Lecture 5

What Are Stock Indices?

A stock market index is a statistical measure which shows changes taking place in the stock market. To create an index, a few similar kinds of stocks are chosen from amongst the securities already listed on the exchange and grouped together.
The criteria of stock selection could be the type of industry, market capitalisation or the size of the company. The value of the stock market index is computed using values of the underlying stocks.. Any change taking place in the underlying stock prices impact the overall value of the index. If the prices of most of the underlying securities rise, then the index will rise and vice-versa.
In this way, a stock index reflects overall market sentiment and direction of price movements of products in the financial, commodities or any other markets.
Some of the notable indices in India are as follows:

a. Benchmark indices like NSE Nifty and BSE Sensex

b. Broad-based indices like Nifty 50 and BSE 100

c. Indices based on market capitalization like the BSE Smallcap and BSE Midcap

d. Sectoral indices like Nifty FMCG Index and CNX IT

2. Why are stock indices required?

The stock market index acts like a barometer which shows the overall conditions of the market. They facilitate the investors in identifying the general pattern of the market. Investors take the stock market as a reference to decide about which stocks to go for investing.
The following lists the importance of stock market index:

a. Aids in Stock-Picking

In a share market, you would thousands of companies listed on the exchange. Broadly, picking the appropriate stock for investment may seem like a nightmare. Without a benchmark, you may not be able to differentiate between the stocks. Simultaneously sorting the stocks becomes a challenge. In this situation, a stock market acts like an instant differentiator. It classifies the companies and their shares based on key characteristics like the size of company, sector, industry type and so on.

b. Acts as a Representative

Investing in equities involves risk and you need to take an informed decision. Studying about stocks individually may seem very impractical. Indices help to fill the knowledge gaps that exist among the investors. They represent the trend of the whole market or a certain sector of the market. In India, the NSE Nifty the BSE Sensex act as the benchmark indices. They are believed to indicate the performance of the entire stock market. In the same manner, an index which is made up of pharma stocks is assumed to portray the average price of stocks of companies operating in the pharmaceutical industry.

c. The Parameter for Peer Comparison

Before including a stock in your portfolio, you have to assess whether it's worth the money. By comparing with the underlying index, you can easily judge the performance of a stock. If the stock gives higher returns than the index, it's said to have outperformed the index. If it gives lower returns than the index, it's said to have underperformed the index.
You would definitely want to invest in a multi bagger so as to justify the risk assumed. Else you can be better off investing in low-cost professionally managed index funds. You may also compare the index with a set of stocks like the Information technology sector. As an investor, you can know market trends easily.

d. Reflects Investor Sentiment

When you are participating in equity markets, amongst other things, knowing investor sentiment becomes an important aspect. It is because the sentiment affects the demand for a stock which in turn impacts the overall price. In order to invest in the right stock, you should know the reason behind the rise/fall in its prices. At this juncture, indices help to gauge the mood of investors. You may even recognize investor sentiment for a particular sector and across market capitalizations.

e. Helps in Passive Investment

Passive investment refers to investing in a portfolio of securities which replicates the stocks of an index. Investors who want to cut down on the cost of research and stock selection prefer to invest in index portfolio. Consequently, the returns of the portfolio will resemble that of the index. If an investor's portfolio resembles the Sensex, then his portfolio is going to deliver returns of around 8% when the Sensex earns 8% returns.

NSE and BSE are the major national exchanges in India. You can trade in stocks by opening a demat or trading account with a depository participant or stockbroker.

Why do companies get listed on exchanges?

- 1. Transparency and automated trading:

  High end technology in terms of trading provides a seamless experience for the investors. The high volume of trading over the exchanges results in lower impact cost for the investor. Automation leads to transparency in dealings thereby increasing investor's confidence.

- 2. Huge Reach:

  Online trading platforms can be accessed from any part of the country. The company gets greater visibility after its listing on the exchange and the public get equal opportunity to use this platform for investment purpose.

- 3. High transaction speed:

  There was huge delay in trade executions before the invention of online trading system and this has been completely done away with high speed trading platforms. Efficiency of transactions have increased manifold due to the high speed in which they happen over the exchange.

Role of exchanges:

- 1. Market where securities are traded:

  Any investor can buy or sell securities depending on his need. There is no specific time period till which one has to wait so as to trade in shares. Liquidity is high which is not the case with investment avenues like land or gold.

- 2. Responsible for evaluation of stock prices:

  Based on demand and supply, the price of stock either increases or decreases. If the company progresses well, there is increase in demand for its shares and in turn its price increases. Whereas if the company does not perform well, demand for its shares decreases and in turn its price also decreases. Evaluation of the stock's price happens in the exchange.

- 3. Safeguards investors:

  There is a thorough check and balance in the kinds of companies that get listed on the exchange and hence investors' money is protected as there are several regulations and norms the companies need to follow.

- 4. Acts as barometer for a country's economy:

  The health of the stock market is an indicator of the country's economic condition. Usually a strong government results in better performance of the markets and vice versa.

- 5. Broader range of investment avenues:

An investor or trader can invest according to his/her financial goals and also risk appetite. A wide range of financial products are available for wealth creation.

What is NSE?

National Stock Exchange (NSE) was founded in 1992 and is in Mumbai. Electronic trading platform was first introduced by the NSE.

Nifty50: Nifty is the abbreviation of National Stock Exchange 50. It is the benchmark index of NSE comprising 50 stocks.

Let us now move on to BSE meaning and its benchmark index.

What is BSE

BSE (Bombay Stock Exchange) was founded in 1875 and is the oldest stock exchange in Asia.

Sensex is the benchmark index of BSE and it is derived from the words sensitive and index. Sensex comprises of 30 stocks.

Sensex and Nifty are the face of the Indian stock market as these either go up or down depending on various political and economic factors.

Difference between NSE AND BSE

Features	**NSE**	**BSE**
Founded in	**1992**	**1875**
Benchmark Index	**Nifty**	**Sensex**
Total companies in Index	**50**	**30**
Known as	**The largest stock**	**The oldest stock**

Features	NSE	BSE
	exchange	exchange
Number of listed companies	5000+	1600+
Trading volume	Higher	Lower than NSE

What is BSE SENSEX?

The Sensex is primarily an index reflecting the movement of the share prices in the Bombay Stock Exchange (BSE). If the Sensex value goes up, it means there is a general increase in prices of shares and vice versa.

One can identify the booms and busts in the Indian stock market through S&P BSE SENSEX. The other index calculated in India is Nifty for the National Stock Exchange. (NSE)

Sensex was first compiled in 1986.

The BSE and S&P Dow Jones Indices have entered into an alliance to calculate SENSEX from Feb 19, 2013

What is the methodology used to calculate Sensex?

Initially, Sensex used the weighted market capitalisation methodology.

It shifted to '**Free Float market capitalization**' methodology with effect from since September 1, 2003. All major indices around the world use the free-float methodology.

What is meant by free float?

Free-float is that percentage of total shares issued by the company that are readily available for trading in the market. It excludes shares held by promoters, government etc.

To illustrate: If a company has 100 shares in total, of which 39 are held by the promoters, Government etc and 61 shares are available for trading to the general public. These 60 shares are the 'free-floating' shares and the free float percentage will be 61 % or 0.61.

What is meant by market capitalisation?

Market capitalisation represents the valuation of a company. It is determined by multiplying the price of their stocks with the number of shares issued by that company. **Market capitalisation = price * quantity**

Free-float market capitalisation is determined by multiplying the total market capitalisation with the free float factor.

BSE determines the free-float factor based on the percentage of free float. The free float percentage is rounded off to a higher multiple of 5.

To continue with the above illustration, the free float percentage is 61 % or 0.61. Hence, the free float factor is 0.65

So, free-float market capitalisation = market capitalisation * free float factor

Explain the steps in the calculation of SENSEX.

1. The Sensex comprise of a basket of 30 stocks. First, the 30 companies are selected on the basis of various quantitative and qualitative criteria like total market capitalisation, free float market capitalisation, sectoral representation etc. Basically, there should be companies from all major sectors like Banking, IT, FMCG.
2. The market capitalisation of each of the 30 companies is determined.
3. The free-float market capitalisation of each of the 30 companies is determined. The market capitalization is multiplied by the free-float factor to arrive at the free-float market capitalization.
4. The free-float market capitalisation of the 30 companies is summed up. We get the total free-float market capitalisation.
5. The formulae used to calculate Sensex: Sensex = (total free-float market capitalisation/ Base market capitalisation) * Base index value.
6. We have calculated the total free-float market capitalisation. The base year to calculate Sensex is 1978-79.
7. So, base market capitalisation is calculated. It means the market capitalisation in 1978-79. The base is a static value, but it has to be changed to account for bonus and rights issues etc. As per the BSE website, the figure of Rs. 2501.24 crore will be used as the base market capitalisation till the next adjustments become necessary.
8. The base index value is 100

Hence, to calculate Sensex, we will add the free-float market capitalisation of 30 selected companies, divide the resultant figure by 2501.24 crores and multiply it by 100.

What is NIFTY? How is it calculated?

Nifty, derived from the combination of two words “National” and “Fifty”, is a major stock index introduced by the National Stock Exchange of India. It comprises 50 stocks that are actively traded on the National Stock Exchange or the NSE. These stocks belong to various sectors. Nifty is calculated by using the “Free-float Market Capitalization” methodology. You can get their current values from the Index Bar of your NEST Trading Platform

Understanding Free-Float Market Capitalization

Free float shares are those shares of a company that are traded in the open market. Not all shares issued by the company are free float. Those that are held by the government or the management or promoters of the company or by foreign direct investors are not actively traded in the market. Only those that are traded in the market are taken into consideration while calculating Nifty. The classes of shareholding that are generally omitted from the characterization as Free-float are the following:

- Shares that are held by founders, directors, acquirers, etc. which contains an element of control over the business entity
- Shares that are held by individuals or groups or organisations having “Controlling Interest”
- Shares that are held by the Government playing the role of promoter or acquirer
- Equity held by the foreign investors through the FDI Route
- Strategic shareholding by private corporate bodies and/ or individuals
- Cross-holding or equity or shares that are held by associates and group companies
- Shares held by Employee Welfare Trusts
- Locked-in shares and shares which would not normally be sold in the open market

Nifty Calculation

The Nifty is a market capitalization weighted index based on this Free Float Method. They involve the total market capitalization of the companies weighted by their effect on the index, so the larger stocks would make more of a difference to the index as compared to a smaller market cap company

Key Points while calculating NIFTY

- 1995 is taken to be the base year
- The base value is set at 1000
- Nifty calculation is done taking into consideration 50 stocks that are actively traded on NSE
- These 50 top stocks belong to 24 sectors.

Market Capitalization = Shares outstanding * Market Price Per Share

Free Float Market Capitalization = Shares outstanding * Price * IWF (Investible Weight Factor)

Index Value = Current Market Value / Base Market Capital * Base Index Value (1000)

IWF is a unit of floating stock expressed in terms of the number available for trading. Base market capital of the Index is the combined market capitalisation of each scrip comprising the

Index during the base period and is equated to an Index value of 1000 known as the base Index value.

Example

Say NIFTYcomprises only 2 stocks – A and B

Assume A has 1,000 shares. Promoters hold 200 and the rest 800 are available for active trading and hence are free-floating. B has 2,000 shares. Its promoters hold 1000. Rest 1000 are free-floating.

Say price of A is Rs.10 and that of B is Rs.20

A’s total market capitalisation = 1,000 x Rs.10 = Rs.10,000

Free-float market cap = 800 x Rs.10 = Rs.8,000.

Similarly, B’s total market cap = 2,000 x Rs.20 = Rs.40,000.

B’s free-float market cap = 1000 x Rs.20 = Rs.20,000

Total free float market cap of A & B = Rs.(8,000+20,000)= Rs.28,000.

Assume Market Cap during 1995 was Rs.5,000

Then, NIFTY = 28,000*1000/5,000 = 5,600

*****