Introduction

The area of research in which I propose to undertake is in the field of finance for building an “Econometric model for prediction of index performance in Indian capital markets” and studying the relationship between the economic variables and the indexes. Broadly, the study would be focused on understanding the variables that would influence the markets and including the appropriate variables for a meaningful construction of model. I am a financial professional engaged in the field of fundamental analysis of equity for global markets. My experience is that the stock markets are influenced by varied factors and exhibits patterns echoing the movements of global markets particularly with those the business relations are high directly or indirectly. The inquisitiveness to study the phenomenon resulted of initiative to study those variables and construct a model for the prediction of the index.

The stocks of the companies are listed in any of the bourses of a country. These stocks trade in the exchange and a benchmark indexes are created to track the overall performance. These benchmark indexes may be industry specific or a representative of the population of stocks listed. Therefore, the overall indexes are a composite representative of the individual components weighted mostly on the market capitalization.

An index performance is the representation of cumulative performance of the underlying stocks included in the group. The stock indexes of any country have always been a challenge to be predicted since it is dependent on interaction of several macro economic variables that are endogenous and exogenous to the economy of the country. There exists a further complexity when the subject is an underdeveloped or developing nation where considerable lag in flow of information also exists. Considering India, the stock markets have been growing phenomenally particularly after the economic liberalization. Globalization has resulted in different economies converging closer to each other and enabling active mobilization of resources necessary to fuel growth.

Generally, an index can be viewed as a variable influenced primarily by the investment factor which can be categorized as individual and institutional irrespective of the source of
geographical origination. In the literature point of view, there exists a relationship between the foreign institutional investment (FII), foreign exchange reserve, money supply and the index performance of the western markets amongst other variables with the performance of Indian index. The thesis would be an analytical study of such relationship and impact of the identified variables in predicting the index.

In Indian context, the equity market is broadly classified as the primary and secondary market. The primary market is the place where the shares are offered to the public through the Initial Public offer, commonly known as IPO. The secondary market is the place where the shares listed after the offering is traded. The study would be utilizing the benchmark index of the secondary market. The Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE) are two major stock exchanges in India.

According to the BSE resources, the exchange is the first ever stock exchange established in Asia in 1875 and first in India to be granted a permanent recognition under the Securities Contract Regulation Act, 1956. The exchange has pioneered since then several actions supporting the growth of the country and marking a name in the international arena. Almost all of the powerful and big Indian business houses are listed in the exchange. On the other hand, NSE was incorporated by end of year 1992 and followed BSE by commencement of trading in options and futures. It has created a niche name for itself in creating benchmark indexes and enabling transaction of shares. The exchanges provided a great opportunity for the Indian companies to establish credibility in the international markets besides providing for capital sources. Further, it enabled in implementation of technological application to open the avenues for wider and convenient trading. They are also responsible for the growth of derivative markets and therefore providing a new avenue for investment and hedging risk. The products were addition to the equities and the segment still is vibrant in the eyes of domestic and global investors.

The growth potential in India is enormous leading to strong fundamental growth of the companies. Given the fact that the household income of the middle class people have been increasing, the companies are competing to push the products. The ultimate result of higher retained earnings and corresponding reinvestment leads to increase in stock price. From a macro
prospective, the price of share is influenced by many variables. The central theme of this study is to explore some of those variables and in particular the response to the global market movements.

**Stock Market Indexes**

In finance literature, stock market index can be viewed as an aggregation of the performance of the individual stock performance of the market. The stocks are selected based on some predefined parameters like price, market capitalization etc. to be included in the index. This grouped measure would act as a proxy for the overall market performance and a benchmark indicator for portfolio managers to compare their performance. In India, we have indexes tracking banks, technology, pharmaceuticals etc. which depicts the collective performance of the individual stock of the respective industry. Such sector focused index would enable in understanding the sectors that are performing well as compared to other peer industry in a given economic condition. Similar to Indian index S&P CNX NIFTY, DOW30, FTSE100 and NIKKEI225 indexes exists for tracking different markets that are considered.

S&P CNX NIFTY is one of the leading indexes tracking large cap companies on the National Stock Exchange (NSE) in India and covering 23 sectors of the Indian economy. The index is owned and managed by Indian Index Services and Products Ltd., a joint venture between NSE and CRISIL. It is a free float market capitalization weighted index and represents approximately 64.3% of the market capitalization of NSE as on March 31, 2011.

DOW30 is the leading index tracking publicly owned companies in the United States of America. The index is price weighted and is one of the oldest indexes in the U.S. It was created by the Wall Street Journal editor and Dow Jones & Co. Co-founder Charles Dow. Initially it contained only 12 stocks but later over the years scaled up to 30.

FTSE index contains 100 stocks that are most highly capitalized companies in the United Kingdom listed in the London Stock Exchange. The index is jointly owned by the Financial Times and the London Stock exchange. It includes the large cap companies and is market value
weighted representing about 81.0% of the total market capitalization from London Stock Exchange.

NIKKEI index contains 225 stocks from the companies listed in Tokyo Stock Exchange in Japan. The index is owned by Nihon Keizai Shimbun newspaper and is calculated on price-weighted basis almost similar to the DOW index in the U.S. It is widely regarded as the reflector of the prosperity of Japanese economy.

The following chart represents the movement of these indexes from January 2003 to December 2010.

**Chart 1: Index Performance Chart**

![Index Performance Chart: 2003-2010](chart1)

Source: Compiled under the study

**Chart 2: Normalised Index Performance Chart**

![Normalised Index Performance Chart: 2003-2010](chart2)
Economic Variables
Several systematic and unsystematic variables have an impact on the business houses and vice versa. The profitability of the business houses reflect in the market prices of the stocks which in turn affect the benchmark indexes. The measure of economic variables includes inflation, money supply, foreign institutional investments, employment rates, forex reserve, exchange rate etc. The scope of the study is restricted to the variables money supply, foreign institutional investments and forex reserve.

Foreign Institutional investment includes the investments made by the foreign institutions in the Indian markets. The stock market is affected particularly with the change in the portfolio of the foreign institutional buyers. Besides the equity markets, the investments is also routed in the debt instruments. The segment is largely regulated by the policies of the government and Securities and Exchange Board of India (SEBI). Most countries including India have specific norms for the investments in companies by these foreign institutions.

Money Supply refers to the total money stock available in an economy at a particular period. The term “money” is defined in several ways depending on the components that are included and the objective of the measurement. The money stock are periodically measured and published over the period of time by the Reserve Bank of India (RBI). In general, a large supply of money would mean the availability of money with the public for the purpose of consumption and investment. The monetary central bank intervenes from time to time in controlling the supply of money in the market to ensure sustainable growth. The Reserve Bank resorts to open market operations and employs others tools to achieve a balance between the inflation and growth.

Further, the money supply is measured as M1, M2, M3 and M4 basis besides the reserve money in India. Each of the parameters has specific purpose and measures the composite aspects of each segment of cash/deposits involved in the economy. The M1 includes currency and deposit money of the public, M2 represents M1 and savings deposits and M3 includes M1 and the time deposits.
M4 also regarded as the broad money includes the M3 and all other deposits with the post office savings.

A foreign exchange reserve refers to the assets held by the central bank in various foreign currencies and bank reserves. Similar to the money supply, the central bank also plays a significant role in the maintenance of exchange reserves. It enables the government to manage the currency exchange rate effectively by manipulating the quantum of reserves held in a specific currency. Such reserves are periodically published to the public by the Reserve Bank of India (RBI).

Therefore, the economic variables have an influence on the economy, and market-driven or regulated changes would impact the conditions.