Does Price to Book Value Predict Stock Price?
Evidence from Nigerian Firms

Isah Shittu[1] Ayoib Che Ahmad[2] Zuaini Ishak[3]

[1,2,3]**School of Accountancy, College of Business,**
Universiti Utara, Malaysia

Abstract
The value a company is usually ascertained based on the markets values of its equity in the markets. Share prices of a company inform the public on the prospect of such stock hence, decisions on purchase or sales is determined. Price to book value multiple is one of the valuation multiples used to predict stock price of companies. However, arguments exist on whether the P/B multiple can be used to predict stock price of Nigerian firms. This study achieve this objective by examining effect of P/B multiple on stock price of 100 firms listed on the Nigerian Stock Exchange (NSE) covering 2009 to 2013 period data. Evidence from the ordinary least square (OLS) results reveals a significant positive relationship between price to book value and stock price of Nigerian listed firms. Therefore, we concludes that price-book value predict stock price of Nigerian listed firms. Hence, recommends the application of P/B value multiple in the prediction of future stock price.
Keywords: price-book value multiple, stock price, listed firms and Nigeria.

1. Introduction
Share prices of companies represent an important avenue that communicates the performance of the company to the outsiders and prospective investors. Investors and other security/investment analysts used certain indices to predict future stock price of companies for effective investment decisions. Some of the market indices used includes prices or market multiples, the objective is to relate future price of equity in relation to the current market value of the equity. Some of the market multiples used by the investors and security analysts are price to earnings, price to book value price to sales and price to cash flow from company operations. The current research intends to investigate empirically whether price-book value can predict stock prices of companies in Nigeria as obtained in other markets. Price-book value multiple is a suitable measure of performance where tangible assets of the companies are the basis of value generation (Suozzo, Copper, Sutherland, & Deng, 2001). This is because of book value close linkage to company return on equity. The collective literature evidence highlights the propensity that price-book value predicts stock returns of firms. However, this claimed is subject to considerable debates amongst investment/security analysts. While some analysts suggests that price to book value predicts stock returns positively, others argue that Price has no predicting power to stock returns of firms. This filled literature gab by providing methodological and practical contribution to the body of knowledge through exploration of Nigerian market.

2. Prior Knowledge on Price to Book Value and Stock Returns
Book value of a firm represents an important feature that offers useful information on firm value at any point in time. The company book values occupies a prominent roles towards valuation process (Ohlson, 2001). The research carryout by Penman (1996) stated that, Price-book value multiple is intensely related with prediction of future company equity value. In addition, the study of Aras and Yilmaz (2008), discloses that, market-book multiple has important part towards share returns prediction of 12 countries 1997-2003 cross sectional information analysis. The research of Fairfield (1994) recommends model of forecasting the impact of book value in share price prediction. The research reveals that price-book value multiple has a positive relationship with future share return of selected companies. The model additionally suggests that various combinations of variables are associated with firms' future viability. Price-book value multiple could decrease or increase from all stocks, generating lower or higher share returns. Thus, price-book value multiple of company plays an important part in predicting stock returns (Foster, 1970). There is significant association between price-book value and share returns of companies listed on the American Stock Exchange (ASE) and New York Stock Exchange (NSE) for 1963 to 1990 cross-sectional information data analysis (Fama & French, 1992). Equally, performance is predictable by other equity valuation multiples nevertheless; price-book value multiple has highest explanation for prospective stock returns of companies compared to other equity valuation multiples (Antonios, Ioannis, & Panagiotis, 2012). valuation approaches that concentrate on price-to book value multiples are more suitable for companies that experience small return on their stocks (Burgstahler & Dichev, 1997). From concrete practices obtained in Denmark, evidence

has revealed that, price-book value multiple is more compared to price-earnings (P/E), suggesting that price-book value (P/B) multiples represent the most and greater predictors of valuation for firms stocks (Elkjaer, Damgaard, & Kumah, 2009). Similarly, Goh (2011) studied the accuracy of equity valuations using the 4 equity value multiples (price-earnings, price-book, price-cash flow and price-sales multiples) to forecast the precise stock prices. The study found that price-book valuation (P/B) multiple symbolize the most impeccable stock price forecaster for period. Furthermore, Ittner and Larcker (2001) established that market-book value is significantly related to markets forecast. According to the research of Pourmohammad, Kheradyar, & Ghahremani (2015) significant positive relationship exists between company price-to-book and return on equity and the association is established at 95% level of confidence. However, in contrasts, the study of Shahed, Barker, and Clubb (2008), outcome from the statistical examination of four valuation multiples findings submit no substantial changes through the sectors. The argument thus, on whether price-book value multiple can predict stock return of Nigerian companies is unsettled, hence, this study makes the following proposition

Ho Price-book value multiple has no positive significant relationship with company stock price in Nigeria.

3. Methodology
The study utilized secondary information from the published annual reports of the selected listed firms in Nigerian. The data are handily collected from Nigerian Stock Exchange (NSE) Facts book on individual company record bases for the five (5) year period (2009 through 2013). The period of the research is selected because is a period after worldwide financial crises which affected virtually most world nations including Nigeria. Secondly, the period is considered as the era of loss of enormous sum of investment by local and international equity investor's due to severe drop in the value of company stocks. The research population comprises of all publicly listed firms on the NSE and 100 companies are drawn based on the information availability.

Variable Definition and Measurement
Variable definition for equity value multiples construct

Variables	Measurements
Price to book value (P/B)	Company share price per share divided by book value per share
Stock price (S/P)	Company stock price

Model Specification
$$SP_{it} = \beta_0 + \beta PB_{it} + \varepsilon_{it}$$

Where: SP represent stock prices for every company over time, β = constant, β = explanatory variable parameter, P/B= price-book value multiple it = denotes combination of cross sectional data and time series of the sample firms and ε = error term to take care of variables that are not captured in our regression model.

4. Results and Discussions
This study examined empirically the effect of price-book value multiple on stock prices of companies listed on the floor of the Nigerian Stock Exchange. The results for the descriptive statistics and multiple regressions are presented in tables 4.1 and 4.2 below respectively.

Table 4.1: Summary of descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
SP	500	9.35	10.15	.06	80.8
P/B	500	2.43	4.26	-16.72	33.21
size	500	7.28	0.88	5.71	9.59
indddum1	500	0.04	0.19	0	1
indddum2	500	0.02	0.14	0	1
indddum3	500	0.01	0.09	0	1
indddum4	500	0.03	0.17	0	1
indddum5	500	0.03	0.17	0	1

The table 4.1 above has presented descriptive summary of equity price and price-book value explained and the explanatory variables respectively. The mean value of the price to book value is 2.43 while the minimum and the maximum values are -16.72 and 33.21 respectively. The standard deviation of the explanatory variable (price-book value) is 4.26 suggesting that the deviation SD to mean value is within the acceptable level. This implies that, the data are closely clustered around the mean also indicating that the data is normally distributed. Therefore, inference drawn from the data set is reliably and results could be use for policy implication. On the other hand, the mean for the stock price is 9.235 and the standard deviation is 10.15 also suggesting that, the deviation of the standard deviation from the mean is within the limit. On the general, the data for the study are all closely and normally distributed for subsequent regressions analysis. The table 4.2 below presents regression results.

Table 4.2: Regression Results

Variable	Coeff	T-value	Probability
PB	0.42	4.06***	0.00
SIZE	-2.09	-4.19***	0.00
IND.	4.28	0.06**	0.06
Cons	23.41	6.35	0.00
R square	0.08		
Prob Chi	0.00		
No. of Obs	500		

Note: *** significant at 1%, ** and * significant at 10% respectively

To examine the association that exist between the dependent variable ((stock price) and independent variables (price-book value multiples), the generally used ordinary least squares (OLS) panel regression was estimated. The results presented the determination coefficient (R-squared), respective signs, and the significant levels. The table 4.2 above presented the OLS regression results and evidence from the results reveals a coefficient of 0.42 implying that that for every one unit increase in the price-book value share price will increase by 0.42 Nigerian Naira (NGN). The probability of the explanatory variable is positive and significant at one 1% level, suggesting a strong positive and significant relationship between the stock price and price-book value multiple of Nigerian firms. The evidence has provided an evidence of rejecting our null hypothesis which predicts that price-book value multiple has no predicting power of share prices amongst Nigerian firms. The low R square is logical and reasonable as several other factors predict stock price in addition to the P/B value multiple. The findings is consistent with the results of Pourmohammad,et al (2015) and Goh 2011 that established significant relationship between the P/B multiple and stock price prediction. However, contradicts the study of Shahed (2008) who reported no relationship between the dependent variable (stock price) and the independent variable P/B value multiple.

Concluding Remark

The discussions above provided an empirical evidence on whether price-book value of company predicts share prices. The implication of the results is that investment/security analysts and other classes of investors can apply price-book value to asses the future share prices of companies listed on the Nigerian Stock Exchange. Therfore, the research concludes that as obtainable in other markets across the globe price-book value multiple represent an important variable to predict share prices of

companies. Thus, we recommends the computations of company price-book value in relation to future forcast of company shares in Nigeria. It could be observed that, the R square is low. This logical because is not only price-book value multiple that predict stock price but combination of other factors.

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