

DETERMINANTS OF MARKET AND BOOK BASED PERFORMANCE OF MANUFACTURING COMPANIES IN GHANA: AN EMPIRICAL STUDY

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Abstract

The study explored the determinants of market and book based financial performance of manufacturing companies in Ghana. The data for eleven (11) listed manufacturing companies covering a period of seven years was used for the analysis. The time series and cross sectional nature of the data necessitated the adoption of the panel regression for the work. The results of the analysis indicated that both the market and book based financial performance of the manufacturing companies were above the average performance of the manufacturing industry and firm specific variables such as tangibility, asset structure and operating cost ratio of the manufacturing companies influenced the book based financial performance measured as earnings per share (EPS) and Tobin's Q negatively.

Keywords: Earnings per Share, Tobin's Q, Macroeconomic Variables, Manufacturing Firms, Signalling Theory

INTRODUCTION

Literature reveals that firm level characteristics largely determine the growth and expansion of any firm. According to Yoon and Kim (2009), these features form the bases of the development of any firm and for that matter have greater impact on the ability of the firm to improve performance. Görzig and Stephan (2002), argued that some firm level characteristics such as the size of a firm is a relevant variable for explaining differences in performance in small and large firms though the performance of smaller firms tends to differ from large ones. They also pointed out that, unobserved firm-specific characteristics, which presumably comprise age of the firm, asset structure and liquidity are very important factors for explaining firm performance.

In the current study, the determinants of performance that were tested were drawn from macroeconomic factors and firm level characteristics such as firm size, operating cost and asset tangibility. The firm's size has a crucial weight on the ability of the company to generate revenue (Burkart & Ellingsen, 2004). Large firms which want to improve their book and market based performance are more diversified in their operations than others (Honhyan, 2009). Operating cost measures the degree to which a business organization relies on fixed operating costs in its pursuit for maximizing its operating profit. Therefore an increase in profits results from spreading a given level of fixed operating costs over a larger number of units of the product (Zubairi, 2010). Thus companies that have higher operating cost will have their fixed cost rising above the variable cost of production.

The trend of macroeconomic variables gives a true reflection of the economic outlook of a country which might have gross impact on the performance of all industries in the economy. For a firm to increase profitability it must be able to withstand the various macroeconomic volatilities prevalent in the country. The macroeconomic factors that were considered in the current study are inflation, lending rate, exchange rate and money supply. This is primarily because in a developing economy like Ghana these four variables directly influence the nature and the performance of firm via the input markets and the banking and insurance sectors through the credit cost transmission mechanism as evidenced from the study by Abor (2008). Inflation is a sustained increase in the general level of prices for goods and services and is measured as an annual percentage increase. Manufacturing firms base the pricing of their products on inflation. Thus, when there are consistent changes in inflation it affects the purchasing power of customers and intend reduce the level of demand and performance of the manufacturing companies by reducing the amount of funds available.

Firm profitability is mostly affected by inflation, exchange rate and lending rate because when these variables are unfavourable, the general level of prices of goods and services increases thereby reducing the amount of cash flow to a company provided the demand for the

product falls. The reason could be the inability of the purchasing power of customers to meet the prices charge for goods and services. Lending rate is the price paid to borrow a debt capital or the amount charged, expressed as a percentage of principal paid by a borrower to a lender for the use of such funds (Brigham & Houston, 2004). It constitutes the base from which various financial institutions lend to the final customer and as such vary. A firm's performance is the general measure of its overall financial health over a given period of time. High performance reflects management effectiveness and efficiency in making use of company's resources and this also contributes to the country's economy at large. Financial performance of a firm can be measured using so many performance measures such as Return on Investment, Earnings per Share, Return on Assets, Return on Equity and Tobin's Q. This research employed earnings per share as a proxy for the book value financial performance and Tobin's Q as market value performance measures.

In Ghana most of research in the area is based on the effect of macroeconomic variables on stock returns and stock prices of firms listed on the GSE. Thus there has not been any visible research publication employing firm characteristics and macroeconomic factors to ascertain both book and market based performance of manufacturing firms in Ghana. In view of this the research was conducted by looking at the effect of macroeconomic factors and firm characteristics as a determinant of book and market based performance of the manufacturing firms listed on the Ghana Stock Exchange(GSE) by analysing the results from the perspective of signalling and the free cash flow theories..

Objectives of the study

The general objective of this research is to explore the determinants of book and market based performance of listed manufacturing companies on the Ghana Stock Exchange.

The study specifically addresses the following objectives;

1. To determine the effect of firm specific variables on the financial performance of manufacturing companies on the Ghana Stock exchange.
2. To determine the effect of macroeconomic variables on the financial performance of manufacturing companies on the Ghana stock exchange.
3. To make policy recommendations on the actions to be taken for each variable in order to increase the performance of the manufacturing firms.

REVIEW OF LITERATURE AND HYPOTHESIS DEVELOPMENT

This section analysed two theories and empirical review from which the hypotheses for the study were developed. The theories are the signalling theory and the free cash flow theory.

Signalling theory

Signalling theory is one of the most important theories in corporate finance literature that is based on the idea that any strategy which is undertaken by managers transmits some signals to key stakeholders of the companies. From this backdrop, a favourable improvement in the firm specific variables can serve as a credible signal of higher expected future cash flows and also the certainty of the going concern nature of the company (Ross et al 2008). In this vein, increasing the features of firm specific variables has been suggested as one potentially effective signalling device by Ross, Westerfield, Jeff and Jordan (2011) and predicted a positive correlation between firm specific variables and financial performance. They argue that a company with favourable features will signal to stakeholders that the company has high future prospects hence the revenue generating capacity of the company can increase and for that matter a high demand in the share of the company may lead to a surge in the market performance of the company.

Furthermore, Akintoye (2008) has also developed a signalling model in which the information asymmetry is about the mean and variance of the returns. In his model, the assumed positive correlation between the means and variance drives a signalling equilibrium in which higher-value firms signal their quality with higher firm specific variable levels. He goes on to argue that higher-value firms are relatively more risky than their low-value counterparts. Nonetheless, this is not to say that managers of higher-value firms are always risk-lovers. The implication of this model just like those reviewed above suggests a positive relationship between firm specific variables and financial performance. To conclude, the lesson learnt from the signalling theory of asymmetry information is that higher-value firms would use more funds to improve their firm specific features which will eventually translate into their market based financial performance.

Free Cash Flow Theory

Free cash flow is the amount of cash that a company has left over after it has paid all of its expenses. It is important because it allows a company to pursue opportunities that enhance shareholder value (Ahmadinia, Afrasiabishani, & Hesami, 2012). Without cash, it's tough to develop new products, make acquisitions, pay dividends and reduce debt. Related to the determinants of financial performance, this theory expresses that mitigation of free cash flow by paying interest of debt and dividends prevent a manager from probable deviations to abuse Company's income for personal purposes.

Empirical Review

Firm Size

Firm size and financial performance has received significant attention from scholars in the various areas of business. Several arguments favour larger firm sizes in attaining higher performance. Majumdar (1997) stated in his work that “the size of a firm affects performance in many ways. Key features of a large firm are its diverse capabilities, the abilities to exploit economies of scale and scope and the formalization of procedures necessary to drive positive performance .Majumdar (1997) sampled 1020 Indian firms to investigate the impacts that size and age of firms have on firm-level productivity and profitability. It was concluded that older firms in India are more productive and less profitable, whereas the larger firms are, conversely, more profitable and less productive; these performance difference were explained as arising from the market – restricting industrial policies that had been followed in India over the past three decades.

Kaen and Baumann (2003) examined the relationship between profitability and size of firms of sixty-four manufacturing industries between 1990 and 2001. The study revealed that almost thirty two out of sixty four firms observed profitability to increase at decreasing rate and finally decreased as the size of the firm increased. Firm size also affect the profits of the firm either positively or negatively according to Serrasqueiro and Nunes, (2008) who indicated that there is a positive and statistically significant relationship between size and profitability of SMEs on their research conducted on relationship between firm size and performance of small and medium sized Portuguese companies for the period 1999 to 2003 whereas for large Portuguese companies, they found a statistically insignificant relationship between size and profitability.

From the Ghanaian perspective research by Abor and Beikpe (2005), Abor (2008), and Gadzo and Gatsi (2013) all found a positive relationship between the financial performance of financial institutions and firms size but none have been recorded on the manufacturing companies hence the hypothesis that can be developed is that;

H₀: There is a positive relationship between firm size and the financial performance of listed manufacturing companies on the Ghana stock exchange (GES).

H₁: There is a negative relationship between firm size and the financial performance of listed manufacturing companies on the Ghana stock exchange (GES).

Operating Cost Ratio

There are no evidences for operating cost ratio effects in the literature. According to Ozkan (2000) operating cost ratio may have a mixed impact on the financial performance. As firms with higher operating cost ratio might use relatively higher revenue due to greater ability to meet

short term obligations when they fall due. This implies a positive relationship between firm operating cost ratio and financial performance. On the other hand, firms with more operating cost ratio may not be aligned to high retained earnings which imply a negative impact on its financial performance. Ozkan (2000) results showed a negative relationship between operating cost ratio and financial performance. However, during the process of data collection, it was observed that many firms in sample set has negligible amount of inventory which offered quite similar data to that of liquidity.

In view of the insufficient evidence on operating cost ratio, the hypothesis that can be developed is that;

H₀: There is no relationship between operating cost and the financial performance of listed manufacturing companies on the Ghana stock exchange.

H₁: There is a relationship between operating cost and the financial performance of listed manufacturing companies on the Ghana stock exchange.

Asset Tangibility

The test of asset tangibility on the financial performance of firms has been an area of constant research to establish if there exists any relationship between them. Akintoye (2008) concluded that a firm that retains large investments in tangible assets will have smaller costs of financial distress than a firm that relies on intangible assets. Also Osuji and Odita, (2012) emphasized on the fact that firms were not able to utilize the fixed asset composition of their total assets judiciously to impact positively on their firms' performance, but their results provided evidence that asset tangibility is a major determinant of firm's performance. From the Ghanaian perspective research by Gadzo and Gatsi (2013) found a positive relationship between the financial performance of financial institutions and asset tangibility but none have been recorded on the manufacturing companies hence the hypothesis that can be developed is that;

H₀: There is no relationship between asset tangibility and the financial performance of listed manufacturing companies on the Ghana stock exchange.

H₁: There is a relationship between asset tangibility and the financial performance of listed manufacturing companies on the Ghana stock exchange.

Inflation Rate

Gulati (1997) developed a general case model to identify the effect of inflation on financial performance. In his study, the inflation was represented by the percentage increase in product prices and production costs. The result indicated that inflation is significantly affecting financial performance. In another study, Mutenheri and Green (2002) measured inflation as the

percentage change in consumer price index. The financial performance increases to some extent as inflation rates rise. At low and moderate inflation rate, there was a direct relationship between inflation and leverage. However, as the inflation rises at very high level, then the financial performance reduces due to the financial related costs or demand side effect.

Hovakimian and Tehranian (2004) undertook a study to examine the effect of inflation uncertainty on financial performance of United State manufacturing companies. A twenty years (1978-1997) data from Dow Jones corporations were examined and three independent variables namely inflation uncertainty, expected real interest rate and asset tangibility were tested to see its influence on the debt-to-equity ratio using cross-sectional heteroscedasticity and time-wise autoregressive model. The results indicated that inflation uncertainty and expected real interest rate were negatively related to financial performance. According to the authors, the negative effect of inflation uncertainty could be due to the fact that companies reduce their investment and capital investment that were financed by debt in the case of higher inflation or uncertainty in inflation. From this backdrop, in case of the manufacturing companies in Ghana it can be hypothesis that;

H₀: There is a negative relationship between inflation and the financial performance of listed manufacturing companies on the Ghana stock exchange.

H₁: There is a positive relationship between inflation and the financial performance of listed manufacturing companies on the Ghana stock exchange.

Lending rate

Lending rate on loan is likely to influence financial performance adversely due to the interest payment, so firms generally do not prefer to raise further loan when the market lending rate is high as they are afraid of the risk of bankruptcy. Therefore, firms were likely to consider the market interest rate while deciding on their targeted profit levels. According to Antoniou, Guney and Paudyal (2002), the interest rate is negatively related to financial performance. Muhammad (1999) was among the pioneers to undertake the study on the effect of bank interest or base lending rate on financial performance in the developing and developed countries. Muhammad studied the listed corporations from Japan, Pakistan and Malaysia. Muhammad concluded that interest was actually a deciding factor for financial performance for Malaysia and Japan. However, there was no significant result found for Pakistan on the effect of interest rate. They found that as interest rate rises; companies take lesser debt for financing as companies worried of the increase in cost of debt which later can 'land' them in default risk. From this backdrop, it can be hypothesis that;

H₀: There is no relationship between lending rate and the financial performance of listed manufacturing companies on the Ghana stock exchange.

H₁: There is a relationship between lending rate and the financial performance of listed manufacturing companies on the Ghana stock exchange.

Exchange Rate

Foreign exchange rate is an important control variable because it forms part of the overall economic activities and for the past years, the experience in Ghana testifies, exchange rate influences the cost of items in the country. From this backdrop, as the research is focused on the performance of manufacturing companies they will be affected significantly with the rate of exchange rate. Below are some empirical evidences on the association of foreign exchange rates and performance. Dong (2011), in a study on foreign exchange rate and financial performance decision, recommended that the exchange rate be included in the financial performance determinants test, especially when companies in a small economy are studied for which Ghana is included. In the research it was discovered that, implicit debt are influenced by exchange rate.

Singapurwoko and El-Wahid (2011) in their research which adopted operational decision factor such as macroeconomic factors, firm size, and industry factors to help understand the effect on profitability. The uniqueness of their research was to add industry factors to compensate the other factors in determining the companies' profitability. The result indicates that in uncategorized data, debt, firm size, and operational decision effects are positive significant, and macroeconomic effect is insignificantly related to profitability. In addition, industry factor is found to affect companies' profitability. It must be noted that the results were obtained by considering 48 out of the 228 companies listed on the Indonesian stock exchange and the study also covered a period of seven years thus from 2003 to 2009.

In a related study on Ghana, Gatsi (2012) and Gadzo and Gatsi (2013) found that, foreign exchange rate negatively influence the performance of listed banks in Ghana. This conclusion was reach after embarking on a cross sectional data covering 2002 to 2011. From this analysis it can be hypothesised that;

H₀: There is no relationship between exchange rate and the financial performance of listed manufacturing companies on the Ghana stock exchange.

H₁: There is a relationship between exchange rate and the financial performance of listed manufacturing companies on the Ghana stock exchange.

METHODOLOGY

The research design employed in this study is the causal research design because it is used to identify the causes and effect relationships between the main variable under study (Babbie,, 2005). The population of this study was all listed manufacturing firms in Ghana. Since the population is so large, it was prohibitively expensive to gather data on all the elements. Thus, only the manufacturing companies listed on the Ghana Stock Exchange were used for the study. In this study the sampling frame was all the manufacturing firms listed on the Ghana Stock Exchange for the period 2005 to 2012 year ending. The manufacturing firms listed on the Ghana Stock Exchange are eleven (11).

The Data

The seven year period was chosen in order to obtain enlarged data necessary for the study. This study used panel data which involves the pooling of observations on a cross-sectional form. The data was sourced from the Annual Reports of all manufacturing firms listed on the Ghana Stock Exchange (GSE) for the period 2005-2012. Again, the data was collected from the data base of the Ghana Stock Exchange

Variables used in the Study

The variables for the study were categorized into dependent and independent variables. For the purpose of this research, the dependent variable was the financial performance and was measured by using Tobin's Q and Earnings per share (EPS). The firm specific variables are operational cost ratio, firm size and Tangibility and with the macroeconomic variables, the variables used were inflation, lending rate and exchange rate.

Tobin's Q (TQ) mixes market value with accounting value and is used to measure the firm's value. It will be used as a major indicator of firms' performance. Tobin's Q, as agreed by many researchers, is a noisy signal and due to its limitations, ROE is employed as a supplementary measure.

$$\text{Tobin's Q}_{(t+3\text{months})} = \frac{\text{MVE}_{(t+3\text{months})} + \text{book value of long term debts}}{\text{Net book value of net assets}} \times 100\%$$

Where $\text{MVE}_{(t+3)}$ is market value of equity three months after end of financial.

Earnings per share (EPS) is calculated as the net profit after tax divided by ordinary shares and indicates the returns generated per share held by each equity investor. In this sense, EPS represents the ability of firm's management to convert firm's assets to increase the shareholders wealth.

$$\text{EPS} = \frac{\text{Net Profit}}{\text{Total ordinary Share}}$$

Firm Size (FS)

The size of the firm, considered to be an important determinant of a firm's profitability which is an independent variable, was measured as the natural logarithm of the total assets of the firm. $FS = \text{Log total assets}$.

Asset Tangibility (AT)

Is considered to be one of the major determinants of firm's performance, it was measured as the total non-current assets divided by total assets. Thus $AT = \text{Total non-current assets} \div \text{Total asset}$

Operational Cost (OC)

This is considered to be the degree to which the manufacturing companies are able to overcome their operational losses by reducing the cost of raw material used in production and other cost. It is measured as the operational cost divided by their total revenue

Model Estimation

In order to test the relationship between dependent and independent variables, this panel data models was estimated:

$$TQ = \alpha + \beta_1 FZ_{i,t} + \beta_2 AT_{i,t} + \beta_3 OC_{i,t} + \beta_4 INF_{i,t} + \beta_5 LR_{i,t} + \beta_6 EX_{i,t} + e \dots\dots(1)$$

$$EPS = \alpha + \beta_1 FZ_{i,t} + \beta_2 AT_{i,t} + \beta_3 OC_{i,t} + \beta_4 INF_{i,t} + \beta_5 LR_{i,t} + \beta_6 EX_{i,t} + e \dots\dots(2)$$

Where, INF = Inflation, LR = Lending rate, EX = Exchange rate, FS = Size of the firm, AT = Asset Tangibility, OC = Operating Cost, α = Constant; β = The Coefficient of the variable; i = firm; t = time period and e = error term.

RESULTS AND DISCUSSION**Descriptive analysis**

The descriptive analysis of the firm level characteristics found with the listed manufacturing companies and the selected macro economic variables is illustrated in Table 1 below. For the purpose of the study, performance which is represented by Tobin's Q (TQ) and Earning per share (EPS) is considered as the dependent variables while Tangibility, firm size, operating cost ratio (OCR), inflation, exchange rate, and lending rate are the independent variables. The sampled companies' average is given by the mean and median along with the minimum and maximum for the respective dependent variable while the standard deviation reflects the intercompany variation of the variables value within the respective dependent variable. The

Normality of the data is also described by the skewness, kurtosis and the corresponding Jarque-Bera probability.

Table 1: Descriptive Statistic

	EPS	TQ	AT	OC	FS	LR	INF	EX
Mean	3.60	1.62	0.64	0.23	14.55	26.30	12.20	1.78
Median	2.80	1.77	0.56	0.20	14.92	26.00	11.80	1.61
Maximum	7.0	2.54	0.79	0.48	19.12	32.80	18.10	2.24
Minimum	0.10	0.18	0.25	0.02	9.66	22.20	8.58	0.91
Std. Dev.	0.09	2.53	0.25	0.17	2.87	2.984	3.404	0.33
Skewness	0.60	1.79	0.06	0.56	-0.02	0.919	0.420	0.34
Kurtosis	2.52	3.67	2.86	2.49	1.75	3.407	1.814	1.96
Jarque-Bera	5.61	3.87	3.12	3.80	5.06	3.38	4.40	5.12
Probability	0.06	0.00	0.94	0.08	0.07	0.003	0.04	0.00
Observations	88	88	88	88	88	88	88	88

From the table, it is revealed that the average values for the performance variables using the mean are GHS 3.6 and 1.62 respectively for EPS and the Tobin's Q. The implication of these averages is that, the performance indicators of the companies for the eight year period are better especially with regards to the EPS because the Ghana stock exchange fact book for 2012 recorded an average of GHS1.22 for all the companies listed on the stock exchange. Regarding the Tobins Q according to Bond and Cummins (2004), if Tobin's Q is greater than 1.0, then the market value is greater than the value of the company's recorded assets. This implies that the market value reflects some unmeasured or unrecorded assets of the company. High Tobin's Q values encourage companies to invest more in capital because they are worth more than the price they paid for them. From this backdrop, both the mean and median of the Tobins Q which are 1.62 and 1.77 respectively means that the manufacturing companies should invest more in capital expansion because they are worth more than the price they paid for them

The standard deviation which measures how far or wide the data is from the average. The coefficients recorded for all the performance variables were 0.09 and 2.53 for EPS and TQ respectively. These values are low so it implies that the recorded averages are not wide from the respective values recorded for each period. The normality of the data is explained by skewness and the kurtosis. The skewness measures whether the sample distribution is symmetrical or not. The kurtosis gives an indication on the tails of the sample distribution. It helps determine whether the data is normally, negatively or positively distributed. From Table 1 above, majority of the coefficient of skewness of the data are positively skewed. This implies that the distribution of the data has a long tail to the right meaning that most of the distributions are of positive values which can be validated from the values of the minimum and the maximum

values .But for the data to be considered as symmetrical the coefficients should be equal to zero or nearer to zero and as can be deduced from the table most of the coefficient of the variables are closer to zero with the exception of the Tobins Q and the lending rate. For the data to be normal the kurtosis is equal to 3. Based on this most of the data are not close too remote from 3 therefore can be said to be normal.

The Jarque-Bera compares the kurtosis and the skewness to know how normal the final output with a probability value. It has a null hypothesis that the data is normally distributed and this is rejected if its p-value is less than 0.05. From Table 1 all the firms have their probability values more than 0.05 therefore the null hypothesis is not rejected implying that the data are normally distributed.

Regression Analysis

In this subsection, the various panel data regressions are discussed. Regression analysis was used to examine the relationship between firm level characteristics and financial performance of the manufacturing companies in Ghana, which is measured by returns on EPS and Tobins Q. Tables 2 demonstrate the results of the regression analysis in which six independent variables are regressed by using the data of eight sampled manufacturing firms from 2005 to 2012. The R-square (0.8151) indicates that performance of manufacturing companies is nearly 81.51 percent dependent on the independent variables or explained by the independent variables (firm size, operating cost ratio, tangibility, lending rate, inflation and exchange rate). Therefore, performance is mainly defined by these six variables of listed manufacturing companies in Ghana over the seven year period.

Table 2: Dependent Variable: EPS

Variable	Coefficient	t-Statistic	Prob.
C	5.4668	4.8024	0.0000
Firm Size	-2.6745	-3.7817	0.0003
Tangibility	-2.6789	-4.8553	0.0000
Operating Cost Ratio	-9.6557	-3.4475	0.0007
Lending Rate	1.3456	1.2319	0.1977
Inflation	1.2357	0.0119	0.9843
Exchange Rate	-12.6934	-2.2500	0.0311
R-squared	0.8151	Prob(F-statistic)	0.000000
Adjusted R-squared	0.6644	S.D. dependent var	13.0375
F-statistic	15.2435	Durbin-Watson stat	2.5526

From the results independent variable such as tangibility, operating cost ratio, firm size and exchange rate indicated coefficient of -2.6789, -9.6557, -2.6745 and -12.6934 respectively. With p-values of 0.0000, 0.0007, 0.0003 and 0.311 respectively it implies that the result is statistically significantly at five (5%) percent and negatively related to the financial performance (EPS) of manufacturing firms in Ghana which confirms the findings of Osuji and Oditia, (2012). The regression analysis also revealed that as firm specific variables like tangibility and leverage, increases, the manufacturing firms tend to experience low performance. But it must also be emphasised that, coefficient of exchange rate indicates a strong negative effect than return on asset due to the strength of the coefficients.

With respect to the economic factor such as the lending rate and inflation rate, they recorded a positive coefficients but only inflation was significant at 1 percent meaning that inflation is a key variable in determining the performance of manufacturing companies. Hence as inflation increases, management of manufacturing companies must take strategic decision in relation to premium charges to increase performance. However the firm specific variables that actually affect the performance measured in return on asset of the manufacturing sector in Ghana are the tangibility, inflation and firm size with each recording a positive coefficient of -2.6789, 1.2357 and -2.6745 respectively.

The findings are in consonance with (Akintoye, 2008). This signifies that as these variables increases over the period the manufacturing sector's financial performance tends to increase since these variables significantly influence their performance. Since tangibility and firm size positively influence the performance of the manufacturing sector in Ghana; it means that any attempt to reduce those variables leads to the insurance industry experience a decline in their financial performance. It must be identified that, manufacturing companies size also have a negative effect on performance. This is significant at a p- value of 0.0003 in Table 2 there is a likelihood of their relationship being significant with a more elongated data set. This is consistent with the study of (Kogan & Tian, 2013) but for the current study, they are not considered as proper explanatory variables of performance in the insurance sector.

Tobin's Q as a Dependent Variable

Table 3 presents the regression for Tobin's Q (TQ) as dependent variable for the manufacturing. The nature of the relationship between firm specific variable and Tobin's Q would primarily depend on the levels of income or expenses received or both. It is expected that when firm specific variables are increasing in values, performance should also increase since it is out of performance surpluses to improve on them. As this happens, it is imperative for policy makers to note that income received may not necessarily go up especially.

Table 3: Dependent Variable: TOBIN'S Q

Variable	Coefficient	T-Statistic	Prob.
C	1.1656	4.2477	0.0000
Tangibility	2.4251	4.8950	0.0000
Operating Cost Ratio	0.6163	2.4796	0.0240
Lending Rate	-1.2027	-2.5517	0.0123
Inflation	3.1521	1.5265	0.2377
Firm Size	0.0987	0.8950	0.5787
Exchange Rate USD	-7.1621	-2.0321	0.0330
R-squared	0.9112	Prob(F-statistic)	0.0000
Adjusted R-squared	0.8303	S.D. dependent var	0.5731
F-statistic	16.992	Durbin-Watson stat	2.1836

Source: Financial statement of manufacturing companies

This means that so long as there is a firm specific variable, there would be a drain on the companies fund especially those generated by financial performance. This therefore establishes a relationship between firm level characteristics and Tobin's Q. Therefore, it can be argued that Tobin's Q would dwindle either as a result of an increase in continuous improvement in firm level characteristics or a decrease in investment in firm level characteristics. In Ghana, the fact is that the Tobin's Q for most manufacturing companies is falling and this can be attributed to a decrease in investment in assets.

The inverse relationship between firm level characteristics and Tobin's Q in the manufacturing companies of Ghana is therefore not unanticipated. From Table 5 above, there exists a positive relationship between all the firm level characteristics and Tobin's Q in the manufacturing sector of Ghana. But it must be emphasized that tangibility and operating cost ratio were statistically significant with p-values of 0.0000 and 0.0240 respectively. This association is significant at 5percent.

Only firm size was not significant hence the conclusion can be reached that there is no relationship between Tobin's Q and firm size. This means that as tangibility, operating cost ratio and liquidity increase in the manufacturing sector of Ghana, performance measured by Tobin's Q also increase. The following reasons account for this phenomenon: Firstly, when companies invest in the non-current assets of the companies it signals to prospective investor of the interest of management of the future prospects of the company hence through the signalling theory, there is an increase in demand of the shares of the company and with all things been equal, the market prices increases through the Tobin's Q.

This is more likely to affect the market value of the manufacturing companies since through the free cash flow theory and the signalling theory. With the free cash flow theory, when companies are liquid there is always an availability of cash for short term investments which in

effect impacts on the company's future returns. With the signally theory, it presupposes that a firm ability to generate liquid cash will signal to stakeholders of the ability of the company to be financially independent hence will do anything to support their activities when the need arise.

The moderating variables in the name of the macroeconomic variables had two of them been lending rate and exchange rate having a negative impact on the Tobins Q with a statistically significant p-values of 0.0123 and 0.0230 respectively. This signals that these variables are very significant in explain the relationship between Tobin's Q and macroeconomic variables and that even as the lending rate and exchange rate increases the Tobin's Q of the manufacturing companies in Ghana also decreases simply because lending rate and exchange rate plays a significant role in the operations of these companies by means of the acquisition of credit facilities and importation of raw materials from abroad. Inflation had a positive impact on Tobin's Q with a coefficient of 0.0121.

Furthermore from the same table the Durbin-Watson Statistic (D-W Statistic) shows that the problem of auto correlation is not serious with respect to Tobin's Q with an average value of 2.1836. Also the *F*-statistics and the *F*-test prove the validity of the estimated models which are statistically significant at 1percent as shown by the *F*-probabilities. The constant term indicates the Tobin's Q levels if all the explanatory variables are put to zero. It is significant at about 0.0000 percent and shows that other factors which equally impact on Tobin's Q have not been captured in the model.

Research Hypotheses Testing

The hypothesis was tested using the p – values of the relationships that were established in the regression results in Table 3 the variables are said to be significant at 1 percent and 5 percent respectively. This is because Tobin's Q is used to measure financial performance because of the usage of the formula which considers the performance of the company by considering both the books values and the market values unlike earnings per share (EPS) which uses book values as explained in chapter three. The hypothesis are tested in two main categories thus in terms of the firm specific variables and macroeconomic variables.

Hypothesis Formulated for the Firm Specific Variables

The hypothesis of the firm specific variables can be addressed from this point. From Table 3, the p-value for the firm size and the financial performance (Tobin's Q) indicator revealed a value of 0.5787 this is above the bench mark alpha of 0.05and because it has established a positive relationship, the null hypothesis is not rejected based on the premises of the positive relationship with financial performance. The positive relationship between manufacturing

companies' and financial performance is not significant. This agrees with previous empirical works of Abor (2008). Therefore, the evidence from this study solidifies the reason of not rejecting the null hypothesis that there is no relationship between firm size and the financial performance of listed manufacturing companies on the GSE

With respect to the null hypothesis for asset tangibility, it is rejected on the premises that, the coefficient of the Table 3 indicates a positive relationship with a coefficient of 2.4251 with a p-value of which is below the benchmark alpha of 0.005 percent. Meaning that, there is a relationship between the tangibility and financial performance of listed manufacturing companies. In the literature, manufacturing companies generally would increase their profits as the level of tangibility increases thus as the level of tangible of the manufacturing companies increases it results to a higher financial performance of the manufacturing companies. According to this school of thought, there exist a positive relationship between tangibility and financial performance which has been confirmed by the current findings. This means that asset tangibility is more important in determining manufacturing companies' financial performance in Ghana.

Finally, from Table 3, the coefficients of the financial performance indicator which is Tobin's Q revealed a relationship with the operating cost ratio of the manufacturing companies, but though this assertion is in consonance with the alternate hypothesis, that there is a relationship between financial performance and the operating cost ratio of the listed manufacturing companies in Ghana, the null hypothesis is rejected based on the premises that the p – value of 0.0240 is way below the benchmark limit of 0.05 and 0.01. This implies that irrespective of the operating cost ratio of the manufacturing of companies in Ghana, the company usually improves on their market values.

Hypothesis Formulated for the Macroeconomic

At this point, the hypothesis stated in relation to macroeconomic variables can be addressed. From Table 3, the null hypothesis for inflation is rejected and the alternate hypothesis is accepted because inflation establishes did not establish any significant relationship with the financial performance of manufacturing companies in Ghana with a p-value of 0.2377 which is far above the bench mark alpha of 0.05 and 0.01. It is imperative to mention that, the relationship established with all the financial performance indicators are positive ones with a p – value which is more than 0.05 ($P < 0.05$). Indicating that, indeed the level of inflation does not directly influences the pattern of financial performance in the manufacturing companies of Ghana. The reason for this relationship can be explained that as inflation increases the general price level in the economy also increases, but the manufacturing companies in Ghana seems to

have policies which mitigate the effect of inflation on their operation by either purchasing raw material in seasons where inflation is stable or borrow funds in seasons where inflation will not affect their performance.

Again, hypothesis for lending rate which has a hypothesis that financial performance of manufacturing companies has a negative relationship with lending rate, is not rejected based on the average p-values of 0.0123 which is lower than the acceptable value of 0.05 thus ($p > 0.05$). Therefore, is a negative relationship established between financial performance and lending rate, the alternate hypothesis is rejected because of the statistically significant nature of the relationship established. The import of this finding is that when the lending rate increases it causes both the book value and market value of the manufacturing companies to decrease because lending rate affects the cost of funds that are used in the operational activities of the manufacturing companies in Ghana. From this backdrop it presupposes that a decrease in the lending rate will cause the book value and market value of the manufacturing companies to increase. This finding is not in consonance with the study by Lara and Mesquita (2002) because their study was conducted on the Brazilian economy whose lending rate is different from that of Ghana.

Exchange rate from all the panel regression tables establishes a negative relationship with the financial performance indicators with an average p-value of 0.0330 which is less than the acceptable range hence hypothesis for exchange rate is rejected while its alternate hypothesis is accepted meaning that, there is a relationship between the financial performance of manufacturing companies and exchange rate but the relationship is a negative one meaning that, the level of exchange rate adversely affects the financial performance of manufacturing companies in Ghana. This means that manufacturing companies should be mindful of the exchange rate of the country since it affect its cash flows negatively due to the increase in the raw material which are imported into the economy and the rippling effect of exchange rate on the economy of Ghana.

CONCLUSIONS

The financial performance indicators of the manufacturing companies is impressive since it is better than other industries in Ghana, The firm level specific variables of the manufacturing companies was above the expected mark meaning that the manufacturing companies in Ghana are actually performing well in improving their features which will eventually cumulate to the assurance of the going concern nature of these companies. The macroeconomic variables used in the study also indicate that they are continuous increasing adversely to the detriment of the operations of the manufacturing companies of Ghana.

In relation to the regression analysis, firm specific variables like asset tangibility and operating cost ratio of the manufacturing companies' influences their financial performance measured as earnings per share and Tobin's Q negatively with first two performance variables and negatively with the last financial performance variable. This significant positive relationship between manufacturing companies tangibility and operating cost ratio and profitability suggests that more tangible manufacturing companies tend to exhibit higher margins and is consistent with models that emphasize the positive role of tangibility and operating cost ratio from scale inefficiencies while that of liquidity is crucial in determining manufacturing companies financial performance in Ghana such that when it increases, performance also increase. This result is in line with the theoretical prediction that as the manufacturing companies increases efforts to increase their liquidity; there is the likelihood that they will increase their financial performance.

In relation to the macro economic variables which were used as controlling variables in the study, inflation rate influences the financial performance of the manufacturing companies positively such that when the level of inflation increases their performance level also increase therefore manufacturing companies needs to draft strategies whenever there are projections of increases in the level of inflation in the future to improve on their financial performance. The other macro economic variables such as exchange rate and lending rate also indicated an adverse influence on the financial performance hence manufacturing companies should be mindful especially in the case of exchange rate fluctuations not to import any material since it would adversely reduce their financial performance. The study also found that profitable manufacturing companies in Ghana increases their firm level characteristics thus supporting the signalling theory and the free cash flow theory.

RECOMMENDATIONS

In terms of the academia, this study had added to the plethora of empirical evidence that firm specific variables are likely to influence financial performance. Therefore, this study strengthened the view kept by many financial experts that the as firm spends more of their free cash on improving their characteristics, it is most likely to adversely affect their financial performance through the increment in their book values and the market values. In short, the major recommendation for academicians is that the much attention should be given the signalling theory and the free cash flow theory since the current study reveals consistency with those theories. For practitioners, this study strongly recommends that manufacturing companies should strive towards improving their specific characteristics. Financial controllers, of manufacturing companies in particular, should try to adjust their characteristics since it could improve their performance. It is also suggested that the government, through Bank of Ghana,

must develop policies to arrest the fluctuations in the macroeconomic variables since persistent variations adversely influence the performance of manufacturing companies in Ghana. The findings are however limited by the short time period of seven years; a more elongated period with increased dataset may have to be conducted in the future.

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