DOES THE STOCK MARKET DRIVE THE PHILIPPINE ECONOMY?

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Abstract: There has been much controversy over the casual dismissal of incumbent politicians of the impact of the downturn in the stock market on the Philippine economy. By far, prevailing literature has focused on the role that economic performance, or economic growth even, plays in the valuation of stocks of listed corporations in stock markets. This research seeks to focus on the role of the Philippine stock market as driver of economic performance. Here, the author looks into the relationship between economic performance, as measured by gross domestic product, and its touted drivers, stock market activity as measured by the Philippine Stock Exchange Composite Index and employment as measured by the unemployment rate. The author does not attempt to delve into the appropriateness of GDP as a measure of a country's wealth, as it is a flow rather than stock measure, and proceeds to examine empirical evidence to support correlational suggestions between the named variables.

Data for the period 2006-2016 is analyzed to study the causal relationships mainly between the stock index and real GDP. Regression analysis is utilized to measure the relationships and the extent to which the Philippine stock market does drive national output. It is argued that stock market performance impacts positively on the country's economic output. Consequently, this research shows that there is empirical evidence to support the posited theoretical observation. Both the Philippine stock index and unemployment rate show significant positive and negative effect, respectively, on real GDP.

Key Words: Philippine business, economic drivers, stock market and economic performance, Philippine stock market

1. INTRODUCTION

After a period of upbeat outlook for the Philippine Stock Exchange, with the PSEi nearly breaking the 8,000 basis points mark in 2016, the downturn in the stock markets has caused concern for how this would impact the economic outlook for the Philippines.

It is widely touted that the Philippine stock market, primarily through the Philippine Stock Exchange Index (PSEi), is the barometer of business and industry. The performance of the PSEi is argued to reflect the financial health of Philippine business as a whole. From the perspective of economic performance, especially the impact on economic growth, it may be argued that stock market performance mirrors the outlook for the economy. This is to say that for stock markets to perform well, economic growth is a prerequisite. When the economy is healthy and posting positive growth, the stock market moves in the same direction and performs well.

There is a deep knowledge store in the analysis of the explanatory effect of economic growth in valuing stock investments. The notion that economic growth anticipates bullish runs in the stock market is much debated. To a limited extent, the reverse relationship has received some attention. The performance of the stock market is seen as a reliable index of economic performance.

The extent that this is true in the Philippines appears to be debatable. The recent downturn in the stock market has been underestimated in political circles, primarily by the present dispensation of the Philippine government. The conventional wisdom appears to propose that this downturn will not dent the Philippine economic performance so much.

In this paper, the author examines to what extent the stock market drives, in turn, the performance of the Philippine economy, if it does so at all. By so doing, the implications for the economy should be clarified for political pundits so that they may be guided not to underestimate the influence of the Philippine stock market on economic performance. More than anything else, this clarificatory objective, pursued at the expense of redundancy for academic circles, is for them. At the same time, it should be a timely reminder to Philippine business of the imperative to observe sound and responsible management practices in order to strengthen and make established businesses of listed Filipino companies sustainable.

1.1 Background of the Study

There are a number of studies that have studied the relationship between economic performance and stock market performance. Prevailing literature has focused on the role that economic performance, or economic growth even, plays in the valuation of stocks of listed corporations in stock markets.

This research seeks to focus on the role of the Philippine stock market as driver of economic performance. The job creation activity that ensues from business investment as well as public sector spending would be considered as well.

1.2 Statement of the Problem

This research focuses on the following key questions: How does the Philippine stock market contribute to economic performance? To what extent does stock market performance and the ensuing job creation activity explain the performance of the Philippine economy? Does the stock market account for the economic growth of the country? If the stock market is a reliable indicator of economic performance, what does this imply for the management of Filipino corporations?

1.3 Objectives of the Study

A. Relate stock market performance (PSEi behavior) and job creation activity to economic performance (gross domestic product levels);

B. Measure the impact of stock market performance and employment to economic performance;

C. Make a compelling argument for enhancing managerial skills in Filipino companies.

1.4 Limitations of the Study

This research attempts to prove, or debunk as it may be, the link between stock market performance and a nation's wealth creation as it applies empirically to the Philippines. The author does not purport to present the conclusions in this research to be valid as well in the experience of other countries.

2. REVIEW OF LITERATURE

The relationship between stock prices and GDP is certainly well-studied and well-analyzed. For the most part, it is argued that the link between the two is inconclusive. In analyzing what drives stock prices for instance, it is said that company profits make a better determinant than economic performance ((Almeida, 2016).

In developed countries, there is at least one study which shows that stock market prices and GDP tend to move together over time. The looming question is whether stock markets explained GDP performance or is it GDP performance which explained stock market behavior.

Various empirical studies are discussed with varying results in this study published in Bank of Valletta Review (Duca, 2007). Here, it was established that among five countries consisting of the US, UK, France, Germany and Japan, stock prices explained GDP behavior, except for Germany. However, the same study could not show that GDP behavior caused variations in stock market indexes in all five countries (Duca, 2007).

In a study of the Chinese economy between 2001 and 2005, it was observed that the stock index showed to move in opposite direction with the Chinese economy (Ming & Rui, 2006). This runs counter to the literature reviewed in the same study where Levine and Zervos in 1991 presented that stock market performance was positively and strongly correlated with economic growth. Randall Filer in 2000 investigated data of 70 countries between 1985-1997 and found little relationship between stock market activity and future economic growth, especially for lower-income countries (Masoud, 2013). It would appear that stock market development was not essential to economic growth (Ming & Rui, 2006).

In any case, this study by Ming and Rui concluded that there is no long-run equilibrium relationship between GDP and stock index in China and no Granger-causality between stock index and GDP growth rate. On closer analysis, Ming and Rui posited that this "abnormal relationship" can be explained by the fact that private sector in China is on self-financing by as much as 90% and this sector accounted for almost 50% of the GDP in 2005. The stock market played little role in private business development. Most of the listed companies in China are state-owned enterprises (Ming & Rui, 2006).

A number of studies has shown that stock returns and economic growth across countries can even be negatively correlated (MSCI, 2010).

Still, there is empirical evidence of positive correlation between stock performance and economic performance when stock market performance is measured in terms of market capitalization and market size. This lends credence to the theoretical link of stock markets as sectors that improve liquidity, mobilize capital, exert corporate control, provide risk-pooling and sharing of services including investments and translate all these to cause economic performance with a strong GDP (Masoud, 2013).

In one study, a positive relationship existed between efficient stock markets and economic growth both in the short and long run primarily through the effect of stock markets on investment (Masoud, 2013).

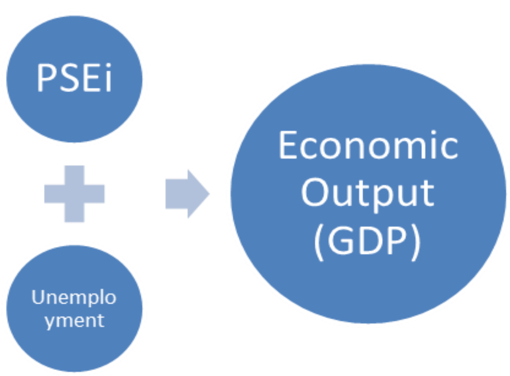
While it is believed that economic growth is good for stock returns, evidence shows that it has not benefitted stockholders. For instance, a study shows that there is a cross-sectional correlation of 0.37 for the compounded real return on equities and the compounded growth rate of real per capita GDP for 16 countries over the 1900–2002 period (Ritter, 2005).

3. METHODOLOGY

This research takes off from the polarities surrounding the relationship between economic performance and that of the stock market activity. It is posited here that stock market performance drives the Philippine economy. This being so, caution must be exercised in political affairs so as not to undermine or put further at risk the performance of the Philippine Stock Exchange. Job generation activities are an offshoot of investing activities. Conventional theory recognizes employment, or rather unemployment, as one of the macroeconomic fundamentals that keep an economy on track.

Regression analysis is utilized to analyze data available for the period 2006-2016 where the stock index (Philippine Stock Exchange Index, PSEi) and unemployment rate are related to gross domestic product (logged real GDP). It is proposed that PSEi and unemployment explain (logged) real GDP levels of the Philippines.

Conceptual Framework



Regression Model

$$GDP = \beta 0 + \beta 1\ PSEi + \beta 2\ UnemploymentRate + \varepsilon$$

(Eq. 1)

where:

GDP	=	Gross Domestic Product (logged)
UnemploymentRate	=	Unemployment Rate
PSEi	=	Philippine Stock Exchange Index
$\beta 0$	=	Constant
$\beta 1, \beta 2$	=	Regression coefficients
ε	=	Error Term

4. RESULTS AND DISCUSSION

4.1 Regression Results

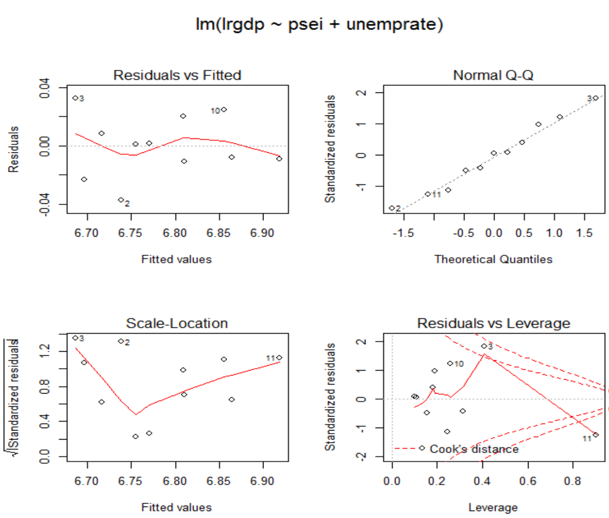
Based on the analysis of the data which cover the period 2006-2016, the results show that economic performance, as measured by national output (GDP, logged), is largely affected by the unemployment as well as stock market performance. Stock market performance as measured by the PSEi positively contributes to GDP. Unemployment rates affect GDP levels negatively. The effect of these business economic drivers on GDP is significant. The economy appears to change by 6.9% with all other factors constant. For every increase in the PSEi by 1 basis point, GDP goes up by as much as 0.000029%. Every increase in the unemployment rate by 1 lowers GDP by as much as 0.034%. The PSEi has a direct relationship with GDP while unemployment validates the theoretical view of having an indirect relationship with GDP. Both factors have a high explanatory effect on GDP, as shown by the adjusted r-squared value of 91%. That means 91% of the changes in GDP levels is explained by the PSEi and the unemployment rate.

The requisite diagnostic tests and tests on the assumptions are performed. The regression model complies with the assumptions of linearity, normality, non-multicollinearity, homoscedasticity and no autocorrelation.

Regression Results

```
Rcmdr>  RegModel.3 <- lm(lrgdp~psei+unemprate, data=gdppsei)

Rcmdr>  summary(RegModel.3)

Call:
lm(formula = lrgdp ~ psei + unemprate, data = gdppsei)

Residuals:
      Min        1Q    Median        3Q       Max
-0.037283 -0.009920  0.001094  0.014251  0.032709

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  6.890e+00  1.045e-01  65.913 3.12e-12 ***
psei         2.795e-05  5.568e-06   5.019  0.00103 **
unemprate   -3.453e-02  1.207e-02  -2.861  0.02112 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.0233 on 8 degrees of freedom
  (2 observations deleted due to missingness)
MultipleAdjusted R-squared:  0.9098
F-statistic:  51.4 on 2 and 8 DF,  p-value: 2.717e-05
```

Basic Diagnostic Plots



Tests on Assumptions

```
Rcmdr>  vif(RegModel.3)
     psei unemprate
 1.928857  1.928857

Rcmdr>  library(zoo, pos=15)



Rcmdr>  library(lmtest, pos=15)

Rcmdr>  bptest(lrgdp ~ psei + unemprate, varformula = ~ fitted.values(RegModel.3),
Rcmdr+    studentize=FALSE, data=gdppsei)

        Breusch-Pagan test

data:  lrgdp ~ psei + unemprate
BP = 1.1842, df = 1, p-value = 0.2765


Rcmdr>  dwtest(lrgdp ~ psei + unemprate, alternative="two.sided", data=gdppsei)

        Durbin-Watson test

data:  lrgdp ~ psei + unemprate
DW = 2.2759, p-value = 0.9322
alternative hypothesis: true autocorrelation is not 0
```

5. CONCLUSIONS

There is empirical evidence for the Philippines to consider the ramifications of undermining the effect of political outrages on the Philippine stock market. The PSE certainly has taken a beating due to external shocks from outside the country but also from a highhanded lack of appreciation of the impact of political affairs on that of business. Given that the performance of the economy is a necessary condition to the goal-seeking behavior of Philippine politics, it may do well for the incumbent political administration to take heed of empirical research and be guided.

The empirical results of this research should allow for the present dispensation in the Philippine government to seriously consider the role of financial markets, especially the PSE, in influencing a key macroeconomic indicator, which is economic performance measured by the GDP. Of course, the job generation part to spur up incomes across the business and household sectors is equally important in explaining economic performance, as shown in this research. Unemployment in conventional economic theory is viewed as contributing to strong macroeconomic fundamentals.

As it is, the PSEi serves a significant indicator of economic performance. Real GDP correlates with PSEi and unemployment. The more buoyant the stock market and the lower the unemployment, the higher is real national output. In this sense, stock market performance drives the Philippine economy to perform well, alongside with the imperative for job creation from both private and public sectors. Clarifying this causal relationship with recent data for the Philippines presents a grim but stern warning for political pundits not to flirt with disaster by carelessly shrugging off the role of our still underdeveloped equity capital market.

From the perspective of management, it will not hurt for Filipino managerial expertise to be made even more conscious of instilling professional business management processes and practices so that local companies especially those that make up the players in the Philippine stock market are managed as sustainable competitive and responsible business units whose activities and engagements would be key to the realization of inclusive growth for all and the generation of jobs and employment that should cascade especially to the countryside.

5.1 SUMMARY OF RESULTS AND RECOMMENDATIONS

Problem	Results	Conclusion	Recommendation
How does the Philippine stock market contribute to economic performance?	Along with low unemployment, stock market performance shows significant positive effect on economic performance.	Job creation and corporate performance improve the country's economic output.	Enhance strategic value of publicly-listed Filipino corporations; Enhance upstream and downstream linkages down the value chain.
To what extent does stock market performance explain performance of the Philippine economy?	Every increase in PSEi allows 0.000028% increase in GDP; every increase in unemployment rate lowers GDP by 0.034%	Stock market performance, along with job creation, has driven economic performance in the last 10 years.	
What is the implication for management of Filipino corporations?	Economy performs well with better-valued publicly-listed companies accompanied by low unemployment.	Job creation and firm valuation create positive outlook for the economy. Growth prospect is pegged at 6.9%, all other factors unchanged.	Promotion of sustainable business processes and practices to enhance value of Filipino companies

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