Chapter-2

Literature Review

This chapter is discussed under the following heads:

I. Literature Review on Derivatives and Regulation

II. Brief on L C Gupta Committee Report on Regulatory Compliance of Derivative Markets.

2.1 History of Derivatives

2.1.1 The 50’s:

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2.1.5.1 2002

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2.2.3 Price Volatility and Discovery

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2.4 Special entry rules for derivatives

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The purpose of this chapter is to summarise the work undertaken, reported on the thesis topic. Literature review helps point at critical observations of the current body of knowledge and helps the researcher build his/her theory and fill a gap within existing studies.

I. Literature Review on Derivatives and Regulation

2.1. History of Derivatives

The history of derivatives dates back to year 1700 BC. Its fundamental essence was used for arranging marriages. Mention in the Bible in chapter 29 throws light on a person called Mr. Jacob who wanted to marry Ms. Rachel, daughter of Mr. Laban. Mr. Laban laid a condition of 7 years of hard labour before he could get a right to marry Ms. Rachel and fulfill his dreams. Seven years passed and Mr. Laban defaulted. He married off his elder daughter Ms. Leah instead. He wanted to marry off a less attractive daughter first. But Mr. Jacob had given his heart out to Ms. Rachel. He bought another option of seven years of hard labour to marry her. He finally married her and fathered 12 children from Ms. Leah and Ms. Rachel. Bigamy was allowed those days. The sons rose being patriarchs of the 12 tribes of Israel.
Thales of Miletus (in a city state of Ionia- in the present day Turkey) –c.636–c.546 BC (some mention his birth in 624 BC till 547 BC, the others– from c.625- 545 BC as well) was the son of Examydes and Cleobuline and belonged to a distinguished family. He was a pre-Socratic Greek philosopher, scientist and mathematician of Miletus and reputed founder of the Milesian school of philosophy. He was the first recorded Western philosopher. His body of work in writings could not be found; may have disappeared in course of time or according to some, might not have any! He is believed to have introduced geometry into Greece and to have been a capable astronomer. Thales studied practical as well as speculative problems and was acknowledged one of the Seven Wise Men of Greece for his exhortation to unity among the Ionian Greeks. He is believed to have purchased olive presses and made off a bumper crop in olives. Foreseeing a heavy crop of olives coming, he obtained a monopoly on all the oil presses of the region and then later realized a fortune by renting them out.

Hence the point is ‘derivatives’ existed before the birth of Christ.

The modern day derivatives structure originated in 1848 through the inception of the Chicago Board of Trade (CBOT) in USA. But before that Europe, to be more precise The Royal Exchange, London introduced forward contracting. Tulip bulbs were traded in 1637. 1650 witnessed ‘futures’ trading in Yodoya rice market in Osaka, Japan. Chicago was slowly developing into a trade center due to its proximity to Michigan Lake. Traders would store, sell and distribute grains coming from mid-west. During harvest, its stores would be under-capacitated and during spring the stores would go rather empty. This resulted into drastic price fluctuations. To stabilize the sharp fluctuations in prices, few traders came together and created ‘to- arrive’ contract, which allowed farmers to lock in the prices now and deliver the grains on the future date. It resulted into less pressure on the Chicago storage and distribution channel. The farmers now could store grains in their farms/ homes, local storage facilities and deliver them on a later date at Chicago. But more than the logistics ease; the farmers/traders spotted this as an opportunity for hedging against price changes. And also as a speculative tool. They realized that the sale and delivery of the grain was not as important as the ability of this arrangement to transfer the price risk associated with the produce. The grain could always be sold and delivered at
any given time. This arrangement was standardized around 1865. In 1925 the first futures clearing house was formed. The present day *avatar* of futures contract is more or less the same as established.

In the mid-1800s, a very famous New York financier named Russell Sage began creating synthetic loans using the principle of put-call parity. Mr. Sage would buy a stock and a put option from his customer and sell a call option in return. He would fix the strike price, call price and a put price simultaneously, thereby creating a synthetic loan with an interest rate significantly higher than what the usury laws (laws limiting the amount of interests than can be charged on loans) allowed.

Trading in derivatives was banned off and on in Europe, Japan and even in USA (Illinois) in 1867. But it would soon get reverted. Chicago Produce Exchange was formed in 1874. Now more known as Chicago Mercantile Exchange which was re-christened in 1919. The ever green journey of new openings never stopped since. So here we go. Opportunity to make money attracts the opportunist. ‘Bucket shops’ were what they set up; took money from people and disappeared; setting up another shop somewhere else. Small operators dealing in options and securities were playing the sport rampantly in the early twentieth century. It was considered to be a dark period for derivatives trading. Options, futures and other derivative instruments were banned from time to time in different countries. USA was not far behind. In 1936 options on futures were banned in USA. This being even after US government taking its first initiative in regulating the futures market by introducing the ‘Grains Future Act’ in 1922. Interesting stories unfold as we look back at the emergence of derivatives trading and markets in the world.

### 2.1.1 The 50’s:

In 1955 the Supreme Court ruled that the profits derived from hedging are to be treated as ordinary income. The case was of ‘Corn Products Refining Company’. The ruling was reversed in 1988, which was challenged in ‘Arkansas Best’ Case. The court denied the deductibility of capital losses while hedging to offset against ordinary income, which effectively gave hedging a tax disadvantage. In 1993, the ruling was reversed; fortunately. Another important event of the 50’s was the ban on onion futures. A group of Michigan
onion farmers with the help of a young congressman Mr. Gerald Ford managed to ban onions from future trading. Hence, we do not hear much of onions being traded on the derivatives exchange. The law in effect reads “you can create futures contracts on anything but onions”. This could be assigned to onions being extensively consumed by poor and rich in equal measures; it also being considered as ‘poor man’s vegetable’. This would protect onion prices against the ‘speculative’ tendencies of the market.

2.1.2 The 70’s:

International Monetary Market was created in 1972. The Chicago Mercantile Exchange (CME), responding to the freeing of the international currencies introduced trading in currency futures. The first, where physical commodities were not involved. In 1975 the Chicago Board of Trade (CBOT) created the first interest rate futures contract, which eventually subsided after an initial success. It was based on Ginnie Mae, Government National Mortgage Association (GNMA) mortgage backed securities.

Quote“A Ginnie Mae, or Government National Mortgage Association security, functions similarly to the process of lending someone money to purchase a house or business. Ginnie Mae buys home mortgages from banks and financial institutions, bundles them together, and then markets portions of these bundles to investors. For example, if you invest $100,000 in a Ginnie Mae, you are essentially lending someone money to buy a house or business with the help and the guarantee of a government organization. You would receive monthly payments consisting of interest on the loan and perhaps also a portion of the principal. These are similar to the payments a bank receives when it lends money to a home or business buyer. If it isn't included in the monthly payment, the principal is paid back at the end of a specified time period. Ginnie Maes are the most popular type of mortgage backed securities because they are guaranteed by the U.S. government. They are not impervious to risk, but the government will step in to prevent the collapse of Ginnie Mae and its securities. Ginnie Mae neither issues, sells or buys pass-through mortgage-backed securities, nor does it purchase mortgage loans. It simply guarantees (insures) the timely payment of principal and interest from approved issuers (such as mortgage bankers, savings and loans, and commercial banks) of
qualifying loans, such as those issued by the FHA (Federal Housing Administration) and RHA (Rural Housing Administration of US). Unlike its cousins Freddie Mac, Fannie Mae and Sallie Mae, Ginnie Mae is not a publicly-traded company. An investor in a GNMA security will not know who the underlying issuer of the mortgages is, but merely that the security is guaranteed by GNMA, which is backed by the full faith and credit of the U.S government, just like U.S. Treasuries.” Unquote.

The CBOT tried to bring it to life many times, by changing its structure; but it proved unsuccessful. In the same year CME introduced futures contract in Treasury Bills (T-Bills). This contract was the first successful pure interest rate futures. For about $1000, one could insure against the price volatility of $1 million worth of T- Bills. The cost eventually came down with passage of time. In 1977 CBOT introduced the T-bond futures contract. It went on to be the highest-volume contract for about 200 years.

1973 was a watershed year for the derivatives market. Early in the year CBOT formed the first options exchange, which was named as Chicago Board Options Exchange (CBOE). Options were traded ‘over the counter’ earlier by few dealer firms. The CBOE provided the first organized option market. It created standardized options for 16 individual stocks. These were offered by few dealers instrumental in creating market in options. Investors now could buy/ sell options as easily as stocks. Same year Fischer Black and Myron Scholes, professors at MIT developed formula for pricing an option. Their paper was published in a journal called ‘Journal of Political Economy’. During the same time Robert Merton too published a paper in ‘Bell Journal of Economics and Management Science’ mentioning a model of risk management in derivative trading. Option traders found the model useful. Although, it was ignored as a minor contribution to academic discussion and literature earlier, CBOE found the model very useful for pricing options as well as to hedge transactions, which they were obligated to provide liquidity for. Soon thereafter, options began trading at American Stock Exchange, the Philadelphia Stock Exchange and the Pacific Stock Exchange. The New York Stock Exchange also introduced small option trading market but eventually sold it to the Pacific Stock Exchange, which in turn sold it again to New York Stock Exchange. It operated as Arca-Ex- Archipelago Exchange (technologically advanced equity trading system). It’s now operating as NYSE Arca.
2.1.3 The 80’s:

In 1982 the CME created the Eurodollar contract, which surpassed the T-Bond contract created in 1977 to become the most actively traded of all futures contracts. The Kansas City Board of Trade launched the Index futures contract in 1982. Soon CME followed suit and introduced Index futures contract on the Standard and Poor’s 500 Index, which became highly successful. In 1983 CBOE created options on Stock Index. Though originally called as CBOE 100 Index, it was soon turned over to Standard and Poor’s to be called as S & P 100. It was one of the most actively traded exchange listed option. The 80’s marked the beginning of the ‘swap’ era. The use of derivatives spread widely. Small and big companies were using them to hedge; speculate on interest rate, exchange rate and commodity risk. Managers from business schools were being exposed to literature on derivatives for the first time. As people started using the instruments extensively, newer and varied versions of derivatives instruments were making it more complex to trade in them. Wall Street sought help from mathematicians and physicists, who in turn made money and carved a new career path for themselves. Derivatives were now referred to as ‘exotic’ instruments; courtesy complexity.

2.1.4 The 90’s:

90’s was marked with controversies. In 1994 investors incurred huge losses on account of trading derivatives. Companies involved were well known and established. There was a hue and cry against the instruments and the firms that sold them. Although some changes were incorporated, companies/ firms continued to use them albeit with some tighter controls. Improvements followed. JP Morgan Co. introduced concept called ‘Risk Metrics’. It was an internet based service to gauge Bank’s value at risk; famously now called as VaR. Sir Dennis Weatherstone initiated the process of a daily report on the indication of the money that the bank could lose in its trading positions, which was to be tabled at 4:15 pm every day. This report was famously called as “4:15 Report”, now being called as ‘Value at Risk’ Report. This report requires extensive data on interest rates, exchange rates, commodity prices, and stock prices. In 1994 the Bank made a bold decision to make the data public, for which it was criticized heavily. But the bank thought
that this move would encourage other bankers to practice good risk management. The bank would also benefit in providing consulting services to the data users. The initiative became so successful that it launched another service called ‘Credit Metrics’ which subsequently became an independent business of the entity.

“CreditMetrics™, is a framework for quantifying credit risk in portfolios of traditional credit products (loans, commitments to lend, financial letters of credit), fixed income instruments, and market-driven instruments subject to counterparty default (swaps, forwards, etc.).”

90’s saw many academicians joining the Wall Street. One of first and the prominent ones being Fischer Black, who died in 1995. Consequently in 1997 Scholes and Merton, partners of Fischer Black in developing the famous Black- Scholes formula, received Nobel Prize in Economics, which unfortunately evaded him. 1990s was marked with many financial scandals and system failures. Right from India to USA the financial markets witnessed bloodbath. 1998 was particularly very bad for financial markets in US. Due to market failures in Russia and other Asian countries, one of the largest hedge fund (companies promoted by Merton and Scholes along with a former Federal Reserve Governor and a veteran Wall Street bond trader), called Long Term Capital Management (LTCM) failed miserably on the Wall Street resulting into government, the Federal Bank to be more precise negotiating with Wall Street Banks for a bailout package. These banks were on the creditors list of LTCM. Imagine a company promoted by the founders of the Capital Asset Pricing Model (CAPM) theory failing miserably at the Wall Street. The damage caused had a long term implications on the derivatives markets as LTCM was a prominent user of the derivatives instruments. The downfall of the company led to a new realization of huge impact of its failure and its capacity of not only damaging the users’ interests but the whole financial system.

The Evolution of Analytical Risk Management Tools over the years could be summarized as follows:
Table 20: Risk Management Tools

<table>
<thead>
<tr>
<th>Year</th>
<th>Risk Management Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1938</td>
<td>Bond duration</td>
</tr>
<tr>
<td>1952</td>
<td>Markowitz mean-variance framework</td>
</tr>
<tr>
<td>1963</td>
<td>Sharpe’s single-factor beta model</td>
</tr>
<tr>
<td>1966</td>
<td>Multiple-factor models</td>
</tr>
<tr>
<td>1973</td>
<td>Black-Scholes option-pricing model, “Greeks”</td>
</tr>
<tr>
<td>1983</td>
<td>RAROC, risk-adjusted return</td>
</tr>
<tr>
<td>1986</td>
<td>Limits on exposure by duration bucket</td>
</tr>
<tr>
<td>1988</td>
<td>Limits on “Greeks”</td>
</tr>
<tr>
<td>1992</td>
<td>Stress testing</td>
</tr>
<tr>
<td>1993</td>
<td>Value at risk (VAR)</td>
</tr>
<tr>
<td>1994</td>
<td>RiskMetrics</td>
</tr>
<tr>
<td>1997</td>
<td>CreditMetrics</td>
</tr>
<tr>
<td>1998</td>
<td>Integration of credit and market risk</td>
</tr>
<tr>
<td>2000</td>
<td>Enterprise wide risk management</td>
</tr>
</tbody>
</table>


2.1.5 The 21st Century:

2002, 2004, 2008 witnessed derivatives losses in National Australian Bank, China Aviation Oil Company and Société Générale respectively. Still these were considered quite pale in comparison to the huge derivatives losses which occurred in the 1990’s which were basically uncontrolled and unstructured. The Financial Accounting Standards Board (FAS) of United States introduced a new standard – FAS 133 enabling listed
companies to record derivatives in their final statements- P& L and Balance Sheet, in the year 2000. The International Accounting Standard (IAS) too responded with its version, IAS- 39 which was promulgated in the year 2005. The International Securities Exchange (ISE) was formed in the year 2000. It was a new fully electronic options exchange, which even surpassed the CBOE in volume of options trading of individual stocks within few years of its operation. Lets list some prominent events which took place in the subsequent years-

2.1.5.1 2002- The Chicago Mercantile Exchange became the first publicly traded company. This led to more companies joining the band- wagon. Futures in individual stocks began trading in United States, although it existed in European and other markets. Two consortiums opened in US to trade in futures of individual stocks. Only one survived – a one between CBOT, CME and CBOE called ‘OneChicago’. It seems futures trading in individual stocks never became popular somehow.

2.1.5.2 2005- The CBOT and ISE went public in 2005. LIFFE – London International Financial Futures Exchange, one of the largest European Derivatives Exchange, and Euro next merged to become of the world’s largest derivatives exchanges, threatening even the big three Chicago Exchanges in competition.

2.1.5.3 2006- Staunch rivals- the Chicago Board Trade and Chicago Mercantile Exchange announced a $25 billion merger. The merger was talked about for a long time; that eventually happened in 2006. It ended the long standing rivalry and ushered a new era in the derivatives industry.

2.1.5.4 2007: Banks are derivatives market makers. The banking regulators have always been concerned with the risk associated to the banking system by the use of derivative instruments. In order to harmonize the banking regulations all over the world, The ‘Basel Committee’ on Banking Supervision was set up by the Bank of International Settlement, Basel, Switzerland. In 1988 they first issued a set of advisory guidelines for global banking regulators. They amended the regulations in 1996. In the year 2007 Basel- II guidelines were promulgated which were under construction since 1999. Although these guidelines are not mandatory to implement they do give a comprehensive insight for
running an ideal bank. These guidelines should further see improvements and changes in the years to come.

2.2 Research Scholars on Regulatory Structure

Above was the brief history of the evolution of derivatives around the world. In India we welcomed it in the year 2000. Since then a lot has transpired during the years for us to take up the study of its regulatory structure. Financial institutions experiment and struggle to find an optimum equilibrium for the market to operate. The importance of this study has been validated by the recent sub-prime crisis which resulted in the global financial meltdown.

David Jackman (2004) discussed the purpose of regulation. The paper argued that regulation is based on ethical drivers that, if we understand them better, it will help us direct towards a more effective and efficient system. Incoherent and excessive regulation can diminish individuals’ and firms’ ability to comprehend these principles and apply them in everyday judgments resulting into a culture of inter-dependency. Increased regulation of an undirected kind could make matters worse.

Joel Telpner, Jamila Piracci (2009), discussed the initiatives of the Obama administration to reform and regulate the OTC derivatives market. The paper outlined Congressional committee bills, other Obama Administration initiatives, and industry self-regulatory initiatives and discussed underlying current issues such as, which derivatives would and would not have to be cleared through central counterparties (CCPs); how standardized and customized derivatives would be distinguished from each other; potential margin, business conduct, reporting, and recordkeeping standards for OTC derivatives dealers; how fraud, market manipulation, and other market abuses would be policed; possible limitations on the types of parties that may participate in unregulated derivatives; possible resolution of the sometimes confusing and overlapping authority of the SEC and CFTC over OTC derivatives; how and by which federal or state authority credit default swaps (CDS) might be regulated; the potential for regulatory arbitrage; and the danger that stringent regulation in the USA will drive OTC derivatives business offshore. The findings of the paper discussed that unlike markets for other financial instruments,
derivatives market participants, largely through ISDA, have for some time cooperated closely with the New York Fed and engaged in a myriad self-policing activities. Time will tell whether this existing framework, combined with the redoubled self-policing efforts of market participants, will cause policymakers to seek appropriate legislation that will not threaten the preservation of the OTC derivatives market in the USA.

Thomas A Russo, Marlisa Vinciguerra (1992) discussed setting out the regulatory structure for derivatives markets in the USA and some of the problems associated with it. It then considered the provisions afforded by Title V of the Futures Trading Practices Act of 1992 and the extent to which these redress regulatory uncertainty.

Atul K Shah (1996) discussed, “in the wake of substantial losses suffered by derivatives dealers and end users in recent years, questions are being raised about the type of regulatory structure needed to monitor and control the use of derivatives. Financial institutions believe that the issue can be resolved by tighter internal controls, whereas regulators believe there is a need for more direct oversight. The conventional view is that derivatives are highly useful instruments which simply need to be handled with care”. In this paper, it is argued that, although useful for hedging, derivatives are a high risk technology which poses inherent difficulties for regulation and control.”

As suggested by Perrow, where the environment of high end technologies is both complex and tightly coupled, such that any significant failure cannot be contained, the potential for catastrophe is significant. The foregoing analysis shows that derivatives operate in a complex and tightly coupled environment, posing a significant threat to the financial system. Regulatory reform would require much greater cooperation between regulators and a proactive approach to regulation rather than a reactive one.

Don M Chance (2008) from Louisiana State University in his book titled ‘Essays in derivatives’ has dedicated a chapter on ‘Worst practices in Derivatives’ where he has mentioned that ‘a party can engage in a seemingly small derivatives transaction and end up destroying an organization’. The sentence is a pretext to my research in the regulatory structure. The author has discussed the price organizations have to pay by not adhering to common sense and massaging out- of control egos of traders while entering into
derivatives contracts. He mentioned the examples of few financial disasters like Orange County, Barings and Procter and Gamble etc. He has also devoted a chapter on the ‘Best Practices in Derivatives’ in which he has discussed few lessons learnt on the undue exploitation of financial trading. Scams and scandals have always been part and parcel of the financial system over the decades. The same could be validated by looking at the data below which was published on www.thisismoney.co.uk featuring financial scams during the years:

**Nov 1989** - Michael Milken, known as the junk bond king when he headed bond operations at US investment bank Drexel Burnham Lambert, was sentenced to 10 years in jail for securities fraud. Drexel filed for bankruptcy after being fined $650m in fines and restitution.

**April 1992** - Indian banks and brokers were accused of colluding illegally to siphon $1.3bn from the inter-bank securities market to fuel a boom on the Bombay Stock Exchange. Top broker Harshad Mehta, the main person accused in the scandal, died in jail during the trial.

**Feb 1995** - One of Britain's oldest investment banks, Barings Plc, collapsed after lone futures trader in Singapore, Nick Leeson, lost some $1.4bn in derivatives trading. Leeson was jailed in Singapore. Barings was subsequently sold to Dutch Bank ING for one pound.

**Sept 1995** - Japan's Daiwa Bank suffered a $1.1bn loss from unauthorized bond trading by Toshihide Iguchi, one of its executives in the United States. He was imprisoned in 1996.

**June 1996** - Japan's trading house Sumitomo Corp suffered a $2.6bn loss over 10 years from unauthorized copper trades, primarily by chief copper trader Yasuo Hamanaka. Sumitomo fired Hamanaka, once dubbed 'Mr Five Percent' because his trading team was believed to control five percent of the world's copper trading. He was later jailed for eight years.
Jan 2001 - Former chief financial officer of the now-defunct Griffin Trading Co, Scott Szach, was charged with diverting more than $5.56m from a company bank account to a brokerage trading account to fund unauthorized trading in the 18 months before the firm's demise.

Sept 2001 - Merrill Lynch fired two senior executives for their failure to supervise a currency dealer who diverted profits on foreign exchange deals to favoured clients, leaving the bank facing a $10m bill.

Feb 2002 - Ireland's largest bank Allied Irish revealed a rogue US trader John Rusnak had defrauded its US subsidiary of up to $750m. Rusnak was sentenced in January 2003 to 7½ years in prison. He admitted devising a scheme that netted him $850,000 in salary and bonuses from 1997 to 2001.


15th September 2008: The fall of Lehman Brothers and the subsequent fall of major banks and financial institutions of the US financial markets led by greed and inflated egos of the so called ‘financial experts’ is the latest example of how vulnerable the financial markets could become in the hands of few ‘financial experts’ who had veins in their hands of financial decision making on behalf of millions of people. It led to takeovers and buyouts of some major American financial institutions like AIG etc. The scam ran into billions of dollars. Lehman Brothers cited bank debt of $613 billion, $155 billion in bond debt, and assets worth $639 billion.

John C Hull has also devoted a chapter (34) in his book Options, Futures and Other Derivatives (7th Edition) on ‘Derivatives mishaps and what we can learn from them’. The author has discussed the downfalls of financial and non-financial institutions and how a single person from an organization could lead to their downfall. He has mentioned few
measures and take-home lessons from the debacles. The list of companies mentioned which incurred huge losses are mentioned as follows:

2.2.1 Scams in Financial Institutions:


The cost of financial insolvencies and damage could be gauged from the following table.

Table 21: Cost of Financial Insolvencies in the 90’s:

<table>
<thead>
<tr>
<th>Country</th>
<th>Scope</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% GDP</td>
<td>$ Billion</td>
</tr>
<tr>
<td>Japan, 1990s</td>
<td>Bad loans, property, prices</td>
<td>24</td>
</tr>
<tr>
<td>China, 1990s</td>
<td>4 large state bank insolvent</td>
<td>47</td>
</tr>
<tr>
<td>U.S., 1984-1991</td>
<td>1400 S&amp;Ls, 1300 banks fail</td>
<td>3</td>
</tr>
<tr>
<td>South Korea, 1997-</td>
<td>Restructuring of banks</td>
<td>28</td>
</tr>
<tr>
<td>Indonesia, 1997-</td>
<td>83 banks closed</td>
<td>55</td>
</tr>
<tr>
<td>Mexico, 1995-</td>
<td>20 banks recapitalized</td>
<td>19</td>
</tr>
<tr>
<td>Turkey, 2000-</td>
<td>21 banks rescued</td>
<td>31</td>
</tr>
<tr>
<td>Argentina, 1980-192</td>
<td>70 institutions closed</td>
<td>55</td>
</tr>
<tr>
<td>Thailand, 1997-</td>
<td>Banking sector</td>
<td>35</td>
</tr>
<tr>
<td>Spain, 1977-1985</td>
<td>Nationalized 20 banks</td>
<td>17</td>
</tr>
<tr>
<td>Russia, 1998-1999</td>
<td>720 banks closed</td>
<td>6</td>
</tr>
</tbody>
</table>
2.2.2 Scams in Non-Financial Institutions:

Allied Lyons, Gibson Greetings, Hammersmith and Fulham, Metallgesellschaft, Orange County, Procter and Gamble, Shell, Sumitomo etc.

Losses Attributed to Derivatives, 1993-2004 in Non-Financial Institutions could be summarized as follows:

Table 22: Losses Attributed to Derivatives, 1993-2004:

<table>
<thead>
<tr>
<th>Entity</th>
<th>Date</th>
<th>Instrument</th>
<th>Loss ($ millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange County, California</td>
<td>Dec.1994</td>
<td>Reverse repos</td>
<td>1,810</td>
</tr>
<tr>
<td>Showa Shell Sekiyu, Japan</td>
<td>Feb.1993</td>
<td>Currency forwards</td>
<td>1,580</td>
</tr>
<tr>
<td>Kashima Oil, Japan</td>
<td>Apr. 1994</td>
<td>Currency forwards</td>
<td>1,450</td>
</tr>
<tr>
<td>Metallgesellschaft, Germany</td>
<td>Jan. 1994</td>
<td>Oil futures</td>
<td>1,340</td>
</tr>
<tr>
<td>Ashanti, Ghana</td>
<td>Oct. 1999</td>
<td>Gold “exotics”</td>
<td>570</td>
</tr>
<tr>
<td>China Aviation Oil, Singapore</td>
<td>Dec. 2004</td>
<td>Oil derivatives</td>
<td>550</td>
</tr>
<tr>
<td>Yakult Honsha, Japan</td>
<td>Mar. 1998</td>
<td>Stock index</td>
<td>523</td>
</tr>
<tr>
<td>National Australia Bank, Australia</td>
<td>Jan. 2004</td>
<td>Currency options</td>
<td>262</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Company</th>
<th>Date</th>
<th>Product Type</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codelco, Chile</td>
<td>Jan. 1994</td>
<td>Copper futures</td>
<td>200</td>
</tr>
</tbody>
</table>


John Keane (2009), professor of politics at Westminster University, author of the book titled ‘The Life and Death of Democracy’ in his article in ‘The Indian Express’ (Pune Edition) titled ‘Are we there yet’?, dated 11th August 2009 commented on the importance of strengthening monitoring mechanisms to curb financial irregularities. Excerpt from the article stressing the need for tougher regulation is as follows:

Quote, “talk of the end of the Great Recession and a return to normality is premature. Surging profits in the City of London and Wall Street should remind us that in matters of political economy, the worst is not over. Mired in spiraling unemployment, state debt and public frustration with parties, politicians and governments, much of the world economy continues to suffer the shock effects of a massive market failure that threatens to knock the life out of democracy itself.

Let us remember: the true cause of the deepest economic slump since the Great Depression of the 1930s is that democracy sleepwalked its way into a deep crisis. Democracy failure bred market failure. Unelected regulatory bodies and elected politicians, parties and whole governments let their citizens down. The self-regulation model palpably failed; empowering bodies like Moody’s and Standard and Poor’s and the UK Financial Services Authority to look after the credit and banking systems resembled putting alcoholics in charge of a wine bar full of celebrating bankers. There were few monitory bodies to blow whistles or sound alarm bells. Brave individuals who did so were ignored, silenced or sacked. The consequence: banks, investment firms and hedge fund operators, shrouded in corporate secrecy, were allowed to pursue ‘front running’ and ‘Ponzi schemes’ and other reckless adventures that brought the world’s banking and credit institutions to the edge of a cliff.
Bursting bubbles have regularly plagued market economies since the seventeenth century Dutch tulip craze; they are intrinsic to unregulated markets, contagious and destructive of human lives. More will happen — unless new early warning systems are put in place. Monitory democracy is the best check against hubris, and that is why toothier ways are urgently needed for doing things that central banks, bankers, securities regulators and accounting standards boards manifestly failed to do. Gordon Brown may believe in granting more power to the Treasury and the Financial Services Authority (and less to the Bank of England) so that they can work financial miracles. But blind trust in either markets or government regulators is folly. **The urgent political priority is to find more open and equitable ways of preventing future breakdowns of credit markets, which are bound to remain the drivers — and potential depressors — of markets in general.** The question is not just whether governments are too big or too small or whether they work (the words used by Barack Obama in his inaugural address). The question is also whether governments and market institutions are held publicly accountable for their actions by citizens, and by their various elected and unelected representatives.

There is of course a feel-good factor when speaking about greater public accountability of markets. Who (aside from animal-spirited bankers and hedge fund operators) could be against it? The trick is to find robust methods of clamping down on market failure. Platiitudes about ‘oversight’ and the need for ‘real reform of our regulatory architecture’ (phrases used in recent months by Henry Paulson, Lord Turner and other failed regulators) are simply not good enough. Tough talk needs to be translated into the construction of new monitory bodies. The recent EU leaders’ decision to establish a Systemic Risk Council, supervisory colleges and a single European rule book applicable to all financial institutions certainly count as examples. Embattled proposals by the US Treasury secretary to regulate hedge funds and traders of credit-default swaps and other exotic financial instruments run in the same direction. So would first-ever global regulatory structures in the fields of banking, insurance and securities — credible forums that would crack down on fraud, discourage excessive risk-taking, foster best practice through open-minded counsel and provide a means by which the millions hurt by this crisis may seek redress.
At its London summit, the G20 acknowledged the pressing need for new global regulatory structures. ‘The era of banking secrecy is over’, it declared. It agreed to rename and upgrade an obscure close-knit body of central bankers, finance ministries and regulators known as the Financial Stability Forum, whose replacement, the Financial Stability Board, will include representatives from all G20 countries — so making it the prototype of the world’s first financial monitor. Based in Basel and working alongside the IMF, the FSB will have an elevated mandate to ‘provide early warning of macroeconomic and financial risks and the actions needed to address them’. For the moment, its officials deny they plan to act like guardians of the global credit system. Their diffidence reflects the fact that there is no formal provision for enabling citizens and independent experts to input their views to the FSB, which will operate entirely at the behest of states, some of which (the United States, China, India) are in any case profoundly skeptical about the need for stronger global-level intrusions into markets. The secretariat of the FSB is to remain tiny; it has no formal powers to impose anything on anybody; and, for the time being, it will function as a clearing-house advisory and information-sharing body that hosts meetings and sets up ‘supervisory colleges’ that issue reports on ‘potential risks’, ‘best-practice principles’ and revamped ‘regulatory systems’. How the FSB would act to avert or resolve cross-border disputes triggered by the future insolvency of troubled companies like Citigroup, AIG and the Royal Bank of Scotland is unknown.” Unquote.

In the October 2009 issue of Harvard Business Review Robert Merton, Harvard Business School professor and a winner of the 1997, Nobel Prize in Economics was interviewed by HBR senior editor David Champion where he was posed a question on the ways to make the financial system safer. To which Merton replied that changes in the regulatory rules and structure with their effective implementation should be the key. To quote Merton -

Quote. “We clearly need regulatory changes, both in the rules and structure and in their execution. As we expand the regulatory scope, we place greater demands on the regulators to exercise judgment on technically complex issues; if they are to do so effectively, provisions must be made for properly trained staffs. There’s also a danger that we’ll regulate too quickly and what we do will have bad unintended consequences. We saw that with Sarbanes-Oxley. Nevertheless, there are some regulations – for over-the-
counter, or OTC, derivatives, for instance – we could enact right away that would probably give more than 90% protection against the kind of systemic breakdown we’ve seen.

First of all, financial institutions should be required to provide explicit margin collateral against their OTC derivative liabilities. This would not be an undue burden because financial companies can manage collateral at low cost. We should also require all financial companies to report positions on a fair-value rather than a book basis, so that their collateral covers the actual liabilities of their derivative exposures. I would not advocate collateral requirements for non-financial companies that make it expensive for them to use derivatives to reduce the risks they face in their normal business. Another useful move would be to create a central clearing system for OTC derivatives trading of contracts that can be adequately standardized. When many different parties are making bilateral trades, the result is a gross, rather than a net, accounting of contract exposures. An exchange that functioned as the central counterparty would facilitate the netting out of contract exposures, making it easier to contain the cascading effects of one firm’s default. For custom derivatives or for non-financial firms that did not want to manage collateral, regulations could establish position limits to prevent these non-centrally cleared contracts from creating a systemic risk and to encourage the use of central clearing. A third step would require that senior management teams, board members, and regulators of financial institutions demonstrate adequate understanding of the financial technology and risk management concepts necessary to perform their oversight roles effectively.”

On another question on to make financial markets safer, Merton suggested incorporating National Transportation Safety Board, an idea as suggested by Andrew Lo at MIT. To quote Merton “As another check on the system, the government could set up a financial equivalent to the National Transportation Safety Board, an idea suggested by Andrew Lo at MIT. The NTSB is not a regulator, but its findings, which are publicly available, inform the decisions of regulators, lawmakers, the industry, and the public. I think this is very sensible. Creating a strong independent body staffed with forensic experts to investigate failures within the financial system on a continual basis would help ensure that regulations are formulated with the best and least-biased information.” Unquote.
An article in American Banker; 9/2/2009, Vol. 174 Issue 166, p3-3, 1/5p reports the initiatives taken by the US regulators namely, The Commodity Futures Trading Commission (CFTC) and the Securities and Exchange Commission (SEC) to harmonize the regulations for the derivatives market. They had to report to the government by 30th September 2009 on the steps to include the unregulated markets under the purview of the regulators. This emphasizes the steps taken by regulators to tighten the regulatory structure in light of the recent financial sub-prime crisis.

Inna Petrova (2009) discussed derivative financial instruments as a factor that triggered the global financial crisis, which originated in the US (starting with —the credit crunch in the middle of 2007). Her paper outlines the main causes of the crisis as the combination of factors that matters like “subprime mortgages and securitization, lack of regulation in the use of collateralized debt obligations and credit default swaps as off-balance sheet instruments, faults of ranking agencies, highly leveraged balance sheets of banks due to warehousing of —toxic assets and massive exposure to the instruments, overleveraging of world economies, multiple credit bubble collapses and mistakes of local economies, amongst others”. The author discussed the lack of regulation in the use of collateralized debt obligations and credit default in the 2007 financial crisis along with other factors.

Ashutosh Vashishtha and Satish Kumar (2010) discussed the growth and development of derivative markets in India. They have indicated the growth as extremely encouraging and successful. “The derivatives turnover on the NSE has surpassed the equity market turnover. Significantly, its growth in the recent years has surpassed the growth of its counterpart globally. The turnover of derivatives on the NSE increased from Rs. 23,654 million (US $ 207 million) in 2000-01 to Rs. 130,904,779 million (US $ 3,275,076 million) in 2007-08. They have considered India as one of the most successful developing countries in terms of a vibrant market for exchange-traded derivatives. According to the authors the equity derivatives market is playing a major role in shaping price discovery. Factors like increased volatility in financial asset prices; growing integration of national financial markets with international markets; development of more sophisticated risk management tools; wider choices of risk management strategies to economic agents and innovations in financial engineering, have been driving the growth
of financial derivatives worldwide and have also fuelled the growth of derivatives here, in India”.

Anuradha Guru (2010) has regarded financial innovation with inappropriate regulatory oversight can as the cause of the crisis recent financial crisis in 2007-08. However she mentions, the solution, for the regulators is not to stop innovating “but also to give it a direction and a helping hand, while ensuring market stability and keeping in mind the larger interests of consumers”. She has suggested balancing innovation with effective regulation for development of efficient financial markets in the country.

James P Cullen (2009) has discussed the significance of monitoring derivative markets in the wake of the 2007-08 world financial crises. He pointed the exchange regulated derivative trades as more efficient mechanism to limit transactional risk than OTC trading. He has expressed concerns on the staggering development of OTC market. As per the paper the outstanding OTC derivatives contracts totaled $683.7 trillion (BIS 2008). The OTC market was therefore approximately 48 times the size of US annual GDP. Although the value of ‘at-risk’ derivative transactions is difficult to estimate, but the net aggregate exposure of the credit derivatives market was calculated at $20.4 trillion in June 2008 (BIS 2008). The US GDP was approximately $14.2 trillion according to National Economics Accounts, Bureau of Economic Analysis, available at http://www.bea.gov/national/index.htm as last visited on 16th March 2009.

**Figure 10: Growth of OTC derivatives market**

![Growth of OTC Derivatives](image)
He has also discussed the inability of even powerful governments of countries like USA to control the systemic collapse, which had to bail out AIG, an insurance company along with other financial institutions with $150 billion which in turn had to suffer a loss of $60 billion due to the crisis. Markets are reluctant to regulate these transactions seeking shelter in the notion of self-regulating and self-corrective markets. Instead regulations are framed in response to potential consequences of default by the collapse of financial institutions (like Barings, Enron etc.), which are reactive rather than proactive in approach. Lack of central clearing counterparty (CCP) has been identified as one of the key weaknesses in the financial system and not “as is often erroneously claimed – because OTC derivative products were a driver of the credit crisis, but because the opacity of the market became extremely debilitating once liquidity contracted and banks became unwilling to lend to one another. The lack of a CCP and the inability of banks to assess counterparty liabilities (because they lay in OTC transactions) led to the protracted credit drought which has exacerbated the crisis. However, in the absence of a clear philosophical shift, establishing a clearinghouse for a market of this size will be a formidable, if not impossible, task”.

According to the paper “the role of the state in current regulatory philosophy is defined in terms of facilitating the installation and maintenance of markets, and intervention is justified only where remedial action is required to fix market failures (Picciotto, Jason Haines, 1999).

Exchanges have warned against attempts to regulate complex and illiquid derivatives products (Grant, 2009). This will continue to ensure that trades are not fully collateralized, with gaps remaining in the capitalization of residual positions. The loopholes characteristic of the current global regulatory network will remain, and OTC trades will continue. This is tolerated despite the realization that the default of major derivatives counterparty such as Lehman Brothers or AIG is not inconceivable, and funds for recapitalizing financial institutions are constrained by the economic downturn”.

The author has suggested introduction of a global monitor of derivatives trading. He has emphasized the need of Derivatives as necessary instruments for the functioning of modern financial markets; however he has suggested their controlled use. “Any attempts by financial industry participants to engage in regulatory arbitrage, or the introduction of contracts exempt from CCP control should be scrutinized by global regulators”.

Gordon Rausser, William Balson, Reid Stevens (2010) has proposed a centralized clearing for OTC derivatives. They have outlined the market microstructure necessary for such a clearing house.

Commissioner J Carterbeese, Jr. (1993) had defended against severe restrictions against derivative trading and the skeptics. There were conservatives who saw a potential in derivative trading creating turbulence (ripple effect) in the OTC markets, and liquidity in the cash market. The financial crisis in 2007 exactly replicated the concerns raised by the skeptics. J. Carter Beese, Jr. accepted the need to regulate derivatives market by objectively analyzing the reasons for inefficiency in the derivatives market rather than taking a “never again” stand of skeptics who do not give a second chance to rectify and correct the inefficiencies. He expressed his concern with explosive growth of the derivatives market but also had confidence in SEC’s ability to police the market with effective tools. He discussed “ripple effect” and the impact of derivatives activities on the liquidity of the cash market as one of the regulatory concerns. He also discussed the concern relating to full disclosure, customer suitability, and anti-fraud protection. Risk assessment in terms of market size and scope of derivatives market, capital requirement, good accounting practices and coordination in terms of information sharing among regulators and market participants.

In the context of a 2010 examination of the ICE Trust, an industry self-regulatory body, Gary Gensler, the Chairman of the Commodity Futures Trading Commission which regulates most derivatives, was quoted saying that the derivatives marketplace as it functions now "adds up to higher costs to all Americans." More oversight of the banks in this market is needed, he also said. Additionally, the report said, "the Department of Justice is looking into derivatives, too. The department’s antitrust unit is actively
investigating 'the possibility of anticompetitive practices in the credit derivatives clearing, trading and information services industries,' according to a department spokeswoman.”

Over-the-counter dealing will be less common as the 2010 Dodd-Frank Wall Street Reform Act comes into effect. The law mandated the clearing of certain swaps at registered exchanges and imposed various restrictions on derivatives. To implement Dodd-Frank, the CFTC developed new rules in at least 30 areas. The Commission determines which swaps are subject to mandatory clearing and whether a derivatives exchange is eligible to clear a certain type of swap contract.

Ralph Chami, Connel Fullenkamp and Sunil Sharma (2009) argued that contractual design and enforcement are central to the functioning and development of financial markets. They emphasized the importance of the regulator in establishing a supportive infrastructure for contract enforcement and dispute resolution. Political and legal guarantees of civil liberties and property rights, an efficient judicial system that cuts transaction costs and limits predatory behavior and legal security as essentials.

The paper states that beyond establishing the rule of law, governments must also support market development through regulation and supervision. Based on these considerations, three reasons are given for public regulation: (i) providing retail customers with protection; (ii) ensuring systemic stability; and (iii) protecting the taxpayer who ultimately provides many of the formal and informal guarantees that shore up the financial system. Regulators need to play an active role in the market by extending a helping hand to remove obstacles, correcting market failures and dealing with distortions that prevent markets from developing. It also emphasized the need for self regulation by the market participants with adequate central regulatory support.

To quote, “Experience has shown that a commitment to enforce regulations is very important. Many countries now have rules that require regulators to take prompt and corrective action, and forbearance can be provided in extreme cases only after special approvals are obtained. Monitoring, surveillance, and the ability to intervene are important precisely because it is difficult to write rules for all contingencies and design
regulations that work in normal times and also suffice for dealing with stress in extreme circumstances.”

“Experience has shown that financial liberalization and the emergence of new markets and institutions in the absence of adequate oversight and an adaptive regulatory structure, can lead to the malfunctioning of financial systems. Also, in this context, the regulation versus competition dichotomy can be misleading, if not inaccurate. Often, fostering competition may require more regulation rather than less. This is especially the case in the initial stages of development, when the government has to create the basic infrastructure to support markets. Nascent markets may require the strengthening of rules that foster competition and the removal of rules and practices that impede it.” Unquote.

Miguel A. Segoviano and Manmohan Singh (2008) argue that the OTC derivatives market is designed to provide for client’s needs and thus go beyond the essentials of standard contracts. Banks and prime brokers hence are interested in protecting their vested interests. The paper argued the need for a central clearing system for all major derivative players.

Jayanth R. Varma (2009) stated that derivative exchanges have fared much better banks during the global financial crisis (2007-2008) as their models were stronger and robust than the internal models of the banks. The robustness should never be compromised for an increased sophistication and calibration of the markets. The benefits of Information Technology should be fully exploited to cover risk management. The exchange should not be complacent on their margining systems and try to eliminate the elements that contribute towards the fragility of the risk management systems.

Mayank Raturi (2005) concluded that the value of outstanding derivative contracts continues to expand, despite some setbacks due to the aftermath of the Baring Bank and similar bankruptcies stories. Survival of Credit Derivatives was also questioned.

Despite the problems, the volume of credit derivatives has seen growth. He has stated following factors for the insurers not using derivatives as tools of managing risk popularly in the past:
unfamiliarity with derivatives;
distrust in derivatives due to derivative-related scandals;
the high infrastructure costs necessary in order to avoid the operational risk associated with derivative usage;
low reinsurance rates that discouraged the use of insurance derivatives in the 1990s’ soft insurance cycle;
the basis risk involved in the use of the available index-based insurance derivatives; and
regulation and accounting complexities.

Arvind Virmani (1998) stated the need for training and creation of human capital on financial risk within the country. The training must focus on learning and use of professional expertise, which must be encouraged.

D R Mehta (1998) suggested addressing the unsystematic risk by encouraging investor protection. I could be done by make it necessary for dealers to have a thorough understanding and knowledge of the derivatives market. The systematic risk could be covered by encouraging regulations that control the capital adequacy of trading members, building a strong centralized clearing corporation.

Joseph Mariathasan (1998) suggested the following what is required for India to benefit from the advantages of having derivative markets along with other systematic risk control options like having a tight credit and margining controls by exchanges backed by enforcement from the regulatory bodies, which could prevent one institution bankruptcy from brining down a host of others:

• A strict segregation of duties between traders and back office staff.
• Use of Mark- to Market valuations.
• Establishing an independent and powerful risk control department.
• Organizations should strive to create right ethos.

He also suggested strict controls over marketing derivative products to the retail sector as it has immense scope for false and misleading information.
Iona J Levine (1998) stated that ‘derivative disaster’ could be over and above the norm. eg. Fraud, breakdown in controls, unenforceable agreement, operational error. The common thread of line is failure of control; legal, risk management, internal audit, regulatory or supervisory control. She also suggested the following blueprint for controlling disasters:

- Understanding the products and the transactions.
- Delegation of Authority; Board Supervision.
- Internal Controls.
- Strong Information Systems.
- Reporting lines.
- Agency conflicts or discouraging the superstar culture.

The ministry of finance from time to time takes steps to strengthen the financial markets as per the macro economic conditions of the country. In the Annual Indian Economic Policy Review of 2008-9, in order to strengthen the derivative market segment, the following steps taken were discussed:

1. The global crisis operating through the trade, capital flows and confidence channels created pressures and enhanced volatility in the financial markets of India, in particular the foreign exchange market, the capital market and the money market. Important measures to improve activity in the Government securities market during 2008-09 included: (i) new issuance structure for issue of floating rate bonds (FRBs); (ii) operational readiness for introduction of separate trading for registered interest and principal of securities (STRIPS); (iii) revision of repo accounting guidelines; (iv) clearing and settlement of over the counter (OTC) derivatives; and (v) new settlement mechanism in government securities market for the non-current account holders.

2. In order to improve the efficiency of the use of the margin capital by market participants, SEBI in December 2008 revised the existing facility of cross margining and extended it across cash and derivatives segments to all categories of market participants. The extent to which positions of clients in both the cash
and derivatives segments offset each other shall be considered for the purpose of cross margining.

3. Effective from August 6, 2008, trading in currency futures was permitted at recognized exchanges for Indian entities, including banks. With a view to rationalizing the eligibility criteria for introduction of derivatives, SEBI in October 2008 advised stock exchanges to introduce derivatives on shares fulfilling the prescribed criteria, irrespective of their date of listing and/or size of issue.

4. Considering the importance of systems audit in a highly technology-driven securities market, all exchanges were advised in July 2008 to conduct, on an annual basis, comprehensive audit of their systems and processes by a reputed independent auditor.

Smt. Shyamala Gopinath, Deputy Governor at the Euromoney Inaugural India, delivered a keynote address at the Derivatives Summit, 2007, Mumbai on October 24, 2007, discussed along with other financial derivatives instruments the lack of growth, in the interest rate futures, which was first introduced on NSE in 2003 and which have not picked up on account of certain structural factors. A subgroup of the RBI Technical Advisory Committee on Markets having representatives from the industry and academia, has been constituted to examine the issues, that included the following:

1. Review the experience with the Interest Rate Futures so far, with particular reference to product design issues and make recommendations for activating the Interest Rate Futures.

2. Examine whether regulatory guidelines for banks for Interest Rate Futures need to be aligned with those for their participation in Interest Rate Swaps.

3. Examine the scope and extent of the participation of non-residents, including Foreign Institutional Investors (FIIs), in Interest Rate Futures, consistent with the policy applicable to the underlying cash bond market.

The draft report of the group would be placed in the public domain for comments.
Trade / Settlement Guarantee Fund has been set up to ensure the smooth settlement of transactions. Recognised Stock Exchanges (RSEs) have established Investor or Customer Protection Fund to take care of investor or customer claims which may arise due to default by a trading member. In addition, an Integrated Market Surveillance System (IMSS) was put in place by the SEBI across the exchanges (NSE and BSE) for monitoring exposure across market segments (cash and derivatives) with effect from December 2006. Also, NSE and BSE have in place their own surveillance system to generate appropriate alerts and prevent market manipulation. (rbi)

J. Carter Beese, Jr. Commissioner, SEC (1992) in his address on the future of OTC derivative markets expressed the effects of regulatory policy decisions in the world markets which are becoming interdependent. The policies have to take into consideration the global environment otherwise they are likely to fail. He also stated that the largest losses in the OTC derivative markets are because of legal uncertainties rather than bad risk management. Today’s regulators need to make sure that effective capital rules are in place. This would ensure broker-dealers and their affiliates financial strength to withstand the turbulences in the market. He stated that regulations should facilitate commerce, but it should also bench mark the type of activities which are not acceptable, which provides a level playing field that fosters competition, creativity and innovation.

James P. Cullen (2009) stated the inclusion of high end technology to monitor derivative trading. He expressed that derivatives are necessary for the functioning of modern financial markets, and also felt that their use must be controlled. Any attempts by financial industry to engage in regulatory arbitrage should be discouraged.

Henry M. Paulson, Jr., Robert K. Steel, David G. Nason et.al, (2008) came out with the blueprint for a modernized financial regulatory structure under the department of treasury, which suggested “short–term” and “intermediate-term” recommendations that could immediately improve and reform the U.S. regulatory structure. The short-term recommendation focused on the improvement of the regulatory coordination and oversight in the wake of recent events in the credit and mortgage markets. The intermediate recommendations focused on elimination of some of the duplication in the
U.S. regulatory system. It suggested modernising the regulatory structure applicable to certain sectors in the financial service industry (banking, insurance, securities and futures). It also discussed the regulatory approach with a focus on market stability regulation, safety and soundness regulation and business conduct regulation. The recommendations under “futures and securities” included the merger of CFTC and SEC to provide unified oversight and regulation of the futures and securities industries. The core principles should modeled after the core principles adopted for futures exchanges and clearing organizations under the Commodity Futures Modernization Act (“CFMA”). Several differences between future regulations and federal securities need to be harmonized. These include involving margin, segregation, insider trading, insurance coverage for broker-dealer insolvency, customer suitability, short sales, SRO mergers. It also suggested establishing a joint CFTC-SEC task force with equal agency representation to harmonize the differences. It also recommends that investment advisor be subject to self regulatory regime similar to that of broker-dealers which offers investment advisors and similar services to retail investors.

Claire Williamson (1997) discussed the mergers between derivative and equity exchanges within and between countries. The mergers have taken place in Germany, Netherlands, and Switzerland and were planned in some other European countries. He discussed advantages like:

1. Common trading platforms, consolidation of exchanges and wider product availability through remote access may all improve the price formation process:

2. Expansion of the trading population and exposure of the contracts to a wider market thus resulting in more liquid, deeper markets, encouraging new investors to participate in the market, attracted by a more efficient pricing. The Scandinavian link is an example: the ability to trade Norwegian products from London has already attracted new participants into the Norwegian derivatives market. In addition, common trading platforms may create new arbitrage opportunities, which could reinforce the price efficiency improvements.
3. Although few regulatory issues like inclusion of common regulatory framework for remote trading members and local members, regulatory jurisdiction and threat of a single derivative exchange curbing competition etc.

Patrick Fell and Abhijeet Kulkarni (2010) referred derivatives in terms of complex products with high risk and reward with significant potential losses if not properly hedged. Hence regulated banks and investment firms dealing in derivatives need to maintain sufficient regulatory capital to protect from the potential losses.

Pranab Mukherjee (2012) stressed the need for collaboration between financial authorities around the world for an effective implementation of regulatory framework and reforms. He also stressed on the Automated Exchange of Information amongst the treaty members for tax compliance and increase transparency.

2.2.3 Price Volatility and Discovery

Raju, Karande (2003) studied the Price volatility and discovery after introduction of Nifty Futures at NSE by adopting Cointegration and Generalized AutoRegressive Conditional Heteroscedasticity (GARCH) techniques. It was found that the futures market responds to deviations from equilibrium. Price discovery occurs in both the futures and the spot market, especially in the latter half of the study period. The results also showed that volatility in the spot market lowered after introduction of stock index futures.

Pradhan, Bhat (2008) investigated the price discovery process for individual securities and their futures separately. The Johansen cointegration test conducted revealed that each pair of series is cointegrated which leads to the existence of long-run equilibrium between spot and future prices. The Johansen VECM results reveal that the futures lead the spot in 9 securities thus playing an important role in price discovery and the spot leads the futures in case of 7 securities. The feedback relation takes place in case of 9 securities. A temporal causality exists the markets.

Thenmozhi (2002) investigated that inception of futures trading has reduced the volatility of spot index returns. The lead-lag analysis shows that infrequent trading is absent from
the futures market. The futures market transmits information to cash market and futures market is faster than spot market in processing information. The future returns lead the spot index returns by a day.

Shalini Bhatia’s (2007) empirical findings show that price discovery occurs in both the futures as also the sport markets. However, Nifty futures index is more efficient relative to the cash market, in processing information faster. The S&P CNX Nifty futures index leads the S&P CNX Nifty index by 10 to 25 minutes.

Satya Swaroop Debasish (2009) adopted ARMA analysis that showed that the NSE Nifty derivative markets tend to lead the underline stock index. This finding is indicative of futures price movements and would help potential investors in designing their risk - return portfolio while investing stocks and derivative contracts.

A Baluch and M Ariff (2007) investigated the relationship between economic growth and derivative market growth. They selected 11 countries; developed and developing and found that there is a negative relationship between derivative market and economic growth. As the market grows and matures, liquidity is provided in the derivative market by the hedging activities rather than the price discovery process. The risk transfer function becomes prominent. Spot market liquidity is prominent for the development of the derivative markets in both the developed and developing economies. All other economic and financial indicators found to be insignificant.

II . Brief on L C Gupta Committee Report on Regulatory Compliance of Derivative Markets:

The L C Gupta committee report has been analyzed in brief to understand the inputs given by the committee to develop the equity derivative markets in India. The report has been attached as an annexure for reference.

1. The L C Gupta committee strongly favored the introduction of Financial Derivatives in order to provide a cost efficient hedging facility against market risk. It was felt that the market should comprise of both speculators and hedgers for the development of sound economic derivative market.
2. Initially the Committee felt the need to introduce equity, interest rate, and currency derivatives. In the case of equity derivatives, the Committee believed that the market forces would facilitate introduction of various types of derivatives contracts under the aegis of SEBI also facilitating development of futures and options. The Committee suggested trading in stock index futures to begin with.

3. The Committee favored introduction of equity derivatives in a phased manner. This would facilitate introduction of complex derivatives product after the market participants acquire some degree of comfort and familiarity with the basic products. This was also desirable from the regulatory angle.

4. The Committee recommended a two level regulatory framework for derivatives trading:
   a. Exchange level
   b. SEBI level

   The Committee’s main emphasis was on Exchange level regulations. This would ensure that the Derivative Exchanges operate as an effective self regulatory organization under overall supervision of the SEBI.

5. The Committee felt since considerable emphasis was led on the self regulatory competence of the derivatives exchanges, it was necessary that SEBI would have to review the functionality of the governance system of stock exchanges and strengthen them further. It was felt that a stricter governance system was needed for the derivative exchanges in order to ensure a disciplined market place.

6. The committee was of the opinion that the entry requirements for brokers / dealers would have to be stringent in the derivative markets vis- a- vis cash market. The requirements included:
   a. Capital adequacy
   b. Mandatory passing of a certification program by the brokers / dealers and the sales persons.
c. Very strict regulation of sales practices.

7. SEBI regulations related to exchanges, brokers-dealers, prevention of frauds, investor protection etc. could be reviewed for its applicability to derivative exchanges and their members.

8. The committee recommended participation of mutual funds in the derivative segment. But it was also of the opinion that the use of derivatives instruments by mutual funds should only be for hedging and portfolio balances and not for speculation. The responsibility of the control should be on the trustees of the mutual fund. The committee was not in favor of framing any detailed SEBI regulations for this purpose to promote flexibility and development of ideas.

9. The committee felt that SEBI should ensure that the derivative market operates fairly, efficiently and on sound principles. The committee felt that underlying cash market could be improved since the derivative market is based on the operation of underlying cash markets.

10. The committee suggested creation of a separate derivatives cell, a derivatives advisory committee and economic research wing by SEBI. It had to develop competent personnel in order to guide this new development along sound lines.

The committee suggested following regulatory framework for the equity derivative markets.

2.3 Regulatory Framework for Derivatives

2.3.1 Regulatory objectives:

The LC Gupta committee believed that the regulation should be designed to encourage healthy activity and behavior to achieve specific well defined goals. It has been guided by the following objectives:

2.3.1.1 Investor protection: The committee laid due emphasis on fairness and transparency. Experience drawn from other countries were discussed in which the most widely reported mishaps were due to non disclosure of potential risk to the clients. In this
context sales practices adopted by dealer for derivatives required specific regulations. It was also felt that these mishaps were the result of inadequate internal control system, which resulted into use of derivatives for speculation rather than risk hedging. **Safe guarding clients money** was also emphasized by maintaining separate clients accounts where they might deposit money and securities with the trading members. This account should not be allowed to be used by the broker to meet his/her own debts. It should be ensured that trading by dealers on own account is totally segregated from that for clients. **Competent and honest service** was emphasized as an eligibility criteria for trading members, so that the investors/clients are served well. This makes it necessary to introduce qualified personnel with necessary prescribed qualification for derivative brokers/dealers and the sales person appointed by them. Market integrity should be ensured by framing appropriate rules for capital adequacy, margins and clearing corporations etc. for minimizing possibilities of defaults.

2.3.1.2 **Quality of markets** has been emphasized, which includes **cost efficiency, price continuity and price discovery.**

a. The report has encouraged innovation which is a source of all economic progress. It has stressed on the regulatory framework not discouraging innovation, while curbing any undesirable tendencies.

b. The Committee reflected that ‘The ultimate objective of regulations of financial markets is to promote economic efficiency’.

c. Derivatives are normally risk hedging products but there are other participants which are attracted to derivatives trading for speculative opportunity. For this reason the risk involved for derivative traders and speculators is high.

d. Hence the regulatory frame work for derivative trading in all its aspects has to be much stricter than what exists for cash trading. Therefore the scope of regulations cover derivative exchanges, derivative traders, brokers, and sales persons, derivative contracts or products, derivative trading rules, and derivative clearing mechanism. The committee viewed that the regulatory responsibility for derivatives trading is to be shared between
the exchanges and SEBI. This will ensure maximize regulatory effectiveness and minimize regulatory cost.

Some major issues concerning regulatory framework are listed as follows:

i. Whether a derivative exchange should function as independent entity separately from the existing stock exchange?

ii. What should be the quantum of sharing of regulatory responsibility between SEBI and derivative exchange?

iii. How would the system ensure the effective implementation of regulatory responsibility by the derivative exchange?

iv. How should SEBI grant permission to an exchange for derivative trading? What should be the conditions for clearing mechanism as it involves high leverage conditions?

v. What new regulations or changes in existing regulations will have to be introduced by SEBI for derivative trading?

A considerable deliberation was done on the creation of a separate exchange for derivatives trading. The committee reviewed the position and practices prevailing in other countries. USA led the practice of exchange traded financial derivatives followed by other countries. Regulatory arrangements are different in countries around the world. USA started its future trading in financial instruments in early seventies from a commodities future markets rather than security exchanges where underlying bonds and equities were being traded. This happened partly because currency futures did not come under the purview of securities markets. These were the first derivative products to emerge among financial derivatives in USA. Also derivative instruments were not defined under “securities” under US laws. Cash trading in securities and option of securities were under the Securities and Exchange Commission (SEC) while future trading was under the Commodities Future Trading Commission (CFTC). In other countries they have varied arrangements.

The arguments for allowing existing stock exchanges to trade in derivatives were as follows:
a. Pooling of cost of expensive IT networks and sharing of expertise for running a modern exchange. Setting up of a separate derivatives exchange would involve high cost and time.

b. The trend in other countries facilitates bringing futures and cash trading under coordinated supervision. The lack of coordination was recognized as an important problem in the USA in the October 1987 market crash. The exchange level supervisory coordination between futures and cash market is greatly facilitated if both are parts of the same exchange.

Arguments for setting up separate future exchange are as follows:

a. The trading rules and entry requirements for future trading should be different from cash trading.

b. Market manipulation could be higher if cash and futures trading are conducted under the same roof.

c. A separate exchange would facilitate new entrants in the market and would not be restricted to the existing members only.

Following recommendations were made by the committee by taking into consideration the above arguments. From the purely regulatory angle a separate exchange for futures trading is recommended. However due to constraints in infrastructural facilities the existing stock exchange having cash trading, it may permit derivatives trading under the following conditions:

a. Online screen based trading system should facilitate the trades, which also facilitates online disaster recovery system.

b. The per hour capacity of the computers and the network should be at least four to five times more of anticipated peak load in any half hour or of the actual peak load seen in any half hour during the preceding six months this should be reviewed from time to time on the basis of experience.

c. The clearing of the trades should be done by an independent clearing corporation.
d. Exchange must have an online surveillance capability which monitors positions, prices and volumes in real time to deter market manipulation. Price and position limit should be used to improve market quality.

e. Real time information on trades volumes and quotes should be disseminated by the exchange. At least two information vending networks have to be accessible to investors in the country.

f. At least fifty members would be required to start derivatives trading.

g. Derivative trading would take place in a separate segment if it is to take place in the existing cash market. A cash market member have to seek a separate membership and would not be automatically become member of the derivatives market.

h. The derivatives market would have a separate governing council. SEBI would prescribe the modalities of representation of trading / clearing members of the derivatives exchange. It would recommend the same after reviewing the working of the present governance system of exchanges.

i. The chairman of the governing council could be a broker / dealer who may be a member of the governing council. In case of the member being selected as chairman he may not be able to carry on broking or dealing business on any exchange during his / her tenure. A trading / clearing member would not be allowed to be on the governing council of both the derivatives and cash market simultaneously.

j. The exchange would have an investor’s grievance redress mechanism operative from all four regions of the country.

k. The exchange would have adequate inspection capability. In case of such an existence of such an arrangement the exchange should have an adequate record of monitoring members handling investors complaint and preventing irregularities in trading.
2.3.2 Following bifurcation of the regulatory responsibility between derivatives exchange and SEBI was undertaken:

2.3.2.1 **Two Levels of Regulations:** Derivatives exchange would oversee the operational rules and regulations and SEBI would oversee the rules and regulations with which the exchanges and their members must comply with.

The Securities Contracts (Regulations) Act, 1956, SEBI Act and other various rules and regulations regarding stock exchanges and brokers / dealers would be applicable equally to derivatives exchange.

2.3.2.2 **Emphasis on Exchange Level Regulations:** The committee opined that the derivatives exchange should be strong, capable and effective self regulator. Since the derivative exchange would be in touch with the market on daily basis it will be in a much better position to spot a provable problem and take a prompt corrective action. Otherwise SEBI being a statutory body would have to first enquire, collect facts / data and then go through a certain statutory procedure before acting. The Administrative and Compliance cost could be borne by derivative exchange since this exchange stands a benefactor from the various business opportunities provided. This could reduce the regulatory cost of SEBI.

2.3.2.3 **Governance of Derivatives Exchange:**

The Committee was made aware of the regulatory concerns regarding the working of governance system in stock exchanges. It felt to address these concerns while introducing derivatives in the market. It felt that SEBI should review its experience of the present stock exchange governance system in terms of improvements and ensuring efficient functioning of the exchanges. A separate governance structure could be recommended for effective governance system as exchanges would be primarily responsible for carrying out basic governance functions.

The new regulations required for derivatives trading are exchange-level regulations hence these regulations have necessarily to be very detailed and highly technical. These regulations should cover formulation of detailed rules, regulations and bye-laws and the
creation of a really effective monitoring and enforcement mechanism, covering all aspects of the exchange's operation. “The exchange-level regulations include entry requirements for derivatives traders/members, design of derivatives contracts, broker-client relationship including sales procedures and risk disclosure to clients, trading and reporting procedures, internal risk control systems, margining, clearing, settlement and dispute resolution”. The Committee felt that, “a derivatives exchange must necessarily be consciously designed to play the role of effective self-regulator. This is so important that if there is any doubt in the exchange's ability in this regard, SEBI should not allow it to conduct derivatives trading. The role of SEBI will be to provide over-all supervision and guidance to the exchange and to act as the regulator of last resort”. The above regulations for derivative market should be stricter than cash market and should be backed by highly fool-proof and fail proof technology.

The Committee felt that all derivative traders/ members (and not 10%) should be audited periodically (annually) for guidance and compliance. The derivative exchange should have a strong inspection department. Its staff should be trained especially for the same.

i. SEBI’s regulatory responsibility: SEBI would approve the rules, by laws and regulation of the derivative exchange. It would also approve the proposed derivative contracts before commencement of trading. Any change in the above would require a prior SEBI approval. SEBI may evaluate the rules framed at exchanges and identify such deficiencies and suggest improvements, if any. The regulatory staff of SEBI should have a thorough understanding of the derivatives trading and its market. It should be able to provide guidance and evaluate various kinds of derivative products. The SEBI supervisory function cannot be delegated and hence it has to acquire the necessary expertise by training its people and recruiting specialized personnel. The responsibility of SEBI would involve in guiding the new and complex development in derivatives market appropriately and should provide appropriate guidance and over all supervision of the process.

ii. Regulatory Review of Derivative Contract: The derivative exchange should submit the proposal of introducing a new derivative product for SEBI’s approval.
a. It should contain the full details of the proposed derivative contract to be traded.

b. Economic purpose of the product which it intends to serve.

c. It’s likely contribution to market development.

d. The safeguards incorporated to ensure the protection of investors / clients and fair trading.

SEBI should be in a position to provide effective supervision and constructive guidance. It has been observed that in most countries regulatory approval is required for introduction of new derivatives contracts. The regulatory authority has to determine whether such trading would be in public interest.

iii. SEBI derivative Cell, Advisory council and Economic Research Wing:

a. SEBI should have a special derivative cell. It should encourage its staff members to undergo training in derivatives and also recruit specialized personnel.

b. A derivatives advisory council should exist to seek outside expertise and independent advice for problems which may arise regarding derivative trading which may arise from time to time.

c. SEBI should have an economic research wing, which would conduct regular studies of critical problems affecting the market. Since the administrative persons may not have adequate time to study and analyze data. The research wing could help address complex economic question e.g. the effect of derivatives market on cash market volatility and price discovery etc.

1.4 Special Entry Rules for Derivatives

Brokers and Dealers:

a. No automatic entry for existing stock brokers: Existing cash market members cannot automatically become members of the derivative market. The members would have to satisfy all eligibility conditions to be allowed to trade in derivatives for example: maintaining minimum net worth etc.

b. Capital adequacy: The committee felt that the brokers’ balance sheet figures of net worth is very vital to grant credibility to the brokers and is very vital to
meet the claims payable to the exchange, which the committee felt is often not available to meet the claims. Hence for effectively insuring capital adequacy, emphasis has to be placed on the capital and margins actually deposited by the brokers / dealers with the exchange. The committee hence recommended the capital adequacy norms as follows:

i. The absolute minimum amount of capital adequacy requirement would be higher for a derivative broker and dealer than a cash market broker / dealer. If a broker / dealer is involved both in cash and derivative market or in different exchanges capital adequacy requirement would have to be satisfied for each exchange / segment separately. The minimum capital adequacy requirement has to take into consideration the need for insuring market efficiency and integrity against sufficient participation and competition among of brokers / dealers. Two high requirement make keep participants away.

ii. **Clearing and Non clearing members:** To ease out the stringent constrains on participation in the derivatives market due to high capital adequacy requirements, the committee recommended, that a two level system of members would be made as in practice in some foreign derivatives exchanges. Hence capital adequacy for clearing members and non clearing members were suggested separately. The net worth requirement for the clearing members would be higher than the non clearing members. The non clearing members would have to depend on clearing members for settlement of trades. A clearing member has to take a responsibility for non clearing members’ position for the clearing corporation. Hence the clearing member becomes the guarantor for the non clearing members. The advantage of two level system is that it helps enhance market liquidity and participation.

iii. **Net worth and Initial Margin:** The committee recommended a minimum net worth of Rs. 300 lacs and a deposit of Rs. 50 lacs with the exchange / clearing corporation in the form of liquid assets such as cash, fixed deposit, etc. pledged in the name of the exchange for clearing members. Bank guarantee in lieu of such deposit may also be accepted. The clearing corporation could permit clearing members to clear the trades of non clearing members. The committee further recommended higher minimum net worth and deposit in case of Option writers.
iv. **Certification Requirement:** The brokers members, sales persons / dealers in the derivatives markets should pass minimum certification program as recommended by SEBI.

v. **Registration with SEBI:** All brokers / dealers of derivative exchange / division should register with SEBI. In addition to their registration at any stock exchange. Sales persons working at derivatives brokerage firms should also register with SEBI.

### 2.5 Clearing Corporations

Committee recommended a separate and independent clearing corporation which should become a legal counter party to all trades and responsible for guarantying settlement for all open positions. Hence in case of default settlement for other clearing members would not be affected. This would protect the reputation of the exchange and would minimize the default risk of trading / clearing members since the clearing corporation would guarantee all settlements. Hence the clearing corporation should be of very high credibility.

The clearing corporation would enforce the “mark-to-market” margin system and would collect the initial margin as per the exposure limits of the broker / dealer. In case of non submission of adequate margins the clearing corporation would disable the clearing / trading member for trading further in order to cease losses due to further increase in his exposure.

The volatility of the underlined market should dictate the capital adequacy norms and up front margin norms. For this purpose daily volatility would be taken into account. In India the daily volatility for major stock indices is around 1.3-1.4 percent compared to around 1 percent for S & P 500 index in USA.‘

The Clearing Corporation should continuously monitor market volatility and modify the margin requirements to safeguard the market. This would facilitate its own solvency and avoid unnecessary tying up of members’ capital. The Committee recommends a centralized independent Clearing Corporation without any interference from trading
interests. The Committee urged SEBI to take initiatives with potential promoters to set up a national level Clearing Corporation.

2.6 Sales to corporate clients

In the case of corporate clients like banks, financial institutions and mutual funds, derivatives broker/dealer may execute orders for such clients only if the orders are supported by the necessary authorization of the client’s Board of Directors/Trustees. Such authorization should specify the scope of permissible derivative trading, i.e. the purposes or objectives for which derivatives trading may be undertaken, (e.g. hedging etc.), over-all limits for derivative exposure, the authority level for giving approval in this regard, the type of derivatives contracts (e.g. futures, forwards, options, swaps) and broad derivative category (e.g. derivatives on interest rate, exchange rate, equities and commodities).

2.7 Maximum Exposures Limit

The committee apart from minimum network requirement also laid a norm on maximum exposure limit for each broker / dealer, which is linked to the amount of deposit / margins kept by the broker / dealer as deposit with the clearing house / clearing corporation.

2.8 Mark to Market Margins

Mark to Market margins have to be collected on daily basis before the start of the next day trading. The committee felt that even a day delay dealing in actual collection could post a serious threat to markets integrity. Hence a very strong electronic fund system has to be developed.

2.9 Cross Margin

The committee felt the cross margining by a dealers combine position in the cash and derivative segments should not be allowed in the initial stage of the introduction of the derivative markets in India. It could be introduced later after establishing the reliability of the systems once they are fully established.
2.10 Margin Collection from Clients

The committee felt that the brokers should insist on the collection of initial and mark to market margins in case of derivative trading. The committee felt that SEBI should ensure that the brokers / dealers collect the required margins from their clients. Adequate inspection and voting system should be developed for the same. The compliance could also be ensured by monitoring exposure limits of dealers and traders in relation to their upfront initial margin deposited with the exchange and by disclosing their trades separately from their client’s trades.

2.11 Safeguarding Clients Money

The committee recommended that the clearing corporation should not utilize the client’s money to cover the deficits by the clearing members. Neither the money should be allowed to be diverted for any other purpose. The same could be implemented by mentioning whether the trades are on the clients or the brokers behalf. An independent investor protection fund could be created to compensate clients in case of member default.

2.12 SEBI approval for Clearing Corporation

The committee felt that a clearing corporation should be approved by SEBI for functioning only after satisfying the following conditions

a. It should be a legal counter party for both the parties and provide unconditional guarantee for settlement of all trades.

b. The clearing corporation should have the capacity monitor both cash and derivative markets for those members who are participating in both the markets.

c. The clearing corporation should have intraday monitoring system / software to ensure that the concept of value-at-risk could be calculated.

d. If a member takes an unusual position the clearing corporation should charge special margin over and above the normal margin.
e. The clearing corporation must have strong electronic fund transfer (EFT) facility for movement of margin payments. In case the system is not available the clearing corporation should collect higher initial margin to cover potential losses.

f. In the event of a members default in meeting its liabilities the clearing corporation should be able to promptly transfer clients positions and assets to another member or close out all open positions.

It has been recommended by the committee that a policy should be slowly framed towards building a single national clearing corporation for all stock exchanges.

2.13 Regulations of Sales Practices and Disclosures for Derivatives

Promoting healthy sales practices is being emphasized by the committee. The committee felt that the broker-client relationship needs a special regulatory attention. The sales practices of the broker need to be focused. The risk associated with speculative buying and selling has to be fully understood by the client as it involves greater risk than entering into the contracts for hedging purposes. Pricing of complex derivative products can attract unethical sales practices. Clients could be duped into buying unsuitable derivative contracts at unfair prices without understanding the risk involved. A large number of disputes have risen in the U.S. markets on such grounds. Hence it has become a standard practice to provide a “risk disclosure document” to the client by the broker/dealer. “Knowing” the clients is a mandatory requirement for any broker or dealer for the contracts suitability in terms of understanding and financial capabilities.

2.14 Options and their complexity

Options are highly complex instruments. The pricing of the option premiums are highly complex and hence need a stricter supervision over sales of option contracts. The derivative exchange may decide to introduce options on stock index or on individual stocks. Some of the features in the US market dealing with sale of options are:

a. Non recommendation of the contract if the broker/dealer finds it unsuitable for the client on the basis of information furnished after reasonable enquiry concerning
the customer’s investment objectives and capability of evaluating the risk and financial bearing.

b. A thorough verification of the client’s net worth, annual income and investment experience and knowledge too should be done.

c. The contracts should be in writing made by senior officials who should offer detail explanation to its clients regarding risk applicable to the trading of options.

d. Derivative exchanges should ensure that officials and sales personal dealing with complex derivative material should be qualified by appearing for appropriate examinations.

e. Proper sales document should be furnished with the exchanges with the details of the mechanics and risk of option trading. Position limits and surveillance procedures should also be mentioned. The exchange should ensure the above.

2.15 Accounting and disclosure requirements

Organizations involved in derivative trading should appropriate accounting treatment and disclosure requirements in the interest of share holders and investors.

2.16 Mutual funds as clients

Earlier SEBI regulations prohibited mutual funds to enter into derivative contracts. Although the committee was of the opinion that they should be allowed since the mutual funds are the most important users of equity hedging through stock index derivatives. The mutual funds have now been allowed to trade in derivative contracts.

2.17 Concluding observations of the committee were:

- “There is no doubt that equity derivatives and other financial derivatives have some definite positive uses and serve an economic purpose, as clearly recognized in economic literature. They represent a financial innovation of considerable significance. They can be helpful in making financial markets more efficient and enhancing economic efficiency in general.
• At the same time, derivatives trading inherently involve high leverage. For this reason, it can be a temptation to inadequately capitalized traders or speculators. Also some users may not fully understand derivatives and use them inappropriately. The regulatory system has to be designed to minimize these possible dangers.

• In drawing up a regulatory framework for derivatives, the Committee has kept in view not only the need for allowing adequate flexibility in order to permit the derivatives market to develop in India but also the need for strict watch so that the development is along sound lines”.

2.18 Survey findings about potential for financial derivatives in India

“The Committee made an assessment of the nature of felt-need and interest in the various types of financial derivatives among potential market participants through a Questionnaire-based survey before the launch of the derivative instruments. The survey covered all types of potential players in the derivatives market, such as mutual funds, other financial institutions, commercial banks, investment bankers and stockbrokers. Out of about 300 Questionnaires sent out by the Committee in May 1997, the number of replies received was 112, comprising 67 brokers and 45 others. In addition, the Committee held a full day session to interact with groups representing each of the above categories of interests. A total of about 35 persons attended the group-wise discussions.

The survey clearly revealed that there was wide recognition of the need for all the three major types of financial derivatives, viz., equity derivatives, interest rate derivatives and currency derivatives. The results of the survey are summarized in Table given below.

Interestingly, the survey findings showed that stock index futures ranked as the most popular and preferred type of equity derivative, the second being stock index options and the third being options on individual stocks. Considerable interest exists in all the three types of equity derivatives mentioned above. The fourth type, viz. individual stock futures, was favored much less. It is pertinent to note that the U.S.A. does not permit individual stock futures. Only one or two countries in the world are known to have futures
on individual stocks. Stock Index Futures are internationally the most popular forms of equity derivative.

The difference in relative preferences among the various financial derivative types is shown more sharply when we look at answers to the question: Which of the derivative products should be introduced first? The respondents who placed stock index futures as first represented 65% of the sample, compared to 39 per cent who placed stock index options as first.

The survey also showed that there exists widespread demand for hedging facility, as indicated by the finding that nearly 70% of the respondents in our sample indicated that they would like to use the various types of equity derivatives for hedging purpose. On the other hand, about 39% of respondents would like to participate in the derivatives market as dealer/speculator, 64% as broker and only about 36% as option writer. Many of the respondents would like to participate in more than one capacity.

In terms of contract duration of Stock Index futures and options, the 3 months duration was the most favored, as may be expected. As regards the choice between the American and European types of options, the former was favored overwhelmingly.

As regards to expectations of growth of stock index futures and options trading in India, about 33% of respondents expected it to grow very fast, 41% expected it to grow moderately and the remaining 16% expected slow growth of trading. On the whole, the survey findings are very positive about the need and prospects of equity derivatives trading in India"