The review of literature provides a path and direction for further research. It can lead to the drawing of some significant conclusions and highlights gaps existing in the area of research.

In this chapter, an endeavor has been made to provide an overview of various aspects and issues related to the proposed research, through the review of studies already carried out. The researcher has reviewed the existing literature under two heads:

a) Studies on the volatility of derivatives market, and
b) Studies on investors’ perception about financial instruments.

A. Studies on Volatility of Derivatives Market

Abhyankar (1995) compared the FTSE 100 stock index with the stock index futures market. He found support for the hypothesis that lower transaction costs is the primary reason for traders with market wide information to use the futures market.

Aggarwal (1988) argued that volatility in all markets (with or without futures-related activity) had increased during the post-futures period.

Alexakis, P. (2007) examined the stock market volatility before and after the introduction of index futures. He found that index futures had no significant effect on the spot markets.
Antoniou and Holmes (2004) documented an increase in spot volatility following the introduction of the FTSE 100 index futures contract for the London Stock Exchange. They were of the view that the increase in volatility following futures trading was due to greater informational efficiency rather than destabilizing speculation.

Antoniou, A., Koutmos, G. and Pericli, A. (2005) opined that the relationship between index futures and their underlying markets could provide valuable insights for understanding the dynamics of the two markets.

B S Bodla and Kiran Jindal (2008) investigated the impact of equity derivatives on the trading volume of underlying Indian stock market. The results of their study show that Compound Annual Growth Rate (CAGR) of trading volume has declined slightly after the introduction of derivatives. However, the study found a positive impact of expiration of derivatives on trading volume of sample stocks. The introduction of derivatives caused some of the informed and speculative trading to shift from the underlying cash market to derivatives market as investors viewed derivatives as superior investment instruments due to inherent leverage and lower transaction cost.

Bandivadekar and Ghosh (2003) studied the introduction of futures on both NSE and BSE. They found that futures market plays a significant role in the reduction of volatility for S&P CNX Nifty, while market forces play an important role for the change in volatility of the BSE Sensex. They explained that when derivative contracts are available in the market, speculators shift from cash segment to derivatives segment resulting in the reduction of trading volume of cash market.
Becketti and Sellon (1989) classified the stock market volatility into two types: normal volatility and jump volatility. Unlike normal volatility, jump volatility signifies the occasional and sudden extreme changes in stock prices.

Becketti and Roberts (1990) opined that increased jump volatility could lessen investors' confidence in the mechanism of stock markets resulting in decline in trading activity, low liquidity with high cost of investment. They stressed that all these bring about a destabilizing impact on stock market, and thus result in higher spot volatility.

Becketti, S. and Roberts, D. J. (1990) studied the effect of increased regulation on stock index futures over the stock market volatility. They were of the view that lower margins may contribute to an increase in concentrated institutional trading, resulting in greater price volatility. Higher margin requirements may lead to higher transaction costs, and help to limit the volume of futures trading, reduce speculation, and increase market stability. Hence, on examining the stock market volatility before and after the introduction of index futures, they concluded that index futures had no significant effect on the spot markets.

Becketti, S. and Sellon Jr., G. H. (1989) studied the market volatility and opined that the presence of noise trading can cause prices to deviate substantially from fundamentals and give rise to jump-volatility.

Bodla and Kiran (2008) investigated the impact of index derivatives on the return, efficiency and volatility of the S&P CNX Nifty. The results of the study indicate increased market efficiency and reduced volatility with no price change in the underlying market due to introduction of derivatives. However, a significant increase in volatility on the expiration day of derivative contracts has been observed.
The study undertaken by Bessembinder and Seguin (1992) on S&P 500 Index showed a decrease in the volatility of the underlying market.

Bologna and Cavallo (2002) examined the effect of the introduction of stock index futures on the volatility of the Italian spot market, and found a reduction in spot market volatility and enhanced market efficiency. They attributed this phenomenon to the increased impact of recent news and a reduced effect of the uncertainty originating from the old news.

Bologna and Cavallo (2002) examined the effect of the introduction of stock index futures for the Italian market. Their empirical results show that the introduction of stock index futures affects the volatility of the spot market. In addition, the results from various GARCH models for pre-futures and post-futures sub-periods suggest that the index futures market reduces volatility.

Boyer and Popiela (2004) looked into whether the introduction of futures to the S&P500 Index altered the effect of addition to, or removal from, the S&P500 Index. This study used the S&P500 price effect to show that overall price volatility did not show any significant increase for added stocks after trading began on the S&P500 Index futures.

Brorsen B Wade (1991) analysed the S&P 500 Index and found increase in the volatility of the spot market when futures trading was commenced. He supports the view that futures markets are likely to attract uniformed traders because of their high degree of leverage and advocates that derivatives support the speculation.

Butterworth (2000) found no significant change in the volatility of the FTSE 250 Index after the onset of futures trading.
Chan K et al. (1991) observed no change in the spot market volatility on Nikkei 225 Index before and after derivative contracts were introduced in Japanese market.

Chatrath et al. (2003), classified futures investors in the S&P500 index into four groups; hedgers, (institutional traders), large speculators, small traders and spreaders and found limited evidence that only institutional traders may lead to a partial increase of volatility.

Chiang and Wang (2002) examined the impact of futures trading on Taiwan spot index volatility. Their study also discussed the macroeconomic and asymmetric effects of futures trading on spot price volatility behaviour. They used an asymmetric time-varying GJR volatility model. Their empirical results showed that the trading of futures on the Taiwan Index has stabilising impacts on spot price volatility, while the trading of MSCI Taiwan futures has no effects, except asymmetric response behaviour.

Chitale, Rajendra P. (2003) observed that in contrast to the exchange-traded markets, domestic financial institutions and mutual funds have shown great interest in OTC fixed income instruments. According to them, transactions between banks dominate the market for interest rate derivatives, while state-owned banks remain a small presence.

The study of Chow et al. (2003) found no evidence of abnormal trading volume on the expiration day of Hang Sang Index (HSI) derivatives on the underlying cash market in Hong Kong.

Claessens (2002) opined that in emerging markets, both equity and derivative markets are threatened by fierce competition from abroad. He also expressed that very often established markets grab the best share of trading activity by granting a place on the listing to the most prominent companies from abroad.
Claessens and Varangis (1991) showed how a developing country’s state oil importing company could use futures and options contracts to insure against price fluctuations in crude oil. They simulated short-term hedge scenarios, in which the company locked in a price for its one-month-ahead crude oil imports, and long-term hedge scenarios, in which the price was locked for six-month-ahead imports. It was shown that the short-term and long-term hedge strategies could potentially reduce the price volatility by 72 to 85 percent and 65 to 81 percent, respectively. The study also identified four factors that constrained the use of risk management techniques—namely, cash flow, negative publicity, flexibility of action, and the legal system.

Clayton (2006) observed that flourishing network of derivative exchange spreads all over the world. Two thirds of 63 derivatives exchanges, which existed around the world at the end of the second millennium, were started during the period 1985 – 1995, many of them in emerging countries. He was also of the view that derivatives can be used to resemble any financial instrument, so they are more than financial instruments; they are a concept.

Cox (1976) found that the introduction of futures markets led to greater informational efficiency, as they were relatively inexpensive, with low margin requirements and low transaction costs.

Darrat, A. F. and Rahman, S. (1995), on examining the stock market volatility before and after the introduction of index futures, found that index futures had no significant effect on the spot markets.

Darrat and Rahman (1995) reported decrease in the spot market volatility after the onset of futures trading.
DeLong, J. B., Shleifer, A., Summers, L. H. and Waldmann, R. J. (1990) analysed the noise trade risk in financial markets. They suggest that there are two components to stock market volatility: volatility arising due to information-based changes and volatility arising due to noise trading. In the former case, volatility increases due to the rise in the participation of informed investors who rationally process all fundamentals-related information and condition their trades upon it; in the latter case, volatility is the result of uninformed investors trading for reasons other than the fundamentals. They named this type of trading as “noise trading”.

Dodd (2000) studied the role of derivatives in the East Asian financial crisis. Analyzing various derivative products in East Asian economies, including foreign exchange forwards and swaps, interest rate swaps and total return swaps, the author showed that, on one hand, derivative products facilitated capital flows to Asia in the 1990s by unbundling and redistributing risks; on the other hand, derivatives facilitated unproductive activities and lowered safeguards. At the onset of financial crisis, the unwinding of derivative positions accelerated capital outflows from emerging market economies, which increased the pace and deepened the effect of the crisis.

Dodd, Randall (2004) studied the ways in which derivatives markets pose several types of public interest concerns to the US economy by creating new and greater sources of vulnerability. The paper concluded with a proposal for prudential regulatory measures that will address these public interest concerns.

Dough French (2006) studied the factors responsible for Tulipmania, during the early rise of derivatives. He argued that monetary factors created the right conditions for an asset price bubble in Amsterdam in the 1630s.
Donald Lien and Mei Zhang (2008) opined that commodity derivatives markets offer a more effective and welfare-improving method to deal with price volatility. According to them, financial derivatives markets have helped to support capital inflows into emerging market economies. On the other hand, using financial derivatives has also had negative effects, leading to exacerbated volatility and accelerated capital outflow.

Drimbetas, Nikolaos and Porfiris (2007) explored the effects of the introduction of futures and options into the FTSE/ASE 20 Index on the volatility of the underlying index using an EGARCH model. It is shown that the introduction of derivatives induces a reduction of conditional volatility in the FTSE/ASE20 Index and consequently increases its efficiency.

On investigating the relation between stock return volatility and the introduction of index futures, Edwards (1988) found no rise in volatility subsequent to the introduction of index futures.

Figlewski (1981) suggested that introduction of derivatives trading has not increased the volatility of cash prices.

Floros and Vougas (2006) examined the effect of futures trading on the volatility of the underlying spot market taking the FTSE/ASE-20 and FTSE/ASE Mid 40 Indices in Greece. The results for the FTSE/ASE-20 Index suggest that futures trading has led to decreased stock market volatility, but the results for the FTSE/ASE Mid 40 Index indicate that the introduction of stock index futures has led to increased volatility, while the estimations of the unconditional variances indicate a lower market volatility after the introduction of stock index futures.

Fortune (1989) found that the volatility level in the US stock markets had been unaffected with the introduction of derivative contracts.
The model developed by Froot and Perold (1991) demonstrates that futures markets cause an increase in the market depth due to the presence of more market makers in the futures segment than in the cash market and the more rapid dissemination of information.

Gambhir, Neeraj and Manoj Goel (2003) observed that foreign exchange derivatives are less active than interest rate derivatives in India, even though they have been around for longer. OTC instruments in currency forwards and swaps are the most popular. Importers, exporters and banks use the rupee forward market to hedge their foreign currency exposure. Turnover and liquidity in this market has been increasing, although trading is mainly in shorter maturity contracts of one year or less.

Gannon G. (2005) tested contemporaneous transmission effects across volatilities of the Hong Kong stock and index futures markets and futures volume of trade by employing a structural systems approach. Competing measures of volatility spillover, constructed from the overnight S&P500 Index futures, were tested and found to impact asset return volatility and volume of trade patterns in Hong Kong.

Garbade Kenneth and Silber (1983) have presented an analytical model of simultaneous price dynamics which suggests that over short intervals, the correlation of price changes is a function of the elasticity of arbitrage between an asset in spot market and its counterpart futures contract.

Garber (1998) analyzed the twofold role of derivatives in international capital flows. Using currency and interest rate swaps as examples, the author showed that derivative products help in the growth of cross-border capital movements, in both gross and net international flows.
Garber (1989) cast doubt on the interpretation of Dough French regarding the factors that led to tulipmania, arguing that earlier authors exaggerated price rises and that it was not irrational to invest in tulip bulbs.

Gary S Shea (2007) analysed the nature of financial derivatives during the South Sea bubble. He claims that call options were present at that time, the tools of speculation included call and put options, where the former were called “refusals”. Shea maintains that these shares were compound call options because the payment of an installment gave the subscriber the right to pay the next installment, thus keeping alive the option to eventually own the share. If the share price fell below a certain value, the subscriber could refuse to make the next installment payment, forfeiting the option on the shares.

Gerety and Mulherin (1990) opined that the volatility in US market has not altered after the introduction of futures trading.

Gilbert (1985) highlighted that if credit is constrained and the costs of using futures contracts are high, then the hedging effectiveness of futures market is greatly reduced.

Goldstein M. A. and Kavajecz K. A. (1990) found that spot volatility was independent of changes in futures trading in 18 countries, and that uninformed futures volume had a negative impact on spot volatility in Austria and the UK.

Granger (1969) has introduced an error correction model which takes into account non-stationarity of cointegrated variables and distinguishes between short run deviations from equilibrium indicative of price discovery and long run deviations which account for efficiency and stability. These approaches involve estimation of simultaneous linear equations in a pair of variables with time lags and have been used in a number of studies examining the source of price discovery.
On examining the stock market volatility before and after the introduction of index futures in 25 countries, Gulen and Mayhew (2000) found that index futures had no significant effect on the spot markets in all the countries studied except the US and Japan.

Gupta O P and Kumar Muneesh (2002) opined that the volatility level in the Indian stock markets had been unaffected with the introduction of derivative contracts.

Harris (1989) showed that uninformed speculative trading in the futures market added noise to the spot market, and decreased the information content of the spot price. He observed an increase of volatility of the S&P 500 index after the introduction of futures trading.

Hayes Samuel L and Michael E Tennenbaum (1979) explain that derivatives attract more traders towards the market as they have the option of risk hedging with the availability of derivatives contracts in the market. Consequently, it should increase the trading volume of cash market

Hermann and Burger (1993) compared the effect of futures markets and buffer-stock schemes, highlighting the fact that futures markets offered a more effective and welfare-improving method of dealing with price volatility.

Ibrahim et al. (1999) opined that there was no change in the spot market volatility after the commencement of futures trading.

Illenca and Lafuente (2003), while studying the Spanish market using a non-parametric approach, did not find any significant link between future trading and the underlying market volatility.
Jegadeesh Narasimhan and Avanidhar Subrahmanyam (1993) documented the liquidity effects of the introduction of the S&P 500 index futures contract on the underlying stocks and concluded a significant increase in the trading volume due to introduction of derivatives there.

Jogani and Fernandes (2003) describe India’s long history in arbitrage trading, with line operators and traders arbitraging prices between exchanges located in different cities, and between two exchanges in the same city. Their study of Indian equity derivatives markets in 2002 indicates that markets were inefficient at that time. They argue that lack of knowledge, market frictions and regulatory impediments have led to low levels of capital employed in arbitrage trading in India.

There are other instances of jump volatility in the stock market in the American Stock Markets, according to Jones and Wilson (1989). Jumps in stock prices over a relatively short period of time (a few hours or a day) can temporarily disrupt capital markets and strain market mechanisms.


Jongho Kim (2007), in his article, stressed the functioning and importance of OTC derivatives. He was of the view that when properly used, these instruments can be construed as essential tools for escaping financial risk.

Kamara, A. (1982), on examining the stock market volatility before and after the introduction of index futures, found that index futures had no significant effect on the spot markets.
Kawaller et al. (1987) showed that movements in the index futures market led to movements in the spot market; however, this did not have a destabilising effect as the movements reflected the ability of the futures markets to process information faster.

The study of Kim and Oliver (2000) found a reduction in trading volume of the underlying securities on the Hong Kong Stock Exchange due to an initial options listing.

Kumar Raman, Atulya Sarin and Shastri Kuldeep (1995) found a positive impact of the listing of index options on trading volume of stock market. They documented this effect in developed markets and concluded a significant increase in the trading volume due to introduction of derivatives in these markets.

Kumar Saurabh, Mohan Gauri and Pappu Sriharsha (2003) analysed the data relating to Indian stock market and the impact of derivatives on the volatility and liquidity of the underlying stock and found a reduction in trading volume of underlying stocks due to options listing while Lee and Ohk (1992) showed that volatility in the underlying stock market rose after the introduction of futures trading. They opined that an increase in asymmetric volatility after the introduction of index trading can lead to an excessive increase of stock market volatility.

Mallikarjunappa T. & Afsal E. M. (2007) studied the volatility implications of the introduction of derivatives on stock market volatility in India using the S&P CNX Nifty Index as a benchmark. They found persistence of volatility before and after derivatives, while listing seems to have no stabilisation or destabilisation effects on market volatility.
Mallikarjunappa T. & Afsal E. M. (2007) studied the volatility behaviour of the Indian market by focusing on the CNX IT Index, which is a sectoral index, and found that underlying volatility increases with the onset of futures trading. Their result contradict many other studies carried out in India, and it is reasoned that the sectoral index showed different behaviour in terms of returns and volatility, especially during the 2001 period of market scam in India. They attributed these results to a sharp decrease in the prices of IT stocks after the stock market scam broke out in 2001.

The studies by Lockwood and Linn (1990) on DJIA Index found increase in the volatility of the spot market.

Morgan (2001) offered a background study on policy attempts to reduce the effects of price volatility on primary commodity markets and reviewed the roles of futures markets in less developed countries (LDCs) and the current extent of the development of futures markets trading in LDCs. The paper demonstrated that for more extensive use of commodity futures markets, it is critical to persuade LDCs’ governments and traders that they are being offered a realistic, low-cost, and relatively risk-free chance to cover some of their price risks.

Moriarty and Tosini (1985) was of the view that introduction of futures trading has not increased the volatility of cash prices

Morris, C. S. (1990) studied the concept of circuit breakers in equity and futures market. He observed that suspending trading prevents incipient panics, and gives traders sufficient time to re-evaluate market conditions so that they can bolster their liquidity and credit.
Moser, J. T. (1990), while studying circuit breakers, observed that clearing houses face increased credit risk by implicitly extending margin credit to loss-making traders who need to make additional margin payments. He stated that a halt in trading due to a circuit breaker makes the true market price change substantially, which creates extreme losses for traders, causing them default on their contracts and forcing clearing houses to assume the obligations of failed traders. Thus, according to him, circuit breakers may increase market volatility unintentionally, as market participants try to buy or sell futures frantically to avoid being locked in.

Nagaraj and Kiran Kumar (2004) studied the impact of Index futures trading on spot market volatility using the data from June 12, 2000 to February 27, 2003 of NSE Nifty. Using ARMA-GARCH model, the study also examined the effect of the September 11 terrorist attack; the relation between futures trading activity and spot volatility has strengthened, implying that the market has become more efficient and assimilating the information into its prices.

Nair, C. G. K. (2004) observed that in India, exchange-traded commodity derivatives have been trading only since 2000, and the growth in this market has been uneven. The number of commodities eligible for futures trading has increased from 8 in 2000 to 80 in 2004, while the value of trading has increased almost four times in the same period.

Nupur and Deb Sakrat (2004) analyzed the impact of index futures on the Indian stock market volatility using the data for the period June 9, 1999 to August 1, 2003 of NSE 500, S&P CNX Nifty index. The results obtained using GARCH model show that the introduction of futures results in a reduction in spot market volatility. It also showed that domestic market factors represented by NSE 500 had a significant effect in determining the volatility of the Nifty index but other international factors were found to have a insignificant effect.
Nelson (1991) claimed that negative stock returns were associated with unexpected increases in volatility, and suggested the EGARCH model which allows the conditional volatility to have asymmetric relation with past data.

Oliveira and Armada (2001) did not find any significant change on the spot market volatility of the Malaysia and Portuguese stock markets respectively.

Pericli and Koutmos (1997) analysed the impact of the US S&P 500 index futures on spot market volatility. Their results showed that index futures did not have an escalating effect on spot market volatility.

Pierluigi and Laura (2002) reported a decrease in the volatility of the underlying market on Italian Stock Market after the introduction of derivatives.

Pok and Poshakwale (2004), in their studies on the KOSPI200 index of the Korean market and KLSE on the Malaysian one, found that while the derivatives increased the volatility of the underlying market, they simultaneously improved its effectiveness as well by increasing the speed at which information was impounded into the spot market prices.

Pratap Chandra Pati and K Kiran Kumar (2007) found evidence of time-varying volatility which exhibits clustering, high persistence and predictability in the Indian futures market. They found an evidence of leverage effect which indicates that negative shock increases the future volatility more than the positive shocks of the same magnitude. This study concludes that information-based effect such as volume and open interest are the important determinants of futures price volatility. The volume effect is stronger than open interest effect. The study also found that that maturity effect will hold good in agricultural futures contracts and not in financial contracts.
Raju and Karande (2003) found a reduction in spot market volatility after the introduction of index futures in National Stock Exchange, India.

Rahman S (2001) examined the impact of index futures trading on the volatility of component stocks for the Dow Jones Industrial Average (DJIA). The study used a simple GARCH model to estimate the conditional volatility of intra-day returns. The empirical results confirm that there is no change in conditional volatility from pre- to post-futures periods.

Randall Dodd gave an overview of the structure and working of OTC Derivatives Market. He advised “know thy customer” provisions to be extended to all entities engaging in derivatives transactions, as it would hold derivatives dealers or other sellers responsible for engaging in transactions that are inappropriate and potentially destructive to their counterparties. He felt that this provision will discourage sharp trading and unethical sales practices.

Robert Dubil (2007) reviewed the current state of knowledge and sketched out three broad avenues of further worthwhile inquiry: economic derivatives as alternatives to traditional stock indexing, the viability of the markets in light of limited trading motives and small probabilities, and modeling difficulties inherent in pricing unhedgeable underlying events.

Ross, S. A. (1989) opined that if rational traders end up dominating index futures, their high quality information would be transmitted to the spot market segment through an alternative channelling route (i.e., the futures market), something that is clearly beneficial from an efficiency viewpoint. However, this also implies that the flow of information from the futures market to the spot market would increase, leading to a rise in the volatility of spot prices.
**Ramana Rao S V** (2007) found that the empirical evidence is mixed and the results suggest that there has been an enhancement in the volatility of spot market index in the post-derivatives period.

**Ryoo** and **Smith** (2004), in the Korean stock market, found an increase in the volatility of the cash market subsequent to the introduction of stock index futures. They attributed this increase to the rate of information flow to the market. They also found evidence of an increase in the persistence of volatility shocks post-futures.

**Samuelson** (1965), by assuming that spot price follows an autoregressive order of one and futures price is an unbiased estimator of expected spot price at maturity, stated that volatility of futures price increases as the time-to-maturity (TTM) of futures contract approaches.

**Sathya Swaroop Debasish** (2008) attempted an empirical examination of effect of futures trading activity on the jump volatility of the stock market by taking a case of NSE Nifty stock index. The study found that futures trading activity is not a force behind the jump volatility. Moreover, the volatility of other macroeconomic variables, such as inflation and risk premium, are not responsible for the volatility in stock prices of NSE Nifty.

**Santoni** (1987) found that the daily and weekly volatilities of the S&P500 are not different after the introduction of futures.

**Schlag, Corredor, Hagelin** and **Peralkeback** (1996) examined the impact of expiration day of index futures and options on the trading volume of underlying markets and indicated that trading volumes on the cash market were significantly higher on expiration days than on other days.
S V Ramana Rao and Naliniprava Tripathy (2009) examined the impact of introduction of index futures derivative and index option derivative on Indian stock market by using ARCH and GARCH models to capture the time varying nature of volatility presence in the data period from October 1995 to July 2006. The results reported that the introduction of index futures and index options on the Nifty has produced no structural changes in the conditional volatility of Nifty but however the market efficiency has been improved after the introduction of the derivative products. The study concluded that financial derivative products are not responsible for increase or decrease in spot market volatility, but there could be other market factors which influenced the market volatility.

Schumpeter (1939) studied the south sea bubble during the early years of derivatives trading. He claims that there was no major economic downturn after the South Sea bubble and the market absorbed the negative shock successfully.

Schwert, (1990) attempted to measure jump volatility, by setting a band within which stock price movements are considered normal or ordinary. Movements outside the band are identified as jumps because they are considered exceptional. He identified jumps in daily data as price changes (up or down) in excess of 1-2%. Schwert argued that if macroeconomic data provide information about the volatility of either future expected cash flows or future discount rates, they should be able to explain stock market volatility over time.

Schwert, G. W. (1990), on examining the stock market volatility before and after the introduction of index futures and the market crash of 1987 in U.S, found that index futures had no significant effect on the spot markets.

Seider (1981) found no increase in the volatility of cash prices after the introduction of futures trading.
Shenbagaraman (2003) reported that there was no significant fall in cash market volatility due to introduction of derivatives contracts in Indian market.

Shenbagarman (2003) examined the impact of introduction of NSE Nifty index futures on Nifty index. Using an event study over the period from October 1995 to December 2002, she tested for changes in the volatility before and after the introduction of Generalized Autoregressive Conditional Heteroskedasticity (GARCH) techniques to model the time series. She uses a framework that allows for GARCH to analyze daily closing prices. She concluded that futures trading had not led to a change in the volatility of the underlying stock index but the structure of volatility seems to have changed in post-futures period.

Shiller (1989) found that the volatility level in the US stock markets had, with the exception of the Great Depression, been stable since the mid-19th century.

Sibani Prasad Sarangi and Uma Shankar Patnaik (2007) compared the volatility of S&P CNX Nifty Stocks and Stock Futures. The empirical evidence suggested that in most of the stocks, there is no significant change in the volatility of the spot market. But with regard to the information flow to the spot market, futures trading has changed the nature of the volatility which is reflected by the change in the news coefficient and persistent coefficient.

Simpson and Ireland (1982) observed that the introduction of futures trading has not resulted in statistically significant increase the volatility of cash prices.

Spyrou, S. I. (2005) examined the stock market volatility before and after the introduction of index futures. He found that index futures had no significant effect on the spot markets.
In the model developed by Stein (1987), prices are determined by the interaction between hedgers and informed speculators. This model demonstrates that futures markets act as an essential tool for risk management by reducing volatility.

Stiglitz, J. E. (1989) argued that transaction taxes help reduce noise trading (which is a significant source of price fluctuations), thus decreasing volatility.

Subrahmanyam (1994) points out that in the US, circuit breakers have had a perverse effect on increasing price volatility prior to the triggering, due to the “magnetic effect,” i.e., traders’ advance purchases or sales of stock in anticipation of being locked out of the market by a circuit breaker. This panic trading increases futures market volatility, which in turn affects the stock markets.

Impact of derivatives trading on the volatility of the cash market in India has been studied by Thenmozhi (2002), Shenbagaraman (2003), and Gupta and Kumar (2002). They found that the overall volatility of underlying market declined after introduction of derivatives contracts on indices. All these studies have been done using the market index and not individual stocks.

Thenmozhi (2002) reported lower level volatility in cash market after introduction of derivative contracts.

Thenmozhi, M and Thomas M. Sony (2004) examined whether there was any change in the volatility of the S&P CNX Nifty Index in India due to the introduction of Nifty futures and whether movements in futures prices provided predictive information regarding subsequent movements in index prices. The study shows that the inception of futures trading has reduced the volatility of spot index returns.
Umlauf (1993) found that the introduction of (or increase in) transaction taxes in Sweden led to an increase in stock market price volatility.

Vipul (2006) investigated the changes in volatility in the Indian stock market after the introduction of derivatives. The study found a strong evidence of a reduction in the volatility of the underlying shares after the introduction of derivatives.

Wilson (1989) studied the market volatility before and after the introduction of derivatives in the US financial market. He observed that the volatility has not altered after derivatives were introduced and opined that derivatives do not influence stock market volatility.

Y V Reddy and Sebastin (2008) studied the dynamics of information transport between stock market and derivatives market using the information theoretic concept of entropy, which captures non-linear dynamic relationship also. The study found that in the Indian stock market, apart from information flow from index futures to Nifty index, information dissemination in the reverse direction also was observed.
B. Studies on investors perception

Abdulla Yameen (2001), at a seminar on capital market development at Maldives Monetary Authority, expressed that capital market development must be a key policy objective for developing countries that have decided to undertake major reforms in their financial sectors, in the context of globalization and integration of world markets.

Abhijeet Chandra found that individual investors do not always make rational investment decisions. They opined that investment decision-making is influenced by behavioral factors like greed and fear and cognitive dissonance. He concluded that these behavioral factors must be taken into account as risk factors while making investment decisions.

Anna A. Merikas et.al. (1999) studied the factors that influence individual investor behavior in the Greek Stock Exchange. The results revealed that there is a certain degree of correlation between the factors that behavioral finance theory and previous empirical evidence identify as the influencing factors for the average equity investors, and the individual behavior of active investors in the Athens Stock Exchange.

Annie Yates and Colin Firer (1997) expressed that investors are concerned more with total risk than with systematic risk. The study observed that volatility and level of returns generated by assets are critical measures of management effectiveness. The study found that investors do not give much importance to the size of the firm while choosing a company for investment.
Bernéus, Hannes, Sandberg, Carl and Wahlbeck, David (2008) examined if professional investors are indicating tendencies of irrational behavior when exposed to certain psychological dilemmas related to the financial world. It was found that there are indeed tendencies that indicate that professional investors are prone to fall for seemingly straightforward psychological dilemmas.

Chyi Lin Lee (2010) found that different types of property funds have dissimilar patterns of derivatives use. The study also revealed that large property funds are more likely to use derivatives than small funds or retail investors.

Corter, James and Chen Yuh-Jia (2006) found that investment experience is an important factor influencing behavior. Investors with more experience have relatively high risk tolerance and they construct portfolios of higher risk.

Daniel Tobias Dorn (2003) studied the investors’ response for the Initial Public Offers (IPOs) made by companies. They observed that investors are willing to pay more for IPOs following the period of high returns in recent new issues and for the IPOs that are recently in news. The study thus found a strong ‘herd mentality’ among retail investors.

Das B, Ms. S. Mohanty and N. Chandra Shil (2008) studied the behavior of the investors in the selection of mutual funds and life insurance products. They observed that from retail investors’ point of view, equity market is preferable over bank deposits considering the time value of money and also the fact that the bank rates had fallen below the inflation rate during the period under study.

David Nicolaus (2010) studied the derivatives choice of retail investors at Borse Stuttgart in Germany. He highlighted that the performance of derivative choices, on an average, underperforms a benchmark portfolio that consist of similar products that are available to retail investors.
Deleep Kumar P. M. and G. Raju (2001) argue that the capital market is becoming more risky and complex in nature so that ordinary investors are unable to keep track of its movement and direction. Hence they conclude that mutual funds should become the investment vehicle of individual investors who want to reap the benefits of buoyant stock markets without risking their investment.

Deleep Kumar P M and Deyanandan M N (2009) analyzed the views of retail investors in Kerala on the major market reforms as well as their investment performance. The study found that capital market has inspired investors by offering opportunities for achieving good returns in the form of dividends and capital gains.

Dimitrios I. Maditinos, Nikolaos G. Theriou and Alexandra V. Tsinani (2007) examined the preference pattern of investors towards dividends and found that individual investors in Greece want dividends. They attributed this finding to the fact of dividends not being taxed in Greece at the individual level.

Dimitrios I. Maditinos, Nikolaos G. Theriou and Alexandra V. Tsinani (2010) studied the extent to which the investors’ choices are affected by limited loss deduction in income taxation. They observed that investors have a positively biased perception of partial and capped loss deduction that leads to their willingness to take risks.

Fellner, Gerlinde and Maciejovsky, Boris (2007) found that female investors more often than their male counterparts tend towards risk aversion which is demonstrated by their more conservative investment behavior. This claim was evidenced by a smaller number of market enquiries, lower trading volume and lower frequency of transactions attributable to females.
Hong Kong Exchanges and Clearing Ltd. (2002) surveyed the retail investors in derivatives trading in Hong Kong. The study analysed trading pattern by different investment characteristics and found that the longer the investor’s experience in the market, the larger his/her usual transaction amount. It was also revealed that male investors trade more frequently than female investors.

Gupta L.C (1991) conducted a survey of Indian shareowners. He tracked the growth of share owning population for a period of 1955 to 1990 and classified the shareowners on the basis of demographic factors such as age, income level, occupation and education level. The study found that age of investors during the entry into equity market played a major role in determining success in the field. The study also revealed that investors give more importance to liquidity, followed by tax benefits.

Gupta L.C, Gupta C.P and Naveen Jain (2001) studied the Indian household’s investment preferences. They attempted to find out how retail investors view investments in bonds and found that investors prefer bonds issued by public sector undertakings and are hesitant to invest in bonds of private sector. The study also showed that investors in bonds give more importance to minimizing credit risk but the majority of bond holders were unaware of the role of credit rating agencies in minimizing the credit risk.

Gupta L.C, Naveen Jain and Utpal Choudhury (2004) surveyed the Indian stock market and household investors for a period of 2001-2004. The study focused on the areas of household investors’ worries about stock market and their investment preferences. The study found that a large number of investors were unfamiliar with many financial instruments. The researchers also opined that the demat system of holding shares in the electronic format was uneconomical for retail investors. The study concluded that small investors’ role needs greater support.
Gupta L.C and Naveen Jain (2008) studied the changing investment preferences of Indian households. They studied investors’ perception towards various financial instruments including Gold ETF, Mutual Funds and IPO. The study revealed that IPOs are too much hyped in India. The study also found that majority of retail investors prefer to have a portfolio with less than ten companies, and the portfolios are moderately diversified. The researchers also observed that awareness about gold ETF is on the rise.

Hailan Zhou (2007) examined the effects of investors’ information processing and assessments of the credibility of management disclosures as well as the interaction of such effect with management reporting incentives. He classified the survey participants into high payment and low payment group based on their annual income and observed that participants in the high payment group spent more time on information processing and decision-making than participants in the low income groups.

Imamual Haque S.M and Khan Ashfaq Ahmad (2002) explained a plan of action for healthy long-term development of the primary market and to encourage the participation of small investors. They highlighted that the sluggish trends in primary equity markets need to be reversed by restoring investors’ confidence in market.

The financial world also holds its share of overconfident behavior. James Montier (2002) found that 74% of the 300 professional fund managers who completed his survey believed that they had delivered above-average job performance.
Jasim Y. Al-Ajmi (2008) studied the determinants of risk tolerance among individual investors in Bahrain. The findings indicate that as investors, men have high propensity towards risk tolerance than women. Also, it was revealed that investors with better level of education and wealth are more likely to seek risk than less educated and less wealthy ones. They also reported that investors’ risk tolerance declines when they are approaching towards their retirement age.

Kalandar and Raghavendra (2004) attempted to analyse the perception of investors towards derivatives. The study found lower awareness towards settlement of derivative contracts. The study also found investors preferring futures over option contracts, even though options were considered to be carrying comparatively lower risk.

Kathleen Byrne (2005) showed that risk and investment experience tend to indicate a positive correlation and past experience of successful investment increases investor tolerance of risk. Inversely, unsuccessful past experience leads to reduced tolerance to risk. Therefore the study concluded that past investment behavior affects future investment behavior.

Kevin Chiang, George M. Frankfurter, Arman Kosedag and Bob G. Wood Jr (2006) studied the professional investors’ perception towards dividends. They were of the view that professional investors such as mutual fund managers and portfolio managers perceive dividends as required to pacify the shareholders and hence were in need of dividends.

Odean, T. (2002) found that traders that conducted the most trades tended, on average, to receive significantly lower yields than the market.
Nandagopal R, M. Sathish and K. J. Naveen (2011) analysed the investors’ motivational factors, investment preference and problems faced while investing in Mutual Funds. They opined that motivational factors to invest in mutual funds are portfolio diversification, Risk minimisation and greater tax benefits. They also expressed that the lack of knowledge was the primary reason for not investing in mutual funds.

Nayak J. K (2006) attempted to analyse the changes that have occurred in the investors perception and confidence in equity market after liberalization. The study revealed that the preferred mode of investment is equity, followed by banks, mutual fund and then others in a descending order. The study found that investor’s faith has increased and their risk taking ability has also increased after liberalization of Indian economy.

Nidhi Walia and Mrs. Ravi Kiran (2009) made an attempt to analyze investor’s perception and expectations. The study suggested setting up of Investor Oriented Service Quality Arrangements (IOSQA) in order to assess investors’ behavior while introducing any financial innovations.

Phung, A. (2008) argues that disregarding the reason for that stock’s evident drop, the anchored higher price is mentally considered its “rightful” price. The stock is therefore believed to bounce back over a certain time period.

Rajamohan RR (2010) analyzed the determinants of household portfolio in Coimbatore city in Tamil Nadu. The study found that the ownership of risky assets is the lowest in the age group of 31-40 and highest among the age group greater than 50 years. It was also revealed that the education qualification is the most influencing factor to invest in risky assets.
Rajeswari, T. R. and Moorthy, V. E. R. (2005) analysed the factors influencing the scheme selection by retail investors. The study found that the most preferred investment alternative is bank deposit with mutual funds and equity on fourth and sixth place respectively. They also observed that the investment decision is made by investors on their own and the performance of funds/scheme is the most influencing factor for investment decision.

Ramakrishna Reddy G and Ch. Krishnudu (2009) studied the investors’ perceptions and preferences of rural investors in Rayalaseema region in the state of Andhra Pradesh. They observed that a majority of the investors are unaware of corporate investment avenues like equity, mutual funds, debt securities and deposits, but are highly aware of traditional investment avenues like real estate, bullion, bank deposits, life insurance schemes and small saving schemes. Hence the study concluded that there is a need to create awareness about modern financial instruments.

Ravichandran K attempted a study on Investors Preferences towards various investment avenues in Capital Market with special reference to Derivatives. This study was undertaken to find out the awareness level of various capital market instruments and also to find out their risk preference in various segments.

Ricardo Gottschalk (2003) found that investors’ behavior is not homogeneous, as diversity was found among investors, between investors and lenders, and among lenders as well. According to the study, it was revealed that even the same mutual fund company adopts different investment strategies in its different investment schemes.
Ronay and Kim (2006) have pointed out that there is no difference in risk attitude between individuals of different gender, but between groups of such, males indicate a stronger inclination to risk tolerance. That is, no gender difference was found at an individual level, but in groups, males expressed a stronger pro-risk position than females.

Saravanakumar S, S. Gunasekaran and R. Aarthy (2011) studied the investors’ attitude towards risk and return content in equity and derivative securities. They observed that investors from younger group are more inclined with equity and derivatives segment and secondary market is preferred over primary market.

Sanjay Kanti Das (2011) analyzed the preferred investment avenues of the household. The study revealed that insurance products are the most preferred investment avenue of the household. It was also observed that factors such as education level, awareness about the financial system, age of investors etc make significant impact while deciding on the avenues for investment.

Sanjay Kanti Das (2012) studied the investment habits and preferred investment avenues of the household. He examined investment attitude, preference & knowledge of capital market institutions and instruments among the household. It was opined that households assign highest weightage to safety of investment and in most cases investors across all categories found insurance products to be the preferred avenue of investment.

Scharfstein, S, D. Stein, C, J. (1990) observed that even though investors might be able to process information and form their own decisions, they are affected by external factors such as supervisors, colleagues, and markets. They opine that investors apply to “herd behavior” because they are concerned of what others think of their investment decisions.
Shefrin, Hersh and Statman, Meir (1994) found that individuals rely on their personal past experience as a foundation and it is from this that excessive self-confidence in decision-making can originate. Such investors make inappropriate decisions with insufficient information due to this personal trait.

Shefrin, H. (2000), in his article “Beyond Greed and Fear”, felt that many investors focus on evidence that confirms their views, for example their predictions for a certain stock, while neglecting information that is of a contradictory nature.

Shyan-Rong Chou, Gow-Liang Huang and Hui-Lin Hsu (2010) tried to develop a model to measure attitudes and behavior towards investment risk among the Taiwanese investors. The study found no statistically significant difference by gender to investor propensity to bear risk.

Sitkin and Pablo (1992) developed a model of determinants of risk behavior. In this model, personal risk preferences and past experiences form an important risk factor in which to frame the problem, and social influence also affects the individual’s perception.

Swarup K. S. (2003) discussed the various measures for the revival of common investor confidence in the Indian equity markets. He opined that equity investors first enter capital market though investment in primary market and that the investors give higher importance to own analysis over the brokers’ advice.

Varadharajan P and P. Vikkraman (2011) attempted to identify the investor’s perception towards investment decision in equity market. The study revealed that an independency between the demographic factors exists. It was also found that the investment strategies of people as well as the factors that influence the decision making keeps changing.
Totok Sugiharto, Eno L. Inanga and Roy Sembel (2007) studied the investment practices and perceptions of major portfolio investors and fund managers at the Jakarta Stock Exchange (JSX) in Indonesia. They found favourable trading conditions in the JSX and increased attraction to Indonesian stock market by foreign institutional investors after its revival following the success of democratic presidential election in 2006.

Varadharajan and Vikraman P (2011) attempted to identify the investors’ perceptions towards investment decision in equity market. The study found that people assign highest weightage to profitability over other parameters. The researchers expressed that factors such as the experience in the equity market, age of a person and the occupation of a person does not affect the risk appetite of an investor.

Yoon Je Cho (1998) studied the Indian capital market development and policy issues. He argued that Indian stock market is dominated by speculative investments for short term capital gains, rather than long-term investment. He opines that investor confidence in mutual funds is increasing, and hence should be the most preferred investment vehicle for the lay investor.