CHAPTER II

STOCK MARKET AND ECONOMIC GROWTH –
A THEORETICAL BACKGROUND

2.1 Introduction

Financial markets play an important role in the mobilization of financial resources for long term investment through financial intermediation. The financial system comprises all financial markets, instruments and institutions. The financial system is also particularly important in reallocating capital and thus providing the basis for the continuous restructuring of the economy that is needed to support growth. (King and Levine 1993, Kizito 2012)

Financial markets comprises of money markets, capital markets, commodity markets, derivatives market, insurance markets and foreign exchange market. Money markets facilitate trading in short-term debt instruments to meet short-term needs of large users of funds such as governments, banks and similar institutions. Unlike the money market, the capital market mobilizes long-term debt and equity finance for investments in long-term assets. Commodity markets facilitate the trading of commodities, Derivatives Market provides instruments for management of financial risk, Insurance Markets facilitate redistribution of various risks and Foreign Exchange Markets facilitate trading of foreign exchange. (NSE, Indian Securities Market- A Review 2012)

The growing importance of capital market around the world has reinforced the belief that finance is an important ingredient for economic growth. The securities segment of the capital market complement traditional lending institutions by providing risk capital (equity) and loan capital (debt). By means of these instruments, the market is able to mobilize long-term savings and provide capital to investors to finance long-term investments there by broadening the ownership of productive assets. Dealers in the
securities segment of the capital market include banking institutions, stockbrokers, investment and merchant bankers and venture capitalists that intermediate between the market and the public. A well-functioning financial market is very crucial for the promotion of global financial integration. An efficiently functioning domestic financial market can better position a country’s competitiveness in the markets for global capital. (Levine 1997)

The financial market particularly the stock market plays a critical role in the process of economic growth today and thus the present chapter focuses on the role assumed by financial market particularly the stock market in promoting economic growth process from the theoretical angles. In addition to the examination of macroeconomic schools on the role played by financial markets, the various theses such as financial repression and financial liberalization, endogenous growth models, stock market instability and the role of stock market integration are also examined.

2.2 Economic Growth and Stock Market Development-Theoretical Relationship

The theoretical relationship between financial development and economic growth can be dated back to the twentieth century to the study of Schumpeter(1911) who focuses on the services provided by financial intermediaries and argues that these are essential for technological innovation and economic development. A well-developed financial system promotes investment by identifying and financing lucrative business opportunities, mobilizing savings, allocating resources efficiently, helping diversify risks and facilitating the exchange of goods and services. Gurley and Shaw(1955) were the first to study the relationship between financial markets and real activity. They contend that the process of financial development parallels real economic growth and emphasized the reciprocal relationship between real and financial development and state that, "Development involves finance as well as goods".
Much of the literature on the relationship between financial markets and economic growth suffered a lack of evidence until the 1970’s. Goldsmith(1969), Shaw(1973) and McKinnon(1973) found that financial development was significantly correlated with the level of per capita income.

The role and impact of stock markets on the economic development process have not received as much attention as other elements of the financial sector. Historically, the economists have focused on banks. Schumpeter (1911) and more recently Patrick (1966) argue that the services provided by the banking system are essential for technological innovation and economic growth. Goldsmith (1969) and McKinnon (1973) and others provide conceptual descriptions of how the financial system affects economic growth. Till the 1980’s literature emphasized the role of banking sector development on economic growth. However, in the 1990’s the emphasis had shifted to stock market indicators and the effect of stock markets on economic development (Demirguc-Kunt and Levine(1996), Levine and Zervos(1993, 1996 and 1998)). However, theoretical literature offers conflicting predictions about the role of stock markets and banks in promoting economic growth.

A well-developed stock market should increase saving and efficiently allocate capital to productive investments, which leads to increase in the rate of economic growth. Stock markets contribute to the mobilization of domestic savings by enhancing the set of financial instruments available to savers to diversify their portfolios. In a well-developed stock market share ownership provides individuals with a relatively liquid means of sharing risk when investing in promising projects. (Greenwood and Smith 1992) Stock Markets play a key role in allocating capital to the corporate sector, which will have a real effect on the economy in aggregate. Stock market development has assumed a developmental role in global economics and finance following the impact they have exerted in corporate finance and economic activity. Stock market activity is thus rapidly playing an important role in helping to determine the level of economic activities in most economies. Stock markets can play a unique role in furthering productivity and long-term economic growth. Stock markets can do this through their
monitoring and information production functions. By aggregating and disseminating information about firms, stock markets provide incentives to gather information, which becomes reflected in stock prices. This information production role has consequences that have efficiency implications. It is very important for entrepreneurs in augmenting their understanding of the market environment. It provides knowledge about how investors evaluate their own and their competitors' current decisions, future plans and managerial performance. It enhances entrepreneurs' knowledge about efficient firms' operation and their ability to develop more efficient production methods. The information reveals the general belief in the current and future prospects of the economy as a whole (Adjasi and Biekpe 2006, Perotti and Van Oijen (1999), Bencivenga and Smith, 1991).

The arguments for stock market development were supported by various empirical studies, such as Levine and Zervos (1996), Atje and Jovanovic (1993), Levine and Zervos (1998). These studies emphasise the importance of stock market development in the growth process. Rousseau and Wachtel (2000) and Beck and Levine (2003) show that stock market development is strongly correlated with growth rates of real GDP per capita. More importantly, they found that stock market liquidity and banking development both predict the future growth rate of economy when they both enter the growth regression.

However, controversy does exist on the role of stock market as an indicator of future economic activity. Mayer (1988) argues that even large stock markets are unimportant sources of corporate finance. Stiglitz (1985, 1994) says that stock market liquidity will not enhance incentives for acquiring information about firms or exerting corporate governance. Moreover, Devereux and Smith (1994) emphasize that greater risk sharing through internationally integrated stock markets can actually reduce saving rates and slow economic growth. Shleifer and Summers’ (1988) and Morck, Shleifer, and Vishny's (1991) analyses suggest that stock market development can hurt economic growth by easing counterproductive corporate takeovers. Levine and Zervos (1998) pose a question as to whether stock markets are merely burgeoning casinos where more and
more players are coming to place bets, or whether they are importantly linked to economic growth.

2.3 Role of Stock Markets in Growth Process: The Outlook of Various Schools of Thought

Before moving on to consider the role of stock markets in the growth process of the economy, the study attempts to investigate the outlook of various schools of thought with regard to stock market development during the era of financial liberalization.

Classical economists claimed that free markets regulate themselves, when free of any intervention. Adam Smith referred to a so called invisible hand, which will move markets towards their natural equilibrium, without requiring any outside intervention. However, the arguments for and against the financial liberalization thesis was provided by the neo-classical and the Keynesian schools of thought.

The neo-classical economists believed that the economy is supply-driven and demand simply follows. Neo-classical economists accept Say's law (that supply creates its own demand) so supply and demand always coincides. Central in the neo-classical theory is the assumption of price flexibility which is used to ensure equilibrium. Moreover, nominal wages are flexible downwards and they can move the economy from a position of involuntary unemployment to a position of full employment. Another feature of the neo-classical theory is that the interest rate is determined by savings and investment. Savings precede investment and are determined by the interest rate. Money supply is largely considered exogenous in the neo-classical theory. An important feature of this approach towards financial institutions is that they are considered simply as intermediaries between savers and lenders. Banks are restrained in their lending by reserve requirements. The monetary system and the liquidity system (financial institutions), do not give any feedback in the economy when interest rates or prices change. In this sense, their role is a passive one. One of the most important features of the neo-classical theory is the significance of market forces. Neo-classical economists
believe that the economy adjusts at the position of full employment on its own, if it is left to operate alone. The basic assumptions behind the market forces are that individuals maximise their utility and firms maximise their profits.

The simple neo-classical models were criticized by Keynes (1936) who argued that the economy does not have to reach the level of full employment. Instead there can be equilibrium at a lower level. The economy according to Keynes is demand driven and current demand is based on expectations of future demand. Investment does not depend heavily on the interest rate since most investment is carried out by the companies' retained earnings. The latter are based on the mark up put on their products which is determined by the need for future investment and the availability of external finance. Keynes argued that the economy does not have a natural tendency to reach equilibrium because of rigidities in prices and wages. Because prices and wages do not move downwards in the Keynesian framework, Say's law cannot work.

The Keynesian criticisms led to the neo-classical synthesis [Hicks (1937), Samuelson (1948)] which borrowed elements from the two schools of thought. The neo-classical synthesis assumes that Say's law holds and ensures full employment in an economy. However, the natural tendency of an economy to return to the level of full employment may be hampered by the Keynesian assumptions which the synthesis accepts. Downward price and wage rigidity may keep the economy away from full employment in the short run. Other assumptions of the neo-classical synthesis are a liquidity trap and the inelasticity of investment with respect to the interest rate. Because of the assumptions of the synthesis, the economy may be below full employment for a considerable amount of time. It is therefore, necessary for the government to intervene in order to restore full employment. Economic policy in this framework depends on the estimation of multipliers which shows the effect of changes of exogenous variables (taxes, government expenditure) on the economy. The problem with this method is that the multipliers are estimated to account for the effect of a particular policy on the economy. However, their estimation depends on historical data which refer to periods when this particular policy was not necessarily pursued. Therefore, the multipliers will
give the wrong signals. Also, this approach does not accommodate the reaction of economic agents.

The Keynesian criticism of the neo-classical model and the neo-classical synthesis, has led a group of economists to form what is known as the post-Keynesian school of thought [Arestis (1988, 1992), Arestis and Skouras (1985), Palley (1996)]. Post-Keynesian economics is an updated and extended version of Keynes' theory. As in Keynesian economics, post-Keynesian believe that output depends on demand and that the most important factor affecting output today is expectations for future demand. So, agents form their expectations for the future and invest accordingly. Post-Keynesian investment theory differs from Keynes investment theory in that not only expected profitability matters but realized investment matters as well because it creates profits which can be reinvested.

The level of demand depends on investment as well as on consumption spending, which is a function of employment. Post-Keynesians do not accept Say's law, not only because of price and wages being downward rigid, the liquidity trap and the interest inelasticity of investment but also because demand may simply not be enough to cover supply, because of pessimistic expectations for the future.

There are two basic theoretical directions provided by the schools of thought outlined above: laissez-faire and an interventionist one. The neo-classical theory and the neo-classical synthesis both favour a liberal economy where market forces are allowed to operate freely. The post-Keynesians argue that government intervention is essential because there is no mechanism which ensures full employment. Instead, the economy may possibly experience crisis which can be avoided (or become milder) if the economic authorities intervene. Obviously, the differences in these directions have implications for the theoretical developments on financial markets in emerging economies.
2.4 Development of Financial Markets in Emerging Economies

Until recently, most developing countries had adopted protectionist policies. They believed that openness to foreign investment from the developed countries would result in exploitation of their natural resources and not in domestic development. Many of these countries tried to completely insulate their economies from any external influence believing that they could achieve some degree of self-efficiency. They also tried to manipulate their domestic economies by means of low interest rates, minimum wages, etc. After the debt crisis of the 1980's, several developing countries had to change their ways because they had failed to achieve the growth levels of developed countries and were still depending on them for finance. The theoretical justification for financial liberalization was provided by Shaw (1973) and McKinnon (1973). Both these economists argued that the problem with developing countries was their governments' interference with the economy. Their approaches’ was a neo-classical one, where financial markets can promote economic growth if they are deregulated. Following this argument of financial repression, the neoclassical proposition for financial liberalization and its critique post-Keynesian arguments emerged.

2.4.1 The Financial Repression Paradigm

The main feature of financial repression is low nominal interest rates. These are believed to assist economic growth through increased investment. Capital, under these conditions, is cheap and there is always excess demand for investment. Real interest rates are sometimes zero or negative since they do not cover the rather high inflation rates usually found in developing countries. High inflation is created by a growth in nominal money that exceeds growth in real money balances demanded [Roubini and Sala-I-Martin (1992)]. The result of low interest rates is low savings which are not enough to cover the demand for investment. Therefore, credit is rationed and markets for credit are curbed, where interest rates are extremely high, for finance which is predominantly short term.
Another part of financial repression is cheap foreign exchange. The price of foreign exchange is kept artificially low and imports are relatively cheap. This allows entrepreneurs to buy capital equipment from abroad cheaply. Consumption goods imports are usually restricted or the import quotas are so high that these products are too expensive for the people of the developing economy. Because capital is very cheap, the growing industry of the financially repressed economy is capital intensive. The result is high unemployment and only a small percentage of the population is qualified to work for the capital intensive industry.

2.4.2 The Financial Liberalization Thesis

The financial liberalization theory was first developed by McKinnon (1973) and Shaw (1973). Its basic argument is that interest rate liberalization will increase savings and investment and result in faster economic growth and that increased real interest rates will only allow the most productive projects to go through, increasing thus the efficiency of investment. The whole process aims to develop the capital markets of the developing countries to achieve what calls predominantly on neo-classical assumptions about interest rates, financial markets functioning and the economy in general (e.g. one of the basic assumptions of the thesis is that only real money are important and there is no money illusion). The advocates of this thesis argue that if interest rates are liberalized in developing countries, then they will rise and real interest rates will rise too. The higher interest rates will attract more savings because of the higher return. These savings will be channeled in the economy in the form of investment. The real growth of the financial institutions provides potential lenders with a bigger and more efficient market for credit. The assumptions made about the financial institutions are a typical neo-classical one: their role is to intermediate between borrowers and lenders. Furthermore, it is assumed that financial services become cheaper and more efficient as capital markets develop. Financial firms compete with each other driving the cost of intermediation down and, in trying to identify the best investment opportunities; they generate information and provide access to finance only to the ‘best’ investments.
Another effect of financial liberalization is the reversal of capital flight. Since savers have access to interest rates as high as in other economies, they have no incentive to send their money abroad. This serves to further increase savings in the developing country and promote investment. The developing country will have no reason to prohibit capital flows and the foreign exchange rate will stabilize at a level reflecting the country's economic condition. At that point, access to foreign capital markets should become easier. This effect together with the increase of savings serves to fill the dual gap in developing countries: the gap between savings and investment and the gap between investment and foreign exchange.

The financial liberalization thesis claims that unemployment should fall following reform policies. Following the neo-classical assumptions about market forces, advocates of the thesis argue that unemployment in developing countries is high because of financial repression. The very low interest rates combined with high minimum wages, make investors choose capital intensive production, even though labour is the one thing developing countries have in abundance. If market forces are allowed to operate, capital intensive productions will become too expensive for the developing countries relative to labour intensive productions. The wage will fall and the demand for labour should increase (especially since the exchange rate will fall making domestic products competitive abroad and thus, increasing output).

2.4.3 Post-Keynesian Criticism of the Financial Liberalization Thesis

Post-Keynesian economics agree with part of the above theory: that the development of financial intermediation in an economy can and should help economic growth. However, it is clear from the above that the financial liberalization thesis is a supply-led theory; it assumes that the supply of finance will be used to stimulate investment. Post-Keynesian economists believe that the economy of any country is demand-led and the development of the financial sector will follow the increasing demand for financial instruments, as the economy grows.
A problem of the liberalization thesis may be that interest rates do not affect the level of savings but the way they are held [Dow and Earl (1982)]. As interest rates rise, savers will be induced to switch from holding cash to financial assets and may even be tempted to increase savings, but the main effect of such a policy will not increase savings dramatically. According to the post-Keynesian theory, savings can only increase if income increases, so people will spend a smaller proportion of their income. However, income increases when investment increases, therefore, the only way to increase savings is to stimulate the demand side of the economy. In fact, under certain circumstances, higher interest rates may result in lower savings.

Even if savings increased, there is no guarantee that it would be used for investment purposes. Contrary to neo-classical theory, post-Keynesians argue that investment depends on the rate of return on capital and it does not have to reach equilibrium with savings. In developing countries, real returns on capital are lower than in developed countries. Khatkhate (1980) argues that this is the reason behind the low incomes observed in these countries. In order to increase investment, interest rates would have to rise but not above the rate of return on capital. This would not be a problem, if the capital account of these countries was closed (and the authorities had the means of effectively policing capital flows). Because rates of return on capital are always higher in developed countries; capital would naturally flow to developed markets, leaving the developing ones with a financial capital shortage. Therefore, letting interest rates rise, will not be an effective way of increasing investment in these countries. In this respect, it is the openness proposed by the liberalization thesis which makes it difficult for developing countries to stimulate investment.

2.5 The Stock Market in Endogenous Growth Models

During the last decade a booming literature of endogenous growth model has emerged. These models aim to overcome some of the problems inherent in neo-classical growth models. Specifically, the neo-classical model assumes that the economy will stop growing at some point unless it is stimulated by some exogenous technological progress
[McCallum (1996)]. The endogenous growth models use neo-classical assumptions to show that an economy can experience everlasting growth. There are several endogenous growth models, each modeling some internal mechanism which is the source of growth. In the present analysis, we are concerned with the family of endogenous growth models in which financial intermediation is modeled explicitly. In these models financial intermediation enhances economic growth mainly in three ways: first, financial institutions pool funds and by predicting withdrawal demand they economize on liquid reserve holdings and direct these funds towards production. This effect is mainly attributed to the banking sector and it has been modeled by Diamond and Dybvig (1983). With respect to the role of the stock market, it provides liquidity to entrepreneurs when they need it, so they do not have to liquidate their investment. Similar models are presented by Bencivenga, Smith and Starr (1995,1996). Their models focus on the effect of improved liquidity as transaction costs fall, to the savings rate of return and the growth rate of the economy, and show that under certain conditions, greater liquidity may result in lower growth rate. Levine (1991) develops a model where through the development of the stock market, agents avoid both liquidity and productivity risk. The latter refer to the ability to diversify.

Second, financial institutions acquire information which enables them to allocate capital efficiently. Probably the best known endogenous growth model in this area is the one presented by Greenwood and Jovanovic (1990). In their model, financial activity develops as the economy develops. The most important role of intermediation is to collect and analyze information, thus facilitating the allocation of funds in projects with the highest return. Greenwood and Smith (1997) present two models where again, financial markets develop together with the economy. The first model can accommodate either banks or an equity market. It is shown that equity markets increase the economic growth rate if and only if, agents are sufficiently risks averse. In this case, if the economy was bank based, agents would be reluctant to invest their funds in physical capital. Their model may have implications for developing economies because it assumes that financial development requires some initial real development. This is because of the costs involved in establishing a financial market. According to this
model, financial intermediation may not be appropriate if it is imposed by the government to promote growth. Instead, the economy should develop to such a degree that would result in an increase in market activity. The second model shows how intermediation can support specialization which is important in economic activity. This model shows how resource allocation is done more efficiently through financial intermediaries. Finally, investors can diversify through intermediaries, obtaining higher and safer returns. This results in increased investment and growth.

2.6 Stock Market Volatility and Economic Development

The development of the stock market may also have an indirect effect on economic development through increased volatility. If the stock market becomes more volatile as it develops, it could undermine the whole economic system. Unstable prices can deter investment and give rise to speculation opportunities. Speculators will divert money from the production process and make the stock market even more volatile. However, stock market development does not have to increase volatility in the stock market. Instead it could reduce volatility by making the market more efficient and driving speculators out. Whether volatility will increase or not as the stock market expands is really an empirical question. The two main theories (neo-classical and post-Keynesian) are not very helpful is affected by stock market development. .

(i) The neo-classical argument

The neo-classical theory on financial deepening suggests that financial 'deepening associated with financial liberalization could reduce stock market volatility by increasing the number of shares and traders in the market. The neo-classicals argue that government intervention leads to distortions of financial prices. These distortions are the result of restrictions on market competition (e.g. interest rate ceilings, credit rationing, and barriers to entry or exit markets). Deregulation and liberalization can affect financial markets by allowing interest rates to raise to their competitive levels and therefore act as an efficient price mechanism [see Shaw (1973) and McKinnon (1973)]. This process should encourage investment and increase output growth which in turn
should lead to increased investment and savings [Fry (1997)]. The role of the stock market in this scenario is to act as an efficient equity pricing mechanism which will act as a guide for resource allocation. According to neo-classicals, this development process should enhance the role of the stock market through increased research and production and dissemination of information in the market place, which could result in the reduction of volatility of equity prices. This should encourage increased participation of both firms and investors in the stock market, which will eventually lead to reduced volatility of equity prices. Tauchen and Pitts (1983) present a model which shows that volatility is inversely related to the number of traders in a market. In their model, volatility consists of two components: a variance component common to all traders and a variance component relative to each individual trader. The more traders in the market, the more the trader specific variance reduces. However, as Kwan and Reyes (1997) argue, the variance components in this model may change after liberalization due to different levels of uncertainty, so, whether volatility will increase or decrease is an empirical question.

However, even if volatility increases after liberalization, this is not necessarily damaging to the efficiency of the market. Lamoureux and Lastrapes (1990a) show that, for 20 actively traded stocks from the S&P index, volatility is positively related to the information flow arriving in the market. Therefore, increased volatility could reflect increased information flow which can promote efficiency in a market. This hypothesis is also consistent with the neo-classical theory which suggests that financial deepening should encourage increased production and dissemination of information because of the profit opportunities which will follow financial liberalization. Also, note that the capital asset pricing model suggests that if the markets are efficient, increased volatility should not affect macroeconomic performance [Chou, Engle and Kane (1992)].

(ii) The Keynesian argument

The post-Keynesian view assumes-imperfect markets, particularly in relation to the availability of information to all participants. It assumes that investment is determined by "animal spirits". [Tauchen and Pitts (1983)]. Therefore, deregulation
could attract speculators and investors with short term strategies who can introduce financial crises and economic instability.

Furthermore, volatility can induce even more volatility. Since individual investors are mainly "ignorant" of the future, according to the post-Keynesian view, a change in their expectations which is not really relevant to the prospective yield, can bring violent changes in the valuation of stocks, "since there will be no strong roots of conviction to hold it steady" [Keynes (1936)]. In this sense, financial liberalization will increase volatility through increased liquidity. Keynes, (1936) regards liquidity as having a destabilizing effect on the market because of the assumption of market imperfection. Therefore, an increased number of trading shares and investors can destabilize the market.

Increased volatility can result to misallocation of savings and investment because of increased uncertainty. Advocates of the post-Keynesian view [e.g. Stiglitz (1994)] argue that government intervention can have a positive effect on the market because financial markets are subject to market failures that can produce externalities. Singh (1997) discusses the role of a stock market in a developing economy and concludes that the expansion of a stock market which results from financial liberalization is more likely to damage than enhance economic growth. Most developing economies lack the necessary legal and regulatory infrastructure to ensure that their stock markets functions properly [Bekaert(1995), Cashin and McDermott (1995)]. Furthermore, equity prices in these markets are much more volatile than in developed markets. Singh argues that increased volatility can undermine the role of the stock market as a whole, since prices are no longer useful in resource allocation decisions and risk-averse firms could stop raising capital or even listing in the stock market.

2.7 Integration of the Emerging Stock Markets with the world market

Another issue we examine is the integration of the emerging stock market like Indian Stock Market with developed stock markets and with each other. Integration has
several implications for the emerging economies and their ability to attract foreign investment. From a neo-classical perspective, as long as there are no barriers to investment between two countries, the rate of return offered by these countries should gradually become equal. This is the result of competition which is a central assumption in the neo-classical theory. The equalized rate of return is referred to as the normal rate of profit [Konz (1997)]. If capital can move freely between countries, the neo-classical theory assumes that convergence between the rates of return offered by these countries is inevitable. The same principle extends to the stock market. The only factor which should cause rates of return to differ across stock markets should be their individual risk. Integrated national stock markets should offer a common reward for the same risk [Bekaert (1995)]. If national stock markets are well diversified and perfectly integrated then, similar assets should offer similar rewards and we should expect the market indexes to offer the same return over time.

Financial liberalization can enhance integration which can assist stock market and economic development. Increased participation due to foreign inward investment can enhance the liquidity of a market and prices will become less sensitive to the sale of equity [Pagano (1989)]. This in turn should decrease volatility which can affect negatively economic development. The increased activity in the stock market should induce more companies to seek a listing and the stock market will be able to provide the diversification, liquidity and informational benefits which promote economic growth [Hargis (1997)]. The increased investment will increase stock prices resulting in lower required rates of return for companies. Faced with the lower rates of return, companies can raise additional capital through the financial markets and increase aggregate investment in the economy.

The above scenario can materialize in a neo-classical world. In such a world, competition will ensure that rates of return will become equal. The emerging stock markets have attracted huge amounts of capital. This implies that when they opened up to foreign investors, prices were repressed and the capital inflows raised them until they corresponded to their individual risk level as it was priced in the world market.
However, it has been often argued in the economic literature that this is not the case. Instead, the reason foreign investors entered the emerging stock markets (ESMs), was a misplaced euphoria and a herd instinct [Singh (1997)]. In other words, the fundamentals of the recipient countries could not justify the capital inflows. The money invested in these countries was simply chasing short term high returns or they were responding to the trend of investing in ESMs.

This view is supported by Krugman (1995) among others. Krugman states that ‘It seems fairly clear that some of the enthusiasm for investing in developing countries in the first half of the 1990s was a classic speculative bubble’. An example they use to support their proposition is the Mexican crisis in 1994 [e.g. Aitken (1996), Krugman (1995)]. It is argued that the Mexican crisis was caused by institutional investors who entered the Mexican market for a quick profit. When the economy hit trouble, they liquidated their investment and send the money out of Mexico. If the speculative bubble theory is correct, then it is expected that the returns of the ESMs will not converge.

The speculative bubble scenario is only one reason why the rates of return offered by Emerging Stock Markets may not be converging. Another reason may be interference from the governments of the developing countries. If the liberalization policies have not gone far enough to remove all barriers on investment flows, then the developing stock markets will different risk premium from the rest of the world for the same risk class [Hietala (1989), Korajczyk (1995)]. If residents are not allowed to invest abroad, they cannot diversify the country specific risk and they should demand a higher return on domestic securities than foreigners. Errunza et. al. (1992) developed a model which accounts not only for integration and segmentation, but also for mild segmentation. Their model is a modified International Asset Pricing Model.

Another reason why segmentation may persist is because of the problems often presented in ESMs. Cashin and McDermott (1995) reports that inadequate regulation and supervision of financial markets and poor quality of information are common
features in emerging stock markets. The neo-classical theory assumes that capital will move in because of the higher rate of return offered by the markets. However, foreign investors should only move in if they have enough information to evaluate their investment. If the investment environment is not developed enough to allow an investor to evaluate and follow his preferred investment strategy, then it is possible that investors in these markets would demand a premium to invest there. Furthermore, the investment horizon would be shorter because of the uncertainty associated with the problems inherent in undeveloped stock markets. One would expect that such markets are segmented because of a lack of foreign capital involvement.

Integration of the ESMs with the world stock markets implies that the ESMs can contribute positively to economic growth. On the other hand, segmentation would imply that either these markets have been used by foreign investors for speculation, or the liberalization reforms have not gone far enough to eliminate any barriers in capital flows. Alternatively, it could be that the ESMs in some countries are not sophisticated enough to provide foreign investors the services that developed stock markets provide. In any case, if the markets are segmented they could be caught in a low equilibrium trap [Hargis (1997)], i.e. in a situation where few money is invested in the stock market making it illiquid and risky. It is then expected that such a stock market cannot enhance economic growth, but rather hinder economic growth through volatile prices, illiquid investment and speculation.

2.8 The Research Questions Evolved for the Present Study

The financial liberalization thesis has been the cornerstone of the financial liberalization reform policies which have been implemented in several developing countries during the last twenty years. The liberalization thesis which advocates the abolition of interventionist policies is largely based on the neo-classical model. One of the reasons these policies where implemented in several countries was because they needed foreign aid and the IMF imposed conditions on the loans or made suggestions which would make the country which followed the suggestions a better candidate for
aid. However, a lot of these policies are controversial and not strictly based on some theoretical model. In effect, the McKinnon Shaw propositions were used in order to suggest wide scale-liberalization of the emerging economies. There is now controversy surrounding the way the liberalization policies were suggested to these countries and implemented, especially with respect to the stock market. What is interesting is that the controversy comes not only from economists against liberalization but also from advocates of the liberalization process.

Clearly whether the reform policies work or not are an empirical issue. There are dozens of issues involved and in this thesis the researcher aims to examine three of them: the effect of stock markets development on the economic growth in an emerging economy like India, the change in the degree of integration between Indian Stock markets and other developed stock Markets after liberalization and the efficiency level of Indian Stock Market after liberalization.

First the researcher tests if stock market development had an effect on economic growth in India. Furthermore, it is examined the main determinants affecting stock market development in India. Also, the integration of Indian Stock Market with other major developed stock Markets is tested. Finally, the researcher tests the efficiency level of Indian Stock Markets. The results should provide evidence on whether Indian stock markets is developed enough after liberalization so they could enhance economic growth, as well as on a number of related issues such as the potential for diversification and efficiency.

2.9 Conclusion

From the above discussion, it can be inferred that the financial liberalization propositions have their foundation in the neo-classical theory of free markets. The liberalization reforms have been implemented in several countries, at the suggestion of the IMF and the World Bank. These reforms and the way they were implemented have
attracted fierce criticism from several economists, even from advocates of the free market.

A major subject of controversy is the usefulness of the development of a stock market in a developing economy. A lot of advantages and disadvantages have been cited in the literature. One of the problems surrounding stock market development is that it was ignored by the early literature which proposed financial deepening. Although an early analysis on the benefits of the creation of a stock market in developing economies was missing, several of these countries either promoted the development of, or created a stock market. The effect of the stock market development on economic growth can be direct or indirect. A national stock market should integrate with the world capital markets in order to assist economic growth more effectively. Integration can help the stock market grow and develop the characteristics which make it a useful instrument for economic growth. The prevailing efficiency in stock market affects a large extent the domestic economic growth as well as its integration with global stock markets. In the following chapters empirical analyses are used for verifying these above mentioned hypotheses.

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CHAPTER III

STOCK MARKETS: EVOLUTION AND GROWTH

3.1 Introduction

The financial markets particularly the stock market is an integral segment influencing the whole growth process in modern times both developed and less developed economies. The existing status of stock market development, its services and products, development of cooperating agents in stock markets and the magnitude of the impact of this market on growth process etc. depend to a great extent on the evolutionary rhythm of stock markets in respective countries (Nagaraj 1996). The evaluation of the evolutionary trends and factors augmenting/decelerating the evolutionary momentum of stock market helps the policy makers to draw suitable policies and strategies to reframe this market to suit the needs of economic development. Thus, in this chapter, the growth and evolution of stock exchanges in the global context, the structure and characteristics of Indian Stock Markets and the trends in the development and operational procedures over the period of years are surveyed.

3.2 The International Scenario: A Look into the Past

The history of the earliest stock exchange, the French Stock Exchange, may be traced back to 12th century when transactions occurred in commercial bills of exchange. To control this budding market, Phillip, the Fair, of France (1268-1314) created the profession of “couratier de change”, which was the predecessor of the French stockbroker. At about the same time, in Bruges (a prosperous centre of the low income countries of Europe), merchants began gathering in front of the house of the Van Der Buerse family to engage in trading. Soon the name of the family became identified with trading and in time a 'bourse' came to signify a stock exchange. At the same time, stock exchanges began to materialize in other trading centres like the Netherlands (Amsterdam Bourse), Frankfurt (the Deutsche Stock Exchange, formerly the Börse) the London Stock Exchange (LSE) in England and Milan (the Borsa). Amsterdam's Bourse was the first to formally begin trading in securities[Duguid (1901) (1904)].
In 1773, London stock dealers, who had been meeting informally in coffee houses, moved into their own building to establish an exchange. Other European exchanges that opened in the 1600s and 1700s included those in Belgium, Spain, Portugal, and Sweden. From the early exchanges for commercial bills and notes, it was an easy and logical transition to establish stock exchanges for securities [Duguid(1901) (1904)].

By the mid-1800s, many countries outside of Europe (including Canada and Australia) began trading in securities. During the 19th and 20th centuries, major exchanges opened in Asia, Eastern Europe, and parts of Africa and Latin America [Duguid (1901) (1904)].

The history of few major stock exchanges across the globe is given below:

(i) **History of New York Stock Exchange**

Across the Atlantic, in the United States, securities markets began speculative trading in issues of the government. By 1791, the nation's first stock exchange was established in the city of Philadelphia. The origin of the New York Stock Exchange can be dated back to the 1792, when the Buttonwood Agreement was signed by 24 stock brokers outside of 6 Wall Street in New York under a buttonwood street on Wall Street. The signers of the Buttonwood Agreement drafted their first constitution on March 8, 1817, and named their nascent organization the New York Stock & Exchange Board in 1863, this name was shortened to its modern form, the New York Stock Exchange, which became known as the NYSE. The volume of stocks traded increased six fold in the years between 1896 and 1901. In 1914, World War I caused the longest exchange shutdown for four months and two weeks. The exchange re-opened on December 12 and the same day witnessed the largest one-day percentage drop in the Dow Jones Industrial Average (24.4%). In 1915, the market price was given in dollars and in 1929 the Central quote system was established. In 1943, the trading floor was open to women. In 1966, NYSE began a composite index of all listed composite stocks. This was referred to as “Common Stock Index” and was transmitted daily. In 1970, the exchange established the Securities Investor Protection Corporation, a federally, non-profit, member-funded,
corporation in the United States, which aimed to protect the investors from financial harm if a broker-dealer failed. Another trading floor called Bond Room was opened in the year 2000. In 2003, NYSE Composite Index was re-launched and value was set equal to 5000 points. The NYSE announced its plans to merge with Archipelago on April 21, 2005 to reorganize the NYSE as a publicly traded company. NYSE's governing board voted to merge with rival Archipelago on December 6, 2005, and become a for-profit, public company. It began trading under the name NYSE Group on March 8, 2006. A little over one year later, on April 4, 2007, the NYSE Group completed its merger with Euronext, the European combined stock market, thus forming the NYSE Euronext, the first transatlantic stock exchange (Smith 2003, Duguid 1904).

Much has changed since 1901, yet the NYSE has always kept pace with member and investor need for trading space and the latest developments in technology. The NYSE is open for trading Monday through Friday from 9:30 am – 4:00 pm Eastern Time, with the exception of holidays declared by the Exchange in advance. Today, nearly three thousand companies from all over the world trade their stocks valued at trillions of dollars here.

(ii) **History of London Stock Exchange**

The London Stock Exchange, located in the City of London in the United Kingdom, is the fourth largest stock exchange in the world and the largest in Europe with a market capitalisation of US$3.266 trillion (as on December 2011). The Exchange was founded in 1801 and its current premises are situated in Paternoster Square close to St. Paul’s Cathedral in the City of London. The Royal Exchange had been founded by Thomas Gresham on the model of the Antwerp Bourse, as a stock exchange.

During the 17th century, stockbrokers were not allowed in the Royal Exchange due to their rude manners. They had to operate from other establishments in the vicinity, notably Jonathan’s Coffee-House. At that coffee house, a broker named John Casting started listing the prices of a few commodities, exchange rates and certain key provisions such as salt, coal and paper in 1698. Originally, this was not a daily list and was only published a few days of the week. Public auctions during this period were
conducted for the duration that a length of tallow candle could burn; these were known as "by inch of candle" auctions. As stocks grew, with new companies joining to raise capital, the royal court also raised some monies. These are the earliest evidence of organized trading in marketable securities in London (Smith 2003, Duguid 1904, 1901, Einzig 1935).

After Gresham's Royal Exchange building was destroyed in the Great Fire of London, it was rebuilt and re-established in 1669. This was a move away from coffee houses and a step towards the modern model of stock exchange (Einzig 1935, Smith 2003, Duguid 1904, 1901).

The Royal Exchange not only housed brokers but also merchants and merchandise. This was the birth of a regulated stock market, which had teething problems in the shape of unlicensed brokers. In order to regulate these, the Parliament brought out an act in 1697 that levied heavy penalties, both financial and physical to those brokering without a license. It also set a fixed number of brokers (at 100), which was later increased as the size of the trade grew. This invariably led to several problems of its own, one of which was that the traders had started leaving the Royal Exchange, either by their own virtues or through expulsion and had started dealing in the streets of London. The street in which they were now dealing was known as Change or Exchange Alley which was suitably placed close to the Bank of England. Parliament tried to regulate this and ban the unofficial traders from the Change streets (Einzig 1935, Smith 2003, Duguid 1904, 1901).

After the Seven Years War (1756–1763), trade at Jonathan's coffee house boomed again. In 1773, Jonathan, together with 150 other brokers, formed a club and opened a new and more formal "Stock Exchange" in Sweeting's Alley. This now had a set entrance fee, through which traders could enter the stock room and trade securities. It was, however, not an exclusive location for trading, as trading also occurred in the Rotunda of the Bank of England. Fraud was also rife during these times and in order to deter such dealings, it was suggested that users of the stock room pay an increased fee. This was not met well and ultimately, the solution came in the form of annual fees and
turning the Exchange into a Stock Subscription room (Einzig 1935, Smith 2003, Duguid 1904, 1901).

The Subscription room created in 1801 was the first regulated exchange in London, but the transformation was not welcomed by all parties. On the first day of trading, non-members had to be expelled by a constable. In spite of the disorder, a new and bigger building was planned, at Capel Court. With its new governmental commandments and increasing trading volume in place, the Exchange was progressively becoming an accepted part of the financial life in the City. In spite of continuous criticism from newspapers and the public, the government used the Exchange's organized market to raise the enormous amount of money in the wars against Napoleon (Einzig 1935, Smith 2003, Duguid 1904, 1901).

Being the financial centre of the world, both the City and the Stock Exchange were hit hard by the outbreak of the First World War in 1914. At first, prices surged due to a rising fear that both borrowed money was to be called back and foreign banks would demand their loans or raise interest. The Stock Exchange ended up being closed from the end of July until the New Year, introducing again street business as well as on the “challenge system”. The Exchange was set to open again on 4 January 1915 under tedious restrictions, as transactions were to be in cash only. Due to the limitations and challenges on trading brought by the war, almost a thousand members quit the Exchange between 1914 - 18. When peace time finally returned in November 1918, the post-war mood on the trading floor was generally cowed.

In 1937, experiences from the First World War made officials at the Exchange draw up plans on how to handle a new war situation. On the first day of September 1939, the Exchange closed its doors “until further notice” and two days later, the declaration of war was signed. Unlike from the prior war, the Exchange opened its doors again six days later, on the 7th of September. As the war escalated into its second year, the concerns for air raids were greater than ever. Eventually, on the night of 29 December 1940 one of the greatest fires in London’s history took place. The Exchange’s floor was hit by a clutch of incendiary bombs, which fortunately were extinguished.
quickly. Trading on the floor was now drastically low and most was done over the phone to reduce the possibility of injuries (Einzig 1938, Smith 2003, Duguid 1904, 1901).

After some turbulent times, the stock market enjoyed some remarkable years in the late 1950s and business was indeed booming. 1973 marked the year of changes for the Stock Exchange. Firstly, two trading prohibitions were to be abolished. A report from the Monopolies and Mergers Commission recommended the admittance of both women and foreign-born members on the floor. Secondly, in March the London Stock Exchange was to (formally) amalgamate with the 11 British and Irish regional exchanges. Governmental changes also continued in 1991, when the governing Council of the Exchange was replaced with a Board of Directors drawn from the Exchange’s executive, customer and user base. This also marked the first time the trading name became 'The London Stock Exchange'(Smith 2003).

FTSE 100 Index (Footsie 100) was launched by the Financial Times and Stock Exchange partnership in February 1984. This turned out to be one of the most useful indices of all and tracked the movements of the 100 leading companies listed on the Exchange. The biggest happening of the 1980’s was the sudden deregulation of the financial markets in the UK in 1986. The phrase Big Bang was coined to describe measures including abolition of fixed commission charges and of the distinction between stockjobbers and stockbrokers on the London Stock Exchange, as well as change from an open-outcry to electronic, screen-based trading.

In 1995, the Exchange launched the Alternative Investment Market, the AIM, to allow growing companies to expand to international markets. Two years later the Electronic Trading Service (SETS) was launched, bringing greater speed and efficiency to the market. Following this, the CREST settlement service was also launched. On the year of the new millennium, 2000, the Exchange's shareholders voted to become a public limited company: London Stock Exchange PLC. The LSE also transferred its role as UK Listing Authority to the Financial Services Authority(FSA-UKLA).

EDX London, a new international equity derivatives business, was created in 2003 in partnership with OM Group. The Exchange also acquired Proquote Limited, a new generation supplier of real-time market data and trading systems. In 2007 The
London Stock Exchange merged with Borsa Italiana creating the London Stock Exchange Group (LSEG).

(iii) History of Paris Stock Exchange

The Paris Bourse is the historical Paris Stock Exchange, known as Euronext Paris from 2000 onwards. Historically, stock trading took place at several spots in Paris, including rue Quincampoix, rue Vivienne (near the Palais Royal), and the back of the OperaGarnier (the Paris opera house). In the early 19th century, the Paris Bourse's activities found a stable location at the Palais Brongniart.

From the second half of the 19th century, official stock markets in Paris were operated by the “Compagnie des agents de change”, directed by the elected members of a stockbrokers” syndical council. The number of dealers in each of the different trading areas of the Bourse was limited. There were around 60 “agents de change” (the official stockbrokers). An “agent de change” had to be a French citizen, be nominated by a former agent or his estate, and be approved by the Minister of Finance, and he was appointed by decree of the President of the Republic. Officially, the “agent de change” could not trade for their own account nor even be a counterpart to someone who wanted to buy or sell securities with their aid; they were strictly brokers, that is, intermediaries. Paris Bourse is referred to as order-driven market, as opposed to quote-driven markets or dealer markets, where price-setting is handled by a dealer or market-maker. In Paris, only “agent de change” could receive a commission, at a rate fixed by law, for acting as an intermediary. However, parallel arrangements were usual in order to favor some clients' quote. Until about the middle of the 20th century, a parallel market known as "La Coulisse" was in operation (Smith 2003).

Until the late 1980s, the market operated as an open outcry exchange, with the agents de change meeting on the exchange floor of the PalaisBrongniart. In 1986, the Paris Bourse started to implement an electronic trading system. This was known generically as CATS (Computer Assisted Trading System). By 1989, quotations were fully automated. The PalaisBrongniart hosted the French financial derivatives exchanges MATIF and MONEP, until they were fully automated in 1998. In the late 1990’s, the
Paris Bourse launched the Euronext initiative, an alliance of several European stock exchanges.

(iv) **History of the Frankfurt Stock Exchange**

The Frankfurt Stock Exchange, located in Frankfurt, Germany, is the world's 12th largest Stock Exchange by market capitalisation. Frankfurt Stock Exchange is owned and operated by Deutsche Borse, which also owns the European futures exchange Eurex and the clearing company Clearstream.

The Frankfurt Stock Exchange accounts for over 90 percent of the turnover in the German market and a very large share of the European market. In 2010, the Frankfurt Stock Exchange agreed to move to abolish floor trading and completed this transition in May 2011. Today, trading takes place exclusively via the Xetra system, with redundant floor brokers taking on the role of market-makers on the new platform. Approximately 47% of the 300 market participants in Frankfurt come from abroad. As of November, 2010, companies from more than 80 countries list on the Frankfurt Stock Exchange with 49% from North and South America. 31% from Europe (including Russia), 14% from Asia and 6% from Australia and Africa (Smith 2003).

The Frankfurt Stock Exchange has more than 250 international trading institutions and more than 4,500 traders. Investors directly connected to the Frankfurt Stock Exchange represent 35% of the world's investment capital. The trading indices in Frankfurt are DAX, DAXplus, CDAX, DivDAX, LDAX, DAX, SDAX, TecDAX, VDAX and EuroStoxx50.

(v) **History of Australian Securities Exchange (ASX)**

The Australian Securities Exchange (ASX) is Australia’s primary securities exchange, created by the merger of the Australian Stock Exchange and the Sydney Futures Exchange in July 2006 and having an average daily turnover of $4.685 billion and a market capitalisation of around AU$1.2 trillion.

The origins of the ASX date back to the mid 1800's when six separate exchanges were established in Australia's state capital cities of Melbourne, Victoria (1861), Sydney,
New South Wales (1871), Hobart, Tasmania (1882), Brisbane, Queensland (1884), Adelaide, South Australia (1887) and Perth, Western Australia (1889). In 1861, Australia's first stock exchange was formed in Melbourne. The Australian Associated Stock Exchanges (AASE) was established in 1937. In 1938, the first share price index was published. During this period, trading was conducted by a call system, where an exchange employee called the names of each company and brokers bid or offered on each. In the 1960s this changed to a post system. Exchange employees called "chalkies" wrote bids and offers in chalk on blackboards continuously, and recorded transactions made (Smith 2003).

The ASX (Australian Stock Exchange Limited) was formed in 1987 by legislation of the Australian Parliament which enabled the amalgamation of six independent stock exchanges that formerly operated in the state capital cities. After demutualization, the ASX was the first exchange in the world to have its shares quoted on its own market. The ASX was listed on 14 October 1998. On 7 July 2006, the Australian Stock Exchange merged with SFE Corporation, holding company for the Sydney Futures Exchange.

(vi) History of Tokyo Stock Exchange

Tokyo Stock Exchange, TSE, located in Tokyo, Japan is the third largest stock exchange in the world with 2,292 listed companies and a market capitalization of US$3.3 trillion (as of December 2011).

The Tokyo Stock Exchange was established on May 15, 1878. In 1943, the exchange was combined with ten other stock exchanges in major Japanese cities to form a single Japanese Stock Exchange. The combined exchange was shut down and reorganized shortly after the bombing of Nagasaki. The Tokyo Stock Exchange reopened under its current Japanese name on May 16, 1949, pursuant to the new Securities Exchange Act.

The TSE run up from 1983 to 1990 was unprecedented, in 1990 it accounted for over 60% of the world's stock market capitalization (by far the world's largest) before falling precipitously in value and rankings today, but still remains one of the 3 largest exchanges in the world by market capitalization of listed shares. In 2001, the TSE
restructured itself as a Stock Company: before this time, it was structured as an incorporated association (Smith 2003).

3.3 Genesis and Growth of the Indian Stock Market

The development of capital markets in India were not in concurrence, on a contemporaneous basis, with that of rest of the world. Unlike the monetary and banking history, India never had an orderly and systematic development of capital markets. Obscured in the mists of time, the records pertaining to the stock markets are scarce. Historical records, as and where they exist rarely speak of gambling, speculation and trading except in passing (Singh 1965).

The origin of any market such as this in those times would be an indirect beneficial outcome of the colonial onslaught. But the onset of industrial revolution in India was not in tandem with that of her colonial mistress. When England was passing through the late stages of industrial revolution, India was in the primitive stage of guild capitalism and there was no need for such a market. Widespread industrial backwardness, primitive stage of currency, credit and banking system, absence of modern communication and general insecurity of life and property characterized India’s nascent stage of development. But gradually with the development of capitalistic enterprises on modern lines and passing of Indian Companies Act of 1857, the need for organized markets was felt which could provide facilities for investment in appropriate directions. (Singh 1965)

The genesis of Indian stock market can be traced back to the eighteenth century when the securities representing the property or promise to pay were first issued and made transferable from one person to another. The East India Company was the dominant institution of those days and earliest record of dealings in securities in India is the East India Company’s loan securities, towards the close of the 18th century. The fragrance of commercialization and business began to spread in India with the inception of nineteenth century as Indian business enterprises were established and merchants and
speculators in Western India began to actively trade in the loan securities and shares of companies.

Rampant speculation was a feature of the commercial life in Bombay since the mid nineteenth century. The business transacted consisted mainly of the making of contracts for the purchase and sale of any commodity or produce or stocks and shares at a specified rate deliverable at specified future time. The seller and buyer had to trust to their own respective calculations or forecasts of the market rate on a specified date. (Singh 1965, Shroff 1962).

Since time immemorial India was the home of cotton and cotton trade constituted the important export trade of the country. Half of Indian cotton crop produced was marketed through Bombay. The importance of Bombay as a commercial centre stemmed from such precedence. The business was conducted under a sprawling banyan tree with 6 persons only who called themselves share brokers. Even though the share bazaar was founded unofficially in 1875, business of dealing of securities was well established before that date. The increasing fortunes in the brokerage business gradually tempted many men into the field (Singh 1965, Shroff 1962, Smith 2003).

The business dealt in was confined to a few shares of Joint Stock Companies, existing at that time and most of them were either textile mills or cotton pressing or ginning companies. There were no restrictions on forward dealing and settlement was usually on a monthly basis. All payments were made in cash. There was no arbitration Committee or contract forms. Of course, discrepancies arose but as a rule the working of the exchange were not disturbed. One noticeable feature of the working of markets was the absence of any unified system of control of forward dealings which subsequently resulted in frequent attempts at cornering of shares or the rigging up of trades (Singh 1965, Shroff 1962).

The year 1864 was a watershed year in the development of capital markets in India. In 1861 the American Civil War broke out which had far-reaching repercussions to Indian stock markets. The war curtailed the supply of American cotton to Britain. The price of local cotton surged up as a consequence and Britain had to depend mainly on
India for cotton supply. Large and unlimited demand on India really meant the Bombay presidency where alone the largest stocks were available. The turn of events provided an opportunity to the Indian enterprise, traders and business. Great wealth and prosperity poured to Bombay. This influx of money engendered the wildest speculation and several banks and private companies were floated (Singh 1965, Shroff 1962).

The progress was so fast that by January 1865 Bombay had 31 banks, eight land reclamation companies, 16 cotton-pressing companies, 20 insurance companies, and 62 joint stock companies (Smith 2003). But the uptrend did not continue indefinitely. The inevitable crash came in mid 1865. The American Civil War halted and a number of companies went bankrupt as orders from the USA dried up. It was on the fatal day, the 1st of July, 1865 that the panic started - the black day in the early economic history of Bombay. Hundreds of companies went bankrupt with huge loss of cash and credit and the nadir of depression was reached. The whole elaborate edifice of speculation toppled down like a house of cards. Bombay’s loss amounted to Rs.458000000. Then, all rushed to sell their securities but there were no buyers and the entire wealth amassed during the civil war was represented by a huge mass of unsalable paper (Singh 1965, Shroff 1962).

The collapse of 1865 brought forth the necessity of an organized form of business and place of trading, which was until then conducted under a tree in open air. The desire and need for an organized transaction of business was thus materialized in the year 1875 when an elementary association having 300 members was founded under the style of brokers’ association and the business was carried on in Dalal Street.

In 1894 started the trend of mushrooming of stock exchanges in other parts of the country. Ahmedabad gained importance next to Bombay with respect to cotton textile industry. After 1880, many mills originated from Ahmedabad and rapidly forged ahead. As new mills were floated, the need for a stock exchange at Ahmedabad was realized and in 1894 the brokers formed "The Ahmedabad Share and Stock Brokers' Association. 

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3.3.1 First World War of 1914 and after

The First World War broke out in August 1914. The markets closed indefinitely on the agreement that existing contracts would be carried over at the buyer’s option until the reopening of the market. Before the outbreak of the war, dealings on the exchanges were mainly confined to government securities and very little business was done on the industrial front. There were failures of various banking companies, particularly Indian Specie Bank prior to the war. Share markets had received a heavy blow and many brokers were compelled to close their business. A panic, unprecedented in history, at BSE had erupted. A general feeling of pessimism prevailed at the spurt of war (Jain 1943).

Early in 1915, when news about Britain gaining in war reached markets turned for the better. Prices of raw materials went up. Indian imports of manufactured articles from England ceased. When markets had reopened outlook had changed entirely. Various new companies were floated and their shares were oversubscribed. On 5th November 1915 a new regulation on floor of exchange was introduced whereby any new share should require the prior permission of board of directors. Another important development which facilitated the boom was the introduction of cheque system from 26th September 1916 (Jain 1943).

3.3.2 The Impact of First World War and Subsequent Reforms

The bubble generated by First World War did not last long and burst by October 1921. There was deflation of currency and the anticipated prospects were not realized. Imports began to pour and soon the Indian industries were faced with the competition from foreign manufacturers and a number of companies were liquidated. The conclusion of boom phase ushered in the phase of depression. Due to severe competition with European goods prices of commodities, shares and properties plunged downwards. A series of corners and crises took place in the year 1925 causing a furore in the public.

In 1920, the then demure city of Madras had the maiden thrill of a stock exchange functioning in its midst, under the name and style of "The Madras Stock
Exchange" with 100 members. However, when boom faded, i.e. by 1923, the number of members declined from 100 to 3, and so it went out of existence (Jain 1943).

### 3.3.3 The Great Depression and its Impact on Indian Market

The ebb and flow of growth of capital markets reached a pinnacle with the Great depression of 1929. In pursuance to the world crisis in 1929 prices fell and forward dealings were suspended at the BSE. The year 1931 could be remembered as one of the darkest in World’s economic history. Simultaneously with the depression of 1930’s in India the struggle for freedom was in full swing. The Civil Disobedience Movement started in 1930 -32 dislocating the economic activities and resulted in a general fall in prices. The years 1934 and 1935 saw a gradual movement towards economic recovery (Jain 1943).

### 3.3.4 The Impact of Second World War on Indian Markets

The year 1942 was one of the most difficult times in the history of stock exchanges. It witnessed a slump of the worst type since the outbreak of the war in 1939 as the news of war reaching India’s doorsteps spread around. There was steep fall in the share values and brought forth the necessity of imposing economic controls to stock markets also. BSE was allowed by the local authorities to impose a system of minimum prices. But the problems of BSE were rather complicated owing to the operation of forward trading. This created the necessity of closing forward trading and it was for the first time in the history of the BSE that forward trading was suspended indefinitely from 15th October 1942. This was an important landmark in the annals of the exchange (Jain 1943).

Indian stock exchanges witnessed a favourable trend in the year 1943. The Uttar Pradesh Stock Exchange Limited (1940), Nagpur Stock Exchange Limited (1940) and Hyderabad Stock Exchange Limited (1944) were incorporated in the respective years mentioned. In Delhi two stock exchanges - Delhi Stock and Share Brokers' Association Limited and the Delhi Stocks and Shares Exchange Limited - were floated and later in June 1947, amalgamated into the Delhi Stock Exchange Association Limited.
The year 1947 was a year of upheavals and when the nation became independent there were about seven stock exchanges. The raising of capital, pricing of issues and matters incidental thereto were controlled by the Office of the Controller of Capital Issues established under the Capital Control Act, 1947. There occurred a crisis in 1947 caused by the presentation of budget by the then finance minister Liaquat Ali Khan – popularly called “the poor man’s budget” (Cirvante 1956).

3.4 Development of Stock Exchanges in the Post –Independence Era

The regulatory framework for the capital market began to evolve with the framing of Capital Issues Control Act in 1947. The stock exchanges prior to 1937 were established as association of persons while those incorporated later were companies limited by guarantee or by shares. The working of the stock exchanges was controlled by the Stock exchange division of the Department of economic affairs, ministry of finance, government of India. The stock exchanges were under the administrative control of the joint secretary (investments) who was also the Controller of capital issues. He was assisted in his work by a complement of staff headed by a joint director. The stock exchange division had field offices at Bombay and Calcutta headed by deputy directors (Cirvante 1956).


In 1956 the Securities Contract Regulation Act (SCRA) was introduced by the Government in consultation with BSE to rationalize Indian capital market. SCRA
granted BSE permanent recognition. Other stock exchanges were initially granted recognition subject to renewal every five years. (SEBI Website: http://www.sebi.gov.in/sebiweb/home/list/4/41/0/0/History-of-Indian-Securities-Market).

The period from 1958-62 was one of cheerful optimism in the capital market with a favourable climate for raising capital resources from the public, by way of subscriptions to equity capital and the economic fabric of the country was on the threshold of a take-off stage. The climate was brimming with confidence and reassurance, when capital needs of the industry and commerce could easily be procured and readily obtained from the public. (SEBI Website: http://www.sebi.gov.in/sebiweb/home/list/4/41/0/0/History-of-Indian-Securities-Market)

The frequent wars and changes in leadership in the sixties created major ripples in stock market. In 1967 unhealthy speculation was witnessed in the shares of Indian Iron which was then a leading inter market security. By 1970, the first phase of industrialization of independent India came to an end. During this period the number of companies listed on stock exchanges almost tripled and capital grew almost 9 times.

But by 1972, the ban on forward trading led to sharp shrinkage in the volume of business particularly at Bombay, Calcutta, Delhi and Ahmedabad Stock Exchanges. To counter this, there evolved an ingenious system of trading which was essentially a free trading system. It started first at BSE in June 1972 and later at Calcutta, Delhi and Ahmedabad Stock Exchanges. In 1974, the oil shock dealt in a huge blow to the market.

The culmination of the decade of seventies saw a significant shift in state policy. The government began to impose curb on state intervention by reducing controls and regulation in licensing trade, prices etc., opening up economic sectors earlier reserved for public sector. In the decade of 1980s, stock market began to occupy a prominent position in the financial markets and the economy. The economic policies that encourage private corporate sector, attractive rates of dividend and performance and growing inability of Direct Financial Institutions to provide funds for expansion of the private sector contributed to this change. (SEBI Website: http://www.sebi.gov.in/sebiweb/home/list/4/41/0/0/History-of-Indian-Securities-Market).
Till 1979, the market for debentures was practically non-existent. It was only after 1979 that the debenture issues became popular because of various policy measures adopted by the Government to liberalize the terms of issue of debentures and offer of incentives to activate the debenture market. Innovative measures to widen and diversify the industrial securities market were taken by the government during this period. In August 1985, the Government of India announced guidelines for the issue of cumulative convertible preference shares (CCPS) aimed at diversifying the capital markets.

In August 1985, the government announced two schemes to encourage participation of employees in the equity capital of their companies. The first scheme was called the employee stock option scheme (ESOS) and the stock issue was linked to the savings of the employees. The scheme extended to all public limited companies and was voluntary in nature, both for company and employees. In the second scheme, companies had to reserve 5% of the total public and rights issue of shares as preferential allotment to their employees. (SEBI Website: http://www.sebi.gov.in/sebiweb/home/list/4/41/0/0/History-of-Indian-Securities-Market).

Even though rapid strides were made in the institutional framework and other aspects, one major lacuna was prevalent in the Indian markets. That was the absence of an appropriate barometer which would record the trials and tribulations in the stock market. This was redressed when the BSE introduced BSE-SENSEX, first published on 2nd January 1986 as a "Market Capitalization-Weighted" Index of 30 component stocks representing a sample of large, well-established and financially sound companies. The base year of BSE-SENSEX was 1978-79. (SEBI Website: http://www.sebi.gov.in/sebiweb/home/list/4/41/0/0/History-of-Indian-Securities-Market).

The seeds of liberalization that was sown in the eighties brought in the yields when there appeared the signs of a boom in stock market. This was partly due to the efforts of successive governments to usher in modern and efficient economy.

In 1987, the bubble burst specifically after the government banned the conversion of non convertible debentures. This had the impact of seriously hampering the confidence of small investors. All these factors ultimately paved the way for the creation...
of Securities and Exchange Board of India on April 12, 1988 through an administrative order.

3.5 Developments in the SEBI Era

Jadhav(2005) mentioned that during the 1990’s, the growing needs of the economy on one hand, and forces of liberalization, on the other, changed the face of the Indian financial system drastically and the capital markets assumed a prominent place in the resource allocation process of the economy.

The decade of nineties ushered in a series of significant turnarounds in the financial market, especially the capital market. Severe macroeconomic and fiscal imbalances characterized the country’s economic situation. Burgeoning fiscal deficit, worsening balance of payment situation, escalating inflation and downward spiraling productivity took a heavy toll of India’s economy. The country in dire necessity of a way to wriggle out of the stalemate of economic affairs had to chart out an alternative path of economic policy. India embraced a new economic philosophy in July 1991 when the new economic policy of liberalization, privatization and globalization was introduced. Interwoven in this policy was the removal of existing administrative controls and impediments and opening up of the economy by encouraging private sector participation in many sectors. Hitherto existing shackles on investment and enterprise were thrown to winds. The changed milieu and the anticipation of good tidings for the corporate sector could not leave the stock market unturned.(SEBI Website: http://www.sebi.gov.in/ sebiweb/home/list/4/41/0/0/History-of-Indian-Securities-Market).

The BSE Sensex which was 1000 in February 1991 rose to 4500 in March 1992. But the uptrend was only a temporary reprieve. On April 23, 1992, press reports indicated that there was a shortfall in the Government Securities held by the State Bank of India. There was a furore in Parliament and the then Finance Minister ordered the RBI and CBI to probe the scam. RBI formed a Committee headed by Deputy Governor, R.Janakiraman to enquire into the scam. Within a month, investigations uncovered the tip of an iceberg, later called the securities scam, involving misappropriation of funds to the tune of over Rs. 3500 crores.
The scam engulfed top executives of large nationalized banks, foreign banks and financial institutions, brokers, bureaucrats and politicians. The functioning of the money market and the stock market was thrown in disarray. The tainted shares were worthless as they could not be sold. This created a panic among investors and brokers and led to a prolonged closure of the stock exchanges along with a precipitous drop in the price of shares.

The scam unveiled the necessity of strong and tight regulations and a potent regulator armed with all the powers to enforce them. Thus the Securities and Exchange Board of India was elevated to a statutory and really powerful organization in 1992. The CCIA was repealed and the Office of the Controller of Capital Issues was abolished. Government of India issued an ordinance on 30th January 1992 and pursuant to this Ordinance, SEBI was set up on 21st February 1992. The SEBI Act (Act No.15 of 1992) replaced this Ordinance on 4th April 1992. (Nagaraj 1996)

The repeal of the Capital Issues (Control) Act, 1947 on May 13, 1992 was a major development for the securities market. With the repeal of the Act, the issuers of securities could raise the capital from the market without seeking the prior consent of the Central Government and to freely price such securities.

The objective of the SEBI Act was “to provide for the establishment of a Board to protect the interests of investors in securities and to promote the development of, and to regulate, the securities market and for matters connected therewith or incidental thereto.”

3.6 Innovations in Indian Stock Markets after 1990’s

The Indian Stock Market witnessed many changes during post 1990’s. The basic structure of the Indian securities market as it exists now, together with the broad trends in different segments of the market have been outlined.

The securities market has essentially three categories of participants—the issuer of the securities, the investors in the securities, and the intermediaries. The issuers are the borrowers or deficit savers, who issue securities to raise funds. The investors, who are surplus savers, deploy their savings by subscribing to these securities. The intermediaries are the agents who match the needs of the users and the suppliers of funds for a commission. These intermediaries function to help both the issuers and the investors to achieve their respective goals. There are a large variety and number of intermediaries providing various services in the Indian securities market. The process of mobilizing the resources is carried out under the supervision and overview of the regulators. The regulators develop fair market practices and regulate the conduct of the issuers of securities and the intermediaries. They are also in charge of protecting the interests of the investors. The regulator ensures a high service standard from the intermediaries, as well as the supply of quality securities and non-manipulated demand for them in the market.

The details of the market intermediaries/institutions registered with SEBI during the last decade are given in the Table: 3.1 below:
TABLE: 3.1
SEBI Registered Market Intermediaries / Institutions

<table>
<thead>
<tr>
<th>Year</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock Exchanges (Cash Market)</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>23</td>
<td>22</td>
<td>22</td>
<td>21</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>Stock Exchanges (Derivatives Market)</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Stock Exchanges (Currency Derivatives)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Brokers (Cash Segment)*</td>
<td>9,782</td>
<td>9,687</td>
<td>9,519</td>
<td>9,368</td>
<td>9,062</td>
<td>9,269</td>
<td>9,384</td>
<td>8517*</td>
<td>8652*</td>
<td>8804*</td>
<td>9,235</td>
</tr>
<tr>
<td>Corporate Brokers (Cash Segment)</td>
<td>3,808</td>
<td>3,862</td>
<td>3,835</td>
<td>3,787</td>
<td>3,764</td>
<td>3,952</td>
<td>4,101</td>
<td>3,955</td>
<td>4,079</td>
<td>4,197</td>
<td>4,563</td>
</tr>
<tr>
<td>Foreign Institutional Investors</td>
<td>527</td>
<td>490</td>
<td>502</td>
<td>540</td>
<td>685</td>
<td>882</td>
<td>997</td>
<td>1,319</td>
<td>1,635</td>
<td>1,713</td>
<td>1,722</td>
</tr>
<tr>
<td>Sub-accounts</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4,967</td>
<td>5,378</td>
<td>5,686</td>
</tr>
<tr>
<td>Custodians</td>
<td>14</td>
<td>12</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>11</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>19</td>
</tr>
<tr>
<td>Depositories</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Depository Participants</td>
<td>335</td>
<td>380</td>
<td>438</td>
<td>431</td>
<td>477</td>
<td>526</td>
<td>593</td>
<td>654</td>
<td>714</td>
<td>758</td>
<td>805</td>
</tr>
</tbody>
</table>

Note: The Magadh, Mangalore, Hyderabad and Saurashtra Kutch stock exchanges have been derecognised by SEBI.

* Excludes brokers in derecognised stock exchanges.

Source: SEBI, Handbook of Statistics, Various Issues, Mumbai

Some of the major developments in the Indian Stock Market since 1992 were as follows:

1) The introduction of the Book building mechanism for pricing of new capital issues in 1995, whereby the offer price of an initial public offering (IPO) is based on the demand for the issue. The book building mechanism has proved to be both cost and time effective in the Indian context (SEBI Bulletin, Various Issues). The details of the resources mobilized from the primary market from 1993-94 onwards is shown in the Table 3.2 below:
The role of an efficient primary market is critical for resource mobilization by corporates to finance their growth and expansion. Indian primary market witnessed increased activity in terms of resource mobilization and number of issues since 1950’s. It is seen that Rs 67,609 crore was raised from the primary market in the year 2010-11 as compared to Rs 24372 crore raised in 1993-94. The policies framed by the regulator relating to primary market development since 1990’s included encouragement of retail participation and issue process reforms, which in turn had positively impacted the market.

2) SEBI issued the SEBI (Buyback of Securities) Regulations in 1998, through which a company is permitted to buy back its shares from existing shareholders. (SEBI Bulletin, Various Issues)

3) With a view to contain excess volatility in the markets, circuit breakers have been introduced on the stock exchanges. With effect from June 2, 2001, index based market-
wide circuit breakers applicable on BSE Sensex and S&P CNX Nifty are operational on 10 per cent, 15 per cent and 20 per cent on either side movement of any of the indices. The volatility of major indices (percent) is shown in the Table 3.3 below:

**TABLE 3.3**  
**Volatility* of Major Indices (Percent)**

<table>
<thead>
<tr>
<th>Year/Index</th>
<th>BSE Sensex</th>
<th>BSE-100</th>
<th>BSE-500</th>
<th>S&amp;P CNX Nifty</th>
<th>CNX Nifty Junior</th>
<th>S&amp;P CNX 500</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997-98</td>
<td>2.3</td>
<td>1.4</td>
<td>NA</td>
<td>1.5</td>
<td>4.0</td>
<td>NA</td>
</tr>
<tr>
<td>1998-99</td>
<td>1.8</td>
<td>2.0</td>
<td>0.0</td>
<td>1.5</td>
<td>2.7</td>
<td>NA</td>
</tr>
<tr>
<td>1999-00</td>
<td>1.7</td>
<td>2.2</td>
<td>2.1</td>
<td>1.9</td>
<td>3.1</td>
<td>1.9</td>
</tr>
<tr>
<td>2000-01</td>
<td>2.2</td>
<td>2.4</td>
<td>2.4</td>
<td>2.0</td>
<td>2.8</td>
<td>2.3</td>
</tr>
<tr>
<td>2001-02</td>
<td>1.5</td>
<td>1.6</td>
<td>1.6</td>
<td>1.4</td>
<td>1.6</td>
<td>1.6</td>
</tr>
<tr>
<td>2002-03</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.2</td>
<td>1.0</td>
</tr>
<tr>
<td>2003-04</td>
<td>1.4</td>
<td>1.5</td>
<td>1.5</td>
<td>1.4</td>
<td>1.6</td>
<td>1.5</td>
</tr>
<tr>
<td>2004-05</td>
<td>1.5</td>
<td>1.5</td>
<td>1.6</td>
<td>1.6</td>
<td>1.8</td>
<td>1.7</td>
</tr>
<tr>
<td>2005-06</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.1</td>
<td>1.0</td>
</tr>
<tr>
<td>2006-07</td>
<td>1.8</td>
<td>1.8</td>
<td>1.7</td>
<td>1.8</td>
<td>2.1</td>
<td>1.7</td>
</tr>
<tr>
<td>2007-08</td>
<td>1.9</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.4</td>
<td>2.0</td>
</tr>
<tr>
<td>2008-09</td>
<td>2.8</td>
<td>2.7</td>
<td>2.6</td>
<td>2.7</td>
<td>2.8</td>
<td>2.5</td>
</tr>
<tr>
<td>2009-10</td>
<td>1.9</td>
<td>1.8</td>
<td>1.8</td>
<td>1.9</td>
<td>2.0</td>
<td>1.8</td>
</tr>
<tr>
<td>2010-11</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
<td>1.0</td>
</tr>
<tr>
<td>Apr 11-Dec 11</td>
<td>1.3</td>
<td>1.2</td>
<td>1.2</td>
<td>1.3</td>
<td>1.1</td>
<td>1.2</td>
</tr>
</tbody>
</table>

NA: Not Applicable

The indices Dollex-200 and S&P CNX Defty have been replaced by BSE-500 and S&P CNX 500 respectively.

* Volatility is calculated as the standard deviation of the natural log of returns in indices for the respective period.

**Source:** Bloomberg

4) In order to promote the safety and efficiency of the capital market, various risk containment measures to manage counter party risk and credit risk were introduced. Settlement Guarantee Funds (SGF) was set up by major stock exchanges to provide necessary funds and ensure timely completion of settlement in cases of failure of member brokers to fulfil their settlement obligations. Furthermore, the establishment of clearing houses by the stock exchanges has substantially reduced the counter-party risk involved in the settlement system. Also, various risk management mechanisms like, the capital adequacy requirements, trading and exposure limits, daily margins comprising of Mark-to-Market(MTM) margins\(^2\) and Value at Risk(VaR)\(^3\) based margins were introduced.
5) The electronic fund transfer (EFT) facility combined with dematerialisation of shares created conducive environment to reduce the settlement cycles on stock markets. Shorter settlement cycles reduce both the risk involved in transactions and speculative activity, and infuse more liquidity in the markets. The Indian stock markets, which followed the Monday to Friday settlement cycle, gradually switched to the rolling settlement cycle for all the scrips from December 31, 2001. From April 1, 2002 Indian markets switched over to T+3 Settlement with effect from April 1, 2003 the Indian markets have shifted to T+2 Settlement. The progress of dematerialization in CDSL and NSDL is shown in the Table 3.4:

**TABLE:-3.4
Progress of Dematerialisation At NSDL and CDSL**

| At the end of the period | NSDL | | CDSL | | |
|-------------------------|------|---|----|---|
|                         | Companies: Live | Mkt. cap (Rs crore)* | Demat Quantity (shares in crore) | Companies: Live | Mkt. cap (Rs crore)* | Demat Quantity (shares in crore) |
| 1996-97                 | 23   | 90,818 | 2  | - | - | - |
| 1997-98                 | 171  | 2,88,347 | 176 | - | - | - |
| 1998-99                 | 365  | 3,96,551 | 711 | 15 | - | - |
| 1999-00                 | 821  | 7,65,875 | 1,550 | 541 | 8,200 | - |
| 2000-01                 | 2,786 | 5,55,376 | 3,721 | 2,703 | 10,906 | 192 |
| 2001-02                 | 4,172 | 6,15,001 | 5,167 | 4,284 | 24,337 | 482 |
| 2002-03                 | 4,761 | 6,00,539 | 6,876 | 4,628 | 36,164 | 821 |
| 2003-04                 | 5,212 | 11,07,084 | 8,369 | 4,810 | 1,06,443 | 1,401 |
| 2004-05                 | 5,536 | 16,38,316 | 12,866 | 5,068 | 1,20,959 | 1,908 |
| 2005-06                 | 6,022 | 30,05,100 | 17,472 | 5,479 | 2,35,829 | 2,722 |
| 2006-07                 | 6,483 | 35,98,800 | 20,270 | 5,589 | 2,83,136 | 3,125 |
| 2007-08                 | 7,354 | 52,19,700 | 23,690 | 5,943 | 5,90,039 | 4,982 |
| 2008-09                 | 7,801 | 31,10,300 | 28,287 | 6,213 | 4,39,703 | 7,082 |
| 2009-10                 | 8,124 | 56,17,842 | 35,114 | 6,801 | 8,38,928 | 7,795 |
| 2010-11                 | 8,842 | 66,07,900 | 47,130 | 8,030 | 10,81,417 | 10,531 |
| Apr 11-Dec 11           | 9,453 | 63,45,000 | 55,908 | 9,412 | 8,80,859 | 13,333 |

* Mkt. Cap. represents Market Capitalisation of Dematerialised Securities, which includes Equity, Debentures and MF units.

Source: SEBI, Handbook of Statistics, Various Issues, Mumbai

6) The Indian capital markets in the 1990’s have deepened and widened with a larger investor base and emergence of a wide range of innovative/hybrid instruments. On
the investor base side, the foreign institutional investors (FIIs), which were allowed to invest in Indian equities since 1992, have now emerged as the biggest institutional investors on Indian capital markets. The foreign investment inflow and the trends in FII Investment for Portfolio Investment since 1992 is shown in the Tables 3.5 and 3.6

**TABLE: 3.5**  
**FOREIGN INVESTMENT INFLOWS**

<table>
<thead>
<tr>
<th>Year</th>
<th>Direct Investment</th>
<th>Portfolio Investment</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Rs crore)</td>
<td>(US $ Million)</td>
<td>(Rs crore)</td>
</tr>
<tr>
<td>1990-91</td>
<td>174</td>
<td>97</td>
<td>11</td>
</tr>
<tr>
<td>1991-92</td>
<td>316</td>
<td>129</td>
<td>10</td>
</tr>
<tr>
<td>1992-93</td>
<td>965</td>
<td>315</td>
<td>748</td>
</tr>
<tr>
<td>1993-94</td>
<td>1,838</td>
<td>586</td>
<td>11,188</td>
</tr>
<tr>
<td>1994-95</td>
<td>4,126</td>
<td>1,314</td>
<td>12,007</td>
</tr>
<tr>
<td>1995-96</td>
<td>7,172</td>
<td>2,144</td>
<td>9,192</td>
</tr>
<tr>
<td>1996-97</td>
<td>10,015</td>
<td>2,821</td>
<td>11,758</td>
</tr>
<tr>
<td>1997-98</td>
<td>13,220</td>
<td>3,557</td>
<td>6,794</td>
</tr>
<tr>
<td>1998-99</td>
<td>10,358</td>
<td>2,462</td>
<td>-257</td>
</tr>
<tr>
<td>1999-00</td>
<td>9,338</td>
<td>2,155</td>
<td>13,112</td>
</tr>
<tr>
<td>2000-01</td>
<td>18,406</td>
<td>4,029</td>
<td>12,609</td>
</tr>
<tr>
<td>2001-02</td>
<td>29,235</td>
<td>6,130</td>
<td>9,639</td>
</tr>
<tr>
<td>2002-03</td>
<td>24,367</td>
<td>5,035</td>
<td>4,738</td>
</tr>
<tr>
<td>2003-04</td>
<td>19,860</td>
<td>4,322</td>
<td>52,279</td>
</tr>
<tr>
<td>2004-05</td>
<td>27,188</td>
<td>6,051</td>
<td>41,854</td>
</tr>
<tr>
<td>2005-06</td>
<td>39,674</td>
<td>8,961</td>
<td>55,307</td>
</tr>
<tr>
<td>2006-07</td>
<td>103,367</td>
<td>22,826</td>
<td>31,713</td>
</tr>
<tr>
<td>2007-08</td>
<td>140,180</td>
<td>34,835</td>
<td>109,741</td>
</tr>
<tr>
<td>2008-09</td>
<td>173,741</td>
<td>37,838</td>
<td>(63,618)</td>
</tr>
<tr>
<td>2009-10P</td>
<td>179,059</td>
<td>37,763</td>
<td>153,516</td>
</tr>
<tr>
<td>2010-11P</td>
<td>138,462</td>
<td>30,380</td>
<td>143,435</td>
</tr>
</tbody>
</table>

P: Provisional.

Note: 1) Data for 2009-10, 2010-11 and Apr 11-Dec 11 are provisional.

Source: RBI, Handbook on Indian Economy, Various Issues, Mumbai
## TABLE: 3.6
Trends in FII Investment for Portfolio Investment

<table>
<thead>
<tr>
<th>Year</th>
<th>Gross Purchases (Rs crore)</th>
<th>Gross Sales (Rs crore)</th>
<th>Net Investment (Rs crore)</th>
<th>Net Investment* (US $ mn.)</th>
<th>Cumulative Net Investment* (US $ mn.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992-93</td>
<td>18</td>
<td>4</td>
<td>13</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>1993-94</td>
<td>5,593</td>
<td>467</td>
<td>5,127</td>
<td>1,634</td>
<td>1,638</td>
</tr>
<tr>
<td>1994-95</td>
<td>7,631</td>
<td>2,835</td>
<td>4,796</td>
<td>1,528</td>
<td>3,167</td>
</tr>
<tr>
<td>1995-96</td>
<td>9,694</td>
<td>2,752</td>
<td>6,942</td>
<td>2,036</td>
<td>5,202</td>
</tr>
<tr>
<td>1996-97</td>
<td>15,554</td>
<td>6,980</td>
<td>8,575</td>
<td>2,432</td>
<td>7,635</td>
</tr>
<tr>
<td>1997-98</td>
<td>18,695</td>
<td>12,737</td>
<td>5,958</td>
<td>1,650</td>
<td>9,285</td>
</tr>
<tr>
<td>1998-99</td>
<td>16,116</td>
<td>17,699</td>
<td>-1,584</td>
<td>-386</td>
<td>8,898</td>
</tr>
<tr>
<td>1999-00</td>
<td>56,857</td>
<td>46,735</td>
<td>10,122</td>
<td>2,474</td>
<td>11,372</td>
</tr>
<tr>
<td>2000-01</td>
<td>74,051</td>
<td>64,118</td>
<td>9,933</td>
<td>2,160</td>
<td>13,531</td>
</tr>
<tr>
<td>2001-02</td>
<td>50,071</td>
<td>41,308</td>
<td>8,763</td>
<td>1,839</td>
<td>15,371</td>
</tr>
<tr>
<td>2002-03</td>
<td>47,062</td>
<td>44,372</td>
<td>2,689</td>
<td>566</td>
<td>15,936</td>
</tr>
<tr>
<td>2003-04</td>
<td>1,44,855</td>
<td>99,091</td>
<td>45,764</td>
<td>10,005</td>
<td>25,942</td>
</tr>
<tr>
<td>2004-05</td>
<td>2,16,951</td>
<td>1,71,071</td>
<td>45,880</td>
<td>10,352</td>
<td>36,293</td>
</tr>
<tr>
<td>2005-06</td>
<td>3,46,976</td>
<td>3,05,509</td>
<td>41,467</td>
<td>9,363</td>
<td>45,657</td>
</tr>
<tr>
<td>2006-07</td>
<td>5,20,506</td>
<td>4,89,665</td>
<td>30,841</td>
<td>6,821</td>
<td>52,477</td>
</tr>
<tr>
<td>2007-08</td>
<td>9,48,018</td>
<td>8,81,839</td>
<td>66,179</td>
<td>16,442</td>
<td>68,919</td>
</tr>
<tr>
<td>2008-09</td>
<td>6,14,576</td>
<td>6,60,386</td>
<td>-45,811</td>
<td>-9,837</td>
<td>59,082</td>
</tr>
<tr>
<td>2009-10</td>
<td>8,46,433</td>
<td>7,03,776</td>
<td>1,42,658</td>
<td>30,252</td>
<td>89,333</td>
</tr>
<tr>
<td>2010-11</td>
<td>9,92,596</td>
<td>8,46,158</td>
<td>1,46,438</td>
<td>32,226</td>
<td>1,21,559</td>
</tr>
</tbody>
</table>

* Conversion rate: The daily RBI reference rate as on the trading day has been adopted. (If the trading day is a bank holiday, immediately preceding day's reference rate has been used).

Source: SEBI, Handbook of Statistics, Various Issues, Mumbai

7) On the instrument side, derivative instruments like index futures, stock futures, index options, and stock options were introduced and they have become important instruments of price discovery, portfolio diversification and risk hedging. The turnover in the equity derivative segment of BSE and NSE is shown in the Table 3.7.
### Table: 3.7
Equity Derivatives Segment Of BSE And NSE (Turnover In Notional Value) Rs Crore

<table>
<thead>
<tr>
<th>Year</th>
<th>Index Futures</th>
<th>Stock Futures</th>
<th>Index Option</th>
<th>Stock Options</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Turnover (Rs crore)</td>
<td>Turnover (Rs crore)</td>
<td>Turnover (Rs crore)</td>
<td>Turnover (Rs crore)</td>
<td>No. of Contracts</td>
</tr>
<tr>
<td></td>
<td>Call</td>
<td>Put</td>
<td>Call</td>
<td>Put</td>
<td></td>
</tr>
<tr>
<td>BSE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001-02</td>
<td>1.276</td>
<td>452</td>
<td>39</td>
<td>45</td>
<td>79</td>
</tr>
<tr>
<td>2002-03</td>
<td>1.811</td>
<td>644</td>
<td>1</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>2003-04</td>
<td>6.572</td>
<td>5,171</td>
<td>0</td>
<td>0</td>
<td>174</td>
</tr>
<tr>
<td>2004-05</td>
<td>13,600</td>
<td>213</td>
<td>1,471</td>
<td>827</td>
<td>2</td>
</tr>
<tr>
<td>2005-06</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2006-07</td>
<td>55,491</td>
<td>3,515</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2007-08</td>
<td>2,34,660</td>
<td>7,609</td>
<td>31</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>2008-09</td>
<td>11,757</td>
<td>9</td>
<td>6</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>2009-10</td>
<td>96</td>
<td>0</td>
<td>138</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2010-11</td>
<td>154</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NSE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001-02</td>
<td>21,482</td>
<td>51,516</td>
<td>2,466</td>
<td>1,300</td>
<td>18,780</td>
</tr>
<tr>
<td>2002-03</td>
<td>43,951</td>
<td>2,86,532</td>
<td>5,670</td>
<td>3,578</td>
<td>69,645</td>
</tr>
<tr>
<td>2003-04</td>
<td>5,54,462</td>
<td>13,05,949</td>
<td>31,801</td>
<td>21,022</td>
<td>1,68,174</td>
</tr>
<tr>
<td>2004-05</td>
<td>7,72,174</td>
<td>14,84,067</td>
<td>69,373</td>
<td>52,581</td>
<td>1,32,066</td>
</tr>
<tr>
<td>2005-06</td>
<td>15,13,791</td>
<td>27,91,721</td>
<td>1,68,632</td>
<td>1,69,837</td>
<td>1,43,752</td>
</tr>
<tr>
<td>2006-07</td>
<td>25,39,575</td>
<td>38,30,972</td>
<td>3,98,219</td>
<td>3,93,693</td>
<td>1,61,902</td>
</tr>
<tr>
<td>2007-08</td>
<td>38,20,667</td>
<td>75,48,563</td>
<td>6,68,816</td>
<td>6,93,295</td>
<td>3,08,443</td>
</tr>
<tr>
<td>2008-09</td>
<td>35,70,111</td>
<td>34,79,642</td>
<td>20,02,544</td>
<td>17,28,957</td>
<td>1,71,843</td>
</tr>
<tr>
<td>2009-10</td>
<td>39,34,389</td>
<td>51,95,247</td>
<td>40,49,266</td>
<td>39,78,699</td>
<td>3,89,158</td>
</tr>
<tr>
<td>2010-11</td>
<td>43,56,755</td>
<td>54,95,757</td>
<td>90,90,702</td>
<td>92,74,664</td>
<td>7,77,109</td>
</tr>
</tbody>
</table>

Source: SEBI, Handbook of Statistics, Various Issues, Mumbai

8) Till 1994-95 stock trading was conducted in the open-out-cry system<sup>6</sup>. In 1994-95 on-line screen based (computerised) trading was introduced in India. Over the Counter Exchange of India (OTCEI) commenced computerised trading much before in...
1992 but it was confined to small and newly listed companies. National Stock Exchange of India (NSE) for the first time, started screen based trading in equity shares across the country in 1995. It attracted the attention of the investors and they accepted the system. The Stock Exchange, Mumbai (BSE) also started computerised trading in shares. This was followed by all other exchanges. NSE opened its terminals in various towns and cities. In October 1996, SEBI permitted other exchanges to expand their trading terminals to cities where there were no stock exchanges. Despite a 120 years legacy of open-out-cry system, the switch over from “hand sign” system to computer system was a very smooth one. Screen based system increased transparency- both pre and post trade - in securities trading. Investors get their contract note with price, brokerage and time of the trade stamped. As a result of computerisation and online trading, many of the earlier malpractices, which adversely affected investor sentiments, have been eliminated. As of date, all the stock exchanges in India are fully automated and have screen based trading system. India is one of the few countries in the world where the entire stock market is fully automated. (SEBI Bulletin, Various Issues).

9) Indian companies have been permitted to raise resources from abroad through issue of American Depository Receipts(ADRs), Global Depository Receipts(GDRs), Foreign Currency Convertible Bonds(FCCBs) and External Commercial Borrowings(ECBs). Further, foreign companies are allowed to tap the domestic stock markets. These developments facilitated the Indian securities market in getting increasingly integrated with the rest of the world. The growth of these resources raised from abroad is summarised in Table 3.8.
### TABLE 3.8
ADRS/GDRS AND ECBS

<table>
<thead>
<tr>
<th>Year</th>
<th>ADRs/GDRs (USD million)</th>
<th>ECBs (USD million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992-93</td>
<td>240</td>
<td>-366</td>
</tr>
<tr>
<td>1993-94</td>
<td>1,597</td>
<td>686</td>
</tr>
<tr>
<td>1994-95</td>
<td>2,050</td>
<td>1,124</td>
</tr>
<tr>
<td>1995-96</td>
<td>683</td>
<td>1,284</td>
</tr>
<tr>
<td>1996-97</td>
<td>1,366</td>
<td>2,856</td>
</tr>
<tr>
<td>1997-98</td>
<td>645</td>
<td>4,010</td>
</tr>
<tr>
<td>1998-99</td>
<td>270</td>
<td>4,367</td>
</tr>
<tr>
<td>1999-00</td>
<td>768</td>
<td>333</td>
</tr>
<tr>
<td>2000-01</td>
<td>831</td>
<td>4,303</td>
</tr>
<tr>
<td>2001-02</td>
<td>477</td>
<td>-1,585</td>
</tr>
<tr>
<td>2002-03</td>
<td>600</td>
<td>-1,692</td>
</tr>
<tr>
<td>2003-04</td>
<td>459</td>
<td>-2,925</td>
</tr>
<tr>
<td>2004-05</td>
<td>613</td>
<td>5,194</td>
</tr>
<tr>
<td>2005-06</td>
<td>2,552</td>
<td>2,508</td>
</tr>
<tr>
<td>2006-07</td>
<td>3,776</td>
<td>16,103</td>
</tr>
<tr>
<td>2007-08</td>
<td>6,645</td>
<td>22,609</td>
</tr>
<tr>
<td>2008-09 R</td>
<td>1,162</td>
<td>7,861</td>
</tr>
<tr>
<td>2009-10 R</td>
<td>3,328</td>
<td>2,000</td>
</tr>
<tr>
<td>2010-11 P</td>
<td>2,049</td>
<td>12,506</td>
</tr>
<tr>
<td>Apr 11- Dec 11 (Provisional)</td>
<td>567</td>
<td>9,984</td>
</tr>
</tbody>
</table>

Source: SEBI, Handbook of Statistics, Various Issues, Mumbai

### 3.7 Conclusion

The progress made by the Indian capital markets in the post-liberalization phase in terms of implementing international standard practices, widening and deepening of capital markets and the technological progress have been remarkable and provide the necessary impetus for growth and development, and thereby strengthening the emerging market economy in India. This period was also marked by greatest turmoil that the markets have ever witnessed. However, with timely and appropriate policy initiatives, systemic failures were avoided. Some of the fundamental problems relating to Indian capital markets include existence of huge number of illiquid stocks, lack of depth with few companies accounting for the majority of trading volume, low delivery ratio and concentration of trading with a few brokerage houses. Although some of these problems are chronic and difficult to solve for any regulatory authority, these problems underline the need to develop the capital markets further.
Notes

1 CREST Settlement- CREST is the Central Securities Depository for the U.K., Republic of Ireland, and UK gilts. CREST allows shareholders and bondholders to hold assets in a dematerialised, i.e. electronic form, rather than holding physical share certificates.

2 MTM- Mark To Market is a margining system and is calculated at the end of the day on all open positions by comparing transaction price with the closing price of the share for the day.

3 VaR Margin is the margining system for the cash market segment. VaR is a technique used to estimate the probability of loss of value of an asset or group of assets based on the statistical analysis of historical price trends and volatilities. VaR margin is collected on an upfront basis.

4 T+3 Settlement- T denotes the transaction date and T+3 means the settlement occurs on the 3rd day of the transaction.

5 T+2 Settlement- T denotes the transaction date and T+2 means the settlement occurs on the 2nd day of the transaction.

6 Open outcry- A public auction in which trading in stocks/securities is conducted by calling out bids and offers.

7 ADR(American Depositary Receipt) is a negotiable security that represents securities of a non-US company that trade in the US financial markets

8 GDR(Global Depository Receipt) is a certificate issued by a depository bank, which purchases shares of foreign companies and deposits it on the account.

9 FCCB(Foreign Currency Convertible Bonds) are a special category of bonds. FCCB's are issued in currencies different from the issuing company's domestic currency. Corporates issue FCCB's to raise money in foreign currencies.

10 ECB (External Commercial Borrowing) is an instrument used in India to facilitate the access to foreign money by Indian corporations and PSUs (public sector undertakings).
ECBs include commercial bank loans, buyers' credit, suppliers' credit, securitised instruments such as floating rate notes and fixed rate bonds etc., credit from official export credit agencies and commercial borrowings from the private sector window of multilateral financial institutions ECBs cannot be used for investment in stock market or speculation in real estate.

References


