GDP IMPACT ON MARKET CAPITALIZATION - AN ANALYSIS OF BSE

Abstract

The economic growth of any country depends upon its capacity of producing goods and services. The aggregate economic growth of the country is measured by Gross National Product (GNP) or Gross Domestic Product (GDP). The Indian capital market has been attracting considerable attention in recent years especially after the opening up of the economy. As a result, several researchers have addressed various issues pertaining to the capital market in India. The present study examines the impact of GDP on Indian capital market. It tries to find out the homogeneity between GDP on market capitalization growth rates. For this study, information has been gathered from sources other than the ones being studied and a time span of 20 years from 2001 to 2020 has been taken into account. Statistical tools like descriptive statistics, correlation, one-way ANOVA, and the regression model were used.

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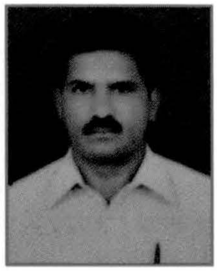

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INTRODUCTION

The capital market is the backbone of every country because it can change the country's finances and keep the economy in check. The capital market is at the centre of economic growth because it helps move money around and bring in new resources. A significant part of the country's industrial and commercial growth has depended on how well the capital market is understood and regulated. The industrial and commercial sectors need long-term funds to grow and the capital markets provide those funds.

GDP per capita is the total market value of the final goods and services made in a country divided by its total population. Gross domestic product is a way to measure the size of an economy. Now-a-days, by nominal GDP, the Indian economy is the sixth largest in the world. By PPP (purchasing power parity), it is the third largest GDP and GDP per capita are two of the best ways to track changes in outputs and people's standard of living. Gross domestic product (GDP) is one of the most important aspect for planning and making policy that the Government and decision makers need to know. With GDP, we can tell if the economy is in a recession, or depression, or boom. GDP is an all-around measure of a country's national income and economic health. The formula for calculating GDP is as follows:

$$GDP = C + I + G + (X - M)$$

Where, C = Consumption per year (Personal Consumer Expenditure)

I = Total private investment in the country

G = Government spending

X = Total export amount

M = Total amount of imports

(X-M) = Total amount of net exports (Total net exports also may be negative)

THE INDIAN STOCK EXCHANGE

Among India's stock exchanges, the Bombay Stock Exchange (BSE) and the National Stock Exchange are the leading security exchanges. Since 1875, the BSE has been around. On the other hand, the NSE was set up in 1992 and began trading in 1994. But both exchanges use the same way to trade, trade at the same times and settle trades in the same way.

Nearly all big companies of India are listed on both Exchanges. The BSE is the older stock market, but in terms of volume, the NSE is bigger. Both exchanges compete for order flow, which lowers costs, makes the market work better, and encourages new ideas. Because there are arbitrageurs, the prices on the two Stock Exchanges stay very close to each other.

THE BOMBAY STOCK EXCHANGE

Bombay Stock Exchange (BSE) was founded in 1875. It is the Asia's first and fastest Stock Exchange with a speed of 6 microseconds and one of the most important Exchange groups in India. Over the past 146 years, BSE has helped the Indian corporate sector grow by giving it a good place to raise money. In 1875, "The Native Share & Stock Brokers' Association," which most people just call "BSE" was set up as the Bombay Stock Exchange. In 2017, BSE was the first Stock Exchange whose shares are being listed in India.

Today, BSE offers a market for trading stocks, currencies, debt instruments, derivatives, and mutual funds that is efficient and clear. BSE SME is India's biggest platform for small and medium enterprises. It has listed more than 250 companies under SME segment and is still growing steadily. The S&P BSE SENSEX, which is BSE's well-known equity index, is India's most watched stock market benchmark index. It is traded around the world on the EUREX and the major exchanges of the BRCS countries (Brazil, Russia, China and South Africa)

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GDP AND CAPITAL MARKET

A positive change in the GDP (a higher GDP growth number) will revitalize the capital market, and as a result the market will go up. GDP is a way to measure how much all of an economy's goods and services are worth. As the stock market goes up and down, so does the economy's mood. People's spending changes with how they feel, which is what drives GDP growth in the end. The change in the GDP can have either positive or negative effects on stock market.

OBJECTIVES OF THE STUDY

a. To highlight the role of GDP in the growth of Indian capital market.

b. To analyze the growth rates of GDP with growth rates of market capitalization.

c. To forecast the market capitalization growth based on GDP.

METHODOLOGY OF THE STUDY

The research is based on information from the official BSE website that was already available. The information was gathered over a 20-year period, from 2001 to 2020.

Analysis tools based on statistics

In the research, tools like Correlation, Regression and One-way ANOVA were used to look at the data.

DATA ANALYSIS

TABLE - 1

ANNUAL GROWTH RATES OF GDP AND INDIAN CAPITAL MARKET CAPITALIZATION

(Figures in %)

Year	GDP	Market Capitalization
2001	4.82	7.12
2002	3.80	18.01
2003	7.86	99.13
2004	7.92	34.78
2005	7.92	47.65

2006	8.06	45.59
2007	7.66	97.83
2008	3.09	-56.14
2009	7.86	93.38
2010	8.50	19.99
2011	5.24	-26.7
2012	5.46	29.41
2013	6.39	1.77
2014	7.41	39.64
2015	8.00	2.05
2016	8.26	5.83
2017	6.80	42.84
2018	6.53	-4.78
2019	4.04	7.65
2020	-7.96	20.89
Average	**5.883**	**26.297**
Standard Deviation	**3.654**	**39.279**
Co-efficient of Variance	**0.621**	**1.493**

(Source: Calculation based on information from web)

From Table 1 we can observe that, the annual growth rates of GDP and market capitalization for a period of 20 years were compared. For GDP growth rates, there was a fluctuation for all years. The growth was high in 2010 at 8.50 and lowest at -7.96 in 2020. In first two years the growth rate is below 5 per cent. From 2003 to 2007 the growth of GDP has been above 7 per cent. In 2008, it decreased to 3.09 per cent due to crisis and thereafter the growth rates increased in some years and decreased in some other years. From 2016 it decreased continuously from 8.26 to -7.96 per cent in 2020. There was about 12 per cent decrease in GDP growth in 2020 due COVID-19. For capital market the growth was high in 2003 at 99.13 per cent and lowest at -56.14 per cent in 2008. There was a continuous fluctuation in growth returns for all years except some years. In 2008, 2011 and 2018 the growth registered negatively due to crisis.

TABLE - 2

DESCRIPTIVE STATISTICS OF GDP AND CAPITAL MARKET CAPITALIZATION

	GDP	Indian Capital Market Capitalization
Mean	5.883	26.297
Standard Error	0.817	8.783
Median	7.105	20.44
Standard Deviation	3.654	39.279
Sample Variance	13.354	1542.902
Range	16.46	155.27
Minimum	-7.96	-56.14
Maximum	8.5	99.13
Sum	117.66	525.94
Count	20	20

Table 2 indicates the statistical central tendency of the growth rates of GDP and market capitalization. The GDP growth rate can go as high as 8.5 and as low as -7.96, giving a standard deviation of 3.654. The average growth rate of GDP is 5.883, the middle growth rate is 7.105, and the range is 16.46. The GDP growth rates variance is 13.354. Market capitalization has a maximum growth rate of 99.13 and a minimum growth rate of -56.14. This gives a standard deviation of 39.279. The average growth rate for the market capitalization is 26.297, the middle rate is 20.44, and the range is 155.27. The market capitalization growth rates variance is 1542.902.

TABLE 3

CORRELATION MATRIX

	GDP	Market Capitalization
GDP	1	
Market Capitalization	0.294	1

There is a positive correlation between GDP and market capitalization which shows both growth returns moving in the same direction.

ONE WAY ANOVA – TEST

H_0: There is homogeneity in the growth rates of GDP and market capitalization during the study period.

H_1: There is no homogeneity in the growth rates of GDP and market capitalization during the study period.

Level of Significance: Appropriate level of significance is 1 per cent.

TABLE 4

ONE WAY ANOVA TEST

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (Df)	Mean Square (MS)	F Calculated Value	F Table Value
Between Groups	4167.314	1	4167.314	5.355563	7.352545
Within Groups	29568.87	38	778.1281		
Total	33736.18	39			

Table 4 reflects one-way analysis of variance of growth rates of GDP and market capitalization. Here, the hypothesis is tested at 1 per cent level of significance. As tabulated value is more than calculated value H_0 is accepted. It can be concluded that there is homogeneity in the growth rates of GDP and market capitalization during the study period.

REGRESSION ANALYSIS

Using the following hypothesis, a regression model was made with the Indian capital market as the dependent variable and GDP as the independent variable.

Hypothesis

H_0: Market capitalization is not significantly influenced by the India's GDP.

H_1: Market capitalization is significantly influenced by the India's GDP.

The regression model is as follows:

$Y = \alpha + \beta X + \varepsilon$

Where, α = Intercept, β = Slope of GDP Growth rates

Y = Market Capitalization Growth rates

X = GDP Growth rates

'R'	'R' Square	Adjusted 'R' Square
0.294	0.0866	0.0359

Based on the regression, R square is 0.0866 and adjusted R square is 0.0359. This means that the independent variable, which is GDP growth, explains 3.59 per cent of market capitalization growth. Based on the adjusted R square, which is 0.0359, this regression model is thought to be good.

	Coefficients
Intercept	7.68105
X Variable (GDP)	3.16436

ANOVA					
	df	**SS**	**MS**	**F**	**Significance F**
Regression	1	2540.636	2540.636	1.708022	0.207693
Residual	18	26774.5	1487.472		
Total	19	29315.14			

Taking into account the F-test, the critical value and the table of F values, we can say that the Null hypothesis is not accepted. Market capitalization is significantly influenced by the India's GDP. Here is the regression equation based on the intercepts of the regression output i.e Indian capital market growth rate = 7.68105+ 3.16436 (GDP Growth Rate).

CONCLUSION

From this study we can find that the two parameters, GDP and market capitalization move in the same direction. This shows that there has been an effect of GDP on the Indian capital market and growth rates of both the parameters are moving in the same direction. It can also be observed that GDP growth rate is positive in all years except in the year 2020 due to impact of COVID-19 and market capitalization growth also was positive in most of the years except for three years due to fluctuations in capital market during the study period. It is clear that there has been homogeneity in the growth rates of GDP and market capitalization which indicates that these two parameters growth rates have same frequency. Finally, we can understand that market capitalization is significantly influenced by India's GDP which shows that as GDP growth rate increases market capitalization also increases and vice versa. MA

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FOR ATTENTION OF MEMBERS

"Members are requested to clear their membership dues immediately and not later than 30th September, 2022. Unless the membership dues are cleared on or before 30th September, 2022, they will not be eligible to cast their vote in the forthcoming Elections to the Council and Regional Councils scheduled to be held in 2023 in terms of Rule 5 of the Elections to the Council Rules, 2006, as amended."