



SECTORAL BENCHMARK'S IMPACT ON CASH TRENDS OF MARKET CAPITAL (NSE INDIA) – A STUDY

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ABSTRACT

This analysis has been emphasized on sectoral benchmark's impact on cash trends of market capital of NSE. The study period is confined to six years i.e., 2009 to 2014. Bi-variate correlation has been applied for the select sectoral indices to equity market capital to measure the co-movements and the result indicates that all indices are moving positively in the same direction except Realty index. Granger casualty test has been applied on the Johnson Co-integrated data and the result unveils that energy & metal sectoral Benchmarks are causing the cash trends of equity market capital. Regression linear trend analysis shows that all the equity indices are influencing the national stock exchange equity market capital during the study period. This analysis is useful to retail, HNI, QIB & FII investors who trade in NSE equity segment.

KEYWORDS: HNI, QIB & FII.

JEL Codes: H5, G2, G22

INTRODUCTION

This research emphasises on studying the relationship and impact of the sectoral indices on the equity capital, in order to analyse if there is an impact on decisions of the investor's decision in relation with the sectoral indices. The Indian Equity Market is more popularly known as the Indian Stock Market. The Indian equity market has become the third biggest after China and Hong Kong in the Asian region. According to the latest report by ADB, it has a market capitalization of nearly \$600 billion. As of March 2009, the market capitalization was around \$598.3 billion (Rs 30.13 lakh crore) which is one-tenth of the combined valuation of the Asia region. Stock market indexes are useful for a variety of reasons. Some of them are:

- They provide a historical comparison of returns on money invested in the stock market against other forms of investments such as gold or debt.
- Modern financial applications such as Index Funds, Index Futures, index Options play an important role in financial investments and risk management.
- They can be used as a standard against which to compare the performance of an equity fund.
- It is a lead indicator of the performance of the overall economy or a sector of the economy. Stock indexes reflect highly up to date information.

REVIEW OF LITERATURE

T. Mallikarjunappa1 and Afsal (2008): This paper studies the volatility implications of the introduction of derivatives on stock market volatility in India using the S&P CNX Nifty

Index as a benchmark. To account for non-constant error variance in the return series, a GARCH model is fitted by incorporating futures and options dummy variables in the conditional variance equation. We find clustering and persistence of volatility before and after derivatives, while listing seems to have no stabilisation or destabilisation effects on market volatility. The post derivatives period shows that the sensitivity of the index returns to market returns and any day-of-the-week effects have disappeared. That is, the nature of the volatility patterns has altered during the post-derivatives period.

Dr. Anand Sharma, Dr. Namita Rajput and Dr. Anurag Agnihotri (2011) did a study on a relationship between cash and derivative segment in Indian stock market stating that during the recent global recession. Derivative instruments were largely criticised on account of their speculative nature. Since introduction of Derivatives segment in the year 2000, it has led both interactions between the Spot and Derivative segment in Indian stock market, and concern by regulators in controlling any possible harmful influences of this new trading segment. There are different opinions on impact of Derivative segment on cash segment. It is said that the Derivative segment prices can reflect additional information, over and above that already reflected in the spot price thus can serve as a leading indicator for the spot prices. This paper analyses the introduction of the Derivative segment trading in India and its impact on the cash segment. It studies the relationship of turnover in Cash and Derivative segment.

Dr. K. Kanaka Raju conducted a study on Equity Derivatives- Comparative and Critical Analysis from BSE to

NSE. The main objective of this paper to know the relationship between variables from one variable of BSE to NSE in terms of index futures, stock futures, index options and stock options and offer suitable suggestions to increase the turnover volume of equity derivative segments.

Kapil Gupta and Dr. Balwinder Singh (2004) study on Price Discovery and Arbitrage Efficiency of Indian Equity Futures and Cash Markets, includes. The price discovery efficiency and validity of Law of One Price in the Indian equity market by using tick-by-tick data available at National Stock Exchange of India. The study finds that strong and stable long-run relationship exists between Indian equity futures and cash markets, however, during short-run significant deviations from equilibrium relationship have been observed. Empirical findings in the study suggest that price discovery takes place in both markets, whereas, the Indian equity futures market dominates the information transmission process and the duration of lead-lag between two markets has been found to be varying in the range of five to fifty five minutes.

Brennan and Schwartz (1990) Regulatory restriction on the participation of institutional traders may be a significant factor leading to negative association between mispricing of futures contracts and days to expiry, therefore, they might be preferring either to unwind or to rollover their positions before maturity date, which not only makes money available to them but also enables them to take new positions.

NEED OF THE STUDY

This study is done for the purpose of understanding the various trends in the NSE market. The sectoral indices that includes eleven sectors representing the various movements that reflect the condition of the economy is correlated with the investments made by the investors in the equity capital. This level of significance is studied and stated in this study. Hence this is established by computing the correlation between the sectoral indices and equity capital, the viability of the data is tested in this research in order to test the validity and relevance of the data. The research is done to understand the trends of sectoral indices in relation with equity capitalization.

OBJECTIVES OF THE STUDY

1. To measure the correlation of select sectoral with equity market capitalization.
2. To measure the sectoral indices impact on equity market capital.
3. To measure the sectoral cash trends impact on equity market capital.

HYPOTHESIS

1. **Null hypothesis – Ho :** Nifty doesn't cause equity capital
2. **Null hypothesis – Ho :** Sectoral indices doesn't cause equity capital

SCOPE

This research is done to establish the relationship and impact of the sectoral indices on equity capital. The data collected during 2009-14 help in understanding the variations in the

investment patterns by the investors during the recession in the economy. The benchmarks in the stipulated time frame have a significant impact on the investment patterns of the investors.

EMPIRICAL STUDY

CNX Auto Index, CNX Bank Index, CNX Energy Index, CNX Finance Index, CNX FMCG Index, CNX IT Index, CNX Media Index, CNX Metal Index, CNX Pharma Index, CNX PSU Bank Index, CNX Realty Index.

RESEARCH METHODOLOGY

This study has been done based on secondary data by using descriptive statistical tools, which are as follows

- **BIVARIATE CORRELATION:** - Bivariate correlation is a measure of the relationship between the two variables; it measures the strength of their relationship, which can range from absolute value over any period of time.

$$r = \frac{\sum_{i=1}^n (X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum_{i=1}^n (X_i - \bar{X})^2} \sqrt{\sum_{i=1}^n (Y_i - \bar{Y})^2}}$$

- **JOHANSEN COINTEGRATION TEST:** In statistics, the **Johansen test**, named after Soren Johansen, is a procedure for testing co-integration of several time. This test permits more than one co-integrating relationship so is more generally applicable than the Engle-Granger test.
- **GRANGER CAUSALITY TEST:** A time series X is said to Granger-cause Y if it can be shown, usually through a series of t-tests and F-tests on lagged values of X (and with lagged values of Y also included), that those X values provide statistically significant information about future values of Y .

$$P[Y(t+1) \in A | I(t)] \neq P[Y(t+1) \in A | I_{-X}(t)]$$

- **REGRESSION:** Regression analysis is widely used for prediction and forecasting, where its use has substantial overlap with the field of machine learning. Regression analysis is also used to understand which among the independent variables are related to the dependent variable, and to explore the forms of these relationships. A regression model relates Y to a function of X and β .

$$Y \approx f(X, \beta)$$

LIMITATIONS

1. The study includes the time frame of 2009-14 data.
2. The data is studied only based on the NSE market and does not include other markets i.e BSE and MCX-SX. The data includes only the sectoral indices, nifty and equity capital data.

DATA ANALYSIS**1. To measure the Correlation of select Indices with Equity market capitalization.**

Indice	Market Capitalization
Auto and equity	0.509840876
Bank and equity	0.535941439
Energy and equity	0.153415842
Finance and equity	0.547586027
FMCG and equity	0.525939557
IT and equity	0.541288219
Media and equity	0.402062192
Metal and equity	0.065341956
Pharma and equity	0.491621015
PSU Bank and equity	0.291762344
Realty and equity	-0.338559238
Nifty and equity	0.521060807

Interpretation

The above table of bi-variate correlation between the select sectoral indices with equity market capital depicts that the energy, metal and PSU bank sectors are slightly correlated with the equity market capital during the analysis period. All the other sector indices are positively moderate correlation with equity market capital except realty sector that is negatively moderate correlated with equity market capital.

2. To measure the correlation of select sectoral indices impact on equity market capital.**Cointegration Test**

Information Criteria by Rank and Model					
Data Trend	None	None	Linear	Linear	Quadratic
Rank	No Intercept	Intercept	Intercept	Intercept	Intercept
No of CEs	No Trend	No Trend	No Trend	Trend	Trend

	Log likelihood by (Rows)Rank and Model (Columns)						Akaike information Criteria	Schwarz Criteria
Nifty & Equity	0	-1508.17	-1508.17	-1505.61	-1505.61	-1505.08	44.59326	44.85438
	1	-1501.08	-1496.97	-1495.67	-1494.26	-1494.03	44.50243	44.89411
	2	-1499.73	-1495.52	-1495.52	-1492.74	-1492.74	44.58032	45.10255
Auto & Equity	0	-1521.08	-1521.08	-1517.18	-1517.18	-1516.58	44.32120	44.58023*
	1	-1517.41	-1510.55	-1508.64	-1508.49	-1508.03	44.33077	44.71931
	2	-1516.4	-1508.55	-1508.55	-1507.51	-1507.51	44.41742	44.93548
Bank & Equity	0	-1601.78	-1601.78	-1599.33	-1599.33	-1598.86	46.66040	46.91942*
	1	-1597.75	-1592.56	-1591.32	-1590.65	-1590.46	46.65932	47.04786
	2	-1596.36	-1590.92	-1590.92	-1588.52	-1588.52	46.73508	47.25314
Energy & Equity	0	-1565.56	-1565.56	-1565.04	-1565.04	-1565.03	45.61052	45.86955*
	1	-1560.26	-1555.38	-1555.37	-1554.73	-1554.72	45.57277	45.96131
	2	-1560.22	-1551.81	-1551.81	-1550.09	-1550.09	45.68750	46.20555
Finance & Equity	0	-1533	-1533	-1530.36	-1530.36	-1529.9	44.66652	44.92555*
	1	-1529.24	-1523.7	-1522.4	-1521.78	-1521.64	44.67364	45.06218
	2	-1527.72	-1521.93	-1521.93	-1519.33	-1519.33	44.74556	45.26361
FMCG & Equity	0	-1586.39	-1586.39	-1580.43	-1580.43	-1579.84	46.21414	46.47317
	1	-1580.79	-1580	-1575.31	-1573.68	-1573.26	46.16790	46.55644
	2	-1580.45	-1575.31	-1575.31	-1570.8	-1570.8	46.27389	46.79195

Sectoral benchmark's impact on cash trends of market capital

IT & Equity	0	-1549.16	-1549.16	-1546.53	-1546.53	-1545.93	45.13518	45.39421*
	1	-1547.04	-1539.36	-1537.84	-1536.37	-1536.34	45.18968	45.57822
	2	-1545.85	-1537.24	-1537.24	-1534.29	-1534.29	45.27098	45.78903
Media & Equity	0	-1458.17	-1458.17	-1456.45	-1456.45	-1455.98	42.49770	42.75673*
	1	-1454.5	-1450.25	-1449.66	-1447.31	-1447.21	42.50726	42.89580
	2	-1453.63	-1448.22	-1448.22	-1445.19	-1445.19	42.59800	43.11606
Metal & Equity	0	-1532.35	-1532.35	-1532.07	-1532.07	-1530.63	44.64771	44.90674
	1	-1530.05	-1520.58	-1520.55	-1520.42	-1520.31	44.69702	45.08556
	2	-1530.04	-1518.81	-1518.81	-1514.76	-1514.76	44.81280	45.33085
Pharma & Equity	0	-1533.15	-1533.15	-1528.36	-1528.36	-1527.52	44.67096	44.92999
	1	-1528.09	-1524.02	-1521.34	-1521.16	-1520.39	44.64039	45.02893
	2	-1527.19	-1520.87	-1520.87	-1520.12	-1520.12	44.73018	45.24824
PSU Bank & Equity	0	-1535.23	-1535.23	-1534.42	-1534.42	-1533.7	44.73142	44.99044*
	1	-1531.54	-1527.88	-1527.79	-1526.36	-1526.3	44.74027	45.12881
	2	-1531.29	-1524.71	-1524.71	-1522.55	-1522.55	44.74027	45.36694
Realty & Equity	0	-1396.01	-1396.01	-1395.76	-1395.76	-1394.75	40.69585	40.95488
	1	-1393.6	-1382.78	-1382.64	-1382.23	-1382.16	40.74216	41.13070
	2	-1393.54	-1380.77	-1380.77	-1376.87	-1376.87	40.85608	41.37414

Interpretation

Johnson co integration test has been applied between select sectoral indices with equity market capitalization and the result unveils that log likelihood rank values were observed in decreasing trend in both linear and quadratic model along

with the two alpha levels in all sectoral indices with equity. Both criteria's such as Akaike info and Schwarz are regarded lowest value. Hence, the data is stated to be co integrated in the above analysis for all the sectoral indices to equity capital market.

Granger Test

	Null Hypothesis	Obs	F-Statistics	Prob.	Accept Receipt
Equity & Nifty	NIFTY does not Granger Cause EQUITY	69	2.56534	0.0848	Accept
Equity & Auto	Auto does not Granger Cause EQUITY	70	3.77860	0.028	Accept
Equity & Bank	BANK does not Granger Cause EQUITY	70	3.81682	0.0271	Accept
Equity & Energy	Energy does not Granger Cause EQUITY	70	0.65955	0.5205	Reject
Equity & Finance	Finance does not Granger Cause EQUITY	70	3.65700	0.0313	Accept
Equity & FMCG	FMCG does not Granger Cause EQUITY	70	1.17057	0.3166	Accept
Equity & IT	IT does not Granger Cause EQUITY	70	1.98530	0.1456	Accept
Equity & Media	MEDIA does not Granger Cause EQUITY	70	1.84141	0.1668	Accept
Equity & Metal	METAL does not Granger Cause EQUITY	70	0.31394	0.7317	Accept
Equity & Pharma	PSU Bank does not Granger Cause EQUITY	70	1.13328	0.3283	Accept
Equity & PSU Bank	Pharma does not Granger Cause EQUITY	70	1.47780	1.47780	Accept
Equity & Realty	Realty does not Granger Cause EQUITY	70	1.06594	1.06594	Accept

Interpretation

The granger causality test results depicts that the sectoral indices are influencing the equity market capital except the

energy and metal indices. The H0 null hypothesis has been rejected as the probability value is found to be non-significance and accept the alternative hypothesis H1.

3 Study the impact of sectoral indices on the trend line by analyzing if it is increasing or decreasing trend.

Variable Processing Summary

	Variable										Independent EQUITY CAPITAL
	Dependent										
	AUTO	PSU BANK	FINA NCE	ENER GY	FMCG	IT	MEDIA	METAL	PHARMA	REALIT Y	
Number of Positive Values	72	72	72	72	72	72	72	72	72	72	72
Number of Zeros	0	0	0	0	0	0	0	0	0	0	0
Number of Negative Values	0	0	0	0	0	0	0	0	0	0	0
Number of Missing Values											
User Missing	0	0	0	0	0	0	0	0	0	0	0
System Missing	0	0	0	0	0	0	0	0	0	0	0

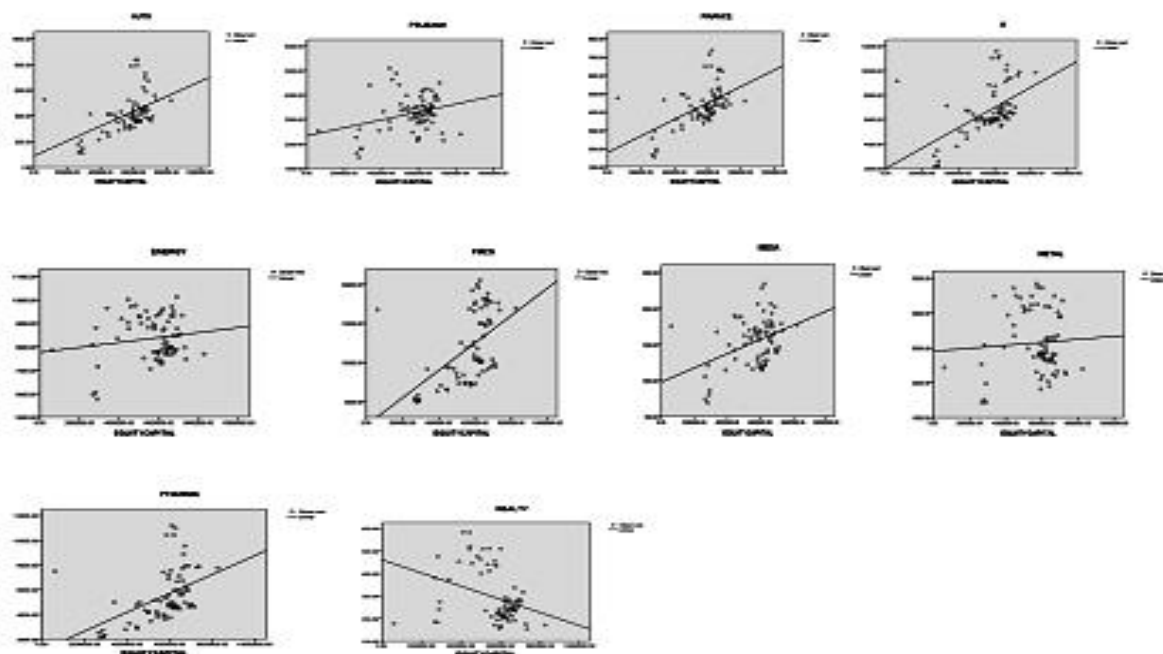
Model Summary and Parameter Estimates

Equation	Model summary		Parameter Estimates				
	R Square	F	df1	df2	Sig.	Constant	B1
Linear	0.26	24.587	1	70	0	872.448	0.001

Interpretation

Regression linear trend model has been applied with all sectoral indices cash market segment with equity market capital. The R² Value 0.26 or 26% which is less than 60% and

the probability value is observed significant with all sectoral indices cash trends to equity market capital, which indicates cash market trends of all sectoral indices were impacting equity market capital.



FINDINGS

- The study observed that all the sectoral indices were positively correlated with the equity market capital except realty index.
- Energy & Metal sectoral indices of cash segment influence the equity market capital during the study period. Rest of the sectoral indices were not causing the equity capital market.
- All the sectoral Indices are found to be significant which indicates that trend line of equity capital is influenced by all the select sectoral indices.

CONCLUSION

I conclude the analysis of benchmark effect on trends of cash segment of equity for the period 2009 to 2014 that sectoral indices were considered from the NSE of the equity cash segment and measured their trends by considering NSE market capital and observed that all the sectors are influencing the equity market capital during the study period.. Energy & Metal indices are causing equity market capital & at the same time rest of the sectors were not causing. Realty sector is the only sector which is moving negatively when it is compared with equity market capital. This analysis has focussed from the perspective of NSE investors. Thence, there is a scope to do further research by considering other factors which influences the sectoral cash trends impact on equity market capital from the perspective of different stock exchanges such as BSE & MCX-SX.

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ABBREVIATIONS

HNI: High net worth individual

QIB: Qualified Institutional Buyer.

FII: foreign institutional investments

NSE: National Stock Exchange of India Limited

CNX: CRISIL NSE Index