

# A Study on Volatility of FMCG and Auto Indices of National Stock Exchange

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## Abstract

*The Sector-based index is designed to provide a single value for the aggregate performance of a number of companies representing a sector of the economy. This study has been made to provide an empirical support to identify the mean differences in FMCG, Auto sectors and CNX Nifty index and also to see the relationship. The indices selected for the study are CNX Nifty index, CNX Auto index and CNX FMCG index for the period from 01/01/2012 to 30/06/2014. The data has been taken from the National stock exchange website. Two Sample T-Test has been used for analyzing the data.*

**Keywords:** Performance of Sectors, Mean Differences, FMCG, Auto Index, Nifty, T-Test

## Introduction

From the beginning of the 1990s in India, a number of measures have been taken for economic liberalization. At the same time, large number of steps has been taken to strengthen the stock market such as opening of the stock markets to international investors, regulations, increased power of SEBI and trading activities in derivatives. These measures have resulted in significant improvements in the size and depth of stock markets in India and they started to play their due role. (Shahid Ahmed, 2008) Understanding dynamics of Indian stock market may be useful for traders, investors and policy makers.

The Securities Contract (Regulation) Act has defined stock exchange as an “association, organization, or body of individuals, whether incorporated or not, established for the purpose of assisting, regulating and controlling business of buying, selling and dealing in securities”. The sector-based index is designed to provide a single value for the aggregate performance of a number of companies representing a group of related industries or within a sector of the economy. The index is based on a statistical compilation of the share prices of a number of representative stocks. It also creates the basis for portfolio trading by both active and passive investors. These market indices are convenient gauges of the stock market that also indicate the direction of the market over a period of time. By using these market indices, you can compare how well individual stocks and mutual funds have performed against market indicators for the same period.

## Review of literature

**Poshakwale Sunil (2002)** examined the random walk hypothesis in the emerging Indian stock market by testing for the nonlinear dependence using a large disaggregated daily data from the Indian stock market. The sample used was 38 actively traded stocks in the BSE National index. He found that the daily returns from the Indian stock market do not conform to a random walk. Daily returns from most

individual stocks and the equally weighted portfolio exhibit significant non-linear dependence. This is largely consistent with previous research that has shown evidence of non-linear dependence in returns from the stock market indices and individual stocks in the US and UK.

**Yakob, Beal and Delpachitra (2005)** examined seasonal effects of ten Asian Pacific stock markets, including the Indian stock market, for the period January 2000 to March 2005. They stated that this is a period of stability and therefore ideal for examining seasonality as it was not influenced by the Asian financial crisis of the late nineties. Yakob, et al., concluded that the Indian stock market exhibited a month-of-the-year effect in that statistically significant negative returns were found in March and April whereas statistically significant positive returns were found in May, November and December. Of these five statistically significant monthly returns, November generated the highest positive returns whereas April generated the lowest negative returns.

**Bodla and Jindal (2006)** several seasonal anomalies in the Indian stock market utilizing the S&P CNX Nifty index for the period January 1998 to August 2005. For the monthly effect, they did find some significant differences utilizing ANOVA for their sub-period, January 2002 to August 2005. However, they were unable to find any significant differences among individual months.

**Rakesh Kumar and Raj S Dhankar (2011)** in their article titled, “Distribution of Risk and Return: A test of normality in Indian stock market”, examined the normality of return and risk of daily, weekly, monthly and annual returns in Indian stock market. They used parametric and non-

parametric test to prove these objectives. They have selected Sensex, BSE 100 and BSE 500 indices from Bombay Stock Exchange (BSE) for the period 1996 to 2006. The results show that, the returns are negatively skewed for all the indices over the period. Asymmetry is found in risk and return in case of daily and weekly returns i.e., risk and return relationship seems inconsistent in case of daily and weekly returns. Monthly and annual return, however are found normally distributed for all three indices over the period of time. The study shows the importance of time horizon in investment strategy for the Indian stock market.

**Raja sethu Durai and Saumitra N Bhadurai (2011)** in their article titled, “Correlation dynamics in Equity markets”, aimed to analyze the correlation structure of the Indian equity markets with that of world markets. The indices considered for the study are NASDAQ composite (USA), S & P 500 (USA), FTSE 100 (UK) and DAX 30 (Germany) classified as developed markets. KLSE composite (Malaysia), Jakarta composite (Indonesia), Straits times (Singapore), Seoul composite (South Korea), Nikkei (Japan), Taiwan weighted index (Taiwan) and the S & P CNX Nifty (India) are classified as Asian market, for the period 1997 to 2006. The logistic smooth transition regression (LSTR) model results for the conditional time varying correlation of S & P CNX Nifty with six Asian market and S & P CNX Nifty with four developed markets show that there is a significant regime shift in the year 2000 and there is a considerable increase in integration in the second regime. This indicates that the S & P CNX Nifty index is moving towards a better integration with other world markets but not at a very noteworthy phase.

## Scope of the Study

The study aims to provide an empirical support to the risk factors of the FMCG sector, Auto sector and CNX Nifty index. The study tries to examine the relationship across the sector in terms of risk and influence of risk on time intervals.

## Objectives of the study

1. To identify whether there is any difference in mean value of indices

## Hypothesis

**H<sub>0</sub>**: There is no difference in Mean values of Indices

**H<sub>1</sub>**: There is a difference in Mean values of Indices

## Data Analysis

### Hypothesis

**H<sub>0</sub>**: There is no difference in Mean values of Indices

**H<sub>1</sub>**: There is a difference in Mean values of Indices

## Indices selected for the study

### CNX FMCG Index

FMCGs (Fast Moving Consumer Goods) are those goods and products, which are non-durable, mass consumption products and available off the shelf. The CNX FMCG index comprises of 15 companies who manufacture such products which are listed on the National Stock Exchange (NSE).

### CNX Auto Index

The CNX Auto index is designed to reflect the behaviour and performance of the automobiles sector which includes manufacturers of cars & motorcycles, heavy vehicles, auto ancillaries, tyres, etc., The CNX Auto index comprises of 15 stocks that are listed on the National Stock Exchange.

**Descriptive Statistics**

	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Nifty	1270	3974.05	7656.40	5.5398E3	17.16213	611.60790
FMCG	1270	5544.85	19407.85	1.1725E4	1.09282E2	3894.48047
Auto	1270	1900.08	6858.80	4.0085E3	25.81307	919.90184
Valid N (listwise)	1270					

t-Test: Paired Two Sample for Means

	<i>Nifty</i>	<i>Auto</i>
Observations	1270	1270
Pearson Correlation	0.917277778	
Df	1269	
t Stat	125.8189248	
P(T<=t) one-tail	0	
t Critical one-tail	1.646055273	
P(T<=t) two-tail	0	
t Critical two-tail	1.961835141	

	<i>Nifty</i>	<i>FMCG</i>
Observations	1270	1270
Pearson Correlation	0.731492	
Df	1269	
t Stat	-63.4781	
P(T<=t) one-tail	0	
t Critical one-tail	1.646055	
P(T<=t) two-tail	0	
t Critical two-tail	1.961835	

The descriptive statistics shows the mean and standard deviation of each index. The CNX Nifty is having a mean of 5.539 and CNX FMCG has 1.17, it shows that there is difference in mean value of these indices. The CNX Auto index has standard deviation of 919.901 and nifty standard deviation is 611, there is a wide range of risk deviation in sectors.

The result of two sample T test says that there is a difference in mean values

### Conclusion

The relationship between sector indexes has received a substantial attention in financial literature. This study is an attempt to provide an empirical analysis to know the mean differences between sectoral indices and CNX Nifty index. The data used for the study has daily closing values of the stock indices covering a period of two and half years, starting from 1<sup>st</sup> Jan 2012 to 30<sup>th</sup> June 2014.

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