

# SENSEX- The Dancing Beauty of Indian Stock Market

\* *Krishna Reddy Chittedi*

“Sensex sometimes surprises me, sometimes worries me”

Mr. Chidambaram at Hindustan Times leadership summit on October 11, 2007

Stock market indices are the barometer of the stock market. They mirror the stock market behavior and the broad trends in the markets. The SENSEX compiled in 1986 was calculated on a “Market Capitalization-Weighted” methodology of 30 component stocks representing large, well-established and financially sound companies across key sectors. SENSEX crossed the twenty thousand mark cheering thousands of investors in the recent Bull Run. Sensex took a little over 20 years to reach the first 10,000 mark, but just a little over 20 months to double that score. The rise in global market and expectations of increased foreign portfolio investment has driven traders’ interest in the market. It is a broad based movement and the major gainers are front line stocks. On that historical date as many as 29 shares that comprise of 30 share indexes ended higher except Wipro Limited, which experienced a marginal decline of 0.2%. In this 10k march, not only the Nifty and the Sensex stocks but also the midcaps and small caps have gained. They gained by 2.2% and 2.7% respectively during that peak. A buoyant economy provided a firm underpinning to mid-cap companies. The FIIs have broadened their investment in more than 750 stocks and in the several mid-cap companies, they are holding over 20 per cent. Institutional investors and FIIs have provided a perfect support to the rising equity values. In this context, this paper intends to analyze:

- the growth path of Sensex
- the quantum of contribution of FIIs and
- the volatility of Sensex

## BSE SENSEX

SENSEX is a basket of 30 constituent stocks representing a sample of large, liquid and representative companies. The base year of SENSEX is 1973-79 and the base value is 100. The index is widely reported in both domestic and international markets through print as well as electronic media. The Index was initially calculated based on the “Full market Capitalization” methodology but was shifted to the free-float methodology with effect from September 1, 2003. The “Free-float market Capitalization” methodology of index construction is regarded as the best industry practice globally. All major index providers like MSCI, FTSE, STOXX, S&P and Dow Jones use the Free-float methodology.

## SENSEX CALCULATION METHODOLOGY

SENSEX is calculated using the “Free-float market capitalization” methodology. As per this methodology, the level of index at any point of time reflects the Free float market value of 30 component stocks relative to the base period. The market capitalization of shares issued by the company is further multiplied by the free-float factor to determine the free-float market capitalization.

The base period of Sensex is 1973-79 and the base value is 100 index points. The notation 1978-79=100 often indicates this. The calculation of SENSEX involves dividing the Free-float market capitalization of 30 companies in the Index by a number called the index divisor. The divisor is the only original base period value of the SENSEX. It keeps the index comparable over time and is the adjustment point for all Index adjustments arising out of corporate acts, replacement of scrip’s etc. During market hours, prices of the index scrips, at which latest trades are executed, are used by the trading system to calculate SENSEX every 15 seconds and disseminated in real time.

## FREE-FLOAT METHODOLOGY

Free-float methodology refers to an index construction methodology that takes into consideration only the free-float market capitalization of a company for the purpose of index calculation and assigning weight to stocks in index. Free-float market capitalization is defined as that proportion of total shares issued by the company that are readily available for trading in the market. It generally excludes promoters holding, government holding, strategic holding and other locked-in shares that will not come to the market for trading in the normal course. In other words,

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\* *Doctoral Scholar*, Center for Development Studies-JNU, Ullor, Prashanth Nagar, Trivandrum, Kerala.  
E-mail: krishnareddy5111@gmail.com

the market capitalization of each company in a Free-float index is reduced to the extent of its readily available shares in the market.

## DEFINITION OF FREE-FLOAT

Share holdings held by investors that would not, in the normal course, come into the open market for trading are treated as 'Controlling/Strategic Holdings' and hence not included in Free-float.

**Table 1 : Time frame of various indices-10K**

Index	Launched	Strike Date	Timeframe
Sensex	1986	6-2-06	20 Years
Karachi SE100	1991	15-3-05	14 Years
DJIA	1896	12-3-99	103 Years
Hang Seng	1964	10-12-93	29 Years
Nikkei225	1949	10-1-84	35 Years

Source.Econstats.com

**The Sensex Journey:** The oldest stock market index in India, the BSE-Sensitive Index was first compiled in 1986. It is a basket of 30 stocks representing a sample of large, well established and financially sound companies. The components of the Sensex have been changed often to induct the leaders of the various industries. The journey of the Sensex over the years is given in the Table: 2.

**TABLE 2 : The journey of Sensex over the years**

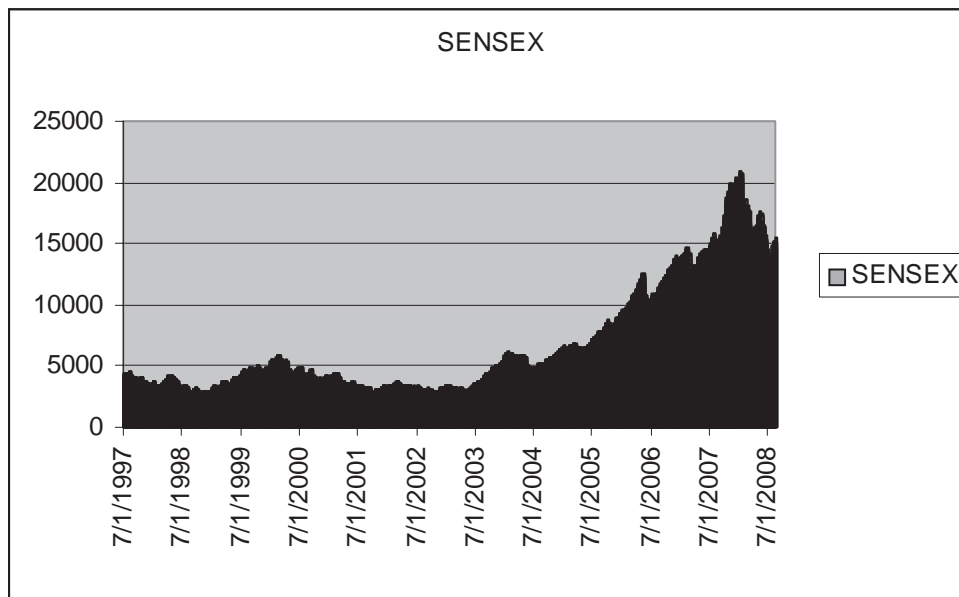
Landmark	Date	Closing
1000	25.07.90	1007.97
2000	15.01.92	2020.18
3000	29.02.92	3017.68
4000	30.03.92	4091.43
5000	11.10.99	5031.28
6000	02.01.04	6026.59
7000	21.06.05	7076.52
8000	08.09.05	8052.56
9000	09.12.05	9067.28
10000	07.02.06	10082.3
11000	27.03.06	11079.0
12000	20.04.06	12039.6
13000	01.11.06	13024.3
14000	12.01.07	14056.5
15000	09.07.07	15045.7
16000	19.09.07	16322.8
17000	27.09.07	17150.6
18000	09.10.07	18280.2
19000	15.10.07	19058.7
200000	31.10.07	20290.9

Source.Econstats.com

**The 1000- Mark:** The Sensex touched the four digit figure for the first time on 25<sup>th</sup> of July, 1990. Thus; it took four years to achieve this landmark. The major causes behind this achievement were good monsoon and excellent corporate results in that year.

**The 2000 - Mark :** On January 15, 1992 after having 538 days of trading, the Sensex crossed the 2000 mark and closed at 2020 in the wake of liberal economic policy initiatives undertaken by the then Finance Minister and the current Prime Minister, Dr. Manmohan Singh.

**Figure 1**



Source: Econstats.com

**The 3000 – Mark:** The Sensex crossed the 3000 mark on 29<sup>th</sup> Feb.1992 followed by the market friendly budget announced by the then Finance Minister, Dr. Manmohan Singh. It took only 45 days to achieve this milestone.

**The 4000 – Mark :** On the expectations of a liberal export import policy, the Sensex crossed the 4000 mark and closed at 4091 on March 3<sup>rd</sup> in 1992. It was the period that the Harshad Mehta scam hit the market and Sensex witnessed unabated selling.

**The 5000 – Mark:** The crash following the Harshad Mehta scam pushed the market into a bearish phase. As the BJP led coalition won the majority in the 13<sup>th</sup> Lok Sabha election, the Sensex touched the 5000 mark on 11<sup>th</sup> of October 99 after 7 years from the 4000 mark.

**The 6000 - Mark :** The magnificent performance of technology sector stocks pushed the stock markets across the globe including the Sensex to cross the all time high of 6006 in a span of 126 days in the intra-day trading ,but it closed over 6000 mark only on January 2<sup>nd</sup> in 2004.

**The 7000 – Mark:** After the 6000 mark, the burst of the internet bubble pushed the markets into a major bearish phase. Stock markets across the world experienced a massive correction. After 63 months, from the 6000 mark, the Sensex touched the 7000 mark on June 20, 2005 followed by the news of the settlement between the Ambani brothers.

**The 8000 – Mark:** In September 2005, the Sensex crossed the 8000 mark in 78 days by the reason of huge FII inflow during 2005 and also by the participation of domestic funds in trading.

**The 9000 – Mark :** On November 28, 2005 the Sensex crossed the magical figure of 9000 in 78 days with market capitalization of Rs.24,05,035 crore. The main factors behind this were surging FII inflows and the strong support of local operators as well as retail investors. Year 2005 is the most important year in the stock market history. The Sensex had grown by 42.3% in 2005 alone. This is the year when crude oil, stock indices and gold touched their new highs, which never happened in the past.

**The 10000 – Mark:** The Sensex on 6<sup>th</sup> of February 2006 made the historical achievement by touching the life time peak of 10,003 points during mid session at the Bombay Stock Exchange on the back of frantic participation of Foreign Institutional Investors, domestic funds and retail investors.

**The 11000-mark:** The sensex on March 21, 2006 crossed the magical figure of 11,000 and touched a life time peak of 11,001 points during mid-session at the Bombay Stock exchange for the first time. However, it was on March 27, 2006 that the Sensex first closed at over 11,000 points.

**The 12000-mark:** The sensex on April 20, 2006 crossed the 12, 000-mark and closed at a peak of 12,040 points for the first time.

**The 13000-mark:** The sensx on October 30, 2006 crossed the magical figure of 13,000 and closed at 13,024.26 points, up 117.45 points or 0.9%.It took 135 days for the sensx to move from 12,000 to 13,000 and 123 days to move from 12, 500 to 13,000.

**The 14000-mark:** The sensx on December 5, 2006 crossed the 14,000-mark to touch 14,028 points. It took 36 days for the Sensx to move from 13,000 to the 14,000 mark.

**The 15000-mark:** The sensx on July 6, 2007 crossed the 15,000 mark to touch 15,005 points in afternoon trade. It took seven months for the sensx to move from 14,000 to 15,000 points.

**The 16000-mark:** The sensx scaled yet another milestone during early morning trade on September 19, 2007. Within minutes after trading began, the sensx crossed 16,000 rising by 450 points from the previous close. The 30-share Bombay stock Exchange’s sensitive index took 53 days to reach 15,000 from 16,000.Nifty also touched a new high at 4659, up 113 points.

**The 17000-mark:** The Sensx scaled yet anther height during early morning trade on September 26, 2007. Within minutes after trading began, the sensx crossed the 17,000 mark. Some profit taking towards the end saw the index slip into red to 16,887-down 187 points from the day’s high. The Sensx ended with a gain of 22 points at 16.921.

**The 18,000-mark:** 9<sup>th</sup> October, 2007 is the biggest rise in Sensx in a single day and is also the highest ever.

**The 19,000-mark:** The stock market continued its bull run, BSE 30-Share Sensitive Index (Sensx) crossed another milestone — the 19,000 mark. From the 18,000-mark, this was reached in just four trading sessions, led by metal stocks.

**The 20,000-mark:** India on 30.10.07 became the 20th nation in the world to have seen its stock market benchmark touch the 20,000-point milestone. Indian index Sensx breached the 20k level in intra-day trade for the first time in its over two-decades history.

FII’s are continuously pumping their money in the Indian Stock Market as there is no tomorrow. Until December 2005, they had invested Rs. 1, 75,442 crore in the Indian market since 1991. Despite that, they have been net sellers in three months of last 12 months, they have pumped Rs.47, 181.2 crore into the Indian stock market. The following Table: 3 shows the net investment made by the FII’s.

**Table 3 : FII’s Net Investment**

<b>Year</b>	<b>Net Investment(Rs.in Cr.)</b>
1999	6314.9
2000	5073.5
2001	13242.9
2002	3565.6
2003	30458.7
2004	38965.1
2005	47181.2

Though the Sensx fall is widely attributed to FII’s pulling out, that’s not the complete explanation. While the flames of the credit crisis began to devour the developed world, the Sensx rose rapidly from 14,500 in early April 2007 to 20,000 by end of December 2007. The last leg of this rise was not supported by FII buying. In fact, FII’s, who were net buyers in October 2007, turned net sellers in November and December 2007 to make up for the losses on account of the US sub-prime defaults. Fast forward to 2008. When the Sensx began its fall in January 2008, FII’s net sold Rs 17,227 crore, but followed this up with net buying in February and March 2008. Surprisingly, when the Sensx rebounded to 17,800 in May 2008, FII’s were net sellers. This shows that the movements of FII’s and Sensx are not directly correlated. Various extraneous factors have caused the FII’s to sell, and their selling has been absorbed by other market players (Business Line 08)<sup>1</sup>.

In the year 2002, the net inflows of FII’s were just Rs.3, 565.6 crore but the figure has increased more than 10 times in the year 2005 as indicated by Table: 3. Thus the record inflows of foreign portfolio capital, coupled with improved participation of the retail investors through Mutual funds as well as through IPO’s have helped this great achievement.

<sup>1</sup>Business Line “Why the Sensx fall is overdone” Sunday, Jul 27, 2008.

## RECENT TRENDS IN SENSEX

After scaling new heights of 20000+, sensex entered the year 2008 with blushing pictures. The trade pundits, brokers and even investors predicted new heights for the year. And they felt their predictions coming true when sensex touched the 21000 mark on 8<sup>th</sup> January 2008. It's interesting if one sees in terms of flows; domestic institutional investors dominate the journey from 20,000 to 21,000; FIIs were negative sellers, they sold in the cash market to the tune of USD 45 billion. So if one has to take out some pointers from this journey from 20,000 to 21,000, it is the longest journey which we have seen in the last 5,000 marks, the midcaps and small caps have been out performers and in terms of flows, it has been domestic institutional investors which have been really putting the money.

But the blushing picture soon turned murky. The skyrocketing sensex suddenly started heading south and Sensex saw the biggest absolute fall in history, shedding 2062 points intra-day. It closed at 17,605.35, down 1408.35 points or 7.4 per cent. It fell to a low of 16,951.50. The fall was triggered as a result of weakness in global markets, but the impact of the global rout was the biggest in India. The market tumbled on account of a broad based sell-off that emerged in global equity markets. Fears over the solvency of major Western banks rattled stocks in Asia and Europe.

After the worst January in the last 20 years for Indian equities, February turned out to be a flat month with the BSE sensex down 0.4%. India finished the month as the second worst emerging market. The underperformance can partly be ascribed to the fact that Indian markets outperformed global markets in the last two months of 2007 and hence we were seeing the lagged impact of that out performance. The US growth and the potential of the "new economy" continued to dominate investor sentiments and world markets and we saw instability move up sharply across the markets. We saw market plunging after the RBI announced further hikes in Repo rate as well as CRR both increased to 9%. And above all, we can't see any positive trigger that can dilute the flow of negative news.

## VOLATILITY

The intra-day volatility is a better indicator than the overall volatility to understand the daily returns that occur in a particular stock index. To calculate the intra-day volatility, one needs to consider the set of daily observations on an index (open, High, Low, Close). The commonly used intra-day volatility estimators are used here. The first estimator is the Parkinson (1980) estimator, which uses the daily high and low prices. One of the key aspects of this estimator is that it leads to have an upward bias in intra-day volatility, i.e. the actual intra-day volatility is less than the given value. In practice, the bias is very small. The market may have turned riskier, messy politics could resurface, and oil prices are at a new high; but nothing seems to worry local investors, who feel the index can go up further.

## REASONS FOR THE PRESENT SLOWDOWN

1. Historic crude oil prices, high inflation rates, weak industrial production data, RBI policies, political uncertainties and obviously, the sentiments of domestic as well as FIIs influence on the sensex volatility.
2. The key benchmark indices ended lower as investors resorted to profit booking due to lack of positive triggers in the market.
3. Central banks across the globe warned that interest rates may have to rise as they look to keep inflation under control, despite the fact that economic growth is slowing in key nations such as the US and UK.
4. Investors dumped financials on concerns about the fallout from worsening global credit turmoil.
5. The global financial sector turmoil impacts sentiment in the local market and raises worries of more withdrawals by foreign funds.
6. We saw market plunging after the RBI announced further hikes in Repo rate as well as CRR both increased to 9%. And above all, we can't see any positive trigger that can dilute the flow of negative news.

## CONCLUSION

Along with the soaring Sensex in the current situation, the investors should keep in mind that the factors could derail this rally like rising interest rates, high inflation fuelled by firm global crude oil prices, slow down in the economy and in corporate earnings, fluctuations in currency markets, sluggish pace of economic reforms, political instability, crash in asset prices across the board, political tension and possible terrorist attacks. The FIIs who have been so bullish in India for the last so many years might start looking at other cheaper emerging markets for better returns. It is pretty tough to predict that whether the Sensex will sustain this momentum in future or not. The investors need to be very cautious in their operations.

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(Contd. from page 9)

□ **Cut in repo and reverse repo rates:** To infuse liquidity into the system, the government has reduced CRR by 250 basis points and cut the repo rate by 100 basis points. For the industry it is not only the availability of funds but also the cost of funds that matters. Since lending rates are still high, the government should cut the repo rate by another 100 basis points and also reduce the SLR. This would provide additional liquidity and also lower the interest rate on borrowing for the corporates.

□ **Increased Insurance on Bank Deposits:** Currently deposits of an investor in a bank are insured to the extent of Rs.1 lakh by the Deposit Insurance and Credit Guarantee Corporation (DICGC) and currently 961.72 million accounts (92.6 per cent of deposits) are insured. Considering the fact that the insurance limit has not been increased in the past fourteen years and taking into account the inflation during this period, the limit should be enhanced to at least Rs.5 lakh. This would further shore up investor's confidence in the Indian banking system and to a great extent reduce the negative impact of the rumors regarding the strength of Indian banks.

□ **Prudent Hedging strategy:** With the rupee depreciating to a low of Rs. 49, on the surface it may seem that exporters would be a happy lot, but we must also understand that Indian exports have a high import component. The depreciating rupee would certainly mean costlier imports which would have a definite impact on the price of export. To tide over this situation, companies should hedge their positions in a prudent manner. Hedging should be used as a risk mitigation measure and not as a means to speculate. Some Indian firms used hedging as a means of speculation and incurred huge losses in the recent past. This tendency should be avoided.

□ **Mergers and Acquisitions:** In these troubled times, many global companies with advanced proprietary technology, robust systems, access to captive sources of raw materials and global customer base may be available at cheap valuations. This is an opportune time for Indian companies to scout for such value buying opportunities which would provide them sustained growth and profitability in the future.

## CONCLUSION

The unprecedented global financial turmoil caused by the US sub-prime crisis clearly brings home the fact that with the globalization of financial markets, there needs to be a robust regulatory mechanism in place to monitor the global flow of funds. There has to be a serious re-look into the current methods of functioning of existing regulatory agencies and the efficacy of credit rating institutions. The leaders of the world should spend serious time and effort to devise ways and means to reform financial markets which have been turned into large scale casinos. The financial markets should once again be made as agents of aiding economic growth and development in an equitable manner. As far as Indian financial system is concerned, the problem is not with regard to solvency but of liquidity and confidence. Our banks have high Capital Adequacy Ratios (CAR), much higher than the Basel II norms, the mandatory CRR and SLR requirements provide an additional safety cushion and exposure to derivative losses are low. The fundamentals are strong and the economy has the capacity to absorb capital and generate good returns. The economic slow down and tight labour market conditions might lead to defaults in retail loans. Therefore, the Indian banks would do well to take measures to expand credit without diluting lending norms.