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Role of Profit Management Methods in Increasing the Market Share of Economics

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Abstract

The relationship between market share and profitability has been the subject of academic research for so many years, yet it remains a generalization which has been over-extended and accepted without acknowledgement of all its attributes. This research intended to contribute to the literature by aiding further understanding of the relationship between profitability and market share. Specifically, the aim of this research was to determine whether there is a relationship between market share and profitability within Indian banks. The research aimed to establish if there was a strong relationship between market share (represented by the percentage that companies own in a market) and profitability (represented by return on asset, return on equity and return on capital employed). In addition, the study wanted to understand if companies that grow market share by acquiring other companies are ranked higher than companies that grow organically. The purpose of the paper was to investigate empirically whether ROA, ROE, and ROI together explain variations in the market prices per share of publicly traded banking financial institutions in India for the period 2010-2017.

Keywords: market share, profitability, return on assets, return on equity, and return on investment.

Papel De Los Métodos De Gestión De Beneficios En El Aumento De La Cuota De Mercado De La Economía

Resumen

La relación entre la cuota de mercado y la rentabilidad ha sido objeto de investigación académica durante tantos años, pero sigue siendo una generalización que se ha extendido y aceptado en exceso sin el reconocimiento de todos sus atributos. Esta investigación pretendía contribuir a la literatura ayudando a una mayor

comprensión de la relación entre la rentabilidad y la cuota de mercado. Específicamente, el objetivo de esta investigación fue determinar si existe una relación entre la participación de mercado y la rentabilidad dentro de los bancos indios. El objetivo de la investigación fue establecer si existía una relación sólida entre la participación de mercado (representada por el porcentaje que poseen las empresas en un mercado) y la rentabilidad (representada por el rendimiento del activo, el rendimiento del capital y el rendimiento del capital empleado). Además, el estudio quería comprender si las compañías que aumentan su participación en el mercado mediante la adquisición de otras compañías tienen una clasificación más alta que las empresas que crecen orgánicamente. El propósito del documento era investigar empíricamente si el ROA, el ROE y el ROI explican en conjunto las variaciones en los precios de mercado por acción de las instituciones financieras bancarias que cotizan en bolsa en la India para el período 2010-2017.

Palabras clave: participación de mercado, rentabilidad, rendimiento del activo, rendimiento del capital y rendimiento de la inversión.

Introduction

The relationship between market share and profitability continues to be a critical research issue in business strategic management in the world. There is growing pressure to make the right decisions quickly and one of the challenges facing managers is how to increase business profits in the competitive business world today. In order to do this, managers need to understand the factors that increase profitability.

Managers are faced with many different choices every day. In today's competitive world there is growing pressure to make the right decisions quickly and one of the challenges facing managers is how to increase business profits. In order to do this, managers need to understand the factors that increase profitability. At microeconomic level, performance is the direct result of managing various economic resources and of their efficient use within operational, investment and financing activities. To optimize economic results, a special attention should be given to the proper grounding of managerial decisions. These should be based on complex information regarding the evolution of all types of activities within the company. A synthetic picture of the company's financial position and its performance is found in the annual financial statements, which therefore become the

main information sources that allow the qualitative analysis of how resources are used during the process of creating value.

In order one company to run on a long-term performance way, it is needed to develop, implementation and maintaining the strategies, measures and coherent policies from economic and financial point of view, resulted from a good knowing of internal and external specific conditions in which the firm acts. The qualities of managerial options depend by the ability of identifying those elements that productively used could lead to increasing of the results and performance.

Good financial performance of any firm not only plays a role in increasing the market value of that specific firm but also leads towards the growth of the whole industry which ultimately leads towards the overall prosperity of the economy (Banafa, Muturi & Ngugi, 2015). Assessing the determinants of performance of manufacturing firms have gained the importance in corporate finance literature because as intermediaries, these companies not only provide the mechanism of risk transfer but also helps to channelize the funds appropriated to support the business activities in the economy.

Financial performance is a subjective measure of the responsibility of a substance for the consequences of its approaches, operations, and exercises evaluated for a recognized period in budgetary terms , Measures of budgetary execution incorporate measures of liquidity, dissolvability, gainfulness, and money related proficiency (Maaka, 2013). Methods for measuring money related execution incorporate; benefit, income, deal development, and market book value (Bassey, Edu, Bassey & Enang, 2016). Evaluating the budgetary execution of business permits chiefs to judge the consequences of business methodologies and exercises in goal money-related terms. Development is by, and large observed as an indication of achievement if it brings about changes in budgetary execution (Agbeja, Adelalaiu & Olufeni, 2015). Three benefit measures that are all around acknowledged for their esteem to administration are profit for resources, return on value and working overall revenue (Njoroge, 2015). Profitability is one of the indicators of financial performance.

Profitability of the firm is defined as the state or condition of yielding a financial profit or gain (Alshatti, 2015). Profitability is measured by Return on Assets (ROA), Return on Equity (ROE) amongst others. ROA measures gainfulness for all supporters of capital; it is the capacity of an associa-

tion's administration to produce salary by using organization resources available to them (Omesa, 2015). The ROE measures the rate of profit for the proprietor's value utilized in the business. It shows the rate of giving back that the administration has earned on the capital gave by shareholders in the wake of bookkeeping in installments to all other capital providers (Ehiedu, 2015).

Market share and Financial Performance

The size of a firm is the amount and variety of production capacity and ability a firm possesses or the amount and variety of services a firm can provide concurrently to its customers (McWilliams & Siegel, 2010). The size of a firm is a primary factor in determining the profitability of a firm due to the concept is known as economies of scale which can be found in the traditional neoclassical view of the firm. It reveals that contradictory to smaller firms, items can be produced at much lower costs by bigger firms. By this concept, a positive relationship between Market share and profitability is expected (Merozwa, 2015). Contrary to this, alternative theories of the firms advise that larger firms come under the control of managers pursuing self-interested goals and therefore managerial utility maximization function may substitute profit maximization of the firms' objective function.

Ali (2017) conducted a study in Kenya entitled: Effect of Market share on the relationship between strategic planning dimensions and performance of manufacturing firms in Kenya. This study aimed to determine the relationship between strategic planning dimensions and firm performance in the manufacturing sector in Kenya and to establish, the moderating effect of Market share on the relationship between strategic planning and firm performance in the manufacturing firms in Kenya. The study was informed by not only the low performance of the manufacturing sector over the past two decades, but also, by the mixed results and contentious debate on the effect of strategic planning dimensions of management participation, functional integration, strategic orientation and strategic control on performance.

Market share has been considered as an important determinant of firm profitability. The used two variables namely total assets and total sales. In this study, the effect of Market share on the profitability of manufacturing companies listed in the Nigerian Stock Exchange was analyzed by using a panel data set over the period 2000-2009. Profitability was measured by

using Return on Assets, while both total assets and total sales were used as the proxies of firm size. According to the results of the study, firm size, both regarding total assets and regarding total sales, has a positive impact on the profitability of manufacturing companies in Nigeria (Babalola 2013).

"Effect of Leverage, Liquidity and Market share on the financial performance of listed non-financial firms" research sought to investigate the effect of Leverage, Liquidity and Market share of nonfinancial firms listed at Indian Stock Exchange during the period 2009-2013. The variables that were used included; debt, the risks associated with indebtedness, interest rates and debt-equity combination and the management of accounts receivables and accounts payables. The study used panel data over a five year period (2009 to 2013) to examine the effect of Leverage, Liquidity, Firm size, Day's accounts receivables and accounts payables on Returns on Equity and Assets on financial performance of listed non-financial firms. Regression coefficients were interpreted using the E-views software output (Abdukadir 2016).

The relationship between market share and profitability continues to be a critical research issue in business strategic management in the world. There is growing pressure to make the right decisions quickly and one of the challenges facing managers is how to increase business profits in the competitive business world today. In order to do this, managers need to understand the factors that increase profitability.

REVIEW OF LITERATURE

A number of previous studies have tested various factors that affect earnings. Bank earnings are proxies in various ways such as ROA, ROE, ROI and NIM. Various internal and external factors are put forward to test its influence on bank earnings. However, some of them also only test the influence of internal factors alone.

Damouri (2013) opines that leverage ratios determine the risk of equity costs. He further states that other measures for the capital structure include market value-based measures, semi- market value based measures, and book value based measures. Financial leverage influences after tax profits as well as the earnings per share. The combined effect of the two has significant effect on the ordinary shareholders' earnings (Pandey, 2010).

Rehman (2013) carried out a study in Pakistan entitled: "Effect of financial leverage and financial performance in listed sugar companies of Pakistan." The study sought to examine the association between leverage and finan-

cial performance of listed companies in the sugar industry in Pakistan. The findings reveal that there was a positive relationship between debt-equity ratio with ROA and sales growth. The study further found that there was a negative relationship of debt-equity ratio with net profit margin, ROE, and earnings per share. An increase in debt increases the interest payment hence decrease in earnings per share.

Hassan (2014) carried out a study in Saudi Arabia entitled: "An investigation of the effect of financial leverage on firm financial performance in Saudi Arabia's public listed companies." This study aimed at analysing the impact of the debt and equity mix, on financial performance. It concentrated on the Saudi Arabian capital market. The main goal of this study was to expand the literature on the influence of financial leverage in a not for profit financial system, and its impact on the financial performance. This study analyzed fifty-seven firms listed in the Saudi Arabian stock (2005-2013). This study expands the literature on the link between financial performance and zakat (Islamic tax), financial structure, and the ages and sizes of not for profit firms in Saudi Arabian financial sector. This study was motivated by the collapse of Saudi Arabia stock market in 2006 couple with the 2008 global financial crisis that reduced the firms' trust in bank loans as a source of funds. The results showed that lower leverage levels increase profit margins, ROE and ROA. The study gives evidence to recommend that, Saudi Arabian firms need to balance their zakat liabilities with their leverage borrowing levels. This study also recommends that other studies should be carried out to examine zakat calculation standards and its effect on capital structure. The current zakat calculation in firms' financial statements is vague. Thus, a study should conduct to analyse the effect of zakat on capital structure and financial performance.

Ahmad Aref Almazari (2014) investigated the internal factors that affecting profitability on 23 Saudi and Jordanian banks for the period 2005 to 2011. The main objective was to compare the profitability of the Saudi and Jordanian banks by using the internal factors for estimations. The results indicated that there is a significant positive correlation between ROA of Saudi banks with Total Equity to Assets Ratio (TEA), Total Investment to Total Assets Ratio (TIA) and Liquid assets to assets ratio (LQR) variables, as well as a negative correlation with Net Credit Facilities to Total Assets Ratio (NCA), Net Credit Facilities to Total Deposits Ratio (CDR), Cost to Income Ratio (CIR) and Bank Size (SZE) variables. Meanwhile, there is a significant positive correlation between ROA of Jordanian banks with

LQR, NCA, TEA and CDR variables, also there is a negative correlation of ROA with CIR, TIA and SZE.

Ong Tze San and Teh Boon Heng (2013) investigated the impact of bank-specific characteristics and macroeconomic conditions on profititability of 20 commercial banks operating in the Malaysian for the calendar year 2003 to 2009. There are three ratios which represent profitability measures are return on assets (ROA), return on equity (ROE) and net non-interest margin (NIM). Results of this study indicated that ROA is the best profitability measures. All bank-specific characteristics (Equity to asset ratio, Cost to income ratio, Loan loss reserves to gross loans, Liquid assets to deposit and short-term funding) significantly affect bank profitability in the anticipated way. However, no evidence is found in support of the macroeconomic variables (inflation and GDP growth) have an impact on profitability.

Abdus Samad (2015) examined the impact of bank specific characteristics and macroeconomic variables in determining the banks' profitablity of 42 Bangladesh commercial banks for year 2009 and 2010. Results indicate that bank specific factors such as loan-deposit ratio, loan-loss provision to total assets, equity capital to total assets, and operating expenses to total assets are significant factors on ROA. Bank sizes, GDP, and Inflation, variables show no impact on ROA.

Zawadi Ally (2014) investigated the effects of bank specific and macroeconomic factors on banks' profitability in Tanzania. The fixed effects regression model was used on a panel data obtained from 23 banks from 2009 to 2013. The empirical results show that bank-specific factors (log of total asset, total equity to total assets, non-performing loan to total loan ratio, non-interest expenses to average assets, loans to deposits) significantly affect on ROA. However, macroeconomic factors (inflation, interest rate) do not seem to significantly affect on ROA.

Nguyen Thi My Linh and Bui Ngoc Toan (2015) examined the factors that affect the profitability of commercial banks in Vietnam. The data are based upon the financial reports of 22 commercial banks in Vietnam during the period 2007 to 2013. The results Bank profitability is measured by indicators such as: return on assets (ROA), return on equity (ROE), and net interest margin (NIM). The research result shows that the equity to total assets ratio (CAP), the loans to total assets ratio (LOAN), liquid assets to

total assets (LA), and the economic growth rate (GDP) have an impact on the profitability of commercial banks in Vietnam.

Shoaib Nisar, Wang Susheng & Jaleel Ahmed (2015) investigated how bank-specific, industry-specific and macroeconomic factors affect the profitability of banking sector of Pakistan over the period 2006 to 2013. The empirical results show that ROA of Pakistani banking sector is negatively affected by Interest Expenses to Total Deposits and Borrowing, Liquid Assets to Total Assets, Non- Performing Loan to Gross Advances, and Administrative Expense to Total
Assets, and positively affected by Non-Interest Income to Total Income, Shareholders' Equity to Total Assets, Log of Total Assets to Log of GDP, and Log of GDP.

Mohammad Abdelkarim Almumani (2013) investigated the factors that determine bank's profitability of the Jordanian commercial banks listed in Amman Stock of Exchange (ASE). Thirteen Jordanian commercial banks listed in ASE since 2000 were selected (91 observations) over the 2005 to 2011. The factors taken into consideration are ROA, total cost to total income, Liquid Asset to Customer Deposit and Short Term Borrowed Funds, Net Credit to Total Assets Ratio, Provision for Credit Facilities and Interest in Suspense to Credit Facilities, Total equity to total assets and log of total assets. The major outcome of this study is that the total cost to total income is the major endogenous factors under the control of management that determines the profitability of the commercial banks in Jordan. Other variables, such as Liquid Asset to Customer Deposit and Short Term Borrowed Funds, Net Credit to Total Assets Ratio, Provision for Credit Facilities and Interest in Suspense to Credit Facilities, Total equity to total assets and log of total assets did not show any statistical effect on ROA.

Deger Alpera & Adem Anbar (2011) examined the bank specific and macroeconomic determinants of 10 commercial banks profitability in Turkey over the time period from 2002 to 2010. The bank profitability is measured by return on assets (ROA) and return on equity (ROE) as a function of bank specific and macroeconomic determinants. The results show that log of total asset and non-interest income to total asset has a positive and significant effect on bank profitability. However, Loans to Total Assets, and loans under follow-up to total loan, have a negative and significant impact on bank profitability. With regard to macroeconomic variables (GDP growth, Inflation, real interest rate) only the real interest rate affects the

performance of banks positively.

Lucky Anyike Lucky and Nwosi, Anele Andrew (2015) examined the relationship between asset quality and the profitability of the fifteen (15) quoted commercial banks in Nigeria from 1980 to 2013. The result show that nonperforming loans to Total Loans and nonperforming Loans to Total Customers Deposit have positive relationship with ROI while Loan Loss Provision to Total Loans and Loan Loss Provision to Total Asset have negative relationship with ROI.

Pooran Lall (2014) examined the effects of bank specific factors and external factors on bank profitability in the United States during the 2007 to 2013. The result shows that Total Deposit to Total Asset; Net loan to total asset; Non-Interest Income to Total Income; Net Interest Income to Total Asset; Equity to Total Asset had a positive effect on ROA, while Loan Loss Allowance to Total deposit; Loan Loss allowance to Loan; had a negative effect on ROA.

Devraj (2014) conducted a study entitled: "Effect of liquidity on the financial performance of non-financial companies listed at the NSE." The objective of the study was to establish the effect of liquidity on the financial performance of non-financial companies listed at the NSE. Secondary data was collected from NSE and multiple regression analysis used in the data analysis. The study revealed that liquidity positively affects the financial performance of non-financial companies listed at the NSE. The study established that current ratio positively affects the financial performance of non-financial companies listed at the NSE. The study also revealed that an increase in operating cash flow ratio positively affects the financial performance of non-financial companies listed at the NSE. The study found that an increase in debt to equity positively affects the financial performance of non-financial companies listed at the NSE. The study recommends that there is a need for non-financial companies listed at the NSE to increase their current assets to increase their liquidity as it was found that an increase in current ratio positively affects the financial performance. The study further recommends that there is a need for non-financial companies listed at the NSE to increase their operating cash flow, through reduction of their credit repayment period to positively influence their financial performance.

- Profitability measures

The financial analysis indicators through their content express and can characterize the modality of patrimonial resources management, the conformity with the principles of a balanced functioning, options and strategies financing, the efficiency of resources used etc. From these financial indicators we have selected the most representative ones that exert a very strong impact on the firms' performance. In order to specify the analysis model, we used as exogenous variable a series of indicators of financial analysis computed mainly as rates of the balance sheet, such as Fixed Assets Ratio, Sales to Current Assets Ration, Sales to equity Ratio, Debt Ratio, Gross Margin Return on Inventory, Expenses Revenue Ratio and structure of financing sources (Financial Leverage Ratio). For the evaluation of profitability, Return on total assets (ROA) was used as a dependent variable. It is considered that it includes all the influences of the assets' management and it is acknowledged as a key indicator of increasing company performance; it also defines their economic growth potential.

- Return on Assets (ROA)

The Return on Assets (ROA) indicator expresses the company's ability to generate profit as a consequence of the productive use of resources and of the efficient management, and it's used as a dependent variable in the assessment of economic performance. It is computed as a ratio between Net Income and Total Assets (Burja, 2010). states that perhaps the most critical financial goal of manufacturing firms is ROA, Investors rate the management performance of Chief Executive Officers (CEOs) and Chief Financial Officers (CFOs) of manufacturing firms largely by their ability to wring profits from the assets under their control. As such, ROA is perhaps the premier metric of quarterly and annual results. However, virtually no company is able to measure and report on ROA at transactional level to allow managers to know how ROA impacts on their day-to-day, deal-by-deal choices. The implications of this is that ROA is nothing more than high level after the effect report card on CFOs and CEOs reveal that there is no link between the day to day operations and the key financial goals of manufacturing firms shows the ROA equation as follows:

$$\text{ROA} = \textit{Margin} \times \textit{Velocity}$$

$$\text{where Margin} = \frac{\text{Profit}}{\textit{Sales}} \text{ and Velocity} = \frac{\textit{Sales Revenue}}{\textit{Assets}}$$

The difference between firms' and industries' ROAs might be related to the economies and diseconomies of scale from operating leverage and to

movement through product life cycles. Interestingly, Selling and Stickney found that firms highest ROA in their industries clearly followed a product differentiation or a cost leadership strategy. Since product differentiation is a way of gaining market power and cost leadership strategy aims at becoming the lowest producer in order to charge lower prices and sell at a greater volume, it is expected that firms with high
market share will also achieve high ROA.

- Return on Equity (ROE)

ROE is the best accounting ratio to measure shareholder performance show the calculation as

$$ROE = \frac{\text{Net Profit after tax}}{\text{Equity}}$$

comment that the fact that ROE represents the end results of structured financial ratios analysis, also known as Du Pont analysis, it contributes to its popularity among analysts, financial managers and shareholder. show that ROE calculation is comprised of the following components:

$$ROE = \frac{\text{Earnings}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Equity}}$$

The components are profitability, asset turnover and financial leverage. From the equation it is clear that ROE can therefore be improved by improving profitability and, by using assets more efficiently as well as by increasing financial leverage. Over time it has become clear that improving the ROE may not necessarily improve shareholder value. some of the limitations of ROE include:

- ROE does not consider the timing of cash flows and thus may overstate returns;
- Asset turnover may be affected by inflation;
- Earnings can be manipulated legally within the framework of Generally Accepted Accounting Practice (GAAP). Thus earnings may not truly represent true earnings;
- ROE is calculated after the cost of debt before taking into account the cost of own capital, which is not a free resource. This may lead to some companies reporting profits while not creating any value or even destroy-

ing value.

- Return on Investment (ROI)

ROI is sometimes referred to as return on invested capital (ROIC) "Return on assets or return on investment is a measure of profit per rand of assets invested in the firm" It can thus be classified as an indicator of operating performance.
Ross (2008) uses the following equation:

$$ROA = \frac{\text{Profit margin}}{\text{Total Assets}}$$

Jacobson in his study used the following equation:

$$ROI = \frac{\text{Profit}}{\text{Investment}}$$

While de Wet and du Toit have used:

$$ROIC = \frac{\text{Earnings before Interest and Tax x (1- Corporate Tax Rate)}}{\text{Assets}}$$

- Strategic Management Theory

According to Weetman (2010) the profitability of a business depends on having a successful business strategy. He further argued that if the business strategy gives the firm its competitive edge, then the market share should reflect that strategy adopted by the firm clearly. This traditionally lays emphasis on profitability and market share. argued that a satisfactory financial result may be obtained by first supplying a good product at
low prices, making customers very satisfied and gaining a market share and an image, and then later reducing the level of satisfaction by raising prices. This strategy leads to increased market share by the creation of loyal customers. The achievement of profitability in the firm is a function of market share, market prospect, etc. That is, an increase in market share will lead to higher profits of organizations. Business strategy usually includes planning to achieve a better performance than competitors.

- Contribution Theory

The contribution theory could be traced to the works of Weetman (2006) he posited that beyond the break-even point of a business entity the sales of further units of products as a result of the business strategy adopted

would make a contribution to profit. This implies that the higher the contribution per unit of a product sold, the greater the profit generated by the firm from any particular level of activity. Thus the expansion of market share beyond the break-even level of sales would increase the profit of the firm. However, this theory is to be applied with a little caution considering the basic assumptions surrounding this theory. From the foregoing, this study considers the market power theory, product quality assessment theory, efficiency theory, strategic management theory and contribution theory as the cornerstone of utilizing the resources related to the study of the relationship between market share and profitability of the banking sector in Nigeria.

How do earnings affect share prices?

A strong driver of share price is a company's earnings. As earnings rise and are retained by the company, the value of the shares to the shareholder rises and so does the price of the shares as investors, keen to gain access to the higher earnings, become increasingly willing to pay the higher prices. Wall Street often distinguishes between "good firms" and "good investments." A good firm may be highly profitable, with a correspondingly high ROE. But if its stock price is bid up to a level commensurate with this ROE, its P/B ratio will also be high, and the stock price may be a relatively large multiple of earnings, thus reducing its attractiveness as an investment. The high ROE of the firm does not by itself imply that the stock is a good investment. Conversely, troubled firms with low ROEs can be good investments if their prices are low enough (Bodie, Kane & Marcus, 2014). One strategy that works reasonably well when selection companies to invest in is to invest in companies that consistently earn higher rates of return on assets and on equity than competing firms in the same industry (Lynn, 2012).

RESEARCH METHODOLOGY

Data

Our data was extracted from the annual published financial statements of banking financial institutions listed on the Bombay Stock Exchange (BSE) for which consecutive data is available for the period 2010-2017. All banking financial institutions listed on the BSE for the period 2010-17 were sampled. Because variables were calculated over this period, the study only maintained firms that provided data over the five-year period. This excluded newly listed firms and firms that did not exist between 2009 and 2013. Firms with missing values were also excluded from the

sample, as well as non-financial firms with capital structures likely to be significantly different from those included in the sample, and which might constitute serious outliers. This period was considered important for two reasons:

(1) from the table below it is clear that the Global Financial Crises which ended in 2009 impacted the financial performance of banks in India, just as it did in many other economies globally. Performance declined during the period 2011-2013 and started to pick up again in 2014.

(2) the 2013 and beyond also coincided with a rigorous adoption of IAS 1 (revised) whose

objective is to give greater importance to comprehensive income in order to provide the public

and analysts with more reliable and relevant information on current as well as the future

financial performance of entities.

Table 1 Profitability indicators (%)

Ratio	December							
	2010	2011	2012	2013	2014	2015	2016	2017
Average Profitability ratio	19.0	16.2	13.3	9.8	14.6	17.8	21.5	23.8
Average ROA	4.8	3.7	3.2	2.8	3.8	3.9	4.8	6.2
Average ROE	27.4	25.8	23.7	17.5	20.4	19.7	25.8	31.1

Model specification

The dependent variable is the market price per share, and the independent variables are return on assets, return on equity, and return on investments. The general empirical model has the form:

$$y_{i,t} = \alpha + \beta X_{i,t} + \varepsilon_{i,t} ;$$

With the subscript i denoting the cross-sectional dimension and t representing the time series dimension.

The left-hand variable $y_{i,t}$ represents the dependent variable in the model, market price

per share for the ith firm at time t, α represent the firm-specific intercepts, β is a 3×1 vector of

parameters, $X_{i,t}$ contains the set of explanatory variables for the ith company in the tth period.

The fixed-effects model, by allowing different company intercepts, serves

as a solution for
models, which may not be fully specified, and εi,t is a disturbance term defined as εit = μi+vit,
where μi denotes the unobservable individual effect, and εi,t indicates the remainder of the
disturbance. An obvious way to deal with the fixed-effects of those omitted variables that are
specific to each firm, but remain constant over time is to introduce dummy variables into the
regression model. Because of this, the fixed-effects model is also referred to as the least
squares dummy variable (LSDV) model. It provides a common set of partial regression
coefficients while allowing a different intercept for each of the cross-sectional units. The set of
explanatory variables Xi,t is represented by return on assets, return on equity, and return on
investment.
The model is therefore specified as follows:

$$P_{it} = \beta_0 + \beta_1 ROA_{it} + \beta 2 ROE_{it} + \beta 3 RO_{it} + \varepsilon_{it}$$

Where:
Pit = closing market price of share for firm i in time t;
ROA_{it} = return on assets for firm i in time t;
ROE_{it} = return on equity for firm i in time t;
ROI_{it} = return on investment for firm i in time t;
ε = an error term, normally distributed about a mean of 0 (for purposes of computation, the ε is
assumed to be 0.)

Analytical Tests
We test the validity of the model and explanatory power of the explanatory variables using the R2. If R2 = 0 then X does not have any explanatory power for Y. The test of the hypothesis R2 = 0 can therefore be interpreted as a test of whether the regression explains anything at all. The test of R2 = 0 will be used as a test of whether all of the explanatory variables jointly have any explanatory power for the dependent variable.
The test is performed according to the following strategy:

1. If p-value is less than 5% (i.e. 0.05), we conclude R2 ≠ 0.
2. If p-value is greater than 5% (i.e. 0.05), we conclude R2 = 0.

EMPIRICAL RESULTS

Table 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
MKT SHARE PRICE	45	.1000	45.5000	4.251333	10.3319572
ROA	45	.0098	.0931	.040369	.0209388
ROE	45	.0523	.4998	.226976	.1141659
ROI	45	.0818	.6960	.317698	.1629194
Valid N (listwise)	45				

The minimum share price was 0.10 and the maximum share price was 45.50, with the mean share price being 4.25 cedis meaning that most of the banks are doing well. The minimum ROA is .0098 and the maximum is .0931 with a mean figure of .0404. ROAs in the range of 1.2 to 1.4 per cent are considered excellent (Goel, 2014). The minimum ROE is .0523 and the maximum is 0.4998 with a mean figure of 0.2270. According to the empirical literature, an ROE above 10% is considered strong (Choudhry, 2012).

Table 3 OLS regression results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics
	B	Std. Error	Beta			VIF
(Constant)	-5.133	3.244		-1.582	.121	
ROA	36.362	145.738	.074	.250	.804	4.500
ROE	11.487	59.197	.127	.194	.847	22.070
ROI	16.711	36.652	.264	.456	.651	17.230

In our evaluation of a multiple regression equation, an approach to reducing the effects of multicollinearity is to carefully select the independent variables that are included in the regression equation. A general rule, if the correlation between two independent variables is between -0.70 and 0.70, there likely is not a problem using both of the independent variables. A more precise test is to use the variance inflation factor. It is usually written VIF.

From table 3 above it is apparent that there is a multicollinearity problem as indicated by VIFs of 22.070 and 17.230 for ROE and ROI respectively.

A VIF greater than 10 is considered unsatisfactory, indicating that the independent variable should be removed from the analysis. We retained ROE as the variable that best captures what we want to measure and delete the ROI (Cooper & Schindler, 2014) and rerun the regression and the results are shown in table 5 below.

Also, because we gathered these data over consecutive years we anticipated that there might be problems with autocorrelation. To check this, we examined the Durbin-Watson statistic from the output. The value of the Durbin-Watson statistic can range from 0 to 4. The value of d is 2.00 when there is no autocorrelation among the residuals. When the value of d gets close to 0, this indicates positive autocorrelation. Values beyond 2 indicate negative autocorrelation
(Cooper & Schindler, 2014). The d = 2.01 for our data is considered to not present any significant problem of collinearity and will not affect the validity of our results.

Table 4 ANOVA

Model	Sum of Squares	df	Mean Square	F	P-value
Regression	944.703	2	472.352	5.287	.009b
Residual	3752.268	42	89.340		
Total	4696.971	44			

Table 5 OLS regression results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-5.054	3.208		-1.575	.123		
ROA	30.371	143.769	.062	0.211	.834	.224	4.463
ROE	35.594	26.368	.393	1.350	.184	.224	4.463

Table 5 presents results from the OLS regression using the banking industry dataset for the publicly traded banks in Ghana. Since we are interested in investigating how ROA and ROE of firms influence their share price, we select closing market price per share as our dependent
variable and ROA and ROE as the explanatory variables. The column headed “standardized coefficients” or “Beta” gives the regression coefficients expressed in standardized form. When these are used, the regression Y intercept is zero. Standardized coefficients are useful when the variables are measured on different scales. The beta coefficients also show the relative contribution of the three independent variables to the explanato-

ry power of this equation (Cooper & Schindler, 2014). This table reveals that the estimated standardized coefficient on ROA is .062 whilst that on ROE is 0.393 suggesting that both contribute to variations in share price. Using these for explaining the equation, we see that even though the two coefficients show a positive linear relationship, the ROE contributes significantly more than the ROA. In fact, the ROE has about six times the explanatory power of the ROA.

Test of the Coefficients

In Table 5, the coefficient of determination of 0.201, means that the ROA and ROE together explain about 20.1% of the variation in the share prices. Testing the null hypothesis can be based on a p-value. In the case of the F-statistic, the p-value is defined as the probability of observing an F-value as large as or larger than the F test statistic, assuming the null hypothesis is true. If the p-value is less than our selected significance level, then we decide to reject the null hypothesis. From table 5, the ANOVA shows the F-statistic of 5.29 with p-value equal to .009. It is clearly less than our significance level of .05. This provides overwhelming evidence that our model is well fit and valid. Therefore, we reject the null hypothesis and conclude that at least one of the regression coefficients is not equal to zero, or the R2 is zero at the 5% level of significance. The hypothesis test of whether R2 = 0 yields a p-value of much less than 5%, indicating that ROA and ROE have statistically significant explanatory power for the dependent variable (market price per share).

Table 6 presents a summary of the expected signs of the coefficients of the

Table 6 Expected and obtained Signs

Explanatory variables	Expected sign	Sign Obtained from our model
ROA	+	+
ROE	+	+
ROI	+	+

CONCLUSION

For decades, managers have learned from professors, consultants, and superiors that high market share is associated with high profitability. According to economies of scale and experience theory, a firm's cost position depends on its market share. The larger the market share, the lower the business unit's when compared to the competition and the higher the profitability. The Boston Consulting Group, using rel-

ative market share as a measure of business strength, also contributed to such beliefs. We find that there is a positive linear relationship between ROA, ROE, ROI and the market price of shares of banking financial institutions quoted on the Bombay Stock Exchange (BSE). This finding is consistent with prior findings in the empirical literature reviewed. The positive sign obtained for the coefficients of the independent variables is also in line with the theoretical framework. The implication is that when bank assets are efficiently deployed and utilized by bank management profitability will increase and this can consequently lead to increases in market prices of their shares, and hence shareholder wealth will be maximized.

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