

STOCK MARKET VOLATILITY WITH RESPECT TO SELECTED NIFTY COMPANIES IN INDIA

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ABSTRACT

Since volatility can have different meanings to different people, it is challenging to analyse. When discussing volatility, people tend to be vague. There is also a lot of false information floating around regarding volatility. The most fundamental statistical metric for risk is volatility. Stock price volatility, currency rate volatility, and interest rate volatility are all examples of financial asset price volatility. The degree to which the price of a security, commodity, or market increases or decreases during a short time frame; The key aspect of this concept is that it includes both price increases and cuts. It is during moments of price decline or "correction" that people tend to worry the most about volatility. However, in a steady market, prices move smoothly from one equilibrium point to another as new information is gradually included into prices. In other words, the term "volatility" refers to the extremeness with which an asset's value fluctuates. When there are large price swings up and down in the stock market within a short time frame, we say that the market is volatile. Volatility of stock returns quantifies the unpredictable swings in stock prices. Volatility, or the degree to which stock prices fluctuate over time, is a key indicator of market activity (Gangadhar and Reddy, 2009). Volatility can be described in a number of ways, but the standard deviation is the most popular statistical metric for capturing it. Basically, it calculates how much the current price differs from the moving average price. When this discrepancy increases, so does the resulting volatility.

Keywords: *Stock Market; Volatility; Nifty Companies; India*

INTRODUCTION

Many members of the general public equate the word "volatility" with "risk," and they think it's bad when it's high because it indicates that asset prices aren't stable and the financial markets aren't operating as efficiently as they could be. In his book *Financial Innovation and Market Volatility* (1991), 1990 Nobel Laureate in Economics Merton Miller says.... People often appear to mean bad days in the market when they talk about volatility. These widespread price decreases in the market generally cannot be attributed to a single news item. This lack of a smoking gun shouldn't be viewed as unusual, either, because the value of assets like common stock is based on subjective estimates of future cash flows and resale values. The general public has a more fatalistic outlook on stock market fluctuations, believing that "if the market crashes, there must be a specific reason."

One definition of volatility is the tendency for asset prices to fluctuate at random. Share price volatility is theoretically affected by shifts in the volatility of future cash flows and discount rates. The emergence of new "fads" or "bubbles" is a new source of uncertainty (Schwert, 1989).

Volatility readings in the high range indicate a high degree of uncertainty about future returns. Standard deviation is the most used way to quantify dispersion in random variables. A statistical measure of the dispersion of returns for a certain securities or market index," volatility is defined as such by Investopedia. Both the standard deviation and the variance of returns on the same securities or market index can be used as measures of volatility. Higher volatility is usually indicative of a more precarious investment.

Simply said, volatility measures the degree of unpredictability or risk associated with the magnitude of price swings for a given security. When volatility is high, the possible values over which a security can trade are broader. This means the security's price can swing wildly in either way in a relatively short amount of time. When a security's value varies gradually over time rather than abruptly, it is said to have low volatility (Pandian, 2009).

According to Wikipedia, the most common definition of volatility for financial instruments over a given time horizon is the standard deviation of the continuously compounded returns of that instrument. It is frequently employed in order to quantify the instrument's risk during that time frame. Annualized volatility can be written as a whole figure (5) or as a percentage of the mean (5%). Options and variance swaps allow for the direct trading of volatility in today's markets.

Volatility places greater significance on price fluctuations themselves than on their overall trend or direction. For example, the direction of the price movement could be up, down, or flat, but the volatility of the price could be very similar in all three circumstances. This means that the volatility of prices across the three scenarios is very similar (Singh, 2008).

Various market participants and situations highlight the significance of volatility forecasting. Securities are meant to be priced in accordance with their underlying assets' volatilities. Low volatility and strong returns over the long term are both characteristics of mature and matured markets. Except for India and China, developing markets as a whole had low returns (often negative returns) and considerable volatility in the years leading up to 2006 (Porwal and Gupta, 2006). Market returns in India and China are comparable to those in the United States and the United Kingdom, but the volatility in both nations is far higher.

VOLATILITY AND ITS IMPORTANCE

Volatility is a measure of risk and, as such, should give investors and others a reason to be wary of the stock market and other financial instruments. For this reason, volatility issues have recently gained prominence among financial professionals, market participants, individual investors, regulators, and researchers.

Investors care about volatility because they want to know how much risk they are taking on when purchasing a stock. The higher the volatility of a stock, the greater the risk it poses, and knowing the volatility of a stock gives an investor an idea of the range of values the stock could take at a future date, helping the investor make more educated investment decisions. However, the future value of a company with a high degree of volatility is notoriously difficult to forecast. Investors, in general, would rather not take any chances at all, much less the small ones they might incur when trying to make a profit. Second, policymakers are worried about the impact of a turbulent stock market on economic growth because uncertainty is bred by market volatility. On the other hand, policymakers may worry that heightened stock volatility endangers the stability of financial institutions and the market. Thirdly, regulators are worried about volatility. Capital market efficiency is affected by market volatility. Small investors avoid the market altogether when volatility is high. In addition, it may undermine investor trust, which in turn decreases market participation and liquidity, and put a pressure on market clearing and settlement requirements. Finally, the volatility of security prices affects the timing, amount, and type of capital issuance decisions that businesses make.

But whether or not price volatility (defined as a significant degree of change in the value of an item) is undesirable is a moot point.

There are two sides to volatility. Most economists believe that the introduction of new information into the market is what causes volatility. The true worth of an item that is being traded on the market is constantly reevaluated as market participants get fresh information. When new information becomes available, the price of a traded asset should change accordingly in a well-functioning market. Volatility can be a byproduct of this procedure. According to the research of Narayan (2006), market volatility is indication of a well-established and informationally efficient market. Volatility is helpful rather than harmful in this context. The potential for increased profits is another plus, provided that the market behaves as predicted. In fact, for an option trader to profit, the underlying asset must be highly volatile. If that happens, an out-of-market option (a call option with a higher strike price than the current market price of the underlying securities, or a put option with a lower strike price than the current market price of the underlying security) may eventually be called. (When the current market price of the underlying asset is lower than the strike price of a call option or higher than the strike price of a put option. The option itself is valuable. But if the market doesn't behave as expected, your investment could go down the drain.

However, volatility that appears to be unrelated to news about the company or the market as a whole may be detrimental and undesired. The effects of stock market volatility on consumer spending are negative (Garner, 1988). Investment spending by corporations is influenced by stock market volatility (Gertler and Hubbard, 1989). Furthermore, the severe volatility may cause structural and regulatory adjustments to be made in order to restore stability to the financial system.

The efficiency of the financial system is affected by the market's volatility. A high level of market volatility discourages casual investors. Aside from that, it may put a pressure on market clearing and settlement requirements, which might cause investors to lose faith and decrease market liquidity and participation.

There are real-world economic ramifications of volatility as well. The capital markets provide a platform for businesses to discuss the viability of various initiatives, the growth prospects of various technology, and the demand for various products. For corporate managers and commercial organizations looking to optimize their company' value, a true reflection of their opinions in security prices would send valuable signals. Firm managers who rely on price signals are essentially responding to nothing but noise if the prices actually contain huge systematic mistakes. Because of this, stock prices lose their significance as a "signal" regarding a company's genuine worth when there is excessive volatility or "noise" that does not appear to be accompanied by any significant news about the firm or market as a whole. The wealth of many families has been significantly reduced as a result of the market's volatility. Investors may react differently to market fluctuations if they associate them with a higher level of risk.

The amount of extrinsic value in an option's pricing is largely determined by its volatility, therefore understanding this concept is crucial. Calls and options have more extrinsic value when volatility rises. As a result, the cost of every available alternative rises. Both the call and put option's extrinsic value diminish as volatility falls. As a result, the cost of every available alternative drops.

MODELING STOCK MARKET VOLATILITY STATISTICS

Volatility in the stock market is widely thought to be predictable. Implications for asset pricing and portfolio management are substantial in light of this finding. When looking to minimize their exposure to risk, investors may rebalance their holdings by decreasing their exposure to assets with projected increases in volatility or by employing more complex dynamic diversification strategies to hedge against such increases. When such methods are in play, the equilibrium values of assets in the market should adjust to reflect investors' aversion to risk and future volatility expectations. Specifically, the value of a derivative asset like a swap or an option will be affected greatly by the volatility of the underlying asset.

Predicting high volatility, as you will see, is equivalent to predicting high variance, or that the extent of the possible price change is large. In light of this, knowing the variance of a market move does not guarantee knowing the magnitude or direction of such move. Predicting volatility is a bit like predicting whether or not it will rain: you can be right about the possibility of rain, but there may still be no rain. Clustering volatility is one of the earliest observed phenomena in economic data. It gives us some insight into the regularity of price swings. If strong market swings are typically followed by additional large swings, in either direction, then volatility should be predictably high after swings of this size. In fact, this is the standard method that traders use to anticipate volatility. To forecast volatility, they calculate standard deviations over a range of time

periods and apply the moving average they determine to be most reliable. To better predict future volatility, some people update standard deviations to account for previous events. However, traders who deal in longer-lived assets (long-lived assets are often those assets which are not consumed during the normal course of business, e.g., land and buildings) may be of the opinion that volatility in the far future is insensitive to new information. Better short- or long-term volatility forecasts might lead to more accurate estimations of underlying asset prices. To what extent the market currently reflects the most accurate predictions is an open question (Engle, 1993).

Volatility can be predicted and estimated using one of four main methods. Some examples include Extreme Value Estimators, Conditional Volatility Models, Implied Volatility Models, and Historical Volatility Models.

- Methods For Predicting Past Volatility
- Simulations Of Implied Volatility
- Estimators Of Very Large Numbers
- Indicators Of Conditional Volatility

INDICATORS OF STOCK MARKET DYNAMICS

The causes of volatility can be broken down into two broad classes: internal and external. Endogenous forces are those that originate within a country's own corporate, economic, and political sectors. Micro and macro factors are both at play here. Earnings per share, firm size, and book value per share are all macro elements that contribute to a stock's value, but micro factors, such as dividend decisions, substantial expansion plans, and the receipt of large contracts, also matter. The stock market's behavior is influenced by the economy as a whole, which is why macroeconomic issues are so important. The stock market's volatility is an obvious reflection of their effects. The tax rate, interest rate, inflation rate, agricultural and industrial production, bank, GDP, government expenditure, foreign institutional investment, exchange rate, union budget, growth rate of imports, current account deficit, money supply, and foreign currency reserves are only few of the variables that can affect a country's economy. Not necessarily will all securities be affected in the same way or to the same extent by these macro level issues. They affect various securities to varying degrees. All the other sources of uncertainty are exogenous. These influences are not native to the country. These issues are rising to prominence as a result of the increasing interconnectedness of the world's economies in the context of globalization. They are usually of a large scale. With the opening of the Indian economy to global trade, they have risen to prominence. The impact of fluctuating crude oil prices and other international economic factors on the Indian stock market may be seen plainly. No inferences about the near-term market trajectory can be drawn from the index. The stock market's reaction to both concrete and abstract developments drive its volatility.

Media outlets frequently attribute small, day-to-day fluctuations in stock prices to investors' responses to news of major economic developments. When unemployment numbers are bad or inflation numbers are good, commentators will often say that the stock market responded negatively or positively, respectively (Roley, 1985).

- Market Forces Of Supply And Demand
- Funding Costs
- State Of Politics
- Globalisation
- Contrivances And Unfounded Rumors
- Business Trends
- Competition In The Technical Market
- Inflation
- Opinion Polls And Media Coverage
- Investors From Overseas Institutions
- The Explosion Of Data
- Stock Price Effects Of Psychological Factors
- Anticipation And Planning
- Public Policy
- The Impact Of Feedback
- Technology

CONTROLLING STOCK PRICE VOLATILITY WITH REGULATORY MEASURES

The Securities and Exchange Board of India (SEBI) has implemented measures like margin requirements, price caps, circuit breakers, and transaction charges to reduce market volatility.

MARGINS

Margin requirements are the first deposits made by traders to cover their stock market risk. Default risk and, by extension, systemic risk can both be reduced with the use of margins. Margin impacts market efficiency and liquidity. Margin requirements are a form of transaction cost for traders since they prevent them from making use of otherwise available funds. As a result, market liquidity is reduced and transaction costs are greater than they would be otherwise. Market price efficiency is reduced and information-based speculators are deterred by the higher transaction costs. Positively, the higher transaction costs may lead to less reckless, uninformed speculation. This is expected to reduce price volatility, which is a goal of regulators (Hsieh and Merton, 1990).

COST RESTRICTION

Futures contracts are typically the setting for price caps. Except for the stock markets in India and Japan, they are hardly employed anywhere else. Limits on the day's trading price can prevent purchases and sales outside of a predetermined band around the previous day's close. Invalid orders outside this window will not be processed. Although trading is restricted to within the aforementioned parameters, the market is not formally closed. Putting a limitation on daily price increases helps reduce default risk. However, the profit potential of time-sensitive knowledge is diminished when prices are capped. As price controls limit the trading techniques of information less speculators, they too would prefer a world without them. Price discovery is slowed down, and traders can't enter or leave the market at will if there's a risk of a market breakdown (when price limits are reached). A market with price ceilings is less appealing because of the reduction in liquidity. Limits on prices are used by regulators to prevent an excessive response to news events (Anshuman and Subrahmanyam, 1999).

OVERLOAD PROTECTORS

The stock market is where you'll typically find circuit breakers in operation. When order imbalance circuit breakers are tripped, markets are unable to clear without substantial price shifts. In order to prevent a total system failure because of a buildup of operational backlog, volume-induced circuit breakers are employed. Finally, price-induced circuit breakers are activated when price shifts exceed a predetermined threshold. Like price controls, circuit breakers can have an impact. Trading must be suspended explicitly when a circuit breaker is activated, unlike with price limitations. The primary goal of circuit breakers is stability regulation. Some argue that a temporary halt in trading gives participants time to "cool down" and make more objective decisions about the situation (Singh, 2008).

TAXES ON BUSINESS TRANSACTIONS

In addition, transaction taxes have the potential to reduce market uncertainty. The intention of this tax is to tame the 'wild' (i.e., uninformed) speculative appetites of investors. However, since it is hard to tell a buyer from a seller, the transaction fees for all buyers and sellers will rise. Because of this, market liquidity deteriorates and price discovery is hampered. Transaction taxes, in contrast to the other measures, may not have much of an impact on default risk (Umlauf, 1993).

All four measures of regulation can theoretically reduce volatility. Comparison of price limitations and circuit breakers with margins and transaction taxes reveals that the latter do not lead to a breakdown in the market. The extent to which information less speculative traders dominate stock markets will determine the effectiveness of these strategies in lowering price volatility. The reaction of noise traders to a new regulation is also crucial to the effectiveness of these efforts. The market liquidity and price efficiency are both negatively impacted by all of the regulatory actions. Thus, reducing volatility, changing liquidity, and promoting pricing efficiency all come with their own costs and benefits.

CONCLUSION

Volatility is a risk factor that should be taken seriously by everyone who deals with money or invests in the stock market or other financial instruments. As a result, the importance of addressing volatility as a topic for the finance industry, market participants, retail investors, regulators, and academics has grown in recent years. The budget had the most effect in the short term (alternative ideas were accepted in all three cases) in the second set of tests. In the middle term, two out of three times, the alternative hypothesis was accepted. In the long term, none of the alternative hypotheses were accepted. In five of the nine cases at the left tail, the actual numbers are higher than the tabular values. Despite the critical nature of the problem of stock market volatility, there have been few attempts to investigate it experimentally and thoroughly in India. There is an abundance of literature on this topic for both established markets like the United States, Australia, the United Kingdom, and other European markets, and developing markets like Southeast Asia and Latin America. There have been few attempts to quantify and analyse the nature of stock market volatility in India. This research tries to fill that void by conducting an empirical examination of India's stock market's volatility.

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