

Measuring the Effects of Selected Financial Variables on the Stock Prices of Publicly Listed Banks in the Philippines

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Abstract - This study increases awareness in the use of financial statements in making investment decisions. It also guides investors and banking sectors in establishing the extent of the effect of financial information on stock prices. It determined whether or not financial information pertaining to: size (assets), stability (leverage ratio), diversification (ratio of other income to total income) and profitability (net income and return on equity ratio) affects the average quarterly stock price of five (5) publicly traded banks using the Panel Regression Model. Data were downloaded from the Philippine Stock Exchange (PSE), Security and Exchange Commission (SEC) and websites of the banks included in the study. Regression results show that size of bank assets and the return on equity ratio (ROE) are the significant predictors of share prices of publicly listed banks. While two (2) of profitability indicators, net income and ROE, were included in the model, net income was not a significant predictor and in fact has a negative effect on share prices. The banks included in the study are homogeneous as far as the conditioning effects of the financial variables on share prices are concerned.

Keywords - diversification, profitability, size, stability, stock price

I. INTRODUCTION

The market value of the firm, assuming its shares are traded in an organized exchange, is generally measured by multiplying its stock price by the total number of common shares outstanding. It is a common practice to compare the company's book value to its market value – a way of measuring the difference between the historical cost of the company from its investors' perceived value. This is not as simple as it seems because movements in stock prices are quite difficult to predict notwithstanding the availability of several stock price valuation models. For example, a particular stock might be selling at, say, one thousand pesos today but it is quite likely for its price to either increase or decrease during the next 24 hours, 3 weeks or more as the case may be. Stock prices are highly volatile as they are conditioned by many factors, both domestic and external. Economic and political factors undoubtedly affect the behavior of individual stocks as well as the entire markets for debt and equity securities and other financial assets. Attitudes and beliefs of capitalists affect investment choices and decisions. Financial information of companies influences investors' expectations. The availability of financial information on companies whose stocks are traded in the stock exchanges can be of value in identifying which indicators of financial viability can guide an investor in making choices as to when to buy or sell individual stocks. This study attempts to empirically estimate how certain financial indicators based on published financial statements, can be useful predictors of the stock prices of selected publicly listed banks in the Philippines.

The main problem which this study tried to resolve is a

determination of how certain financial variables influenced or conditioned the stock prices of selected publicly listed banks in the Philippine Stock Exchange (PSE) over a given period of time. Specifically, the study provided the following: trends of the Philippine Stock Exchange Index (PSEI), PSE Financials Index, and the stock prices of the five (5) publicly listed banks; individual and collective effects of financial information such as size, stability, diversification, and profitability on the stock prices of selected publicly listed banks in the Philippines; homogeneous or heterogeneous effects of the identified financial variables on the stock prices of the participating banks; and the best predictive model to explain the hypothesized relationships between the stock prices of publicly listed banks and the identified financial variables.

Findings from this study can guide not only publicly listed banks in the Philippines but also the unlisted ones, in determining to what extent the identified financial indicators condition stock price levels. This information can be useful in deciding when to increase stock offerings to build up bank capital. Even non-bank institutions can potentially benefit from the findings of this paper. The results also enhance the awareness of the investing public regarding the importance of published financial information in making decisions on where to invest their money in the stock market. Regulatory agencies of the government (i.e. SEC) can also benefit from the outcome in formulating rules and regulations used in supervising the evaluation of publicly listed companies.

Review of Related Literature

Stock price. According to Su (2015) and DeFond, Konchitchki, McMullin, & O'Leary (2013), bank reputation and recognition from reputable award giving bodies exert a significant effect on stock performance. Investors value companies that are perceived to be stable and are expected to provide their desired rate of return. Published data also help investors make informed judgment. Media coverage encouraged stock price synchronicity, informed trading, and hinders stock pricing error (Kim, Yu, & Zhang, 2016). Frequent financial disclosures also attract analysts following and promote accurate forecasts (Tsao, Lu, & Keun, 2016). Financial ratios can predict stock price one year ahead (Pech, Noguera, & White, 2015).

Size. In order to increase its size, banks either merge with or acquire other banks. Increasing stock price leads to mergers and acquisitions (Hsueh, Tsao, Tu, Chiu, & Liu, 2014). Mergers and acquisitions happen when two companies are grouped together as one economic entity, giving the acquiring company control over the net assets and operations of the acquired company (Guerrero, 2013). In another study, huge assets and capital, larger operations, and economies of scale may mean resilience to market shocks as these banks could be viewed as "too big" to fail and could therefore positively affect its stock price. Larger banks are more profit efficient compared to smaller banks (Dong, Firth, Hou, & Yang, 2016) and also experience less income volatility (Moutsianas & Kosmidou, 2016). On the other hand, a study regarding the identification of "too big to fail banks" showed that it did not result to abnormal stock price returns after the announcement (Abreu & Gulamhussen, 2013) and that systemic risk rises with banks size (Laeven, Ratnovski, & Tong, 2016).

Stability. Bank loans are found to be more costly from banks with higher equity (Dietrich & Hauck, 2014; Tovar-Garcia & Kozubekova, 2016) because interest rates provided to depositors are lower compared to the expected returns of equity holders. Banks are generally required to maintain a minimum capital ratio in order to meet central bank regulation. This tends to decrease banks' profit (Momota & Maedab, 2004). In order to minimize risks, banks are required to maintain higher capital to assets ratio and decrease the same as risks decline (Valencia, 2016; Laeven, Ratnovski, & Tong, 2016).

Diversification. Traditional banking involves realizing income by charging interests to borrowers. Bank income diversification happens when there is increasing non-interest income such as fees from remittances, investment funds, stock market investing, fixed income securities, insurance and online banking aside from the traditional deposits and lending operations. Income diversification positively affects stability and profitability (Köhler, 2015) and market value (Sawada, 2013). Even though diversification shows positive financial effect, it does not provide evidence of reducing bank risks (Sawada, 2013). Too much diversification leads to negative market valuation (Edirisuriya, Gunasekarage, & Dempsey, 2015).

Profitability. Managers carry the burden to present impressive financial results. Banks are more profit than cost efficient (Dong, Firth, Hou, & Yang, 2016). Change in profit efficiency has a positive effect on stock prices (Liadaki & Gaganis, 2010) but another study found that changes in earnings are negatively related to stock returns (Choi, Kalay, & Sadka, 2016).

From the preceding reviews, there is sufficient basis to believe that the availability and reliability of financial information may have an effect on stock prices. In this study, the relevant factors identified are size, solvency, diversification, and profitability and they exert differing effects on stock price movement of publicly listed banks in the Philippines. Since bank deposits provide low interest income, the stock market has become an attractive investment alternative. As Filipinos become more financially literate and exposed to stock market transactions, where even banks participate by offering it as one of its products and services, understanding how the identified factors conditioned stock prices could be a valuable guide.

In line with this, the following hypotheses were tested in this study:

Ho1: Financial factors such as size, stability, diversification, and profitability, taken individually, do not exert any significant effect on the stock prices of the publicly listed banks in the Philippines.

Ho2: Financial factors such as size, stability, diversification, and profitability, taken as a whole, do not exert a significant effect on the stock prices of publicly listed banks in the Philippines.

Ho3: Publicly listed banks in the Philippines are homogeneous in terms of the effects of the identified financial factors on their stock prices.

Theoretical Framework

Since capitalists are looking for the highest possible return of investment, they will always choose the best stocks where they can invest their money. Let us say, Capitalist A obtained information that the price of Stock 1 will increase, definitely, he will purchase more stocks and will wait for the right time to sell them – at the peak of its increase.

Information is important to investors in order to make wise decisions. The Theory of Efficient Market (Fama, 1991) posits that information about a company is reflected in its stock price. There are three levels of market efficiency: weak form, semi-strong form and strong form. For the weak form, historical information of the company is already incorporated in its stock price. Semi-strong form includes both historical and public information. Strong form consists of historical, public and insider information. If stock prices move together with positive financial information, we can say that the stock market level of efficiency is either semi-strong or strong form.

Risk and rate of returns are also considered by investors. The Value of the Firm according to Besley & Brigham (2014) is based on the expected cash flows that the firm can generate over a given period of time,

discounted at the investors' desired rate of return or cost of capital. Investors will require a higher rate of return from risky investments compared to less risky ones. If the company's actual return is always higher compared to the investor's desired rate, stock prices will continually increase.

Investors expect to receive a higher benefit by sacrificing enjoyment, that is, instead of spending and enjoying money, they choose to invest it on stocks in order to receive a higher amount. In their Costs, Benefits and Customer Value Theory, Perreault, Cannon, & McCarthy (2015) argue that value is based on the tradeoff between potential benefit of the goods and services and the cost that the customer needs to give up. Customers find superior value when cost is lower compared to the perceived benefits or when perceived benefits are higher compared to cost. If the investors' perceived benefits are higher compared to the purchase cost of the stock, investors will be willing to purchase the stocks at a higher price until the cost equals the perceived benefits.

Conceptual Framework

To facilitate understanding and to guide in the empirical evaluation of the hypothesized relationships between average stock prices of selected publicly listed banks in the Philippines and factors such as size of a bank, its relative profitability, net income, stability, and level of diversification, the following conceptual or structural framework as presented in Figure 1 is used.

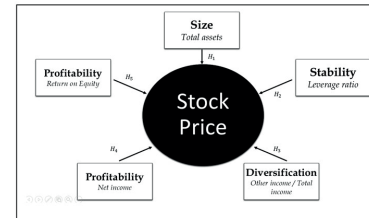


Table 1. Conceptual Framework

Functionally, the relationships between stock prices and the conditioning variables depicted in the above diagram are expressed in the following:

$$SP = f(\text{Size, Stability, Diversification, Net Income, ROE...})$$

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where the algebraic signs below each variable represent the assumed direction of its effect on the dependent variable Stock Price (SP). These assumed effects are implied by the preceding theories and empirical studies narrated in the literature review.

Aside from estimating the quantitative effects of the financial indicators on the stock prices of publicly listed banks in the Philippines, the statistical significance of the parameters of the model, and their agreement with expectations were highlighted in the discussion of results.

II. RESEARCH METHOD

Research Design. Descriptive and causal research methods were employed in this study. The descriptive aspect pertains to the graphical presentation of historical data on the movements of the Philippine Stock Exchange Index (PSEI), PSE Financial Index, and the stock prices of five (5) banks used in this study. The causal aspect focused on the empirical estimation of the hypothesized relationships between average stock prices of sample banks, as dependent variable, and the financial indicators identified in Figure 1 as explanatory variables.

Data Sources and Variables. There are ten (10) publicly traded banks listed under Financials Sector of PSE. These include Asia United Bank Corporation (AUB), BDO Unibank, Inc. (BDO), Bank of the Philippine Islands (BPI), China Banking Corporation (CHIB), East West Banking Corporation (EW), Metropolitan Bank and Trust Company (MBT), Philippine National Bank (PNB), Rizal Commercial Banking Corporation (RCB), Security Bank Corporation (SECB) and Union Bank of the Philippines (UBP). Four (4) banks were not included in the sample because two of these banks were traded after 2010 and the stock price and financial data of the other two banks were incomplete. This led to the remaining six (6) publicly listed banks as the sample of the study. The names of the banks were not disclosed and were identified as Bank A, Bank B, Bank C, Bank D and Bank E. While Bank F was originally included in the study, it was later removed from the sample as its performance differs substantially from all other banks. It is in effect an outlier and its inclusion could distort the results.

Quarterly stock prices of five (5) banks in the Philippines, the PSE Index, and PSE Financial Index, for the period from 2010 to 2015 were downloaded from the PSE website and requested from the PSE library. Annual financial statements of the identified banks are also available from the Securities and Exchange Commission (SEC), on the PSE or bank website or upon request.

Convenient proxies for size, stability, diversification, and profitability were derived from audited financial statements of the sampled banks. Total bank assets serve as proxy for size, leverage ratio or debt to equity ratio mirrors stability, ratio of other income to total income measures degree of diversification of bank operations and services. In the case of profitability, two (2) proxies were used: net income and return on equity (ROE) as indicators of managerial efficiency.

Statistical Treatment of Data. The hypothesized relationships embodied in the conceptual framework of this study were estimated using three (3) variants of panel data regression model. Their estimating equations are described as follows:

• Pooled OLS

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + u_{it}$$

The intercept β_0 , and slope coefficients β_1 are assumed to be constant. Quarterly data for each of the 5 banks were pooled and regressed using ordinary least squares (OLS) hence the term.

▪ **Fixed Effect Model (FEM)**

$$Y_{it} = \beta_1 + \beta_2 X_{it1} + \beta_3 X_{it2} + \beta_4 X_{it3} + \beta_5 X_{it4} + \beta_6 X_{it5} + u_{it}$$

Here the intercept β_1 , while assumed constant, is firm or subject specific. In other words, it may vary from subject firm to subject firm by introducing dummy variables (not shown) to account for variation in intercepts of subject firms. The slope coefficients are assumed to be fixed or constant.

▪ **Random Effect Model (REM)**

$$Y_{it} = \beta_1 + \beta_2 X_{it1} + \beta_3 X_{it2} + \beta_4 X_{it3} + \beta_5 X_{it4} + \beta_6 X_{it5} + \omega_{it}$$

Here the intercept term β_1 is treated as a random variable representing the average for all cross-section units's (banks) intercepts. Variations in the intercepts are subsumed in the composite error term ω_{it} .

Symbols for the above variables are the same for the three (3) models, viz:

- Y_t = Average stock price (SP) during the quarter
- X_t1 = Size (Assets)
- X_t2 = Stability (Leverage ratio)
- X_t3 = Diversification (Other income ratio)
- X_t4 = Profitability (Net income)
- X_t5 = Profitability (Return on equity)

Coefficient of Multiple Determination. The percentage variation in the dependent variable attributable to the variation in the explanatory variables was measured by the coefficient of multiple determination, R^2 . It ranges in value from 0 to 1. The closer the coefficient to 1, the higher the predictive power of model.

Overall Statistical Significance of the Models. The overall statistical significance of the model was measured by the F-statistic. In essence, it tests whether the coefficient of multiple determination R^2 is statistically significant or not.

Jarque-Bera Test of Normality of Residuals. The validity of tests of significance of the parameters of the model hinges on the assumption of normality of the regression residuals. A Jarque-Bera test was implemented to verify this.

Variance Inflation Factor for Multicollinearity.

This test was applied to rule out presence of multicollinearity among the explanatory variables.

Restricted F-test (Fixed Effect vs. Pooled OLS). This test was used to determine whether the Fixed Effect Model and the Pooled OLS model are significantly different from each other. If there is no significant difference, then homogeneity of cross section units is implied and Pooled OLS is consistent and the appropriate model.

Hausman Test. This was applied to test which of the Fixed Effect Model and Random Effect Model is consistent and appropriate. A statistically significant Hausman chi-square statistic would mean that the Fixed Effect is the better model.

The relevant statistical formulas used are not reproduced here but are readily available in standard econometrics textbook like Gujarati & Porter's (2009) Basic Econometrics 5th Edition and Hill, Griffiths & Lim (2008) Principles of Econometrics 4th Edition. The econometric software E-Views Version 7.0 was used in estimating the parameters and relevant diagnostic tests.

III. RESULTS AND DISCUSSION

Trends in Stock Price Movements. The movements in stock prices of publicly listed companies in the Philippines are monitored and supervised daily by the Philippine Stock Exchange (PSE). These daily movements are compiled in terms of value and volume in the Philippine Stock Exchange Index (PSEI) and published daily. The Index (PSEI) consists of several sub-sector indices of which the PSE Financials Index (Financials) is one and it specifically measures the performance of banks and financial entities. A plot of the logarithms of PSEI, Financials and stock prices of the sampled banks in this study for the last six (6) years are shown in Figure 2.

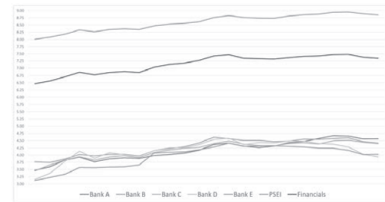


Figure 2. PSE Index, PSE Financials Index and Average Stock Price, for the Past Six Years in Log Form

All the series, while exhibiting fluctuations, are unmistakably upward trending although a slight downturn is observed in 2015. These movements clearly suggest positive returns for both the market as well as individual share prices of the traded banks. The close clustering in the movement of stock prices of the sampled banks suggests that they do not deviate too far from each other.

The exclusion of Bank F's stock prices from the data series used in estimating the regression models arose from the distortions introduced in terms of non-normal residuals which rendered the statistical significance of the parameter estimates doubtful. The regression which included Bank F is not reproduced in this report due to its unsatisfactory results. A look at Figure 3 which included the data series for Bank F clearly illustrates that the series is an outlier particularly during the latter part of the period covered. One approach is to remove the offending outlier from the series which was adopted here.

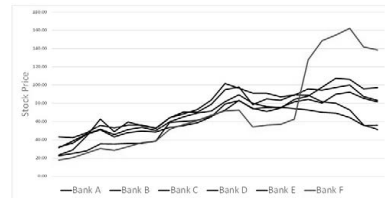


Figure 3. 6-Year Average Stock Prices of Five Publicly Traded Banks

Although no formal test of panel unit root was employed in this study, changes in the logarithms of the sampled banks' stock prices were plotted, as shown in Figure 4 below, which exhibited a clustering of all the series around zero. This is a visual indication that the series are stationary and the regression at their level series is valid. However, no formal test of panel unit root is included in this study.

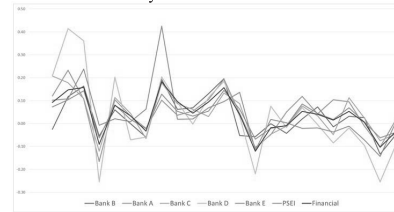


Figure 4. Movements on the PSE Index, PSE Financials Index and Average Stock Price for the Past Six Years in Log Form

Analysis of Regression Results. The regression results of the sampled banks' stock prices on the financial variables using balanced panel data for the three (3) models are summarized in Table 1.

Table 1
Regression results under three (3) different models

Variables	POOLED OLS		FIXED EFFECT MODEL		RANDOM EFFECT MODEL	
	Coefficient	Sig.	Coefficient	Sig.	Coefficient	Sig.
CONSTANT	59.13554	0.0000	48.66970	0.0220	62.13668	0.0000
ASSETS	0.011735	0.0991*	0.016803	0.1661	0.017045	0.0000**
LEVERAGE RATIO	-0.014100	0.9873	-0.148400	0.8736	-1.451257	0.0506*
OTHER INCOME RATIO	-0.055896	0.3685	-0.057427	0.3704	-0.144684	0.1501
NET INCOME	-0.045799	0.8763	-0.044248	0.8836	0.180234	0.7461
RETURN ON EQUITY	0.694761	0.0002**	0.715064	0.0002**	0.490537	0.0378**
BANK B			8.220764	0.4868		
BANK C			-0.143118	0.9897		
BANK D			13.67677	0.4176		
BANK E			1.737453	0.9235		
AR(1)	0.966559	0.0000	0.939854	0.0000		
AR(2)	-0.117794	0.2043	-0.121951	0.2064		
R-squared		0.887798		0.889597		0.289347
F-statistic		115.2960		71.78671		9.283189
Durbin-Watson		1.999996		2.001007		0.191505
Jarque Bera		0.453461		0.245808		0.111906

*significant at 10% level of confidence
** significant at 5% and 10% level of confidence

There are 3 significant coefficients, including the intercept, for the Pooled OLS model, 2 for the Fixed Effect Model (FEM) and 4 for the Random Effect Model (REM). Both Pooled OLS and FEM were corrected for first and second order autocorrelations. In terms of R^2 , FEM has a slightly higher coefficient of multiple determination than Pooled OLS.

To find out which of the Pooled OLS and FEM is better, a restricted F-test was applied which yielded an insignificant F-stat of 0.3389. This means that there is no significant difference between the two (2) models. The inclusion of dummy variables for firm-specific intercepts in FEM, also known as Least Squares Dummy Variable

(LSDV) technique, has no superior advantage over Pooled OLS. Moreover, since the dummy variables of the FEM are not statistically significant, the underlying assumption of heterogeneity among the subject firms is not valid. In other words, there is homogeneity among the five (5) banks as far as the effect of financial variables on stock prices is concerned and no firm-specific effect is found. Briefly, they have the same intercept.

A related test was also applied to determine which of FEM and REM is the consistent and appropriate model. Based on the Hausman Test which is a chi-square test, the resulting chi-square statistic yielded a p-value of almost zero. This is highly statistically significant suggesting that FEM is the more appropriate and consistent model compared to REM.

The preceding results indicate that the Pooled OLS is the more appropriate model to use. In equation form, the Pooled OLS model presented in Table 1 is shown as follows:

$$\text{STOCK PRICE} = 59.13554 + 0.011735\text{ASSET} - 0.014100\text{LEVERAGE} - 0.055896\text{OTHINRC} + 0.045799\text{NETINC} + 0.694761\text{ROE}$$

and interpreted as follows:

- A billion peso increase in assets, other things equal, gives rise to an increase in average stock price by P0.011735. Asset size exerts a statistically significant effect at 10 percent level on average stock price of subject banks.
- An increase in leverage ratio by a percentage point, other things equal, tends to exert a negative effect on average stock price by P0.014100. While this is consistent with expectations, it has no statistically significant effect on average stock price.
- Diversification or a percentage point increase in other income ratio, other things equal, tends to reduce average stock price by P0.055896. This is not statistically significant at 5%.
- A billion peso increase in net income, other things equal, leads to a decrease in average stock price by P0.045799, albeit this is not statistically significant.
- A percentage point increase in the return on equity (ROE), other things equal, tends to increase average stock price by P0.694761. This was found to be statistically highly significant.

The regressions plots for the three (3) models are illustrated in Figures 5, 6, and 7. A striking feature of these diagrams is the almost identical characteristics of the Pooled OLS and the Fixed Effect Model.

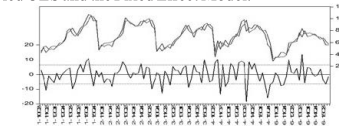


Figure 5. Regression graph of Pooled OLS

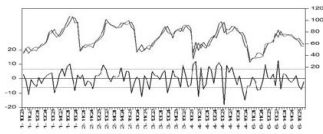


Figure 6. Regression graph of FEM

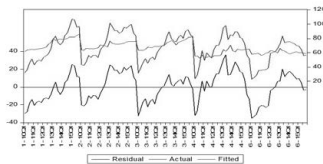


Figure 7. Regression graph of REM

Based on the results, assets (Size) and return on equity (ROE) are the most significant predictors of bank share prices. Thus, Ho. 1 which states that “Financial factors such as assets (size), leverage ratio (stability), other income ratio to total income (diversification), net income (profitability), and ROE (profitability) do not exert any significant effect on the stock prices of the publicly listed banks in the Philippines” is rejected with respect to asset (size) and ROE and accepted with respect to all other variables.

The computed R^2 indicates that 88.78% of the variation of the stock prices could be attributed to the collective variation in the independent variables (assets, stability, diversification, and profitability). The computed F-stat of 115.30 which exceeds critical value means that the entire model is highly significant. Therefore, Ho² which states that “Financial factors such as size, stability, diversification, and profitability, taken collectively, do not exert a significant effect on the stock prices of publicly listed banks in the Philippines” is rejected.

On the other hand, the Jarque-Bera test result registered a p-value of 0.453461 which is well in excess of 0.05 level of significance, indicating that the residuals are normally distributed. Tests of significance therefore on the parameters of the model are reasonable and valid.

An examination of the results of the variance inflationary factor test ruled out the presence of multicollinearity among the explanatory variables of the model. Each variable has a VIF of less than 3.0, far below the VIF rule of thumb of 10.0 for severe multicollinearity (see Gujarati & Porter, 2009).

The null hypothesis Ho³ which states that “Publicly listed banks in the Philippines are homogeneous in terms of the effects of the identified financial factors on their stock prices” is accepted. Based on the regression results using the Fixed Effect Model (Table 1), there are no firm-specific effects among the sampled banks in this study. Discussion. Size, represented by assets, has a significant positive effect on stock price. Consistent with expectations, banks with bigger assets appear to be more attractive to investors compared to smaller ones.

Investors also associate profitability with bank size (Dong, Firth, Hou, & Yang, 2016; Moutsianas & Kosmidou, 2016).

Stability, computed using the leverage ratio, has a negative but insignificant effect on stock price. There are two reasons why leverage ratio increases: 1. there was an increase in liabilities and 2. there was a decrease in capital. Increase in liabilities are perceived to be risky and could lead to decline in the stock price. In addition, risks are minimized by maintaining a higher capital (Valencia, 2016; Laeven, Ratnovski, & Tong, 2016), therefore, a decrease in the capital amount could alarm investors.

Diversification has an insignificant negative effect on stock price. Diversified banks offer more products and services which positively affects financial performance but could be viewed to be risky by the investing public (Sawada, 2013 and Edisiruyee et al, 2015).

Profitability, represented by net income, has a negative insignificant effect on stock prices. Net income is an indicator of management's performance; however, a large amount of net income doesn't mean that investors will receive high dividends. The banks included in the study showed that net income is only 51%, on average, of the invested share capital amount. This means that even though banks reported a high net income, since this will be shared by many investors, dividends could be lower than expected. Net income as related to the share capital amount is a better basis before investing.

Profitability, measured by return on equity, has a positive and significant effect on stock price. The positive effect of ROE on share prices is consistent with expectation. While this could be viewed as inconsistent with net income's negative impact on share prices, there is a big difference between ROE and net income. Net income measures the net assets which the company was able to generate from business operations. On the other hand, ROE computes for the investors' relative share in net income based on their shareholdings. As a profitability measure, ROE is more relevant than net income in making investment decisions on equity purchases or sale.

IV. CONCLUSIONS AND RECOMMENDATIONS

The availability and accessibility of financial information on companies (banks in this study) that the investing public may want to put their money into, is a necessary condition for this undertaking. But more importantly is one's ability to use such financial information intelligently and carefully because of the inherent uncertainty and volatility in financial markets like the stock exchange. In this regard, accountants, securities analysts, financial and investment analysts, and economists may enjoy a certain advantage due to their higher financial literacy.

Based on the results of the study, it is recommended that investors, both novice and experienced, should have a background knowledge on how to read and interpret financial statements of the companies they want to invest in. This will help them not only in choosing stock

investments but also assess its profitability.

Within a span of 24 quarters covered by this study for a sample of five (5) banks whose shares are listed in the Philippine Stock Exchange, the price index of all shares as well as the share prices of the 5 banks trended upward, suggesting positive returns.

The panel data regression results for the Pooled OLS model which is the final empirical model of the hypothesized relationships between stock prices and financial indicators disclosed that two (2) out of five (5) indicators, size of bank assets and return on equity (ROE) are the significant predictors of share prices. While two (2) of profitability indicators, Net Income and ROE, were included in the model, Net Income surprisingly was not a significant predictor and in fact has a negative effect on share prices which appears to be contrary to expectations. However, other empirical studies cited in the review support this possibility.

Since financial information affects investors' decisions, it is recommended that government regulating authorities like PSE and SEC to continually set the best standards in monitoring and controlling publicly traded companies. Financial reports should be updated and accessible to the public in order to keep them well-informed.

The choice of Pooled OLS model over either FEM or REM is motivated by the fact that based on relevant tests FEM is more appropriate than REM while Pooled OLS is better than FEM. This implies that Pooled OLS is the final model of choice for this paper. Moreover, the dummy variables included in the FEM proved statistically insignificant which means that the sampled banks are homogeneous as far as the conditioning effects of the financial variables on share prices are concerned.

Bank F was removed from the sample since its stock prices are inconsistent from other banks. This paper cannot give any reason or justification on what causes the unpredictable stock price behavior and suggests further research to clarify the matter.

It should be noted that this study includes only financial information. Other variables like economic indicators and investors' attitudes and preferences are not taken into consideration and could be a topic for further research.

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REFERENCES

- Abreu, J., & Gulamhussen, M. (2013). The stock market reaction to the public announcement of a supranational list of too-big-to-fail banks during the financial crisis. *Journal of International Financial Markets, Institutions & Money* 25, 49–72.
- Besley, S., & Brigham, E. (2014). *Basic Finance 2013-2015 Edition*. Philippines: Cengage Learning Asia Pte Ltd.
- Choi, J. H., Kalay, A., & Sadka, G. (2016). Earnings news, expected earnings, and aggregate stock returns. *Journal of Financial Markets* 29, 110–143.
- DeFond, M. L., Konchitchki, Y., McMullin, J. L., & O'Leary, D. E. (2013). Capital markets valuation and accounting performance of Most Admired Knowledge Enterprise (MAKE) award winners. *Decision Support Systems* 56, 348–360.
- Dietrich, D., & Hauck, A. (2014). Bank capital regulation, loan contracts, and corporate investment. *The Quarterly Review of Economics and Finance* 54, 230–241.
- Dong, Y., Firth, M., Hou, W., & Yang, W. (2016). Evaluating the performance of Chinese commercial banks: A comparative analysis of different types of banks. *European Journal of Operational Research*, 252, 280–295.
- Edirisuriya, P., Gunasekarage, A., & Dempsey, M. (2015). Bank diversification, performance and stock market response: Evidence from listed public banks in South Asian countries. *Journal of Asian Economics*, 41, 69–85.
- Fama, Eugene A. (1991). Efficient Capital Markets: II. *The Journal of Finance* 46 No. 5, 1575-1617.
- Guerrero, P. P. (2013). *CPA Problems and Procedural Approaches to Solutions Practical Accounting 2*. Manila, Philippines: GIC Enterprises & Co., Inc.
- Gujarati, D. & Porter, D. (2009). *Basic Econometrics 5th*, New York: McGraw-Hill
- H., Chiu, Y.-H., & Liu, S.-B. (2014). Can M&A activities act as a predictor of the performance of economic growth or stock prices? *Economic Modelling*, 42, 430–438.
- Hill, R.C., Griffiths, W. & Lim, G.C. (2008). *Principles of Econometrics*, 3rd Ed., Hoboken, N.J.: John Wiley & Sons
- Kim, J.-B., Yu, Z., & Zhang, H. (2016). Can media exposure improve stock price efficiency in China and why? *China Journal of Accounting Research* 9, 83-114.
- Köhler, M. (2015). Which banks are more risky? The impact of business models on bank stability. *Journal of Financial Stability*, 16, 195–212.
- Laeven, L., Ratnovski, L., & Tong, H. (2016). Bank size, capital, and systemic risk: Some international

- evidence. *Journal of Banking & Finance* 69, S25–S34.
- Liadaki, A., & Gaganis, C. (2010). Efficiency and stock performance of EU banks: Is there a relationship? *Omega*, 38, 254–259.
- Momota, A., & Maedab, Y. (2004). The effect of solvency regulation to a bank. *Japan and the World Economy* 16, 163–191.
- Moutsianas, K. A., & Kosmidou, K. (2016). Bank earnings volatility in the UK: Does size matter? A comparison between commercial and investment banks. *Research in International Business and Finance* 38, 137–150.
- Pech, C., Noguerab, M., & White, S. (2015). Financial ratios used by equity analysts in Mexico Mexico and stock returns. *Contaduría y Administración* 60, 578–592.
- Perreault, W., Cannon, J., & McCarhy, E. (2015). *Essentials of Marketing: A Marketing Strategy Planning Approach Fourteenth Edition*. USA: McGraw-Hill Education.
- Sawada, M. (2013). How does the stock market value bank diversification? Empirical evidence from Japanese banks. *Pacific-Basin Finance Journal*, 25, 40–61.
- Su, C. (2015). Does institutional reform improve the impact of investment bank reputation on the long-term stock performance of initial public offerings? *The British Accounting Review*, 47, 445–470.
- Tovar-García, E., & Kozubekova, R. (2016). The Third Pillar of the Basel Accord: Evidence of borrower discipline in the Kyrgyz banking system. *Journal of Eurasian Studies* 7, 195–204.
- Tsao, S.-M., Lu, H.-T., & Keun, E. C. (2016). Voluntary monthly earnings disclosures and analyst behavior. *Journal of Banking & Finance* 71, 37–49.
- Valencia, F. (2016). Bank capital and uncertainty. *Journal of Banking & Finance* 69, S1–S9.