

## STOCK MARKET PERFORMANCE AND THE ECONOMIC GROWTH OF THE PHILIPPINES (1990-2011)

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### Abstract

The stock market is seen as the most exciting and promising indicator of the economic growth of a country. However, there have been the growing concerns and controversies about the role of the stock markets on economic growth and development. Also, studies on this topic show that there are many potential effects of the stock market on economic growth. This study specifically examines the relationship between the stock market performance and the economic growth of the Philippines. The study used secondary data which will be collected from the Annual Report of the Philippines Stock Exchange Index (PSEi); Security and Exchange Commission (SEC). The Granger Causality has been carried out following the Augmented Dickey-Fuller test for it is relevant to time series variables and in order to assess whether there is any potential predictability power of one indicator for the other. This study employed gross domestic (GDP) as the dependent variable; the independent variables include Market Capitalization (MC) and total Value of Shares traded (VST). The study shows that the Market Capitalization has no relationship with GDP and likewise, it also revealed that the Value of Shares traded has no relationship with GDP.

### INTRODUCTION

The capital market was recognized as an institution that contributes to the socioeconomic growth and development of emerging and developed economies. The existing stock market was seen as the most exciting and promising indicator of the economic growth of a country. According to Ogboi and Oladipo (2012), studies on this topic show that there are many potential effects of the stock market on economic growth, but the effects have no clear direction. It was found that a fast growing concerns and controversies about the role of the stock markets on economic growth and development (Sule, Momoh, Ewah, Esang & Bassey, 2009). That is why research on this topic is found to be an area of continuing interest.

There are different empirical studies that show that the stock market development is strongly correlated with growth rates of real per capita (Rousseau & Wachtel, 2000; Beck & Levine, 2003). Ekundayo (2002) and Osaze (2000) also examined the effect of the stock market on economic growth

and produced with mixed result. For example, Donwa and Odia (2010) found out that the capital market indices have no impact on the Gross Domestic Product.

In the Philippines, the capital market provides the necessary lubricant that keeps turning the wheel of the economy. Its capital market comprises both bond market and stock market, which indicate its overall performance. Also, the stock market gives a signal to investors about their future moves. Bernardo (2005) claimed that the Philippine stock market remains low and not liquid. Actions to improve stock market liquidity yielded only mixed results, one concern is the lack of depth in the Philippine stock market.

On the other hand, there is no larger extent of practical studies that investigate the underlying relationship between the stock market performance and economic growth in the Philippines. Most of the studies mentioned above are performed outside the Philippines. Besides, related studies in the Philippines focus only on the efficiency of the stock market and do not consider its direct relationship to Philippine economic growth within a given period. Consequently, this encouraged the researcher to study the relationship of the stock market performance to the economic growth of the Philippines.

## **FRAMEWORK**

There were increasing concerns and issues on the responsibility of the stock market on the economic growth and development of the country. In fact, various studies were conducted on the effect stock market performance on the economic growth of a country (Kolapo & Adaramola, 2012; Adenuga, 2010; Ogboi & Oladipo, 2012; Beck & Levine, 2003; and Sule & Momo, 2009). However, the results vary from one study to another.

The stock market provides the turning point for capital market activities and as often cited as a barometer of business direction. There were numerous existing studies that established a positive relationship between the stock market performance and economic growth. Such study includes Ogboi et al. (2012), Beck et al. (2003), and Sule et.al (2009). Furthermore, stock market contributes to economic growth through the specific services it performs either directly or indirectly. Improving the efficiency and effectiveness of the functions of the stock market through prompt delivery of their services can supplement the rate of economic growth (Abayomi, 2011).

Kolapo et al. (2012) used Gross Domestic Product (GDP) as proxy of economic growth while Abayomi (2011) included market capitalization ratio (MCR), total value of transaction traded ratio (VTR), and turnover ratio (TR) as indicators of stock market performance. He said that the market capitalization and turnover ratios are positive and statistically significant in explaining economic growth while value of transaction traded exerted positive but statistically insignificant impact on economic growth in Nigeria. This result suggests further extensive studies in other countries, including the Philippines if it gives consistent results as in the case of Nigeria.

Adenuga (2010) argued that Stock market is reputed to perform critical functions, which promote economic growth and prospects of the economy. Moreover, Capasso (2008) indicated that those firms with lower debt to equity ratio has a strong relationship between the stock market and economic growth. In, addition, a well-functioning stock market can be a strong factor of economic growth (Alghamedi, 2012). Furthermore, the stock market development can also predict the future rates of growth in capital, productivity and per capita GDP (Poopola, 2014) but it has little relevance to real economic activity or event that may be harmful to the economy Alghamedi (2012).

## **OBJECTIVE OF THE STUDY**

This study determines the relationship between the stock market performance and the economic growth of the Philippines (1990-2011).

## RESEARCH METHOD

### Subject

The research subject of these proposed study is the published stock market performance indicators in the Philippines from 1990 to 2011.

### Research Design

This research work will pertain to time series analysis using the Granger causality test. The Granger causality test is performed using the level values of two or more variables. In regression, one variable is labelled as the dependent variable and the others are explanatory variables. However, in many cases, because the latter explained the former it is reasonable to talk about X “causing” Y. Work with Granger causality between two variables (X and Y) which are both stationary can be extended into many variables.

### Data Collection

The primary objective of this study is to assess the relationship of stock market performance on the economic growth of the Philippines. The period of study of the Philippine Stock Market is from 1990 to 2011. The data used will be strictly secondary data that was collected from the Annual Report of the Philippines Stock Exchange Index (PSEi), Security and Exchange Commission (SEC).

### Statistical Tool

This study will employ time series analysis using the Granger Test of Causality was used to test the predictability of stock market performance to the economic growth. While the Augmented Dickey-Fuller test will be used to see if the variables are stationary or not. Accordingly, let  $y$  and  $x$  be stationary time series. To test the null hypothesis that  $x$  does not First, this study test the univariate autoregression of  $y$ :

$$y_t = a_0 + a_1 y_{t-1} + a_2 y_{t-2} + \dots + a_m y_{t-m} + \text{residual}$$

Next, the autoregression is augmented by including lagged values of  $x$ :

$$y_t = a_0 + a_1 y_{t-1} + a_2 y_{t-2} + \dots + a_m y_{t-m} + b_1 x_{t-1} + \dots + b_q x_{t-q} + \text{residual}.$$

One retains in this regression all lagged values of  $x$  that are individually significant, according to their  $t$ -statistics, provided that collectively they add explanatory power to the regression according to an  $F$ -test (whose null hypothesis is no explanatory power jointly added by the  $x$ 's). In the notation of the above augmented regression,  $p$  is the shortest, and  $q$  is the longest, lag length for which the lagged value of  $x$  is significant.

## RESULTS AND DISCUSSION

Table 1 shows the Philippine stock market performance from 1990-2011. These data were expressed in billions of dollars.

Table 1. Real GDP, Market Capitalization and Value of Shares Traded (1990-2011)

Year	GDP (in Billion US\$)	Market Capitalization (in Billion US\$)	Value of Shares Traded
1990	42.6	13.38	2.74
1991	44.3	25.1	3.27
1992	45.4	28.88	5.68
1993	53	74.12	12.41
1994	54.4	88.63	23.3
1995	64.1	79.51	19.87
1996	74.1	97.38	30.8
1997	82.8	38.08	24.76
1998	82.3	54.19	15.53
1999	65.2	55.34	26.05
2000	76.2	32.04	10.11
2001	75.9	54.45	4.13
2002	71.2	47.96	3.81
2003	76.8	28.08	3.14
2004	79.6	31.68	4.01
2005	86.9	38.96	6.74
2006	98.8	55.95	9.2
2007	122.21	69.11	19.58
2008	149.4	30.01	9.91
2009	173.6	47.6	10.22
2010	168.3	78.82	13.42
2011	199.6	73.58	14.62

Table 1 shows that the total market capitalization of all publicly traded companies in the Philippines was 28.88 billion dollars in January 1992 and rose as high as 69.11 billion dollar in the year 2007. However in the market was dropped at 30.01 in year 2008 and rose again in the year 2011 at 73.58 billion dollar. Moreover, the market capitalization marks an overall mean of 51.95 billion dollar which means that the performance of Philippine stock market is moderately good.

The value of shares traded in Philippines was 5.68 billion dollar in year 1992 and rose as high as 19.58 billion dollar in year 2007. It goes down to 9.91 billion dollar in 2008 and rose fairly at 14.62 billion dollar in the year 2011. Furthermore, the value of shares traded in the Philippines embarks an overall mean of 12.42 billion dollar which means that the stock was trading at that value for the past 22 years.

Table 2. Economic Growth of the Philippines in terms of GDP (1990-2011)

Year	GDP Growth Rate
1990	1.7
1991	1.1
1992	7.6
1993	1.4
1994	9.7
1995	10
1996	8.7
1997	-0.5
1998	-17.1
1999	11
2000	-0.3
2001	-4.7
2002	5.6
2003	2.8
2004	7.3
2005	11.9
2006	23.41
2007	27.19
2008	24.2
2009	-5.3
2010	31.3
2011	-
MEAN	7.14

Table 2 shows that the economic growth of the Philippines in terms of Gross Domestic Product growth rate. The GDP improved up to 7.6% in year 1992 and declines to as low as 17.1% in the year 1998 and marks another increased in the year 2010 to 31.3%. In addition, GDP in the Philippines disclosed an overall rate of 7.14% which means that the economic growth in the Philippines increased up to 7.14% for twenty-two years.

The Tables below shows the relationship of the stock market performance to the economic growth of the Philippines (1990-2011).

Table 3. Co-integrating Regression for GDP and Market Capitalization- OLS (1990-2011) Augmented Dickey-Fuller test for GDP including one lag of (1-L) GDP Unit-root null hypothesis:  $a = 1$  Test with Constant Model:  $(1-L)y = b_0 + (a-1)*y(-1) + \dots + e$

1 <sup>st</sup> –order auto-correlation coefficient for e:	-0.001
Estimated value of (a-1)	0.13183
Test statistic: tau_c(1)	1.64219
Asymptotic P-value	0.9996

Table 3.2 Augmented Dickey-Fuller test for MC including one lag of (1-L) MC

1 <sup>st</sup> –order auto-correlation coefficient for e:	-0.046
Estimated value of (a-1)	-0.678626
Test statistic: tau_c(1)	-2.65893
Asymptotic P-value	0.08134

Table 3.3 Augmented Dickey-Fuller test for uhat including one lag of (1-L) uhat

1 <sup>st</sup> –order auto-correlation coefficient for e:	-0.001
Estimated value of (a-1)	0.0400495
Test statistic: tau_c(1)	0.328313
Asymptotic P-value	0.9945

SUMMARY OF CO-INTEGRATION

	Co-efficient	Std. error	T-ratio	P-value
Constant	68.0141	23.7601	2.863	0.0096
MC	0.4291	0.41959	1.023	0.3187

MODEL SUMMARY

Mean Dependent Variable	S.D. Dependent Variable	Sum squared residual	S.E. of Regression	of R squared	Adj. R squared
90.305	44.4107	39360.2	44.3623	0.0497	0.00218

Log-likelihood	Akaike criterion	Schwarz criterion	Hannan-Quinn	RHO	Durbin-Watson
-113.601	231.2016	233.3837	231.7156	0.922008	0.169696

Table 3 presents the Granger Causality Test of GDP and Market Capitalization. It shows that the Market Capitalization has no relationship with GDP since the values presented above exceeds the specified significance level of .05 or 5%. Since the computed market capitalization T-ratio (1.023) is lower than the critical value of 2.863, the null hypothesis shall be accepted. Besides, Adam and Sanni (2005) discovered a one-way causality between GDP and market capitalization.

Table 4. Co-integrating Regression for GDP and Value of Shares Traded- OLS (1990-2011) Augmented Dickey-Fuller Test for Value of Shares Traded including one lag of (1-L) VST

1 <sup>st</sup> –order auto-correlation coefficient for e:	-0.002
Estimated value of (a-1)	-0.3925
Test statistic: tau_c(1)	-1.9534
Asymptotic P-value	0.3079

Table 4.2. Augmented Dickey-Fuller Test for uhat including one lag of (1-L) uhat

1 <sup>st</sup> –order auto-correlation coefficient for e:	-0.058
Estimated value of (a-1)	0.075859
Test statistic: tau_c(1)	0.80186
Asymptotic P-value	0.9985

SUMMARY OF CO-INTEGRATION

	Co-efficient	Std. error	T-ratio	P-value
Constant	85.4834	17.4865	4.889	8.88e-05 ***
VST	0.38813	1.1725	0.331	0.7441

MODEL SUMMARY

Mean Dependent Variable	S.D. Dependent Variable	Sumsquaredresidual	S.E. of Regression	R squared	Adj. R squared
90.30500	44.41070	41192.81	45.38326	0.005449	-0.044278

Mean Dependent Variable	S.D. Dependent Variable	Sum squared residual	S.E. of Regression	R squared	Adj. R squared
90.305	44.4107	41192.81	45.38326	0.005449	-0.44278

Log-likelihood	Akaike criterion	Schwarz criterion	Hannan-Quinn	RHO	Durbin-Watson
-114.1014	232.2028	234.3849	232.7168	0.965702	0.101868

Table 4 presents the Granger Causality Test of GDP (Table 5.1) and Value of Shares Traded. It shows that the Value of Shares traded has no significant relationship with GDP since the result in the values offered in summary of co-integration exceeded the specified significance level of .05 or 5%. The t-ratio of the value of shares traded of .3310 is lesser than the constant critical value of 4.889. Moreover, the stock market development in Nigeria during the period of 1980-200 found no significant effect on economic growth (Osinubi and Amaghionyeodiwe, 2003). However, the result of Oladipo (2012) study revealed a significant effect of the stock market to the economic growth.

## CONCLUSIONS

The argument on the impact of the stock market performance and economic growth was empirically evaluated in this study. This effort was impelled by the raging debate on the relevance the stock market in promoting economic growth. Using the Granger Causality Test, the empirical evidence suggests that the market capitalization and value of shares traded have no significant relationship to the economic growth of the Philippines.

Hence, the evidence should be scrutinized with vigilance. The market capitalization and value of shares traded are used as proxies of stock market performance have been popular in literature. This study does not clearly include other indicators of stock market performance (e.g. international integration, market concentration, regulatory and institutional indicators and stock market volatility).

In view of this limitation on the relationship between stock market performance and economic growth, the result should not be seen as conclusive evidence but rather a drive for further research in this area.

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