo-advisors offer optimized portfolios for socially responsible investing (SRI), Halal investing, or tactical strategies that mimic hedge funds. Additionally, they can handle much more sophisticated tasks, such as tax-loss harvesting, investment selection, and retirement planning.

The industry has experienced explosive growth; client assets managed by robo-advisors reached nearly $1 trillion in 2020, with the expectation of reaching $2.9 trillion worldwide by 2025.

Other common designations for robo-advisors include "automated investment advisor," "automated investment management," and "digital advice platforms." Regardless of the name, it all refers to fintech (financial technology) applications for investment management.

Causes of Evolution & Growth

The rise of the investor class of technology-savvy professionals who preferred digital & automated advice for managing their investments.

High minimum investment amount requirement by the offline advisory firms where the investment decisions are taken after 1on1 interaction between investment manager & the clients. Due to this large number of small investors are unable to avail of the services.

Very high investment advisory fees are charged by financial advisory firms. Compared to them, the robo-financial advisor fee is much lesser.

In many instances, the human decision about market timing & future market movement went wrong. Compared to them, the financial plans based upon complex computational algorithms elicited more trust from the investors.

Characteristics

- 24/7 Accessibility –Robo financial advisors ca
- n be helpful for any investor, no matter the amount of wealth. And being online has the greatest advantage of 24/7 accessibility.
- Low Costs – Without any human interaction, the fees are drastically reduced &robo-advisors are much cheaper than traditional advisors.
- Transparency – Robo investment advisors are transparent regarding fees, trades & portfolios, etc.
- Efficiency – Every change in the portfolio can be instructed efficiently & effectively
- User Experience – Easy & intuitive features allow a comfortable user experience
- Targeting to Small Investors – there are some Robo Advisers who are targeting small investors that are used to digital & are the potential wealthy clients of the future

Robo Advisors in India

Robo advisory in India is not very old & a list of Robo Advisors in India will be short. But this is something that is catching the eyes of a lot of young people nowadays. In the last year or two, quite a few companies have started operations in the robo-advisory space.

At present, there are 39 robo-advisory companies in India according to Tracxn, a data analytics company. Out of 39 fintech companies, ~10 have announced receiving funding in the robo advisory domain. The very early entrant was FundsIndia.com. They have received $15.41 million so far from Foundation Capital, Inventus Capital Partners & Faering Capital. The other robo-advisory companies that have received substantial funding include MyUniverse ($9.7 million) and Scripbox ($3.22 million).

Benefits of Using Robo-Advisors

The main advantage of robo-advisors is that they are low-cost alternatives to traditional advisors. By eliminating human labor, online platforms can offer the same services at a fraction of the cost. Most robo-advisors charge annual flat fees of less than .5% per specific amount managed. It is much less than the typical 1% to 2% charged by a human financial planner (or more for commission-based accounts).

Robo-advisors are also more accessible. You can reach them 24/7 as long as you have an internet connection. Furthermore, it takes significantly less capital to get started, as the minimum assets required to register for an account are typically in the hundreds to thousands ($3,000–$5,000 is a standard baseline). Efficiency is another significant advantage these online platforms have. For instance, before robo-advisors, if you wanted to execute a trade, you'd have to call or physically meet a financial advisor, explain your needs, and wait for them to execute your trades. Now, you can do all of that with the click of a few buttons in the comfort of your home.

On the other hand, using a robo-advisor will limit the options that you can make as an individual investor. For example, you cannot choose which mutual funds or ETFs you are invested in, and you cannot purchase individual stocks or bonds in your account. However, this might be beneficial as buying individual stocks to try and beat the market has been shown repeatedly to produce poor results; on average, ordinary investors often see better results with an indexing strategy.

Shortcomings of Robo-Advisors

The entry of robo-advisors has broken down some of the traditional barriers between the financial services world and average consumers. Because of these online platforms, sound financial planning is now accessible to everyone, not just high-net-worth individuals.

Still, many in the industry have doubts about the viability of digital advisors as a one-size-fits-all solution to wealth management. Given the relative nascency of their technological capabilities and minimal human presence, robo-advisors have been criticized for lacking empathy and sophistication.They are good entry-level tools if you have a small account and limited investment experience. You may find them lacking if you need advanced services like estate planning, complicated tax management, trust fund administration, and retirement planning.

Automated services are also ill-equipped to deal with unexpected crises or extraordinary situations. For example, they will not know if you're in-between jobs or dealing with an unexpected expense—your funds could be drained unexpectedly if you have automatic withdrawals set up for the digital advisor.

Robo-advisors leverage advances in algorithmic trading and electronic markets to automate investment strategies for ordinary investors. Often based on Modern Portfolio Theory (MPT), robo-advisors are able to optimize investors' risk-return tradeoffs and automatically manage and rebalance their portfolios.

Automation also allows for tax-loss harvesting and other strategies that were once too complex or expensive for ordinary investors. With low fees and small minimum balances to get started, robo-advisors are often a good choice for most long-term investors and may be especially attractive to younger, tech-forward individuals.

20.4 High-Frequency Trade

High-frequency trading, also known as HFT, is a method of trading that uses powerful computer programs to transact a large number of orders in fractions of a second. It uses complex algorithms to analyze multiple markets and execute orders based on market conditions. A combination of rapid advances in computing power, improvements in trading algorithms, massive investments in technology, and regulatory leeway has made HFT pervasive in equity markets.

Understanding High-Frequency Trading (HFT)

HFT became popular when exchanges started to offer incentives for companies to add liquidity to the market. For instance, the New York Stock Exchange (NYSE) has a group of liquidity providers called Supplemental Liquidity Providers (SLPs) that attempts to add competition and liquidity for existing quotes on the exchange.

The SLP was introduced following the collapse of Lehman Brothers in 2008 when liquidity was a major concern for investors. As an incentive to companies, the NYSE pays a fee or rebate for providing said liquidity. With millions of transactions per day, this results in a large number of profits.

History of HFT

Interestingly, the phenomenon of 'fast information' delivery goes back to the 17th century.

Here, an interesting anecdote is about Nathan Mayer Rothschild who knew about the victory of the Duke of Wellington over Napoleon at Waterloo before the government of London did. How did that happen?

Well, a simple answer is a combination of "Human Intelligence & Technology"! So it is said that Julius Reuter, the founder of Thomson Reuters, in the 19th century used a combination of technology including telegraph cables and a fleet of carrier pigeons to run a news delivery system. This way, the information reached Julius Reuter much before anyone else.Many years after the 17th century, in 1983 NASDAQ introduced full-fledged electronic trading which prompted computer-based High-Frequency Trading to develop gradually into its advanced stage. In the early 2000s high-frequency trading accounted for less than 10% of equity orders, but this has grown rapidly.By the year 2001, High-Frequency Trading had an execution time of several seconds which kept improving further. Between 2005 and 2009, according to NYSE, high-frequency trading volume grew by 164%.

By 2010, this had shrunk to milliseconds and later in the year went to microseconds. And subsequently, each trade started getting executed within nanoseconds in 2012.

How does High-Frequency Trading work?

High-Frequency Trading is mainly a game of latency (Tick-To-Trade), which basically means how fast your strategy responds to the incoming market data. The "Bleeding Edge" firm actually talks of single-digit microsecond or even sub-microsecond level latency (Ultra-High-Frequency Trading) with newer, sophisticated, and customized hardware.

Conclusively, in the past 20 years, the difference between what buyers want to pay and what sellers want to be paid has fallen dramatically. One of the reasons for this is the increase in accuracy. High-Frequency Trading has also added more liquidity to the market, reducing bid-ask spreads.

Benefits from HFT

Increase liquidity- algorithmic trading increase liquidity. That's because they increase the number of buys and sell orders and therefore increase the size of the order book significantly. Improve pricing efficiency- high-frequency trader quickly aggregate a lot of information, they improve the informational efficiency of the market. They force the price closer to the fundamental value faster than would otherwise be the case. Thus, they increase pricing efficiency.

Lower costs- algorithmic doesn't require human traders who are typically well-paid and thus expensive. Algorithms lower manual labor which in turn lowers transaction costs.Tighter bud-ask spreads- because high frequency traders act as market makers, they tends to reduce

Disadvantage of HFT

Market manipulation- HFT may engage in market manipulation. This can be done by spoofing, quote stuffing, wash trading, or painting the tape.Unfair speed advantage- one way in which high frequency traders are able to make a profit is simply by being faster than others. This may provide some traders the ability to front run other investors trades.

Magnification of market movements- trading algorithms may magnify fluctuations in financial markets. For example, a sell-off may trigger some of these algorithmic traders to close down positions, thereby magnifying a downward trend. Risk of trading errors- the high speed with which HFT execute trades also means that if things go wrong, they tend to wring quickly. Thus, the results may be disastrous if the trades are not as intended. When this happens, it is referred to as an algorithm "going wild".

Critiques of High-Frequency Trading

HFT is controversial and has been met with some harsh criticism. It has replaced a number of broker-dealers and uses mathematical models and algorithms to make decisions, taking human decision and interaction out of the equation.Decisions happen in milliseconds, and this could result in big market moves without reason. As an example, on May 6, 2010, the Dow Jones Industrial Average (DJIA) suffered its largest intraday point drop ever, declining 1,000 points and dropping 10% in just 20 minutes before rising again. A government investigation blamed a massive order that triggered a sell-off for the crash.

An additional critique of HFT is it allows large companies to profit at the expense of the "little guys." Its "ghost liquidity" is also a source of criticism: the liquidity provided by HFT is available to the market one second and gone the next, preventing traders from actually being able to trade this liquidity.

The world of trading has undergone a dramatic shift in recent years. The introduction of high-frequency trading (HFT) tactics has changed the landscape for traders, investors, and corporations.

SelfAssessment

1. Set of instructions are placed automatically in trading decisions in ----------.

A. Algorithm trade
B. Wave trade
C. Both of the above
D. Not Applicable

2. Algorithmic trading was introduced and allowed in India in 2008 by the Securities and Exchange Board of India (SEBI).

A. 2007
B. 2008
C. 2005
D. Not Applicable

3. In ----------An investor can buy stock in one market at a lower price and sell the same at a higher rate in another market simultaneously with speedy execution of trades.

A. Arbitrage
B. Hi frequency
C. Both of the above
D. Not Applicable

4. The more complex an algorithm, the more stringent backtesting is needed before it is put into action.
A. True
B. False
C. Can't say
D. Not Applicable

5. Very high investment advisory fees are charged by financial advisory firms. Compared to them, the robo-financial advisor fee is much----------
A. Lesser
B. Higher
C. Equal
D. None of the above

6. Robo-advisors are automated portfolio managers that use algorithms to offer financial advice.
A. True
B. False
C. Can't say
D. Not Applicable

7. Automated services are also ill-equipped to deal with unexpected crises or extraordinary situations.
A. True
B. False
C. Can't say
D. Not Applicable

8. ----------, is a method of trading that uses powerful computer programs to transact a large number of orders in fractions of a second.
A. Colocation trading
B. High-frequency trading
C. Speculative bubble
D. None of the above

9. High-Frequency Trading has also ----------more liquidity to the market, reducing bid-ask spreads.
A. Added
B. Reduced
C. Both
D. Not Applicable

10. HFT may engage in market manipulation. This can be done by spoofing, quote stuffing, wash trading, or painting the tape.

A. True
B. False
C. No change
D. None of the above

11. The introduction of high-frequency trading (HFT) tactics has changed the landscape for traders, investors, and corporations.

A. True
B. False
C. No change
D. None of the above

12. Neobanks are essentially banks without any physical branch locations, serving customers with checking, savings, payment services, and loans on completely mobile and digital infrastructure.

A. True
B. False

13. Robo-advising provides algorithm-based asset management recommendations and portfolio management at a lower cost than an individual would face as compared to working with a traditional wealth manager.

A. True
B. False

14. Fintech is known for adding efficiency to the process. Automation doesn't involve humans and hence automation offers a high level of specialization.

A. True
B. False

15. Fintech is transforming the financial sector landscape rapidly and is blurring the boundaries of both financial firms and the financial sector.

A. True
B. False

Answers for SelfAssessment

1.	A	2.	B	3.	A	4.	A	5.	A
6.	A	7.	A	8.	B	9.	A	10.	A
11.	A	12.	True	13.	True	14.	True	15.	False

Summary

Automation and financial deregulation have changed the way of doing transactions in financial markets. It has made the system more transparent and cost-effective. When a person starts a new

business, he analyzes the competitive advantage for future growth and survival. For the person in the securities, market this competitive advantage can be a good trading strategy the as, the latest technologies, infrastructure, research, and risk management tools.

trading is one of the tools of competitive advantage for the person in the securities market. A set of instruction are placed automatically in trading decisions in algorithm trade.

Keywords:

Algorithm: A set instruction is placed automatically in trading decisions in algorithm trade.

Robo-advisors: They are automated portfolio managers that use algorithms to offer financial advice. You can think of these apps as autopilots for investors.

Fintech: It is situates ion in which business uses technology to enhance or automate financial services and processes.

Review Questions

What do you mean by Algorithm trading?

Enumerate the concept of High-frequency trading.

Explain in detail the disadvantages and advantages of High-frequency trading.

Elaborate on the challenges of Robo advisor.

Further Readings

- Security Analysis And Portfolio Management By K Sasidharan & Alex K
- Mathews, Mcgraw Hill Education
- Security Analysis And Portfolio Management By Pandian, Punithavathy, Vikas Publishing House.

Web Links

- https://www.investopedia.com/articles/active-trading/101014/basics-algorithmic-trading-concepts-and-examples.asp
- https://www.investopedia.com/terms/h/high-frequency-trading.asp
- https://www.investopedia.com/ask/answers/09/high-frequency-trading.asp
- https://en.wikipedia.org/wiki/Robo-advisor
- https://groww.in/blog/robo-advisory-india

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