



Investing 101

Business Club

Finance Team
2021

Table of Content

Table of Content	1
Investing	4
When to Start Investing?	4
Why to Invest?	4
Compounding	5
Interest	6
Factors Determining Interest Rates:	6
Financial Markets	8
Stock Market	10
Stock Exchange	10
Equity/Share	10
Why do companies need to issue shares to the public?	10
Primary Market	11
Initial Public Offering	11
Secondary Market	11
Portfolio	11
Factors that Affect Portfolio Allocation	12
Bond Market	13
Bonds	13
Bonds vs Stocks	13
How to Invest in Bonds	14
Over-the-counter (OTC) market	14
Mutual/investment funds	14
Exchange-traded funds (ETFs)	15
Price Risk of a Bond	15
Coupon Rate vs Interest Rate Fluctuations	15
Term to Maturity	16
Risk	16
Special features	16

Demand and supply	17
Foreign Exchange Market	18
Rates Driven Returns	19
Features of Forex Market	19
Commodities Market	20
Financial Statements	22
Financial Statement Analysis	22
Ratio Analysis	23
Profitability Ratios	23
Valuation Ratios:	24
Leverage Ratios:	25
Liquidity Ratios	26
Portfolio Selection and Management	28
Types of Portfolio	28
Types of Portfolio Management :	29
Need for Portfolio Management	29
Risk	30
Types of risks	30
Diversification of Risk	30
Capital Asset Pricing Model	31
Formula	31
CAPM assumptions	32
Investors hold diversified portfolios	32
Investors can borrow and lend at the risk-free rate of return	32
Perfect capital market	32
Styles of Investing	33
Value Investing	33
Intrinsic Value	33
Different Faces of Value Investing	33
Value Screens	34
Assumptions of Value Investing	34



Growth Investing	34
Technical Investing	35
Day Trading and Short Term Trading	35
Pattern Traders	36
Time Frames	36
Trading Strategies	37
Piotroski F-Score	37
Profitability	37
Leverage, Liquidity and Source of Funds	37
Operational Efficiency	38
Betting Against Beta	38

Investing

Investing is the act of committing money or capital to an endeavor with the expectation of obtaining an additional income or profit. It can also be understood as a method of wealth creation by buying or selling of assets.

There are several approaches you may use when making an investment. This involves, among other things, investing in stocks, bonds, mutual funds, or real estate, as well as creating your own business. These possibilities are sometimes referred to as "investment vehicles," which is simply another way of expressing "a means to invest." Each of these vehicles has advantages and disadvantages, which we've examined in more detail in later portions of this lesson. The idea is that regardless of the technique you choose to invest your money, the aim is always to put your money to work and make a profit.

When to Start Investing?

The earlier one begins investing, the better. By investing early, you give your investments more time to develop, allowing the concept of compounding to boost your income year after year by accumulating the capital and the interest or dividend generated on it. The following are the three golden rules for all investors:

- Invest early
- Invest regularly
- Invest for long term and not short term

Why to Invest?

One needs to invest to:

- Earn return on their idle resources
- Generate a specified sum of money for a specific goal in life
- Make a provision for an uncertain future



One of the most essential reasons to invest sensibly is to cover the expense of inflation. Inflation is defined as the rate at which the expense of living rises. The cost of living is simply the price of the products and services required to live. Money loses value as a result of inflation since it will not buy the same quantity of a good or service in the future as it does today or in the past.

For example, if inflation is 6% for the next 20 years, a Rs. 100 purchase today will cost Rs. 321 in 20 years. This is why, in any long-term investment strategy, inflation must be considered. Remember to consider the 'real' rate of return on an investment, which is the return after inflation. The goal of investments should be to produce a return that exceeds the rate of inflation in order to ensure that the investment does not lose value. For example, if the annual inflation rate is 6%, then the investment must earn more than 6% in order to rise in value. If your after-tax return on investment is less than the rate of inflation, your assets have really depreciated; that is, they will not purchase as much now as they did last year.

Compounding

Compounding (also known as "compound interest") transforms your earning money into a cutting-edge, highly effective income-generating tool. Compounding is the process of gaining interest on the earnings reinvested in an asset. It takes two things to make it work: reinvestment of revenue and time. The more time you devote to your assets, the faster you will be able to realise the income potential of your initial investment, relieving you of the burden.

Let's look at an example to see what is meant by compounding : If you invest Rs. 10,000 now at 6%, you will have Rs. 10,600 after a year ($\text{Rs. } 10,000 \times 1.06$). Let's imagine that instead of withdrawing the Rs. 600 earned from interest, you decide to put it in there for another year. If you continue to earn 6%, your investment will be worth Rs 11,236.00 ($\text{Rs. } 10,600 \times 1.06$) by the end of the second year.

Because you re-invested the Rs. 600, it now works in conjunction with the original investment to earn you Rs. 636, which is Rs. 36 more than the previous year. This

little amount extra may seem insignificant now, but keep in mind that you didn't have to do anything to get that Rs. 36. More crucially, this Rs. 36 now has the potential to generate interest. Your investment will be worth Rs. 11,910.16 after a year (Rs. 11,236 x 1.06). You earned Rs. 674.16, which is Rs. 74.16 more than the previous year. This annual growth is compounding in action: interest gaining interest on interest, and so on. This will continue as long as you keep reinvesting and earning interest.

Interest

Interest is the additional amount paid back to the lender of money by the borrower of that money above the borrowed money. Thus, interest is a fee charged to the borrower for the use of the lender's funds. In most cases, interest is computed as a percentage of the principal balance (the amount of money borrowed). Depending on the loan terms, the percentage rate may be set for the life of the loan or variable.

Factors Determining Interest Rates:

There are many different types of interest rates, such as those offered by banks to their depositors, those offered by banks to their borrowers, those offered by the government in the Bond/Government Securities market, those offered to investors in small savings schemes such as NSC and PPF, and those offered by companies when they issue fixed deposits, and so on. The factors that control interest rates are largely economic in nature and are referred to as macroeconomic considerations. Some of these elements are:

- Demand for money
- Level of Government borrowings
- Supply of money
- Inflation rate
- The Reserve Bank of India and the Government policies which determine some of the variables mentioned above.



Financial Markets

Financial Markets are a form of a marketplace that allows you to buy and sell assets, including bonds, equities, foreign exchange, and derivatives.

Financial markets come in various shapes and sizes, and they operate in a variety of ways. But they all fulfil the same basic duties, whether they are highly organised, such as the National Stock Exchange, or highly informal, such as the money changers on the street corners of numerous Delhi neighbourhoods.

These functions are:

- **Price setting:** Markets enable price discovery, which is a method of determining the relative values of various items based on the prices at which people are prepared to purchase and sell them. These items could include gold, equities, commodities, and so on.
- **Asset valuation:** The best way to determine the value of a company or its assets, or property, is to use market pricing. This is critical not only for business buyers and sellers, but also for regulators.
- **Arbitrage:** Commodities and currencies may trade at highly different prices in various regions in countries with underdeveloped financial markets. Prices rise towards a consistent level as traders in financial markets strive to profit from these divergences, making the overall economy more efficient.
- **Raising capital:** Funds are frequently required by businesses to construct new facilities, update machinery, or expand their operations in various ways. This is made possible by shares, bonds, and other sorts of financial instruments, which we will discuss momentarily. Individuals who want to buy a house or a car, or even make credit-card expenditures, are increasingly turning to the financial markets for financing.

- **Commercial transactions:** The financial markets offer the lubrication that allows many commercial transactions to take place, as well as long-term capital. This can involve things like arranging payment for a product sold overseas and providing working capital so that a company can pay its staff if customer payments are late.
- **Investing:** The stock, bond, and money markets offer a way to make a return on money that isn't needed right away, as well as to build up assets that will give income in the future.
- **Risk management:** The stock, bond, and money markets offer a way to make a return on money that isn't needed right away, as well as to build up assets that will give income in the future. Various stock market instruments, such as derivatives contracts, can protect against a range of hazards, including the chance that a foreign currency would lose value against the local currency before receiving an export payment. They also allow markets to price risk, allowing businesses and people to exchange risks until they only hold those that they choose to keep.

The desire of investors to get a return on their investments is the driving factor behind financial markets. This return is made up of two different parts:

- The income received by an investor while holding an investment is referred to as the yield.
- Capital gains are improvements in the value of an investment that are not usually available to the owner until the investment is sold.

We now understand the terminology and fundamental concepts of the financial markets. Let us go through the various sorts of Financial Markets in depth.

Stock Market

The Stock Market refers to public markets for the issuance, purchase, and sale of stocks that trade on a stock exchange or over-the-counter. Stocks, also known as equities, reflect a company's fractional ownership, and the stock market is a marketplace where investors can purchase and sell ownership of such investable assets.

Stock Exchange

The Stocks Contract (Regulation) Act of 1956 [SCRA] defines a stock exchange as any group of individuals, whether incorporated or not, formed for the purpose of helping, regulating, or controlling the business of buying, selling, or dealing in securities. A stock exchange may be a regional stock exchange whose area of operation/jurisdiction is established at the time of its recognition, or it may be a national exchange that has been allowed to conduct nationwide trading since its start.

Equity/Share

A company's total equity capital is divided into equal units of tiny denominations, each referred to as a share. For example, in a business with a total equity capital of Rs 2,00,00,000, the complete equity capital is divided into 20,00,000 units of Rs 10 each. Each unit of Rs 10 is referred to as a Share. As a result, the corporation is believed to have 20,00,000 equity shares at Rs 10 apiece. Such shareholders are members of the company and have voting rights.

Why do companies need to issue shares to the public?

Most businesses are founded privately by their advocates. However, the promoters' money and bank and financial institution borrowings may not be sufficient for long-term establishment or operation of the business. As a result, firms allow the general public to participate to the equity and offer shares to



individual investors. A 'Public Issue' is a method of soliciting share capital from the general public. Simply put, a public issue is an invitation to the general public to subscribe to a company's share capital.

Primary Market

The primary market is the mechanism through which new securities are sold. The primary market allows issuers of securities, both government and corporate, to raise funds to meet their investment needs and/or to satisfy some obligation. They may issue securities at face value or at a discount/premium, and these securities may be in the form of equity, debt, or a combination of the two. They may issue securities in both the domestic and international markets.

Initial Public Offering

The sale of securities to the general public on the main market is known as an Initial Public Offering (IPO). It occurs when an unlisted firm, for the first time, issues new securities or makes an offer to sell existing securities, or both, to the public. This prepares the path for the issuer's securities to be listed and traded. Securities can be sold in two ways: through book building or through regular public offerings.

Secondary Market

The secondary market is a market in which securities are exchanged after they have been first offered to the public in the primary market and/or listed on the Stock Exchange. The secondary market is where the majority of the trade takes place. The secondary market is made up of stock and debt markets.

Portfolio

The definition of a portfolio is a collection of financial assets and investing tools held by an individual, a financial institution, or an investment firm. The aforementioned collection of financial assets may also include valuables such as gold, stocks, funds, derivatives, property, cash equivalents, bonds, and so on.

Individuals invest in such assets to create revenue while guaranteeing that the asset's or capital's original equity does not degrade.

Factors that Affect Portfolio Allocation

These following factors tend to influence an investor's portfolio allocation to a great extent:

Risk Tolerance: Investors' risk tolerance influences how they allocate financial assets and investments in their portfolio. The components of an investor's portfolio might immediately reveal their risk tolerance level. Conservative investors, for example, are more likely to develop a portfolio that includes large-cap value stocks, investment-grade bonds, cash equivalents, market index funds, and so on. Individuals with a high risk tolerance, on the other hand, may incorporate investments such as small-cap and large-cap growth stocks, high-yield bonds, gold, oil, real estate, and so on in their portfolio.

Time horizon : The time frame for investing money into a particular investment option is also critical for establishing a lucrative portfolio. As they approach their financial goals, investors should adjust their portfolio to reach a cautious asset allocation mix, as suggested by the general rule. It is used to keep their investment portfolio's accrued earnings from degrading. Investors nearing retirement are typically advised to invest a larger amount of their portfolio in less hazardous assets such as cash and bonds, with the remainder in higher-yielding options. Those who have just started their careers, on the other hand, are advised to spend the majority of their assets in high risk-reward investment options for the long term. A longer time horizon will assist them in weathering short-term market volatility and losses.

We will discuss Portfolio Management in more detail in this module. But, before that let us complete our discussion on different types of Financial Markets.



Bond Market

A bond market refers to a marketplace where buying and selling of bonds take place.

Bonds

A bond is a sort of investment that symbolises a debt between a lender and a borrower. It's similar to taking a personal loan from a bank, only you're the lender (also known as the investor or creditor) and the borrower is usually a government or corporation (known as the issuer). The issuer of a bond agrees to pay the investor periodical interest payments at a defined rate (the coupon rate) on the amount borrowed (the face amount) until a defined date (the maturity date). When the bond matures, the interest payments cease and the issuer is compelled to repay the investor the face value of the principal. Bonds are often referred to as fixed-income instruments since interest payments are normally issued at regular intervals and are fairly predictable.

Bonds vs Stocks

Bonds are classified as debt investments. A stock purchase, on the other hand, is an equity investment since the investor (also known as the stockholder) becomes a part owner of the firm. Issuers of stock or equity are normally corporations, but issuers of debt can be either corporations or governments. While bonds normally do not allow the bearer to participate in the corporation's profits, stockholders are entitled to a portion of the profits and may also be granted voting rights. Bondholders normally receive interest, whereas stockholders often receive dividends. Both may incur capital gains or losses if the price at which they sell their shares is higher or lower than the price at which they purchased them. Coupon rates are frequently fixed, which means that the interest rate remains consistent during the life of the bond. Some bonds, however, have variable or floating coupon rates (interest payments change from period to period based on a

predetermined schedule or formula). Some bonds pay no interest until they mature. Bondholders have a higher claim on assets than stockholders if a firm goes bankrupt since they are creditors rather than shareholders. This provides additional security to bond investors but does not completely eliminate risk.

How to Invest in Bonds

There are three common ways to invest in bonds:

Over-the-counter (OTC) market

Individual bonds are not traded on a centralised exchange like the New York Stock Exchange (NYSE). They are instead purchased or sold through an investment advisor from inventory in the advisor's brokerage company or the OTC market. Any fees for the advisor's services are included in the pricing. When you acquire a newly issued bond (one that has not previously been held by another investor), the investment advisor gives you a prospectus or other disclosure documents that explain the bond's terms, features, and related risks, and then buys the bond on your behalf in the main market. Bonds that have already been issued are traded in the secondary market.

Mutual/investment funds

Bond mutual funds, often known as balanced mutual funds, are an indirect way to invest in bonds. These products combine professional management with exposure to a portfolio of bonds with variable maturity dates and grade levels. A bond or balanced fund, like any other mutual fund, can enable systematic buy/sell strategies, dividend reinvestment, and low initial investment requirements. However, unlike direct bond investments, mutual funds have no predetermined maturity date or coupon rate, so the size and timing of your cash flows are uncertain. It may also be difficult to identify the quality of the fund's bonds or the overall level of risk. Mutual funds charge investors a management fee, which includes adviser costs.

Exchange-traded funds (ETFs)

ETFs are mutual fund trusts whose units are traded on a stock market like the NSE. Some ETFs attempt to track the performance of a government benchmark bond, while others attempt to track the performance of an entire bond market index. The level of risk varies based on the ETF chosen. Because ETFs are not actively managed, they typically have reduced management fees.

Price Risk of a Bond

If you sell your bonds before they mature, their price or market value may be lower than when you bought them. Throughout the life of a bond, its price changes and may be higher or less than its face or principal value. The price of a bond is determined by the bond's coupon rate in relation to the current level of interest, the remaining term to maturity, the credit or default risk, and any particular features it may have.

Coupon Rate vs Interest Rate Fluctuations

Interest rate fluctuations typically have the greatest impact on bond prices — interest rates can be changed by a variety of factors, including changes in inflation rates. Bond prices generally move inversely to interest rates because the coupon rate is normally fixed until maturity. If current interest rates are higher than the coupon rate, the bond loses value because investors are unwilling to pay as much for a series of reduced coupon payments. Bond prices rise when the coupon rate exceeds current interest rate levels. Price variations may appear insignificant to an investor who holds bonds until maturity. Many commonly held bonds have end-of-day prices quoted in the daily business journals. Estimated prices Bond prices are expressed as a percentage of the face value of the bond. A bond with a quotation of 100 is worth 100 percent of its face value, or par.

For example, a bond priced at 94.50 is worth 94.5 percent of its face value, or par. If the face value of the bond is \$1,000, the buying price is merely \$945.00 ($\$1,000 \times 0.945$). This bond is currently trading at a discount. If the quote was 101.25, the fee is 101.25% of the face value, or \$1,012.50. This bond is now trading at a premium.



Bond prices do not all react the same way to changes in interest rates. The lower the coupon rate, the more sensitive the bond price is to rate swings. Trading-oriented investors, on the other hand, may be able to benefit from these swings in order to improve the overall performance of their portfolio. A short-term interest rate fall, for example, may be a chance to profitably sell bonds and redirect funds into noninterest-bearing investments with greater expected returns.

Term to Maturity

Bonds' market value approaches their face value as they approach maturity. In general, the longer the maturity term and the lower the coupon rate, the more sensitive a bond is to interest rate movements. Bonds with long maturities and low coupon rates suffer the most price declines as interest rates rise.

Risk

As a general rule, you may expect to receive full repayment of a bond's face value on the maturity date as long as the issuer is able to return the loan; but, if the issuer's credit rating changes throughout the bond's life, the bond's price may fluctuate. For example, if the credit rating of debt rated "AAA" – the lowest degree of default risk – changes owing to huge losses by the issuing company that may damage the business's capacity to repay interest or principle, the bond price will fall even if interest rates remain unchanged.

Special features

Many bonds have unique characteristics that can have a substantial impact on their pricing, risk, and potential returns. They can be called (repaid) early or converted into shares of the issuing corporation, for example. Bonds can also be extended (repayment postponed from the initial term to a later date) or other special provisions can be imposed.



Demand and supply

Bond prices are influenced by the availability of bonds as well as the demand for them. Prices rise when demand rises, while all other elements stay constant. Furthermore, if the supply of bonds, for example, decreases, bond prices normally rise. In both circumstances, if you own bonds, the yield to maturity will rise. Likewise, as demand falls or supply rises, prices fall and yield to maturity falls.

The next type of Financial Market we will discuss is the Foreign Exchange Market.



Foreign Exchange Market

The foreign exchange (forex: abbreviation for the Foreign Exchange Market, also known as the Currency Market) market is the world's largest financial market, comprised of banks, commercial companies, central banks, investment management businesses, hedge funds, and retail forex brokers and investors. The Forex Market allows its members to trade in foreign currency exchanges.

From 5 p.m. EST on Sunday through 4 p.m. EST on Friday, this market is open 24 hours a day. It is the most liquid financial market in the world. Currency trading in the foreign exchange market is always done in pairs, therefore the value of one of the currencies in that pair is related to the value of the others. There are two levels to the global market. The first is referred to as the interbank market, while the second is referred to as the over-the-counter market.

The interbank market is where larger banks trade and exchange currency with one another. The over-the-counter market is where people and businesses trade and has grown in popularity since various organisations now offer internet trading platforms.

Forex trading is worth more than \$5 trillion each day, which is far too much when compared to the \$700 billion bond market and the \$200 billion stock market. Every day, the total daily value of all stock trading in the world equals around one hour's worth of trading in the FX market.

In the foreign exchange market, the US Dollar (USD) is the most prevalent currency. This currency is linked with the currency of every country transacted on the FX market. The Euro (EUR), Japanese Yen (JPY), British Pound (GBP), Swiss Franc (CHF), Australian Dollar (AUD), and Canadian Dollar are the other major currencies in the market (CAD).

Rates Driven Returns

Rates influence returns in the currency market, according to one golden rule. When you purchase and sell currencies, they are always accompanied by an interest rate: buyers receive interest, while sellers pay interest.

From a procedural standpoint, you are selling one currency and then utilising the proceeds to purchase another (though the transactions happen simultaneously). When you sell a currency, you must pay interest on it (similar to how a bond issuer does); when you buy a currency, you get interest as well. Each currency has its own interest rate, which is calculated in basis points. The difference in basis points between the currency you're selling and the currency you're buying is your net return. So, if you sold a currency at 400 basis points and bought another at 600 basis points, your net return would be 200 basis points (or 2 percent). As a result, the constant fluctuation of these currency rates presents an opportunity for investors to profit from these fluctuations.

Currency markets also enable investors to invest money in currencies that have correlations with their present investments, so hedging risk coming from currency sensitivity to equities or bonds, or, in some situations, hedging the risk of investing in a foreign country.

Features of Forex Market

- High Liquidity
- Market Transparency
- Operates 24 hours a day
- Lower Trading Costs
- Leverage Trading available

Commodities Market

It is a marketplace for the commodities. These goods are divided into two categories:

- **Hard commodities** : These are extracted and mined goods, such as gold, copper and crude oil. Gold and Crude Oil are two of the most precious and widely traded commodities globally.
- **Soft commodities** : These include agricultural products and livestock, such as rice, wheat, eggs, pork, cattle, etc. Soft Commodities usually have much shorter shelf-life compared to its counterpart.

Most of the commodities are traded using forward and futures contracts and Exchange Traded Funds.

These agreements bind two parties to carry out a transaction at a given price on a certain date. Futures contracts are frequently used by farmers and industries to hedge against prospective losses. However, these also act as an exceptional instrument to realise a profit.

Individuals may also choose to invest in commodities directly. There are six commodity exchanges in India to that end –

- Multi Commodity Exchange (MCX)
- Ace Derivatives Exchange (ACE)
- The Universal Commodity Exchange (UCX)
- National Multi Commodity Exchange (NMCE)
- Indian Commodity Exchange (ICEX)
- National Commodity and Derivatives Exchange (NCDEX)

Commodities tend to perform very well in a high inflation environment. A commodity market thrives under such inflation because as prices of raw materials increase, more and more investors flock towards those. This leads to an increase in prices of manufactured goods, leading to lowered consumption. It snowballs



into poor performance across different industries, resulting in a bearish trend in the stock market.

Now that we have looked into different instruments and Financial markets where an investor can invest, let us look at what kind of analysis goes behind choosing those investments. An experienced investor would look into both Qualitative and Quantitative factors that might affect their investments.

For Stock Analysis, analysts look into quantitative factors derived from Financial Statement Analysis and qualitative factors such as Management Discussion and Analysis.

Financial Statements

Financial Statements provide accurate financial information about a company and thus investors can use that data to take informed investment decisions. Three major financial statements are:

- 1. Income Statement:** Income Statement is prepared for a period, covering one year. This statement shows the expenses incurred on production and distribution of the product and sales and other business incomes. The final result of this statement may be profit or loss for a particular period. Thus, the Income statement summarizes the incomes /gains and expenses /losses of a Business for a particular financial period.
- 2. Balance Sheet:** A balance sheet depicts a company's financial situation as of a specific date. As of the date of the statement, it represents the assets owned by the firm as well as the claims of the owners and creditors against the assets in the form of liabilities.

$$\textit{Total Assets} = \textit{Total Liabilities} + \textit{Shareholders' equity}$$

- 3. Cash Flow Statements:** The changes in cash position from one period to the next are shown in a cash flow statement. It depicts cash inflows and outflows and aids management in making short-term financial decisions. A projected cash flow statement allows managers to determine whether or not cash is available to meet business obligations. This remark is useful for management's short-term planning.

Financial Statement Analysis

Financial Statement Analysis is a useful tool in assessing company's performance and trends. Major Analytical Tools and Techniques are:

- Ratio Analysis
- Common Size Analysis (Evaluation of the internal make-up of financial statements and/or financial statement items across companies)

- Comparative Analysis (Evaluation of consecutive financial statements)

In this module we will look into details of Ratio Analysis and the inference we can get from it.

Ratio Analysis

Financial Ratios are indicators of some aspects of a company's performance. Ratios can also help predicting investment returns.

Ratios helps an investor to:

- Evaluate past performance
- Assess current financial position of a company
- Gain insights useful for projecting future results

Some of the important ratios that investors usually consider are:

Profitability Ratios

These ratios indicate a company's profitability in relation to other companies, internal comparison with previous years' profits, the efficacy of the management as shown by the sales and returns on investments. Major Profitability Ratios are:

1. Return on Equity:

ROE measures the efficiency of a company in using its equity for generating profits. It essentially measures the return to the stockholders on stockholders' investment in the company.

$$\text{Return on Equity} = \text{Net income} / \text{Average Shareholders Equity}$$

Because equity equals assets minus debt, a company's ROE can rise if it has been borrowing heavily. The more debt a corporation takes on, the lesser its equity may become. A high RoE is great, but not at the cost of high debt. Thus, investors need to have a check on the leverage position of the company as well.

2. Dividend Payout Ratio:

Dividend Payout ratio represents the fraction of money paid to the stockholders out of the income after taxes.

$$\text{Dividend Payout ratio} = \text{Total Cash Dividends} / \text{Net Income}$$

The dividend payout ratio is important to the management as well. They cannot afford to pay large dividends when the company needs the money to finance new profitable projects.

Valuation Ratios:

The valuation ratios help us to develop a sense of how stock prices are valued by the market participants. It shows investors what they should expect to receive from their investment. These ratios are helpful to predict how much stock prices will be in the future based on current earnings and dividend measurements.

1. Price to Sales (P/S) Ratio

It's a financial indicator that compares the stock price to total revenue to determine how much investors value a company for each dollar of revenue it generates. If the P/S The main operation in any business is to generate revenue from the sale of goods and services, and the P/S ratio provides the valuation based on its actual operations without any accounting adjustments.

$$\text{Price to sales ratio} = \text{Current Share Price} / \text{Sales per Share}$$

$$\text{Sales per share} = \text{Total Revenues} / \text{Total number of shares}$$

2. **Price to Book Value (P/BV) Ratio:** It is used to compare the current market value of a firm to its book value. The book value is the amount left over after the company has liquidated all of its assets and paid off all of its debts.

$$\text{P/BV} = \text{Market Price Per Share} / \text{Book Value Per Share}$$

$$\text{Book value per share} = \text{Shareholder's equity} / \text{Total shares outstanding}$$

The ratio is used to compare a company's available net assets to the price of its stock. A P/BV ratio greater than one implies that investors are prepared to pay more than the company's net assets are worth.

3. **Price to Earnings (P/E) Ratio:** It is a metric for evaluating how attractive a company's stock price is compared to its current earnings. The higher the P/E, the more you are willing to pay for a stock based on its current earnings and the more expensive the stock.

$$P/E = \text{Stock Price Per Share} / \text{Earnings Per Share}$$

Or

$$P/E = \text{Market Capitalization} / \text{Total Net Earnings}$$

Where EPS is a measure of the amount of net income earned per share of stock outstanding. If the company's earnings are increasing but not its cash flows and sales, then a red flag is raised.

Leverage Ratios:

These assess a company's debt levels to its assets, equity, and profits to determine if it can stay afloat in the long run by paying down its long-term debt and interest. Every firm needs funding from investors and financial institutions at some point in order to develop, but these loans and debts must be managed in order to create profits. They examine how much a firm has relied on borrowing to fund and manage its activities.

1. **Debt-to-Equity ratio:** It indicates the relative proportion of shareholders' equity and debt used to finance a company's assets. This ratio highlights how a company's capital structure is tilted either toward debt or equity financing.

$$\text{Debt to Equity Ratio} = \text{Total Debt} / \text{Shareholders' Equity}$$

A higher debt-equity ratio indicates a levered firm, which is quite preferable for a company that is stable with significant cash flow generation, but not

preferable when a company is in decline. A lower debt to equity ratio usually implies a more financially stable business.

2. **Debt-to-Asset ratio** : It denotes the percentage of assets that are funded by debt. The larger the ratio, the more debt and financial risk there is. Companies having a greater leverage ratio are more leveraged and hence riskier to invest in and lend to. Because the debt to asset ratio is low, it indicates that the firm has borrowed less money in comparison to the total assets that it possesses, implying that it is safer to invest in the firm.

$$\text{Debt/Asset} = (\text{Short-term Debt} + \text{Long-term Debt}) / \text{Total Assets}$$

Investors utilise the ratio to ensure that the firm is solvent, that it can satisfy current and future commitments, and that it can create a return on investment.

Liquidity Ratios

Liquidity ratios examine a company's ability to repay short-term obligations. These compare various combinations of relatively liquid assets to the number of current liabilities stated on a company's most recent balance sheet. Internal analysis regarding liquidity ratios involves calculating the ratios using multiple accounting periods of the same company. Comparing previous time periods to current operations allows analysts to track changes in the business. A higher liquidity ratio shows a company is more liquid and has better coverage of outstanding debts. The different liquidity ratios include:

1. **Current Ratio**: The current ratio, also known as the working capital ratio, assesses a company's capacity to pay down current liabilities (those due within a year) with current assets such as cash, cash equivalents, accounts receivable, and so on. This ratio reflects a company's current debt as a percentage of its current assets.

$$\text{Current Ratio} = \text{Current Assets} / \text{Current Liabilities}$$



A ratio under 1 suggests that a company would be unable to pay off its obligations if it came due at that point. Its main flaw is that it includes inventory as a current asset. Inventory may not be that easy to convert into cash(not liquid), and so may not be a good indicator of liquidity.

2. **Quick ratio:** It is similar to the current ratio but it excludes inventory from current assets. It measures how well a company could meet its short-term obligations with its most liquid assets.

Quick ratio = (Current assets – Inventories) / Current liabilities

There are other liquidity ratios too such as cash ratio, operating cash flow ratio etc.

Portfolio Selection and Management

When considering to invest into asset markets, an investor has to make three decisions:

- the amount he wants to invest into the asset market,
- determine the assets he wants to invest in,
- determine the amount he wants to invest into each selected asset

A collection of financial assets in which an investor has invested is referred to as a portfolio. Portfolio management is the art of establishing the best investment policy for an individual in terms of least risk and maximum return. It requires to strategize the process of buying and selling of the assets with an effort to meet long term financial goals.

In a layman's language, the art of managing an individual's investment is called portfolio management.

Types of Portfolio

There are two types of portfolio –

a) Market Portfolio : The market portfolio is a hypothetical investment portfolio that contains every form of asset available in the investment universe, with each asset weighted in proportion to its overall market participation. A market portfolio's expected return is the same as the market's overall expected return.

b) Zero Investment Portfolios : A portfolio of assets with a zero net value as a result of the grouping of investments. This type of investment portfolio can be created by simultaneously purchasing and selling equal securities, resulting in a net zero investment portfolio.

Types of Portfolio Management :

Portfolio Management is further of the following types -

a) Active Portfolio Management:

An active portfolio management service, as the name implies, involves portfolio managers actively purchasing and selling shares to achieve maximum profits for individuals. Outperforming the benchmark is the goal of active portfolio management. (For instance, BSE-SENSEX, NSE-NIFTY50, and so on.)

b) Passive Portfolio Management:

The portfolio manager in passive portfolio management works with a pre-determined portfolio that is tailored to the current market situation. Individuals who use discretionary portfolio management services appoint a portfolio manager to look after their financial needs on their behalf. The individual gives money to the portfolio manager, who then handles all of his investment needs, as well as paperwork, documentation, and filing. The portfolio manager in discretionary portfolio management has the authority to make decisions on behalf of his client.. In non-discretionary portfolio management, the portfolio manager can only advise the client on what is good and bad for him, but the client retains complete discretion.

Need for Portfolio Management

Individuals are given the optimum investment plan based on their income, budget, age, and risk tolerance by portfolio management. Portfolio management reduces the dangers of investing while simultaneously increasing the likelihood of return. Portfolio managers analyse a client's financial needs and provide the best and most risk-adjusted investment strategy for them. Portfolio management allows portfolio managers to give customers tailored investment solutions based on their needs and requirements.

Elements of Portfolio Managements includes proper asset allocation, diversification, rebalancing of assets and restructuring of the portfolio.

Risk

The uncertainty of future returns is referred to as risk. The difference between expected and actual returns can be used to calculate risk. Returns expected for a future period are known as expected returns. The gap between the expected return and the actual realised return is used to calculate risk.

Types of risks

The different types of risk are:

1) Unsystematic risk : It is also known as diversifiable risk and is a measure of risk connected with a given security. It refers to the level of risk associated with the company in which you invest or the industry in which you engage. Unsystematic risk can be avoided by investing in a diverse portfolio of companies from various industries.

2) Systematic risk/ market risk : Due to market volatility, all investors are exposed to this risk, which cannot be mitigated. While most individuals casually use the term "risk" when discussing investments, they are referring to this form of risk.

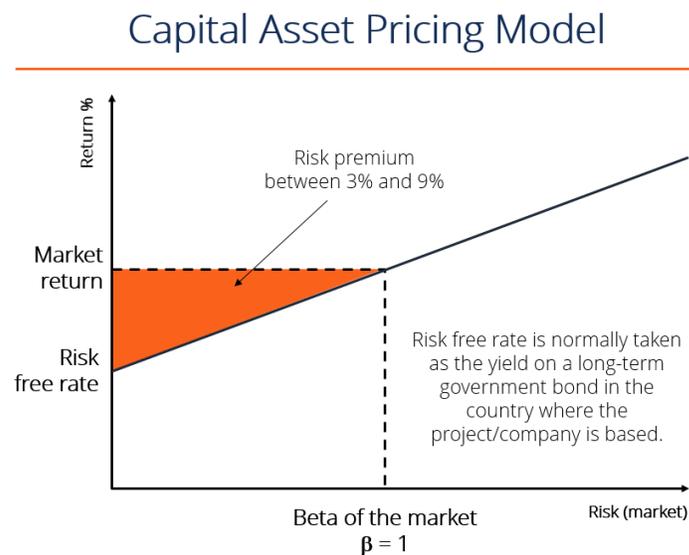
Diversification of Risk

Diversification is a risk management strategy that spreads investments over a variety of financial instruments, industries, and other categories to reduce risk. The goal of this strategy is to maximise profits by investing in a variety of sectors that will produce higher long-term returns.

Although it does not guarantee against loss, most experienced investors feel that it is the most crucial component of accomplishing long-term financial goals while decreasing risk.

Capital Asset Pricing Model

The Capital Asset Pricing Model (CAPM) is a model that describes the link between a security's projected return and risk. It demonstrates that the expected return on a security is equal to the risk-free return plus a risk premium based on the asset's beta. The CAPM principle is illustrated below.



Formula

The linear relationship between the return required on an investment (whether in stock market securities or in business operations) and its systematic risk is represented by the CAPM formula. The formula is as follows:

$$E(r_i) = R_f + \beta_i(E(r_m) - R_f)$$

$E(r_i)$ = Return required on financial asset i

R_f = Risk free rate of return

β_i = Beta value of financial asset i

$E(r_m)$ = Average return on the capital market

CAPM assumptions

Because of the assumptions on which the model is built, the CAPM is frequently criticised as unrealistic; therefore, it is critical to be aware of these assumptions and the reasons why they are criticised. The following are the assumptions:

Investors hold diversified portfolios

This assumption implies that investors will only seek a return on their portfolio's systematic risk, as unsystematic risk has been diversified and can be ignored.

Investors can borrow and lend at the risk-free rate of return

This is an assumption made by portfolio theory, from which the CAPM was built, and it provides investors with a minimal amount of return. The intersection of the securities market line (SML) and the y-axis corresponds to the risk-free rate of return. The SML graphically represents the CAPM formula. The SML is the line in the figure above.

Perfect capital market

This assumption implies that all securities are accurately priced and their returns will plot on the SML. The following are required for a flawless capital market:

- There are no taxes or transaction fees to worry about.
- Perfect information is readily available to all investors, who have the same expectations as a result.
- Every investor is risk averse, rational, and seeks to maximise their own utility.
- The market has a big number of buyers and sellers.

Styles of Investing

Value Investing

Rather than stock prices, value investing focuses on companies. “The dumbest reason in the world to buy a company is because it's going up,” Warren Buffett, the world's premier value investor, argues.” The movement of stock prices is largely irrelevant save for this important precept: Over time, the stock price tends to reflect the real value of the company.

In short, Value investors tend to buy the stocks that are undervalued and are inclined on shorting the stocks that are overvalued.

Intrinsic Value

Intrinsic Values is a metric for determining the asset's worth. Calculating intrinsic value is difficult since there is no universally accepted method for doing so. As a result, the investor must exercise considerable judgement. In general, the discounted cash flow approach is used to calculate the intrinsic value of an asset.

Different Faces of Value Investing

Passive Screeners: They look for traits in equities that the investor believes indicate undervalued stocks. They're hoping to use the screens to spot market errors.

Contrarian Investors: These are investors who put their money into businesses that others have abandoned, either because of poor performance in the past or because their future prospects appear grim. They imply that markets have overreacted to certain stocks.

Activist Value Investors: These are investors who make investments in poorly managed and ran businesses and then try to improve them.



Value Screens

Price to Book ratios: Buy stocks when the stock price is less than or a low multiple of the book value of the stock.

Price earnings ratios: Purchase stocks with a low equity-to-equity earnings multiple.

Assumptions of Value Investing

Value investing is based on two important assumptions:

1. A company's intrinsic value is not the same as its total stock value.
2. Stocks will always adjust to the company's intrinsic worth in the long run.

Growth Investing

Growth investors prefer to invest in stocks that are rapidly growing, and they are willing to pay a high price for doing so. Businesses that have undergone significant expansion, such as Microsoft, are known as growth companies. They may have excellent management teams, highly rated developments, or aggressive intentions for international expansion.

Growth firms rarely pay large dividends, and growth investors don't expect them to. Instead, growth firms reinvest their profits in the business to fuel even more expansion. Growth investors pay close attention to a company's earnings, among other things.

Younger companies with cutting-edge technology and expanding niche markets are attractive to growth investors. High-tech businesses have attracted the attention of growth investors for decades. Because expanding new companies tend to reinvest their revenues, investors rely on capital gains rather than dividends to make money. Growth investors look for indicators of future



performance in their fundamental analysis, particularly how it compares to previous performance.

Technical Investing

Unlike value and growth investors, investors who use technical analysis to identify stocks are nearly wholly disinterested about the firms in which they invest. Rather, they base their selections on the stock's movement as a result of market activity. They're interested in things like price highs and lows, trading volume, and market short-term patterns.

The most important thing to remember about this type of investment is that the technical investor is unconcerned about the stock's value. In other words, a technical investor approaches shares in a high-tech firm in the same way he approaches shares in a baby food company. The stock's and company's fundamental worth are immaterial. The only thing matters to them is how the stock is performing in the market

Candlestick charts are one sort of technical analysis that is widely used. These are charts in which each entry (or "candlestick") represents a single day of trading for a certain stock. The chart shows the stock's high and low values, as well as when it opened and closed. Technical analysts can assess if a stock is moving up or down and decide whether to purchase or sell based on the analysis of these charts.

Day Trading and Short Term Trading

Day trading is a type of securities trading in which a trader buys and sells financial instruments on the same trading day, closing all positions before the market closes for the day.

Day traders usually rely on very fast computers, since speed is a key asset in day trading. Day traders also need access to the trading desk; sources of news; and an understanding of technical analysis and the software necessary to perform it.



Short Term trading, on the other hand, is slightly slower paced. The purchase and sale of stock takes place over several days, but generally occurs within a week.

Pattern Traders

Such traders look for patterns in their technical analysis, relying heavily on candlestick charts. These patterns can have names like:

- Consolidation
- Cup-with-a-handle
- Evening doji star
- Hanging man
- Pennant
- Wedge

Day traders and short-term traders, like technical investors, rely on trends rather than performing fundamental analyses of companies whose stock they trade (the deliberate nature of fundamental analysis is incompatible with the immediate, highly charged world of day trading and short-term trading).

Time Frames

Day traders and short-term traders work within four basic time frames:

- **Short-term:** Trades take place over one to two weeks
- **Swing:** Trades occur within two to five days
- **Day:** Stocks are bought and sold within a day
- **Scalping:** Stocks are bought and sold within seconds or minutes

Trading Strategies

In this section we'll be discussing a few popular trading strategies to give more intuition as to how various approaches can be followed and modifications can be made to standard value investing approaches.

Piotroski F-Score

Piotroski's F-score method recommends evaluating a company's financial statements on nine different attributes. For each attribute if the company passes the test it gets a point otherwise it gets no point for that attribute. And thus adding points for all the nine attributes gives a score out of 9 which we call as F-Score.

It classifies the firms into three categories:

- Weak Candidates for Investment- score between 0 and 2
- Gray Zone- score between 3 and 7
- Strong Candidates for Investment- score between 8 and 9

The attributes considered in this method are:

Profitability

1. Positive Net Income in the current year = 1 point. Company is profitable.
2. Positive Operating Cash Flow in the current year = 1 point. Company is generating cash.
3. Positive change in ROA (Current year vs previous year) = 1 point. Company is improving its profitability.
4. Accruals: Operating Cash Flow > Net Income = 1 point. This is to ensure that the net income is not being driven by a change in accruals.

Leverage, Liquidity and Source of Funds

5. Decrease in Long Term Debt in the current year compared to previous year = 1 point. Leverage is going down.

- 6. Increase in Current Ratio this year compared to previous year = 1 point.
Liquidity is getting better.
- 7. Current Outstanding Shares \leq Previous Year Outstanding Shares = 1 point.
There is no share dilution.

Operational Efficiency

- 8. Gross Margin, current year $>$ Gross Margin, previous year = 1 point.
Company is getting better at improving profitability.
- 9. Asset Turnover Ratio, current year $>$ Asset turnover ratio, previous year = 1 point.
The company is able to generate more revenue from its asset base.

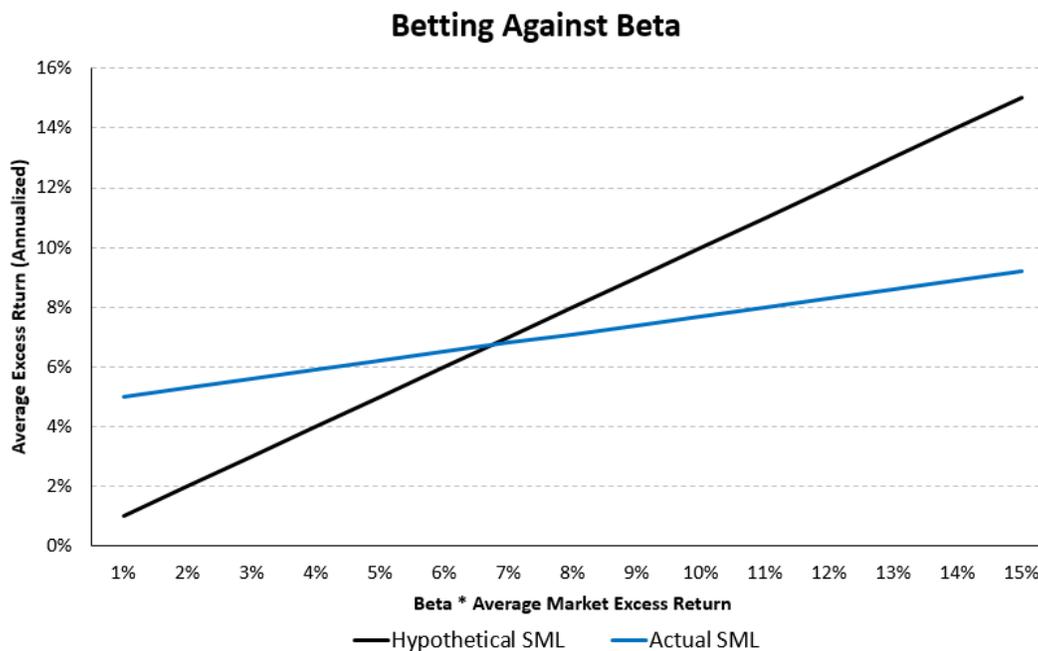
High Piotroski F-score depicts that the company is financially strong. But it is very much possible for a stock to have high F-Score and high valuation as well. These stocks represent quality, but not value. Many Investors use F-Score as a screener to filter out financially strong stocks.

Betting Against Beta

Like F-Score betting against beta is yet another trading strategy which relies on finding assets with high beta values (beta is defined in CAPM section) and then taking short positions in those stocks. Along with taking short positions in stocks with bigger beta values taking a leveraged long position is advised in assets with lower betas. The concept is that greater beta assets are overpriced, whereas lower beta assets are underpriced. According to the idea, the stock prices will eventually return to parity.

One of the basic assumptions of CAPM is that all rational investors would invest their money in a portfolio with the best projected excess return per unit of risk. The Sharpe ratio is the predicted extra return per unit of risk. Investors should ideally use this strategy and leverage their holdings based on their risk profiles. However, in the real world, the amount of leverage accessible to individual investors or mutual funds is restricted, thus investors are obliged to invest in

companies with larger betas in order to achieve a greater return with the limited amount of leverage that they have.



This preference for higher beta stocks suggests that these assets demand lower risk-adjusted returns than lower beta assets. The slope of the SML line is empirically demonstrated to be excessively flat for the market when compared to the theoretical value. This allegedly causes a pricing anomaly in the market, from which some profit. Some economic studies that have done historical backtesting have found that betting against beta portfolios have higher Sharpe ratios than the market as a whole.

Many large funds have built market-neutral bets against beta variables that may be used to test this concept. In practice, the performance of this approach declines as a result of fees and other trading expenditures. To be effective, the approach will almost certainly need a substantial quantity of cash as well as access to cheap trading expenses.