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IMPACT OF ECONOMIC INDICATORS TOWARDS PEFORMANCE OF INDIAN CAPITAL MARKET

DR.V.R.Nedunchezhian, Professor, KCT business school, Kumaragurucollege of technology, Coimbatore
Dr. A. Amirtha, Assistant Professor,RathnavelSubramaniam College of Arts & Science, Trichy Road, Sulur,Coimbatore

ABSTRACT- The study is about determinants on the performance of stock market indices using monthly data over the period 2009 to 2019 for three macroeconomic variables, namely, Inflation, Exchange Rate, Crude oil Price, GDP and index included in NSE and BSE. By applying the tools Anova, Descriptive statistics and Regression model and the conclusion is that there is an impact on the market based on economic indicators and when analyzing about the market these factors can be taken in to consideration for the decision making process of the study.

Keywords: Inflation, Exchange Rate, Crude oil Price and GDP.

I. INTRODUCTION

The stock market is a generic word for an organised exchange where stock securities are exchanged. The movement of the stock exchange relies on the investor's logical and unreasonable behaviour.

Because of microeconomic factors such as benefit, market development (new orders), P/E, declared dividend and the like of a specific firm, stock returns may be probable. Macroeconomic conditions such as inflation will also impact GDP's total stock price returns.

Therefore an analysis will be performed to determine the effect on stock returns of inflation, GDP and interest rates and to discover the existence and intensity of the relation between the studied component.

The National Stock Exchange of India Ltd. (NSE) is the nation's leading stock exchange headquartered in Mumbai, India's financial hub. The NSE was founded as a demutualized electronic exchange in the mid-1990s. NSE provides a new, fully automated screen-based trading system with more than two lakh trading terminals that enable investors to trade in all corners of India. In restructuring the Indian stock sector and introducing unmatched accountability, productivity and market fairness, NSE has played a key role.

NSE Market Capitalisation as of July 2013 is over US$989 billion and 1,635 firms have been listed. While there are a variety of other markets, NSE and Bombay Stock Exchange are the two largest stock exchanges and the overwhelming majority of stock trades between them. Investors in India and across the world are widely utilising the NSE flagship index, the S&P CNX Nifty, as an exposure to the Indian equity sector.

NSE began with a clutch of India's leading financial institutions. It includes equity, debt and equity dealing, clearance and settlement facilities. It is India's biggest currency trading, in cash trading and index options worldwide. NSE's shareholding has diversified. There are various domestic and foreign trade organisations and businesses. The LIC, GIC, State Bank of India, and IDFC Ltd. are several domestic investors. International players include MS Strategic (Mauritius) limited, Citigroup Strategic Holdings Mauritius Limited, Tiger Global Five and FII-Mauritius, Norwest Investment Partners. As of June 2013, NSE has 1673 VSAT terminals and 2720 leaselines, distributed over more than 2000 Indian towns.

Origin was founded by a clutch of leading Indian financial institutions to introduce clarity to the Indian economy, on the request of the Government of India, and has diversified shareholdings of domestic and global investors.

ECONOMY

India is the seventh and second largest nation in the world and has long been known as a country of unrealized potential. There is already a fresh spirit of economic independence in the world that has brought about dramatic reforms. The country's deregulation and foreign investment encouraging aggressive economic reforms have brought India to the front lines of the fast-growing Asia-Pacific area and unleashed the latent capabilities of a diverse and rapidly developing economy.

India's economic reform mechanism is deeply embedded in a national coalition involving the numerous political parties. India's democracy is a proven and secure force that has been firmly ingrained for almost half a century. Most notably, India does not have a profound disagreement between its economic and political structures. Its democratic structures have fostered an accessible democracy with clear collective and individual freedom and a free market climate.

India's time-tested institutions provide an open climate for international investors to guarantee long-term investment stability. This involve a free and lively newspaper, a government-focused judiciary, a complex legal and accounting scheme, and user-friendly intellectual infrastructure. India has long been the cornerstone of India's diverse and highly efficient private sector. It accounts for more than 75% of its Gross Domestic Product and provides a large amount of space for joint projects and cooperation.

GDP GROWTH

Countries are trying to boost their GDP to improve their living standards. Notice that GDP development would not raise spending power whether growth is triggered by inflation or population growth. It is the actual, per capita GDP that is essential for purchasing power. Although expenditure is an essential factor for a nation's GDP growth, greater compliance with laws and contracts is perhaps more important.

INFLATION

The annualised Indian inflation rate by the Indian Ministry of Statistics and Policy Execution is 8.9% as of June 2012. This represents a modest reduction in June 2011 from the previous annual figure of 9.6%. Inflation rates for all goods in India are typically quoted as adjustments to the Wholesale Price Index.

Most developed countries use adjustments to their main indicator of inflation in the Consumer Price Index (CPI). However, for socioeconomic and demographic purposes, this approach is not ideal for usage in India. Usually, CPI numbers are calculated monthly with a considerable delay and are thus inadequate for policy use. Instead, India applies adjustments to the WPI to calculate the inflation rate.

In point-to-point (November 2013 over November 2012), the tentative yearly inflation rate dependent on the general Indean CPI (Combined) was 11.24% compared to 10.17% (final) for the previous month of October 2013. For November 2013, the respective temporary inflation figures for rural and urban areas are 11.74% and 10.53%. Rural and urban inflation rates (final) for October 2013 are respectively 10.19 percent and 10.20 percent.

The WPI calculates the price of a broad wholesale basket. This basket is comprised of three categories in India: main articles (20.1% of overall weight), fuel and electricity (14.9%) and produced products (65 percent). The Primary Articles Group food products represent 14.3% of the total weight. Chemicals and petroleum goods (12 percent); essential metals, alloys and metal (10.8 percent); machines and machinery equipment (8.9 percent); textiles (7.3 percent) and shipping, machinery and parts are the most significant components of the manufacturing products category (5.2 percent).

WPI numbers are normally calculated by the Ministry of Trade and Industry on a weekly basis. This is timer than the delayed and rare CPI numbers.

OBJECTIVE OF THE STUDY

The thesis aims to achieve the following objectives.

1. To study the relationship between economic indicators and stock market indices.
2. To analyse about the strength of relationship between economic indicators and stock market indices.
3. To analyse about the dependent and independent factors based on statistical tools.

SCOPE OF THE STUDY

The scope of the project is restricted to find nature and strength of relation between economic indicators and stock market indices.

NEED OF THE STUDY

The study is about comparing the macroeconomic indicators with broad band indices. The need is to analyse about the markets with macroeconomic indicators which will be helpful for decision making process in buying and selling of indices.

II. RESEARCH METHODOLOGY

The titled thesis project shall follow the methodology mentioned below.

Nature of the Study:

a. The study done would be detailed of nature to help explain the research review performed.

b. Regression, Anova, can also be used to detect the existence and intensity of the interaction between the variables under analysis.
c. Data on stock market returns, growth, GDP and interest rates was taken for the report over the past five to ten years.

TOOLS USED FOR THE STUDY

- Descriptive statistics
- Regression
- Anova

LIMITATIONS

- The project is restricted to "inflationary, crude, and GDP impacts on broad India indices"
- Details on capital market returns, inflation and GDP can only be taken for the analysis in the last 10 to 15 years.
- Another drawback is the scheduling of the analysis.

III. ANALYSIS AND INTERPRETATION

Table 1: Descriptive statistics

	N	Mean	Std. Deviation
Inflation	121	8.2484	2.84
Nifty 50	121	5.445	1519.08172
BSE midcap	121	6.849	1980.79510
Nifty midcap 50	122	2.710	773.59950
Nifty 500	122	4.214	1265.36164
Nifty midcap 100	122	7.287	2605.62896
Nifty small cap	122	3.44	952.12784
Nifty100	98	5.67	1509.62010
SENSEX 30	122	1.636	5190.33767
Sensex 200	122	1.0864	3779.91135
S&P bank nifty	122	1.0076	4332.95057
S&P BSE MIDCAP	122	1.6338	391.34322
Crude oil	122	74.4792	21.17041
Valid N (listwise)	98		

The above table shows about the descriptive statistics of the economic indicators and broad based index with NSE and BSE. Based on the descriptive statistics it shows that the mean value was high with crude oil at 74.47 and was low with Nifty Midcap 50 at 2.71. It shows that all those index and economic indicators can reach the mean value in future period of time.

Linear Regression

Table 2: Comparison between GDP and nifty 50

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	252.064	355.942		.708	.480
	GDP	.448	.030	.809	14.990	.000
a. Dependent Variable: Nifty 50						

Nifty 50 (Dependent variable) (Constant) 252.06 = (0.448) Inflation. Here Nifty 50 is directly proportional to GDP.

Table 3: Comparison between GDP and BSE midcap

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1819.046	630.650		2.884	.005
	GDP	.434	.053	.601	8.194	.000
a. Dependent Variable: BSE midcap						

BSE midcap (Dependent variable) (Constant) 1819.04 = (0.434) Inflation. Here BSE midcap is directly proportional to GDP .

Table 4: Comparison between GDP and Nifty midcap 50

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	3345.850	303.383		11.028	.000
	GDP	-.055	.025	-.194	-2.156	.033
a. Dependent Variable: Nifty midacp 50						

Nifty midcap 50 (Dependent variable) (Constant) 3345.85 = (-.055) Inflation. Here Nifty midcap 50 is inversely proportional to GDP.

Table 5: Comparison between GDP and Nifty 500

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-88.454	298.639		-.296	.768
	GDP	.370	.025	.804	14.755	.000
a. Dependent Variable: Nifty 500						

Model fit

Nifty 500 (Dependent variable) (Constant) -88.454 = (0.370) Inflation. Here Nifty 500 is inversely proportional to GDP .

Table 6:Comparison between GDP and Nifty midcap 100

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-1421.339	627.167		-2.266	.025
	GDP	.748	.053	.793	14.208	.000
a. Dependent Variable: Nifty midcap 100						

Nifty midcap 100 (Dependent variable) (Constant) 1421.33 = (0.748) Inflation. Here Nifty midcap 100 is directly proportional to GDP .

Table 7:Comparison between GDP and nifty 100

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	51.203	397.253		.129	.898
	GDP	.521	.036	.829	14.497	.000
a. Dependent Variable: Nifty100						

Nifty 100 (Dependent variable) (Constant) 0.521 = (0.036) Inflation. Here Nifty 100 is directly proportional to GDP .

Table 8:Comparison between GDP and SENSEX 30

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	34279.585	1165.092		29.422	.000
	GDP	-1.537	.098	-.822	-15.728	.000
a. Dependent Variable: SENSEX 30						

Nifty 50 (Dependent variable) (Constant) -1.537= (0.098) Inflation. Here SENSEX 30 is inversely proportional to GDP .

Table 9:Comparison between GDP and S&P bank nifty

Model Summary[b]									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.862[a]	.743	.741	2194.30479	.743	344.209	1	119	.000
a. Predictors: (Constant), GDP									
b. Dependent Variable: S&P bank nifty									

The "R Square" column represents the R2 value, from our value of 0.743 that our independent variables explain 74.3% of the variability of our dependent variable Nifty 50

Table 10:Comparison between GDP and S&P BSE MIDCAP

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5717.249	425.772		13.428	.000
	Inflation	-32.961	48.815	-.062	-.675	.501
a. Dependent Variable: Nifty 50						

Nifty 50 (Dependent variable) (Constant) 5717.249 = (-32.961) Inflation. Here Nifty 50 is inversely proportional to CPI inflation.

Table 11:Comparison between CPI inflation and Nifty midcap 50

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	4032.320	176.392		22.860	.000
	Inflation	-160.399	20.223	-.588	-7.931	.000
a. Dependent Variable: Nifty midacp 50						

Model fit

Nifty 50 (Dependent variable) (Constant) 4032.32 = (-160.39) Inflation. Here Nifty midcap 50 is inversely proportional to CPI inflation.

Table 12:Comparison between CPI inflation and nifty 50

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	7892.000	723.610		10.906	.000
	Inflation	-77.573	82.962	-.085	-.935	.352
a. Dependent Variable: Nifty midcap 100						

Nifty 50 (Dependent variable) (Constant) 5717.249 = (-32.961) Inflation. Here Nifty 50 is inversely proportional to CPI inflation.

ANOVA

Table 13:Comparision between cpi inflation and broad based index with BSE and NSE

H0: There is no significant relationship between CPI inflation and Broad based index with BSE and NSE

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Nifty 50	Between Groups	2.674E8	106	2522472.65	3.705	.004
	Within Groups	9531009.956	14	680786.42		
	Total	2.769E8	120			
BSE midcap	Between Groups	4.271E8	106	4029297.99	1.290	.306
	Within Groups	4.372E7	14	3122880.01		
	Total	4.708E8	120			
Nifty midacp 50	Between Groups	6.963E7	106	656913.37	3.354	.007
	Within Groups	2742037.292	14	195859.80		
	Total	7.237E7	120			
Nifty 500	Between Groups	1.735E8	106	1636755.45	1.311	.294
	Within Groups	1.748E7	14	1248771.58		
	Total	1.910E8	120			
Nifty midcap 100	Between Groups	7.264E8	106	6852911.45	1.259	.327
	Within Groups	7.622E7	14	5444519.24		
	Total	8.026E8	120			
Nifty small cap	Between Groups	9.892E7	106	933171.88	1.322	.287

	Within Groups	9879072.917	14	705648.06		
	Total	1.088E8	120			
Nifty100	Between Groups	2.199E8	87	2527201.69		
	Within Groups	1191878.936	10	119187.89	21.204	.000
	Total	2.211E8	97			
SENSEX 30	Between Groups	3.048E9	106	2.87		
	Within Groups	1.147E8	14	8190433.65	3.511	.005
	Total	3.163E9	120			
Sensex 200	Between Groups	1.616E9	106	1.52		
	Within Groups	4.987E7	14	3562336.29	4.281	.002
	Total	1.666E9	120			
S&P bank nifty	Between Groups	2.184E9	106	2.06		
	Within Groups	4.662E7	14	3329717.02	6.187	.000
	Total	2.230E9	120			
S&P BSE MIDCAP	Between Groups	1.711E7	106	161381.15		
	Within Groups	992317.858	14	70879.84	2.277	.042
	Total	1.810E7	120			

The above table shows about the relationship of in-between variables of inflation and other factors related with Broad based index with BSE and NSE were there is a relationship between inflation and Nifty midacp 50 (0.007), Nifty100 (0.000), SENSEX 30 (0.05), Sensex 200 (0.02), S&P bank nifty (0.000) and S&P BSE MIDCAP (0.042) as the level of significance is less than 0.05 and these factors can be taken for decision making process of the study.

Table 14:Comparision between crude oil and broad based index with BSE and NSE

H0: There is no significant relationship between Crude and Broad based index with BSE and NSE

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Nifty 50	Between Groups	2.769E8	118	2346647.98	542.607	.002
	Within Groups	8649.531	2	4324.766		
	Total	2.769E8	120			
BSE midcap	Between Groups	4.697E8	118	3980258.16	6.890	.135
	Within Groups	1155443.850	2	577721.925		
	Total	4.708E8	120			
Nifty midacp 50	Between Groups	7.241E7	119	608484.70	345.835	.003
	Within Groups	3518.931	2	1759.466		
	Total	7.241E7	121			
Nifty 500	Between Groups	1.937E8	119	1627650.37	68.453	.015
	Within Groups	47555.300	2	23777.650		
	Total	1.937E8	121			
Nifty midcap 100	Between Groups	8.207E8	119	6896939.406	17.919	.054
	Within Groups	769789.220	2	384894.610		
	Total	8.215E8	121			
Nifty small cap	Between Groups	1.097E8	119	921588.754	79.528	.012
	Within Groups	23176.479	2	11588.239		

	Total	1.097E8	121			
Nifty100	Between Groups	2.211E8	96	2302672.341	1.224E3	.023
	Within Groups	1881.917	1	1881.917		
	Total	2.211E8	97			
SENSEX 30	Between Groups	3.254E9	119	2.735E7	10.047	.095
	Within Groups	5443820.247	2	2721910.124		
	Total	3.260E9	121			
Sensex 200	Between Groups	1.724E9	119	1.449E7	5.983	.154
	Within Groups	4842797.029	2	2421398.515		
	Total	1.729E9	121			
S&P bank nifty	Between Groups	2.272E9	119	1.909E7	537.072	.002
	Within Groups	71086.918	2	35543.459		
	Total	2.272E9	121			
S&P BSE MIDCAP	Between Groups	1.851E7	119	155527.396	13.332	.072
	Within Groups	23331.099	2	11665.549		
	Total	1.853E7	121			

The above table shows about the relationship of in-between variables of crude oil and other factors related with Broad based index with BSE and NSE were there is a relationship between Crude oil and Nifty 50 (0.002), Nifty midacp 50 (0.003), Nifty 500 (0.015), Nifty small cap (0.012), Nifty100 (0.023), S&P bank nifty (0.002) as the level of significance is less than 0.05 and these factors can be taken for decision making process of the study.

IV. FINDINGS

Linear regression

- The variables Nifty 50, BSE Midcap, Nifty 500, Nifty midcap 100, SENSEX 30, SENSEX 200 are directly proportional to inflation. And the factors Nifty midcap 50, Nifty small cap, Nifty 100, S&P BSE Midcap are inversely proportional to inflation.
- The variables Nifty 50, Nifty 500, Nifty midcap 100, Nifty small cap, SENSEX 30, are directly proportional to inflation. And the factors BSE midcap Nifty midcap 50, Nifty 100, and SENSEX 200are inversely proportional to crude oil.
- The variables Nifty 50, BSE midcap, Nifty 500, Nifty midcap 100, Nifty midcap 100, SENSEX 30, Sensex 200, and S&P BSE MIDCAP are directly proportional to GDP and
- Nifty midcap 50, Nifty small cap and S&P bank nifty are inversely proportional to GDP.

Anova

- In analyzing the relation between CPI inflation and Broad based index with BSE and NSE
- There is a relationship between inflation and Nifty midcap 50, Nifty100, SENSEX 30, Sensex 200, S&P bank nifty and S&P BSE MIDCAP.
- In analyzing the relationship of in-between variables of crude oil and other factors related with Broad based index with BSE and NSE were there is a relationship between Crude oil and Nifty 50, Nifty midcap 50, Nifty 500, Nifty small cap, Nifty100, S&P bank nifty.

V. SUGGESTIONS

- Its suggested that Nifty 50, BSE Midcap, Nifty 500, Nifty midcap 100, SENSEX 30, SENSEX 200 are directly proportional to inflation and based on the inflation the said index moves accordingly.
- Based on crude oil rate the variables Nifty 50, Nifty 500, Nifty midcap 100, Nifty small cap, SENSEX

30 move directly and based on the crude oil news it can traded in the market.

- Based on GDP growth rate Nifty 50, BSE midcap, Nifty 500, Nifty midcap 100, Nifty midcap 100, SENSEX 30, Sensex 200, and S&P BSE MIDCAP and these index can be traded according to the news release for GDP.

VI. CONLUSION

The study is about comparing the economic indicators with market indices based on broad band index. For this purpose a sample of 10 years data was taken for analysis and compared and the conclusion is that there is an impact on the market based on economic indicators and when analyzing about the market these factors can be taken in to consideration for the decision making process of the study.

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