Module 1: The Investment Background and Financial Markets

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Investment

- Investment refers to the allocation of capital to purchase assets with the expectation of generating capital appreciation
- It is a way for individuals or companies to put their money to work to achieve their financial goals.

individuals – HNIs / Retailers. When HNIs are not able to manage it, they go to Asset Management Companies.

DIIs – Domestic Institutional Investment – LIC, SBI

FIIs – Foreign Institutional Investment

- Investment can take many forms, including the purchase of stocks, bonds, real estate, commodities, or other financial instruments.

The goal of investing is to earn a return that is greater than the initial investment over a period of time.

commodities – which occurs naturally : Metals = Precious – Gold & silver, Base – copper, alum.
energy – Natural Gas, Crude oil

Portfolio

A portfolio is a collection of investments held by an individual or an organization, such as (stocks, bonds, commodities, real estate properties, or other financial assets.) – These are known as Asset Class

The purpose of portfolio is to diversify investment risk by ~~po~~ holding a mix of different assets, rather than just investing in a single one.

The goal of a portfolio is usually to maximize returns while minimizing risk, and it is typically used as a tool for long-term wealth creation or preservation.
Capital

- 10 companies Ratan Tata invested in
- venture capital

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The composition and management of a portfolio can depend on various factors. Such as
- Investor's risk tolerance,
- Investment objectives, and
- time horizon

Diversification:
It is spreading investment across different asset classes, industries or geographical locations to reduce risk

Risk and return:
Higher risk investments generally offer higher returns, while low-risk investments offer lower returns.

Asset allocation:
Dividing investments among different asset classes such as stocks, bonds, real estate, commodities, etc.
Also called as weightage.

Time Horizon: ~~the~~
The length of time over which an investment is held.
Long-term investments typically offer higher returns but also higher volatility.
If SENSEX and NIFTY is flourishing, it indicates that the economy is flourishing and going good.

Dollar-cost averaging:
Investing a fixed amount of money at regular intervals, regardless of market conditions.

Compound interest:

Penny Stocks: That costs less than ₹10

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Investment Objectives
- Capital preservation
- Income generation
- Capital appreciation
- Portfolio diversification

Diversification:
IT - ~~Infosys~~, TCS
Automobiles - Tata Motors, Maruti
Pharma - Cipla, Biocon
FMCG - ITC, HUL
Banking - HDFC, Kotak
Real Estate - ~~Prestige Group~~, Brigade
- Long-term wealth creation
- Retirement planning
- Estate planning

The objectives of investment also includes -
- Maximizing the return
- Minimizing the risk

and the subsidiary objectives are -
- Maintaining liquidity
- Hedging against inflation
- Increasing safety
- Saving tax

BANKNIFTY → 12 Stocks and their weightage. (on 21st Feb '23)

1.	HDFCBANK	27.04%
2.	ICICIBANK	23.03%
3.	KOTAKBANK	11.72%
4.	AXISBANK	11.18%
5.	SBIN	11.27%

the interest on an investment generates interest, leading to exponential growth over time

Liquidity:
The ease and speed at which an investment can be converted into cash.

Different Asset Classes
Asset classes refers to the types of investments in which money can be invested. Some of the main asset classes include:

- Stocks: ownership in a publicly traded companies, offering potential for capital appreciation and dividend income. (listed company)
- Bonds: debt securities issued by companies or govt., offering regular income in the form of interest payments.
- Real Estate: ownership of physical property, offering potential for rental income and appreciation.
- Commodities: raw materials such as gold, silver, oil
- Cash and Cash Equivalents: low-risk investments such as savings accounts, certificates of deposit, and money market funds.
- Alternatives: investments in non-traditional asset classes, such as private equity, hedge funds, and ~~of~~ cryptocurrencies.

Each asset class has its own unique risks and returns, and it's important to consider a variety of factors when deciding which asset classes to invest in, such as personal investment goals, risk tolerance, and time horizon.

* Heat Maps

6.	INDUSINDBK	5.58%.
7.	AUBANK	2.69%.
8.	BANDHANBNK	1.98%.
9.	BANKBARODA	1.84%.
10.	IDFCFIRSTB	1.08%.
11.	FEDERALBNK	1.68%.
12.	PNB	0.91%.

Investment Process

The investment process involves a series of activities leading to the purchase of securities or other investment alternatives. The investment process can be divided into five stages:

- Framing of the investment policy
- Investment Analysis
- Valuation
- Portfolio Construction
- Portfolio Evaluation

Investment Policy

- Define investment goals
- Assess personal finance
- Conduct market research
- Develop an investment strategy
- Implement the investment strategy
- Monitor and review investment
- Rebalance portfolio

Investment & Speculation

Investment refers to the act of allocating money, time, or resources with the expectation of

Savings A/c, Trading A/c, Demat A/c } Components of Demat A/c

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Participants in Securities Market in India

- Investors
- Brokers - zerodha, sharekhan, Groww, etc.
- Stock Exchanges
- Depositories - National Securities Depository Ltd. (NSDL)
  - Central Depository Services Ltd. (CDSL)
- Clearing Corporations - National Securities Clearing Corporation Ltd. (NSCCL)
  - Indian Clearing Corporation Ltd. (ICCL)
- Regulators - SEBI

New Issues Market

The new issues market and the secondary market are two different segments of the financial market that serve different purposes.

- New Issues Market : It is also known as the primary market, is the market where newly issued securities are offered to the public for the first time.
  - Companies raise capital by issuing new shares or bonds to investors through the new issues market. The securities are usually offered through an Initial Public Offerings (IPO) or a follow-on public offering (FPO)
  - The issuer sets the price on various factors such as market demand, financial performance, and growth prospects. Investors invests in new opportunities and earn capital gains on their investments.

• Scrips : The term "scrips" is sometimes used interchangeably with 'share', but it can also refer specifically to certificates of ownership in a company. In past, when shares were traded on paper certificates, these certificates were called scrips.

• Stocks : The term 'stock" is also sometimes used inter-changeably with 'share', but it can also refer to the collective ownership of a company. When a company sells shares, it is said to be issuing stock. The term "stock market' is referred to the market where stocks are bought & sold.

Gambling and Arbitrage

Gambling is an activity in which an individual or entity bets on the outcome of an event with the hope of winning a prize or making a profit.

It typically involves money or other assets on a game, event, or activity that is based largely on chance, and where the outcome is uncertain.

Arbitrage, on the other hand, is a financial strategy that involves buying and selling securities or other assets in different markets to take advantage of price differences.

The goal of arbitrage is to buy an asset at a lower price in one market and then sell it for a higher price in another market, generating a profit in the process.

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Individual Investment Life Cycle

The individual investment life cycle refers to the stages that an individual goes through when planning, implementing and adjusting their investment strategy over time.

Some common stages of the individual investment life cycle:

1. Accumulation Phase : This is the stage where an individual starts building their investment portfolio. The focus is typically on saving money and investing in assets that offer long-term growth potential. The primary goal is to accumulate enough wealth to meet their financial goals.

2. Consolidation Phase : As individuals start to accumulate wealth, they may shift their focus towards consolidating their assets and diversifying their portfolio. They may also start to take a more defensive approach, seeking to protect their wealth while still aiming for growth.

3. Spending Phase : In this stage, individuals shift their focus towards generating income from their investments to support their lifestyle. They must adjust their portfolio to include more income-generating assets, such as bonds or dividend-paying stocks.

4. Decumulation Phase : This is the final stage of the individual investment life cycle, where individuals start to draw down their assets to fund their

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Parties involved in the New Issue

- Managers to the Issue
  - > Company appoints lead managers to the Issue
    - Drafting the prospectus
    - Preparing a budget of expenses
    - Suggesting the appropriate timing
    - Assisting in the marketing

- Registrars to the Issue
  - > Act as an interface between the public and company in the allocation of shares

- Underwriters
  - > Contract of assurance to the issuer that they will subscribe in the event of non-subscription.

- Bankers
  - > Responsible for collecting the money along with the application form.
  - > they charge their commission

- Advertising agencies

- Financial Institutions
  - > Underwrite the issue and extend term loans to the companies
  - > IDBI, ICICI, LIC are some of the institutions that underwrite

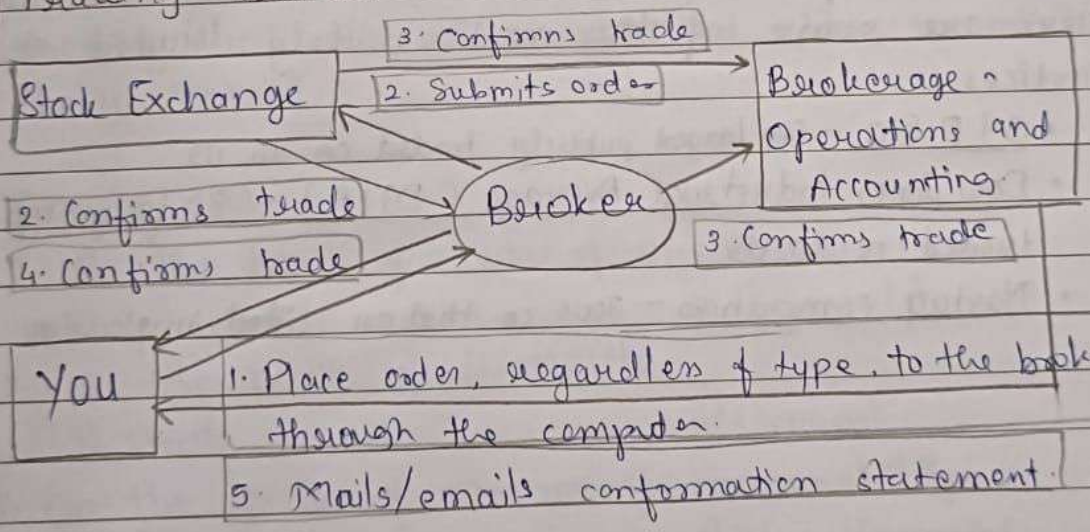
- Government / Statutory agencies
  - > SEBI, Registrar of Companies, RBI, BSE & NSE

Intraday.
Exchange → Depository
↑
Retailer - Broker

Secondary Market

The secondary market is the market where previously issued securities are traded among investors.
- This market provides a platform for investors to buy and sell securities that they already own.
- In secondary market, the price of securities is determined by supply and demand, and it is based on various factors such as market conditions, company performance, and news events.
- Investors who participate in the secondary market are typically looking to buy securities at a lower price and sell them at a higher price to earn capital gains or earn dividends from their investors.

Trading Process



Demat Account

A demat account, short for dematerialized account, is a type of electronic account that allows investors to hold their securities, such as stocks, bonds, and mutual fund, in a electronic form.
- In the past, investors used to hold physical certificates

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Types of Issues

There are 3 major types of Issues:

- Public Issue – IPO (FPO)
- Preferential Issue – Preferred people (HNI / DII)
- Rights Issues – for existing shareholders.

- Public Issue

Method of raising funds through the issue of shares in the primary market. They can be:

- IPO, Issue made by a new company in the capital markets
- FPO, shares issued by a company already listed on a stock exchange
- Fasttrack Issue, Primary Market Advisory Committee (PMAC) of SEBI has suggested this system and introduced in 2007.

- Preferential Issue

- Listed company issue to a selected group under Sec. 81 of Companies Act, 1956.
- This group may be financial institutions, mutual funds of HNIs, Promoters
- This is not a rights or public issue

- Rights Issue

- Issue offered to its existing shareholders through Letter of offer under Sec. 81 (1) of the Companies Act, 1956.

generating future income or profit.
The goal of an investment is to put money to work to generate a return that is greater than the initial investment.

Speculation is an investment strategy that involves taking a high level of risk with the expectation of making a significant profit in a short period of time.
Speculation typically involves investing in assets that are highly volatile and subject to rapid price fluctuations such as stocks, commodities, or currencies.

Shares, Scrips & Stocks

Shares, scrips and stocks are all terms that refers to ownership in a company. While these terms are often used interchangeably, there are some subtle differences in their usage and meaning.

- **Shares**: It is a unit of ownership in a company. When a company is incorporated, it divides its ownership into units called shares, which are often sold to investors.
  - Each share represents a portion of the company's ownership, and entitles the shareholder to certain rights such as voting on important company matters and receiving a portion of the company's profit as dividend.

σ_i = standard duration of return of stock;
σ_m = SD of returns of the market index
σ^2_M = various variance of the market returns.

Expected return & risk of a single stock:

- Ex-post return: When you invest something in the past and getting returns today. Here, we get historical data.
- Ex-ante return: Investing today & expecting return in the future based on probability.

→ EX-post return: It is a measure of the actual return earned by an investment over a specific period of time after the investment has been made.

* It is the realised return that the investor has received from an investment, as opposed to the expect returns or the anticipated return that the investor may have initially projected.

* Ex-post return can be calculated using the formula:

$$\text{Ex-post return} = \frac{(\text{ending value of the investment} - \text{beginning value of investment} + \text{any income generated})}{\text{Beginning value of the investment}}$$

* $$\text{Ex-post return} = \frac{(EV - BV) + \text{Dividend}}{BV} \times 100$$

Thus, Mr. X can yield dividend at the rate of 13.34% and 20% on capital appreciation.

Calculation of expected return

Q.3] Calculate the expected return from the data given below:

Return	Probability
20	0.10
30	0.20
40	0.10
50	0.30
60	0.20
70	0.10

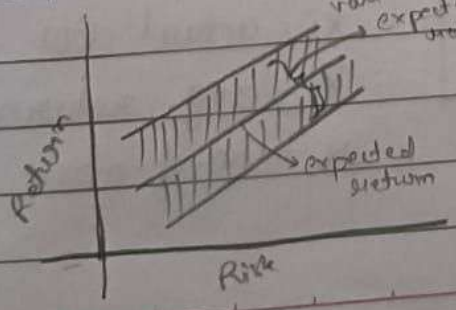
Sol^n

Return	Probability	Expected return (R×P)
20	0.10	20 × 0.10 = 2.00
30	0.20	6.00
40	0.10	4.00
50	0.30	15.00
60	0.20	12.00
70	0.10	7.00
	1.00	46

∴ Total expected return = 46%

Variation in Expected return

- Expected return is average or mean
- Variation is measured with SD (risk)



Systematic risk : It can be defined as a type of total risk that arises as a result of various external factors such as political, economic & sociological factors

Calculation of return

Q.1] Mr. X subscribes shares in ABC Co. Ltd. at a price of ₹100 each. Company paid dividend of ₹20 after one year. Compute return on net investment. What would be your opinion if Mr. X paid a premium of ₹10 on subscription of these shares and shares are fully paid-up?

Sol" The return on shares in ABC Co. Ltd. $= \frac{D_1}{P_0} = \frac{20}{100} = \underline{\underline{20\%}}$

In case of premium paid at the time of subscription, then P_0 will be equal to ₹110

Thus, return on shares $= \frac{20}{110} = \underline{\underline{18.18\%}}$

Q.2] Mr. X bought 10 shares in Swastik Co. Ltd. at price of ₹150 per share. After a year, company declare dividend at ₹20 per share. Mr. X wants to sell these share and the realisable value of each share is ₹180. Calculate the total return on the security along with income and capital yield.

Sol" Total return from share :

$$\text{Return per share (\%)} = \frac{D_1 + (P_1 - P_0)}{P_0} \times 100$$

$$= \frac{20 + (180 - 150)}{150} \times 100 = \underline{\underline{33.34\%}}$$

$$\text{Return} = \frac{20}{150} + \frac{(180-150)}{150} \Rightarrow 13.34\% + 20\% = \underline{\underline{33.34\%}}$$

to prove their ownership of securities, which was often inconvenient and prone to fraud.

- Demat accounts are maintained by Depository Participants (DPs), like CDSL & NSDL. DPs facilitate the electronic transfer of securities, making it easier and faster for investors to buy and sell securities.

A demat account acts as a repository of all the investments made by an investor in electronic form making it easier to track their investments, and reducing the loss or damage to physical certificates

Stock Indices

Stock Indices are known as equity indices, are indices that track the performance of a group of stocks in a particular stock market or exchange. Here are some of the most widely traded stock indices

- S&P 500 - 500 largest publicly traded co. in US
- Dow Jones Industrial Average (DJIA) - 30 large-cap, publicly traded co. in US
- Nasdaq companies - 3000 co. that are listed in Nasdaq

Q.U] The expected returns of last five years are provided below: Compute the expected risk on these returns

Year	Return
1	50
2	70
3	80
4	100
5	90

Sol"

Year	X	$X-\bar{X}$	$(X-\bar{X})^2$	$SD=\sqrt{\frac{\Sigma(X_i-\bar{X}_i)^2}{N}}$
1	50	-28	784	156.8
2	70	-8	64	12.8
3	80	2	4	0.8
4	100	22	484	96.8
5	90	12	144	28.8
				$\sqrt{296} = 17.2$

$SD = 17.2\%$

~~Measure of Systematic risk~~

Measure of Systematic Risk

Beta is a measure of systematic risk. It measures the risk that cannot be diversified way. A beta of more than 1 means that if an aggresive stock & beta of less than 1 means that it is a defensive stock.

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Risk

It can be defined as the potential for loss, damage or harm to an individual, organization, or asset, caused by an event or action.

It refers to the possibility of an outcome that is different from what was expected (or) desired, and may result in negative consequences.

Risk can arise from a variety of sources like:

- Natural disasters
- Accidents
- Financial (or) buriness attributes
- Health and safety hazards and more.

Effective risk management involves identifying, assessing and mitigating potential risks to minimise their impact.

Types of risks

1. On the basis of chance of occurance
   i) Speculative risk
   ii) Pure risk
2. On the basis of flexibility
   i) Static
   ii) Dynamic
3. On the basis of chance of measurability
   i) Financial
   ii) Non-financial.
4. On the basis of coverage
   i) Fundamental
   ii) Particular
5. On the basis of chance of behaviour
   i) Subjective
   ii) Objective
6. On the basis of diversification.
   i) Diversified
   ii) Non-diversified

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Interpretation of Beta

- Beta is a measure of sensitivity of an asset's return to the market
- For eg. If β of Infosys is 1.35 → means that when Market (NIFTY / SENSEX) return is 10%, Infosys's return will be 13.5% (i.e. 10 × 1.35)

$$\beta = \frac{\text{covariance between stock(i) and market (m) returns}}{\text{variance of mkt return}}$$

$$\beta = \frac{COV_{i,m}}{\sigma^2_m}$$

Calculation of Beta

- Covariance measures how two variables move together. In this case, stock return(i) and market return(M)
- Variance measures how much a variable deviates from its average.

This calculation takes into account the change in the value of the investment over the specified time period, as well as any incomes generated, such as dividends (or) interests.

- Ex-post returns are important because they provide a more accurate picture of the actual performance of an investment
- By comparing expost returns to other investments or to benchmarks, investors can evaluate the effectiveness of their investment decisions and adjust their strategies accordingly

Q.5] Calculate expected return and risk of single stock.

Year	Annual return
2001	10
2002	15
2003	-5
2004	20
2005	25

Sol^n

Year	X	$X-\bar{X}$	$(X-\bar{X})^2$	SD.
2001	10	-3	9	1.8
2002	15	2	4	0.8
2003	-5	-18	324	64.8
2004	20	7	49	9.8
2005	25	12	144	28.8
			530	$\sqrt{106} = 10.29$

$\bar{X} = \frac{10+15-5+20+25}{5}$

$= \frac{65}{5} = 13$

SD = 10.29%.

Q.6] Obtain historical data of your choice stock and calculate the ex-post return and risk.

- Beta is a part of Capital Asset Pricing Model [CAPM]

CALCULATION OF BETA :

- Beta is a measurement of riskiness of an investment
- It measures the volatility of systematic risk associated with a particular stock in comparision to the market as a whole.
- The higher the beta, the more volatile the investments are vice-versa.
- A higher beta stock can be considered speculative because it has both greater potential for growth & loss than low beta stocks.

MEASUREMENT OF SYSTEMATIC RISK :

The systematic risk of a security is measured by a statestical measure called beta. The value of the beta maybe computed from the historical data. To compute beta, there are two methods in statistics first, correlation method, second, regression method. Under the correlation method, beta is computed as follows.

$$\beta = \frac{r_{im} \sigma_i \sigma_m}{\sigma_m^2}$$

where,

β = beta, or measurement of systematic risk.

r_{im} = correlation coefficient of returns of stocks and returns of the market index.

Two types of risks
i) Systematic (measured by beta)
→ cannot be diversified.
ii) Unsystematic
→ can be diversified.

Systematic risk (cont.)
- It is non-diversifiable in nature
- This means that this type of total risk cannot be controlled or minimised or avoided by the management of an organisation.
- It has the tendency to disrupt not just the whole of the market but an economy too
- The major sources of systematic risks are risks relative to the > market > interest rate > inflation > Price movements > rise in unemployment, etc.

Standard Deviation
It measures the variation in actual return from the expected average return. A low value of SD indicates actual return likely to be close to avg. return; on the other hand, a high value of SD shows lesser possibility of actual return close to avg. return. The SD is symbolised with 'sigma' `σ'. The statistical formula to calculate SD is:

$$SD = \sqrt{\frac{\sum_{i=1}^{N} (x_i - \bar{x}_i)^2}{N}}$$

where,
x_i = actual ROI
$\bar{x}_i$ = avg. return and
N = no. of obs.

Q.U] Th be

Sol"