

Dynamic Effect of Corporate Investment Styles and Value of Quoted Manufacturing Firms in Nigeria

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Abstract

This study examined the relationship between corporate investment policies and the market value of quoted manufacturing firms in Nigeria. Panel data of 17 quoted manufacturing firms was collected from the annual reports of the manufacturing firms from 2014-2023. Market of the quoted firms was modeled as the function of Long term investment measures as fixed assets to total assets, short term investment measures as current assets to total assets, portfolio investment measures as investment in equity to total assets and subsidiary investment measures as joint venture investment to total assets. Multiple regressions were formulated. Panel data methodology was employed while the fixed effects model was used as estimation technique at 5% level of significance. Fixed effects, random effects and pooled estimates were tested while the Hausman test was used to determine the best fit. Evidence from the findings shows that explained 60.2 percent of the systematic variation in the market value was explained by investment policy. The beta coefficient informed that short term portfolio investment, long term portfolio investment and long term investment have positive relationship with the stock prices of the quoted manufacturing firms while subsidiary investment have negative relationship with stock prices of the manufacturing firms. The probability coefficient of the variables informed us that short term portfolio investment and long term portfolio investment are statistically significant while long term and subsidiary investment are statistically not significant. From the findings, we conclude that corporate investment policies have significant relationship with value of the quoted manufacturing firms. The study recommends that managers of the manufacturing firms should devote adequate time in designing long term and portfolio investment policy that enhances firm's shareholder value.

Keywords: Corporate Investment, Styles, Value, Quoted Manufacturing Firms, Nigeria

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1. INTRODUCTION

Every corporate organization exists to create value for shareholders. This operational philosophy depended on internal factors of the firms such as financial policies and external factors such as monetary and macroeconomic variables. This overriding objective motivates managers to make decisions that will increase the value of the firm. Finance theory identifies three types of policies that corporate managers have to optimize in order to maximize the firm's value. These include the investment, financing and dividend policies. The investment policy refers to both the magnitude and types of growth pursued and projects undertaken. Once the amount and type of expansion has been determined, the financing policy is set, delineating the spectrum of financing methods or sources of funds used to finance the expansion.

Investment policy is the most important policy of other decisions in relation to increasing company

value. The basic investment decision is the decision to allocate funding sources (Syahyunan, 2013). The decision on investment will directly affect the amount of investment profitability and the company's cash flows for subsequent times. The company's investment is aimed at prospering shareholders both now and in the future. Capital investment is one of the main aspects of investment decisions besides determining the composition of assets. In addition to investment policy and funding decisions, dividend policy is a problem often faced by the company. Investment policy made by companies is influenced by the ability of companies to produce cash that can meet long-term and short-term needs or what is called company liquidity. Companies must maintain liquidity so that it is not disrupted, so as not to disrupt the smooth running of the company's activities to invest and not lose the confidence of outsiders (Hidayat, 2010).

Value of a company can be assessed through its stock price. Stock value is a reflection of the company's ability to achieve expected profit, sales growth, and capital increase. Thus, if the stock value of a company is high, then its value will be high too. Corporate value can be measured using Tobin's Q, which is the total of stock market value and leverage market value divided by the value of company's asset book. Tobin's Q is used to measure the amount of corporate value through potentially increasing stock prices, potential management of company's financial management, and potential investment opportunities that will grow (Wolfe and Suaia, 2003). Company value shows the value of assets owned by the company. The higher the value of the company then higher the prosperity received by shareholders. This gives a positive signal to the company because by increasing the prosperity of shareholders then they will continue to invest their capital in the company's activities. Thus, every company must show good performance in order to attract investors to invest their capital into the company (Pandey, 2010). The stock price is an assessment of investors on a company, where stock prices indicate that the company has a good performance or not.

Investors estimate company by comparing the value of the book with market prices. If the book value of a company is higher than the price of its shares, the company has a cheap stock price that shows the company's performance is not good. On the other hand, if a company has a higher market price than its book value, the company has a good rating from investors and shows the company's performance both from the viewpoint of investors, which in turn increases the company's stock price (Harmono, 2011). The optimal of firm value is very important for management or an investor. For a manager who is able to increase firm value, then the manager has shown a good performance on achievement for the company. As for investors assume that the increased firm value is a good view of the company so that investors will be attracted to invest that make the company's stock price has increased (Widodo & Kurnia, 2016).

Given that the market place is changing rapidly, new corporate policies are also evolving. In the early 1960's to late 1980's investors coveted long term financial gains and capital appreciation and were uncomfortable when firms acquire debt to finance their businesses. However the trend has changed over time with more and more investors expecting short term gains opposed to more traditional long-term financial strategies (Nwala, Gimba and Oyedokun, 2020). This shift in the expectations of investors has propelled a change in setting corporate financial policies. The ambiguity in the theories further deepens the controversies on the relationship between financing leverage and firms'

value. The applicability of the theories can better work in the business environment where the degree of market imperfection is less compared to the high degree of market imperfection such as the financial market of the developing countries like Nigeria where the market is characterize with information asymmetric and risk that can affect the performance of the firms contrary to theories (Murekefu and Ovma, 2014).

Investment is component of aggregate demand. It is the most volatile component of aggregate demand and fluctuation in its level is highly correlated with fluctuation in Gross National Product known as business cycle (Iyoha, 2004). Real investment can be private or public, while public investment is autonomous; the private investment is determined by monetary and macroeconomic variables in the economy (Lucky and Uzah, 2017). Unlike financial investment that is an avenue to increase wealth, real investment increases the productive capacity of the economy, create employment and expand production beyond national consumption, a prerequisite for economic growth, full employment, price stability and external balance. Domestic investment is a tool for measuring the level of Gross Domestic Product (Amer, Umer and Muhammad, 2014). Investment play key role in increasing capital formation and brings about long-run economic growth.

Corporate investment is an internal determinant of corporate performance and has great extent to which it affects the profitability and survival of the firm. Investment structure of a firm can be categorized in time of duration which can be short and long term investment; it can also be categorized in terms of nature of investment such as subsidiary investment, equity investment and joint venture investment. Profitability measures are important to company managers and owners alike. Koralun-Bereźnicka (2013) described investment structure as a combination of the various asset components which were identified as: financial fixed assets; tangible fixed assets; current assets; and current investments and cash in hand and at bank. Olatunji et al. (2014) found that investments in fixed assets have strong and positive statistical impact on the profitability of banking sector in Nigeria. Investment structure has also been widely reported by corporate finance literature to significantly affect financial structure of firm (Koralun-Bereźnicka, 2013). Prior research in economics has extensively documented the role of financial constraints on the magnitude of investment and other economic variables. However, there is little evidence on the implications of investment on future earnings performance and stock returns for firms that a priori face different levels of financial constraints. Corporate investment is the subject of a large and at times, contentious literature. While the determinants of investment are well-established

theoretically, empirical studies have reached little consensus on the link between investment and corporate profits, stock prices, discount rates, uncertainty, and sentiment.

However, the assumptions of a frictionless financial market are very strong. In practice, firm decision makers have significantly better information than outside investors about most aspects of the firm's investment and production (Fazzari et al. 1988, Hubbard 1998). With imperfect information about the quality or riskiness of the borrowers' investment projects, adverse selection leads to a gap between the cost of external financing in an uninformed capital market and internally generated funds. For firms that are not affected by this information problem, investment decisions are independent from internal funds. This kind of firms can raise external funds at a cost equal to r and finance their optimal level of investment without facing restrictions; this has significant effect on profitability. The contribution of investment structure on corporate value cannot be underestimated. Several companies, however, are experiencing declining performance and some have even been delisted from the NSE in the last decade (Wamugo et al., 2014). This is contrary to the expectations of their stakeholders who span across shareholders, employees, consumers, and government among others. Audited financial statements of some quoted firms reported a loss of billion after tax loss for past three years which was attributed to investment structure.

Most of results of empirical studies on the effect of investment structure on financial performance are mixed. Okwo et al. (2012) studied the impact of a company investment in fixed assets on its operational net profit basing on the data obtained from four Nigerian brewery firms and the found that though there was a positive correlation between the variables, it was not statistically significant. The study by Mawih (2014) the effect of asset structure on financial performance basing the study on manufacturing firms and found that it was only petroleum sector where asset structure had impact on ROE while other firm did not have. In the same year, the study on the effect of investment in fixed asset on profitability that was conducted on commercial banks in Nigeria concluded that investment in fixed asset had strong and positive statistical impact on the profitability of banking sector in Nigeria (Olatunji et al., 2014). Due to these empirical contradictions it still remains unclear how investment structure of firms affect their financial performance. In view of the research gaps identified above, the objective of this study is to determine the effect of investment policy on the market value of quoted industrial goods manufacturing firms manufacturing firms in Nigeria.

2. LITERATURE REVIEW

2.1 Investment Policy

Investment policy of the three major types of policies (investment, financing and dividend), theory predicts that corporate managers would consider the investment policy as the most important policy because it forms the basis for the firm's business operations and growth. In their survey, Bodie, Kane and Marcus (2008) opined that a rise in the frequency of use of the NPV (Net Present Value) as an investment appraisal technique. They were surprised by the fact that more than half of the respondents used the company's cost of capital for investment appraisal of an international project, even though the risk in a particular project was likely to differ from the firm's overall risk.

Besley and Brigham (2008) asserted that while large firms use the NPV and the capital assets pricing model when assessing the financial feasibility of an investment, small firms still rely on the pay back criterion. In our international survey, we will examine the extent to which known criteria are used for investment appraisal and compare the results. The investment policy directly affects company value. It will be interesting to examine what managers think about the value of the company they head. Based on the psychological considerations of identifying with the company and valuing their personal contribution to its success, we expect that most managers will state that their company is undervalued. Another important issue in finance theory that we investigate is the types of risk measures considered by corporate managers. This fixed asset turnover ratio indicator, looked at asset over time and compares the ratio to that of competitors. This gives the investor an idea of how effectively a company's management is in using fixed asset. It is a rough measure of the productivity of a company's fixed assets with respect to generating sales. The higher the number of times turns over, the better. However investors should look for consistency or increasing fixed assets turnover rates as positive balance sheet investment qualities (Ibam, 2008).

2.2 The Keynesian Theory of Investment

In the General Theory, Keynes (1936) emphasized the central role of investment as the driving force of influencing aggregate output, employment, and short run fluctuations in economic activity. The theory emphasizes that investment is the result of firms harmonizing the expected return on new capital, referred to as the marginal efficiency of capital (MEC), and with the cost of capital, which depends primarily on the real interest rate. The financially viable while higher interest rates lead to some projects being postponed or cancelled since the cost of borrowing to finance investment become higher. To the Keynes since investment is volatile and dependent on firms

expectations of the profitability of investment, so long as the expected yield on their investment exceeds the real interest rate, new investment will take place. Keynes rejected the notion that investment was based exclusively on technological conditions of capital productivity, but emphasized monetary factors and finance and uncertainty as the basic determinants of investment (Fazzari, 1989).

2.3 Rigid Accelerator Theory

The simplest theory of investment demand is the rigid accelerator model formulated by Clark (1917). In its simplest form, the rigid accelerator theory of investment states that investment is proportional to the increase in output which is proxy by changes in demand in the coming period. Thus, the accelerator model relates investment to changes in demand and proposes that an increase in a firm's output will require a proportionate increase in its stock of capital. The theory basically assumes that firms' desired capital-output ratio is roughly constant and net investment takes place when output is expected to increase. In effect, the theory implies that the level of output or the changes in aggregate demand determines investment or the change in capital stock. Mathematically, this proposition of the theory is expressed as $K_t^* = \sigma Y_t$, where σ is the desired capital-output ratio which is assumed to be constant, K_t^* is the desired capital stock in period t , and Y_t is the level of output in the same period.

2.4 Modern Portfolio Theory

Any investment firm should have a portfolio of investments in different types of investment to maximize returns and minimize risks. Its standard practice for PE firms to invest in a diversified portfolio to minimize risk and harness the returns of the various investment options on offer (Cumming, 2009). The modern portfolio theory (MPT) is a theory of finance that attempts to maximize expected portfolio returns for a given amount of portfolio risk, or equivalently minimize risk for a given level of return by carefully choosing the proportions of various assets. MPT models a portfolio as weighted combination of assets, so that the return of a portfolio is the weighted combination of the assets return. The process of selecting a portfolio may be divided into two stages. The first stage starts with observation and experience and ends with beliefs about the future performances of available securities. The second stage starts with the relevant beliefs about future performances and ends with the choice of portfolio. One type of rule 17 concerning choice of portfolio is that the investor does (or should) maximize the discounted (or capitalized) value of future returns. Since the future is not known with certainty, it must be "expected" or "anticipated" returns which are discounted. Through combining different assets whose

returns are not perfectly positively correlated, MPT seeks to reduce the total variance of the portfolio return. MPT also assumes that investors are rational and the markets are efficient (Markowitz, 1952).

2.5 Empirical Review

Okwo, Ugwunta and Nweze (2012) assessed the impact of a company's investment in fixed assets on its operating profit margin. The study is based on a sample of four companies in the Nigerian brewery sector over an eleven year period from 1999 to 2009. We used regression statistical method to ascertain the relationship between level of investment in fixed assets and its impact on the operating profit reported by Nigerian brewery firms. Though the relationship is positive, but the result is not statistically significant. Therefore, the result did not suggest any strong positive impact of investment in fixed assets on the operating profit of brewery firms in Nigeria. This finding is in line with past academic researches show that investment in fixed asset does not have any strong and statistical impact on the profitability of brewery firms in Nigeria.

Svetlana and Aaro (2012) used regression analysis as the methodology on a sample of 8,074 companies in six European Union (EU) member states over a nine year period from 2001 to 2009. Contrary to some previous studies, they could not identify any strong negative (or positive) impact of investment intensity on future rate of return on assets. Mwaniki and Job Omagwa (2017) studied the relationship between the asset structure and the financial performance of the firms quoted under the commercial and service sector at the NSE, Kenya. The target population by the study was the secondary data from the annual reports of the firms. The asset structure is analysed in term of: Property, Plants and Equipment; current assets; intangible assets; and long term investments and funds, which formed the independent variables. The dependent variable of interest was the financial performance of the firms, and was measured in terms of: earning per share; return on assets; return on equity, profit margin (return on sales); and current ratio, by aid of a composite index. A census was done on the entire firms listed under this sector by the year 2014, for a five year period, 2010 to 2014. A document review guide was used to collect the secondary data from the financial statements of the firms under study. A multiple regression analysis (standard) was conducted with the aid of statistical programs SPSS version. The results of the study indicate that asset structure had a significant statistical effect on the financial performance. In particular, the study found that: Property, Plants and Equipment, and long-term investments and funds have a statistically significant effect on financial performance, while current assets and intangible assets do not have statistical significance on financial performance sectors.

[Okwo et al. \(2012\)](#) assessed the impact of a company's investment in fixed assets on its operating profit margin. The study is based on a sample four companies in the Nigerian brewery sector over an eleven year period from 1999 to 2009. The operating profit margin was taken as the dependent variable while the independent variables were Sales/Net Fixed Assets ratio, Interest Rates, Foreign Exchange Rate, and Inventory/Cost of Sale ratio. The findings of the study was that though the relationship between the level of investment in fixed assets and its impact on the operating profit was positive, the result was not statistically significant. Therefore, the result did not suggest any strong positive impact of investment in fixed assets on the operating profit of brewery firms in Nigeria. [Olatunji et al. \(2014\)](#) examined the effect of investment in fixed assets on profitability of selected Nigerian banks. Data were obtained from annual reports and accounts of thirteen selected Nigerian commercial Banks for the period from 2000-2012. The relationship between the dependent variable (Net profit) and independent variables (Building, Land, Leasehold premises, fixtures and fitting, and investment in computers.) indicated that there was a significant relationship between them. The study concluded that investments in fixed assets had strong and positive statistical impact on the profitability of banking sector in Nigeria.

[Mawih \(2014\)](#) on some listed manufacturing companies indicated that the fixed assets had impact on ROE but not on ROA. In relation to intangible assets, [Martina \(2015\)](#) investigated the relationship between tangible assets and the capital structure of Croatian small and medium-sized enterprises. The study was conducted on a sample of 500 Croatian SMEs for the period between 2005 and 2010. The data used for the empirical analysis were taken from companies' annual reports. The results of the research found that tangible assets are differently correlated with short-term and long-term leverage. The relationship between tangible assets and short-term leverage was negative and statistically significant in all observed years. The relationship between tangible assets and long-term leverage was positive in all observed years and statistically significant. The results showed that small and medium-sized companies use their collateral to attract long-term debt, which means that small and medium-sized companies use lower costs and the interest rate of long-term debt in relation to short-term debt. These findings are consistent with the trade-off theory which predicts a positive relation between leverage and tangibility ([Frank et al., 2011](#)), and also with the pecking order theory, which is generally interpreted as predicting a negative relation between leverage and tangibility ([Koralun-Bereznicka, 2013](#)). [Mawih \(2014\)](#) examined the effects of assets structure

(fixed assets and current assets) on the financial performance of some manufacturing companies listed on Muscat Securities Market (MSM), for the period 2008-2012. The assets structure was measured by fixed assets turnover and current assets turnover while the financial performance was measured by ROA and ROE. The overall result of the study was that the structure of assets does not have a strong impact on profitability in terms of ROE. Another result of the study indicated that only the fixed assets had impact on ROE unlike ROA. Further, the result suggested that the effect of asset structure had an impact on ROE only in petro-chemical sector. It also concluded that there was no impact for current assets on ROE and ROA.

[ZhengSheng and NuoZhi \(2013\)](#) on the optimal allocation of asset structure and business performance illustrated that asset structure research had more application value and significant meaning in determining the financial performance. This study sought to consider asset structure of the commercial and services firms listed at the NSE Kenya as the independent variables, to determine how they affect the dependent variable, which in this case is the financial. [Christopher and Kamalavalli \(2011\)](#) investigated the "Influence of the Management of Working Capital on the profitability of Indian Corporate Hospitals" by taking a sample of 14 out of the fifty one listed corporate hospitals in India using panel data analysis for the period 1996-97 to 2005-06. The results of their analysis depicted that Inventory Turnover ratio, Debtors Turnover ratio and Working Capital Turnover were positively related with the Return on Investment, a variable used for the measurement of a firm's profitability.

[Azam and Haider \(2011\)](#) investigated the "impact of Working Capital management on firms' performance" for non-financial institutes listed in Karachi Stock Exchange (KSE-30) Index". Panel data was analyzed by applying Canonical correlation for the time period of 2001 to 2010. It was found that inventory turnover in days has negative relationship with Return on Assets and Return on Equity which means that companies performance can be increased by reducing inventory in days. Another attempt to explore the Relationship between the variables of Working Capital Management and Profitability was made by ([Haitham & Maryam 2005](#)). Their analysis was based on a sample containing 2123 Japanese non-financial firms listed in the Tokyo Stock Exchange for the period from 1990 to 2004. The authors, after analyzing the results, suggested that Japanese firms should focus on shortening their Receivable Collection Period, Inventory Conversion Period and Cash Conversion Cycle to enhance profitability. Lengthening the Payable Deferral Period could also add to profitability, they argued. However, they deemed the over lengthening of

the Payable Deferral Period to be equally risky as it could harm the firm's credibility and credit reputation in the long run. [Nwidobie \(2012\)](#) investigated working capital efficiency and corporate profitability of 22 quoted firms on the Nigerian Stock Exchange and results show that costs of working capital inventory inclusive exceed returns on working capital investments thus affecting their profitability. To redress this anomaly and improve net returns and corporate profitability from the use of working capital, quoted firms in Nigeria should optimize working capital investments to avoid over investment with its attendant inventory costs, lost returns on excess cash holdings and receivables; and under investment with its attendant stock-out, illiquidity and bad debts costs.

As observed by [Michalski \(2007\)](#) in his study, an increase in the level of accounts receivables in a firm increases receivables and both lead to a decrease in the value of the firm. A study by [Juan and Martinez \(2002\)](#) emphasized that firms can create value by reducing their number of days of accounts receivable, thus confirmed the finding of [Deloof \(2003\)](#) who established that the length of receivables collection period has a negative effect on a firm's performance. A study by [Sushma and Bhupesh \(2007\)](#) also affirmed that, putting in place a sound credit policy ensures proper debt collection procedures and is pivotal in improving efficiency in receivables management hence the performance of firms. [Lazaridis and Tryfonidis \(2006\)](#) conducted a cross sectional study by using a sample of 131 firms listed on the Athens Stock Exchange for the period of 2001 - 2004 and found statistically significant relationship between profitability, measured through gross operating profit, and the cash conversion cycle and its components (accounts receivables, accounts payables, and inventory).

[Adediran, Bosun-Fakunle and Imuzeze \(2012\)](#) investigated the impact of working capital Management on Profitability of SMEs in Nigeria. The data for the study were from 30 SMEs covering the single period of 2009 and collected from secondary sources (financial statement) and was analyzed using the multiple regression analysis. Results which are robust to the presence of endogeneity demonstrate that managers can create value by reducing their firm's number of day's accounts receivable and also that shortening cash conversion cycle improves profitability.

[Azam and Haider \(2011\)](#) investigated the "Impact of Working Capital Management on firms' performance" for non- financial institutes listed in Karachi Stock Exchange (KSE-30) Index. Panel data have been analyzed by applying Canonical correlation for the time period of 2001 to 2010. APP is found to be significant positive association with ROA and ROE indicating that if time period of supplier's payment is increased then overall firm's performance also improves. CCC and NTC shows

significant negative relation ROA and ROE showing that firms' performance can be increased with short size of both of them.

[Mohamad and Saad \(2010\)](#) based on secondary data of 172 firms of Malaysia. They evaluated the impact of various components of working capital on profitability and market value of the firms. The study covered a time span of five years from 2003 to 2007. For this purpose they used different working capital components namely cash conversion cycles (CCC), debt ratio (DR), current assets to total assets ratio (CATAR), current liabilities to total assets ratio (CLTAR) and current ratio (CR). To see the effect of these working capital components on financial performance they used Tobin's Q (TQ), return on invested capital (ROIC) and return on assets (ROA) as a measurement of financial performance of the selected firms. To deduce the results they used correlations and multiple regression analysis. The results showed that there exists an inverse relationship between different working capital components and performance of firms. James investigated effective working capital management using Standard working capital ratios to measure the effectiveness of working capital in the selected firms. The firms selected show signs of overtrading and illiquidity, concerns was on profit maximization without taken cognizance of payment of creditors. The firms exhibit low debt recovery over credit payment. It is recommended that for SMEs to survive within Nigeria economy they must design a standard credit policy and ensure good financial report and control system. They must give adequate cognizance to the management of their working capital to ensure continuity, growth and solvency.

[Ruiz et al., \(2012\)](#) further reported that, Kaboski and Townsend (forthcoming) evaluated the impact that Thailand's Million Baht Village Fund Program had on economic outputs of Thai villages using the IV approach. As each village received the same amount of money, regardless of the population of the village, smaller villages received a relatively more intense injection of credit. Due to the nature of the intervention, the expansion of credit in villages by the Thai Fund Program could be correlated with the number of households in a village during the program years. Using these interactions of number of households and the program years as instruments for the amount of credit received, the authors assessed the impact of this program. [Kerr, Lerner, and Schoar \(2010\)](#) obtained information on prospective ventures from a large angel investment group. Using a regression discontinuity approach to evaluate the effect of angel funding on the performance of high-growth start-up firms, the authors compared firms that fall just above and just below the funding criteria of the angel group. The evaluation found a strong, positive effect of angel

funding on the survival and growth of ventures. In U.K., after receiving investment support from Impetus Trust, St Giles Trust, a charity which provides access to housing, training and jobs for ex-offenders, teamed up with Social Finance, a UK based institution which designs financial structures to create the first Social Impact Bond.

[Aliyu \(2013\)](#) examined the impact of government interventions on Small Scale enterprise in Mubi North local government Area of Nigeria". The study has become imperative because of an increasing inability of Small Scale enterprises to live up to expected target as the engine for economic growth and development, despite government encouragement in this direction. The study focused its empirical verification on three key areas which are very fundamental to the study, viz: perception of SSEs operators about government interventions the relevance of these interventions to them, and the accessibility of these interventions. Data were collected through interviews and questionnaire. Percentage and Chi - square techniques were used to describe and analyzed the results obtained from the field. However, the available data indicates that government intervention schemes/programmes aimed at elevating the SSEs to the expected targets in the area, lacks the awareness of the SSEs operators. Again, the available data shows that accessibility to the intervention by SSEs operators is not easy. As a result SSEs operators do not feel the relevance of these interventions. [Ebbin and Johnson \(2011\)](#) studied the effect of working capital management on return on invested capital and net balance position in around 1,700 small US firms from 2002 through 2004. Contrary to liquidity-profitability tradeoff ([Eljelly 2004](#)), they found evidence that companies with shorter cash conversion cycle are both more liquid and more profitable, requiring less invested capital. By classifying companies to different profitability quartiles, they found that small firms appear to be reactive on their approach to cash conversion cycle as weakly performing companies are more likely to decrease their CCC, while well performing companies are likely to do the opposite. Moreover, decline in CCC was associated with higher subsequent profitability and liquidity. These findings indicate the problems in small companies as managers often do not have enough time for working capital management which is accentuated only when performance and liquidity are weak.

[Enqvist et al. \(2014\)](#) studied working capital management in different business cycles using a sample of listed Finnish companies from 1990 through 2008. Using dummy and interaction variables to express different states of economy, they found evidence that the negative effect of cash conversion cycle on profitability is more significant during an economic downturn but there is no significant effect during a boom. In addition,

they found evidence consistent with [Deloof \(2003\)](#) that besides accounts receivable and inventories, accounts payable also had a negative impact on profitability, suggesting that less profitable firms wait longer to pay their invoices. In addition, there have also been a few papers examining the impact of working capital on market values. [Luo et al. \(2009\)](#) studied the effect of change in cash conversion cycle on both future return on assets and future stock returns in all retail, wholesale and manufacturing firms in COMPUSTAT in 1980–2006. They found that a decrease in CCC increases both future profitability compared with the industry median and future stock return compared with the benchmark portfolio, the effect being more significant for more leveraged companies. Regarding the individual components of CCC, payables turnover had a positive and inventory turnover a negative effect on future performance and firm value but unlike other studies, receivables turnover had a positive effect, suggesting a strategy for stimulating sales through granting trade credit. Since additional analysis states that financial statement information about more efficient working capital management increases excess share returns, the implication of their results is that shareholders put some attention also to daily operations but their interpretation of working capital management is not perfect.

[Nazir and Afza \(2009\)](#) studied the impact of aggressiveness of working capital management on both return on assets and Tobin's q ratio. The working capital investment policy was measured as a ratio of current assets on total assets, whereas the working capital financing policy was measured as a ratio of current liabilities on total liabilities. The results indicate that conservative working capital investment policy had a positive effect on both ROA and Tobin's q but, on the other hand, conservative working capital investment policy had a positive effect on only ROA, whereas it had a negative effect on Tobin's q. The positive impact of conservative working capital management on profitability is contradictory to most previous papers. However, investors value more companies that use a higher ratio of financing based on short-term liabilities although that kind of approach in financing working capital results in lower profitability, which is a sign that shareholders may have different interests than accounting measures show. In any case, the nature of Pakistani economy as an emerging market needs to be taken into account when comparing the results with developed economies. [Kieschnick et al. \(2013\)](#) also examined the impact of working capital on shareholder wealth. Using a US sample of public companies from the years 1990–2006, they found that the level of net working capital has a negative impact on the benchmark adjusted stock return of the company. Moreover, the results show

that an incremental dollar invested in net operating working capital is worth less for the shareholders than an incremental dollar held in cash and an incremental dollar invested in credit for customers has a greater effect on shareholder value than an incremental dollar invested in inventories. The rationale for this is that the risk regarding receivables is if and when the invoice is paid whereas the risk regarding inventories is whether the goods are sold at all. When observing the effect of different firm characteristics on the relationship between working capital and shareholder wealth, an incremental dollar invested in net operating working capital is worth less for shareholders when the company has a high debt ratio and bankrupt risk and worth more when the company has financial constraints and future sales growth.

[Kieschnick et al. \(2013\)](#) found that an incremental euro invested in net operating working capital has a negative impact on the share price and investors for French companies value additional working capital even less than investors for US companies. Besides, they found that an incremental euro invested in net operating working capital has a lower value for shareholders than an incremental euro of cash. As both net working capital and cash are valued less for investors in French companies than for investors in US ones, they assume that the relatively low ratio of net working capital in the balance sheets of French companies may be a possible explanation for the lower valuation. [Baños-Caballero et al. \(2014\)](#) studied the impact of working capital on market performance in around 250 listed UK firms for the period 2001–2007. Using similar methodology as in their previous paper, they regressed market-to-book ratio against net trade cycle and its square. Thus, their findings show a concave relationship between working capital and market value as deviations from the optimum reduce market value, depicting a positive effect of net trade cycle on market-to-book ratio with a low level of working capital and a negative effect with a high level of working capital. Furthermore, they found that the optimal level of working capital is lower for financially constrained companies than for unconstrained ones due to the higher financing costs and more restricted capital access they suffer from. Besides, there have been studies examining the relationship between working capital and performance the other way round, thus studying the impact of profitability and other determinants of working capital management by using a measure for working capital as a dependent variable and profitability, among other ratios, as one of the independent variables ([Chiou et al. 2006; Baños-Caballero et al. 2010; Hill et al. 2010](#)). [Chiou et al. \(2006\)](#) examined the determinants of both working capital requirement and net liquid balance, finding that changes in profitability, leverage and business cycle have a negative effect on both WCR and NLB, whereas the change in company size is positively

associated with WCR but negatively with NLB. Their results are partially supported by [Hill et al. \(2010\)](#) who found that net working capital requirement is positively affected by size, operating cash flow and access to market financing, whereas lagged sales growth, sales volatility and financial distress have a negative impact on WCR.

Besides, [Baños-Caballero et al. \(2010\)](#) stated Spanish SMEs have a target cash conversion cycle and they try to adjust their current CCC towards the target relatively quickly because significant costs are incurred for being far from the target CCC, possibly due to the high financial constraints that smaller companies suffer from. All in all, the frequency of papers examining the impact of working capital on performance has been growing during the past two decades. Generally, the results are consistent with the theoretical assumption that lower level of working capital tied up in the balance sheet results in higher earnings in the income statement. Additionally, lower level of working capital has also been found to be associated with higher stock returns. [Samiloglu and Demirgunes \(2008\)](#) analyzed the effect of WCM on company profitability of a sample of companies consisting of Istanbul Stock Exchange (ISE) listed manufacturing companies for the period of 1998 to 2007. Making use of ROA as a measure of company profitability, they found a significantly negative effect of inventory holding period and accounts receivable period on company profitability. Their conclusion was that the negative relationship between accounts receivable period and profitability may be due to the fact that customers want more time to assess the quality of products they buy from companies with declining profitability. However, there was no statistically significant relationship between ROA and cash conversion cycle.

[Dong and Su \(2010\)](#) also measured the relationship between WCM components and profitability employing secondary data collected from the listed companies in Vietnam Stock Market (VSM) for the period from 2006 to 2008. They reported a significantly negative association between three components of WCM including: inventory holding period, accounts receivable period and cash conversion cycle. It was therefore argued that as inventory takes more time to sell, it will adversely affect profitability. Also, the results imply that the increase or decrease in accounts receivable will significantly affect profitability of companies. The cash conversion cycle coefficient indicates that when the cash conversion cycle is longer, profitability is smaller and that managers can create value for their shareholders by reducing the cash conversion cycle to a reasonable range. They concluded that the positive relationship between the average payment period

and profitability indicates that profitable companies wait longer to pay their bills which contradict with the findings of [Raheman and Nasr \(2007\)](#). [Anvar et al \(2007\)](#) investigated relationship between working capital management and corporate performance. They use panel data method and companies accepted in Malaya Stock Exchange for a period of 1996-2006. Also they use cash conversion cycle as evaluating criterion of working capital management. Research findings show that there are meaningful relationship between cash conversion cycle and corporate profitability. [Sen and Oruc \(2009\)](#) investigated the relationship between efficiency level of WCM and ROA of companies trading on the ISE. Exploiting a total of 49 production companies for the period between 1993 and 2007, they concluded that there exists a negative relationship between inventory holding period, accounts receivable period, cash conversion cycle and ROA. [Binti Mohammad and Binti Mohd Saad \(2010\)](#) found in the study of 172 listed Malaysian firms for the period 2003-2007, they employed Tobin's Q as a measure of market valuation and firms profitability measured by ROA and ROIC. They found that current ratio is negatively significant to financial performance. Their study emphasized the importance of proper management of working capital as it affects firm's market value and profitability. They also suggested that working capital management should be part of the company's strategic and operational processes in order to be effective.

2.6 Literature Gap

[Okwo et al. \(2012\)](#) assessed the impact of a company's investment in fixed assets on its operating profit margin. [Olatunji et al. \(2014\)](#) examined the effect of investment in fixed assets on profitability of selected Nigerian banks. [Mawih \(2014\)](#) on some listed manufacturing companies indicated that the fixed assets had impact on ROE but not on ROA. [Martina \(2015\)](#) investigated the relationship between tangible assets and the capital structure of Croatian small and medium-sized enterprises. [Mawih \(2014\)](#) examined the effects of assets structure (fixed assets and current assets) on the financial performance of some manufacturing companies listed on Muscat Securities Market (MSM), for the period 2008-2012. These studies only considered fixed assets while other types of investment was left out giving it a knowledge gap on the effect of short term investment, investment on equity and investment on subsidiaries on corporate profitability.

3. METHODOLOGY

3.1 Research Design

The research design adopted by the study is correlational quasi-experimental design and it involves investigating relationship between two or

more variables with the hope of establishing whether effect or lack of effect exist between the variables under study. The rationale behind adopting the design is because the study is after finding whether corporate social responsibility, such as environmental responsibility, economic responsibility and philanthropic responsibility affects the performance of manufacturing firms quoted on the floor of Nigerian Stock Exchange.

3.2 Population and Sampling Design

Secondary data was used in this study. The relevant data used will be sourced from the publications of the Nigerian Stocks Exchange and the population of this study constitutes of the fifty (50) manufacturing companies quoted on the Nigeria Stock Exchange as at 31st December 2016. Due to the data availability of the companies and the fact that they are many in number, the study uses census approach to select 17 firms

3.3 Sources and Methods of Data Collection

The study uses secondary source of data collection. The data that will be used are extracted from the annual reports of the manufacturing firms, NSE fact book and Daily official lists of the NSE. The data is for the period of 10years ranging from 2008-2017 Secondary data is considered appropriate given the fact that the study is correlational in nature and is basically attempting to establish effect or lack of it under the study variables.

3.4 Model Specification

The technique of analysis employed by the study is multiple regressions. The technique is made up of one dependent variable ROE and other independent variables. The models are formulated as follows:

$$MV = f(STI, LTI, PI, SI) \quad 1$$

$$MV = \alpha_0 + \beta_1 STI + \beta_2 LTI + \beta_3 PI + \beta_4 SI + \epsilon_i \quad 2$$

Where:

MV = return on equity

LTI = Long term investment measures as fixed assets to total assets

STI = short term investment measures as current assets to total assets

PI = portfolio investment measures as investment in equity to total assets

SI = Subsidiary investment measures as joint venture investment to total assets

ϵ_i = Error term

β = Beta

In an effort to estimate the goodness of fit of the models Mc Fadden R2 is used. Apart from using the R2, Correlation Matrix, Tolerance Value, and Variance

Inflation Factor are also adopted in order to address Multi-Collinearity problems. All these analyses are to be done by using E- VIEW 9.0 software. Regression models are used because they are flexible, powerful, and produce optimal results in predicting numeric output when properly structured. They also allow examining the effect of many different factors on some outcome at the same time.

Prior Expectation of the Result

The explanatory variables are expected to have positive and direct effects on the dependent variables. That is a unit increase in any of the variables is expected to increase financial performance of the manufacturing firms.

3.5 ANALYSIS AND DISCUSSION OF FINDINGS

Table 1: Validity of the Model

Redundant Fixed Effects Tests			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	2.869468	(19,172)	0.0001
Cross-section Chi-square	54.241641	19	0.0000
Correlated Random Effects - Hausman Test			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	4.036763	5	0.0001

Table 2 Presentation of Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Investment Policy and Stock Prices				
STI	1.439808	0.090909	3.768095	0.0092
LTI	-0.001612	0.016107	-0.100054	0.9204
PI	0.013258	0.017999	4.736605	0.0000
SI	0.003073	0.019169	0.160321	0.8729
C	1.158345	0.183932	6.297664	0.0000
Effects Specification				
			S.D.	Rho
Cross-section random			0.084865	0.3283
Idiosyncratic random			0.121378	0.6717
Weighted Statistics				
R-squared	0.724712	Mean dependent var	0.523021	
Adjusted R-squared	0.602379	S.D. dependent var	0.121133	
S.E. of regression	0.120946	Sum squared resid	2.106419	
F-statistic	4.912182	Durbin-Watson stat	1.088621	
Prob(F-statistic)	0.008662			
Unweighted Statistics				
R-squared	0.513798	Mean dependent var	1.265685	
Sum squared resid	3.036451	Durbin-Watson stat	0.779431	
Correlated Random Effects - Hausman Test				
Equation: Untitled				
Test cross-section random effects				
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.	
Cross-section random	2.968292	4	0.5631	

Source: Extract from E-View Window, 9.0, 2023

Data analysis and Model Specification

The study used multiple regression defined as an equation with one dependent variable and more than one independent variables, the technique used in this study is the Ordinary Least Square (OLS) estimation technique. The test instruments in the OLS are the T-statistics and F-test which were used to test the significance of variables and the overall significance of the regression respectively. Other test instruments also employed were the Durbin Watson test which was used to test the presence or absence of auto correlation between and among the explanatory variables and the adjusted R square used to test the percentage variation of the dependent and the independent variables.

3.1 Panel Regression Model

Our dataset embodies information in two dimensions; across both time (2008-2017) and different firms, which is in line with panel data that is often employed in the situation where the data comprise both time series and cross-sectional elements (Brooks 2014).

3.2 Pooled Regression

According to Brooks (2014) we start by testing pooled regression by using ordinary least squares (OLS) first as it is the simplest to do with panel data. This involves estimating a single equation on all the data together, assuming that the average values of the variables and the relationships between them are constant over time and across all of the cross- sectional units in the sample. This will lead to assumptions of no heterogeneity and no time-specificity, thus the disadvantage - the information is lost in time dimension and cross-section dimension.

3.3 Redundant Fixed Effect Test

We use redundant fixed effect test, also called likelihood ratio test, to test whether the data can simply be pooled and estimated using a standard ordinary least squares regression model or affixed effects panel regression approach can be employed (Brooks 2014). The study use exercise redundant fixed effect test by E-views, with the null hypothesis that a pooled sample can be employed.

3.4 Fixed Effects Model vs. Random Effects Model

Fixed effects models allow the intercept in the regression model to differ cross-sectional but not over time, while all of the slope estimates are fixed both cross-sectional and over time (Brooks, 2014). With time-fixed effects models, the average value of y (i,t) is assumed to change over time but not cross-sectional, hence the intercepts would be allowed to vary over

time but be the same across entities at each given point in time (Brooks, 2014). Although fixed effects model is easy to apply, there are drawbacks. Gujarati (2004) argues that when introducing many dummy variables, the degrees of freedom would decrease. Problems with many variables can also cause the possibility of multicollinearity to increase. With both entity- fixed effects and time- fixed effects, a model would contain both cross- sectional and time dummies (Brooks, 2014).

3.5 Hausman Test

Since random effects model is invalid when heterogeneity exist, meaning that error term is correlated with explanatory variables, Hausman test is often used to test whether a variable can be treated as exogenous or whether that variable needs a separate structural equation. Hausman test refers to a test for whether a random effects approach to panel regression is valid or whether a fixed effects model is necessary (Brooks, 2014). We exercise Hausman test by E-views, with the null hypothesis that random effects model can be applied.

3.6 Final Regression Model

As discussed above, both redundant fixed effects model and Hausman test reveal that fixed effects model is more appropriate, therefore fixed effects model will be employed in our panel regression. Since our regression model concerns more about the determinants of the dividend policy, which are measured by cross-sectional entities, we apply fixed effects on both time period and cross- section dimensions. Though this adds in more dummies, the model generates reasonable and accurate estimates for the cross-sectional entities.

From model I, the probability of the Hausman test is $0.5631 > 0.05$ therefore the null hypothesis is accepted and the alternate rejected, this implies that the random effect results is appropriate for the study. From model II, the probability of the Hausman test is $0.0023 < 0.05$ therefore the null hypothesis is rejected and the alternate accepted, this implies that the fixed effect results is appropriate for the study. Base on the fixed effect results, we formulate the regression line.

$$MV = 1.158345 + 1.439808STPI - 0.001612SSI + 0.013258LTPI + 0.003073LTI + \epsilon$$

The result shows that the adjusted R^2 is 0.602379 indicating that the independent variables explained 60.2 percent of the systematic variation in the stock prices of the quoted manufacturing firms over the observed years, while the remaining 39.8 percent is explained outside the unspecified variables, thus, exogenously explained. The F-statistic and probability informs that the model is significant while the Durbin Watson statistic informed that the results are free from autocorrelation. The regression results informed us that if the variables are hold constant, stock prices of

the quoted manufacturing firms can increase by 1.15. The beta coefficient informed that short term portfolio investment, long term portfolio investment and long term investment have positive relationship with the stock prices of the quoted manufacturing firms while subsidiary investment have negative relationship with stock prices of the manufacturing firms. The probability coefficient of the variables informed us that short term portfolio investment and long term portfolio investment are statistically significant while long term and subsidiary investment are statistically not significant.

4.1 Discussion of Findings

The objective of the first hypothesis was to test the relationship between investment policy and market value of the quoted manufacturing firms. The multiple regression formulated in the chapter three of this study had market value as the dependent variable. Results from the estimated model shows that investment policy explains 60.2 percent (adjusted R²). The estimated regression line is significant when judged from the f-statistic and probability. The Durbin Watson statistic proved that the result is free from autocorrelation.

The multiple regression results further revealed that short term portfolio investment have positive and significant relationship with market value of the quoted manufacturing with the periods covered in this study. The estimated coefficient indicates that increase on short term portfolio investment will increase market value of the firms by 1.4 percent (see table 4.2). The positive relationship between short term portfolio investment and market value of the quoted manufacturing firms confirm our a-priori expectation and justify theories of investment. It could be recalled that John M. Keynes and Irving Fisher, both argued that investments are made until the present value of expected future revenues, at the margin, is equal to the opportunity cost of capital. This means that investments are made until the net present value is equal to zero. The positive relationship between the variable confirm the findings of [Nwala, Gimba and Oyedokun \(2020\)](#) that dividend payout and equity issuance have significantly impacted on firm performance (Tobin Q).

The multiple regression results further revealed that long term portfolio investment have positive and significant relationship with market value of the quoted manufacturing with the periods covered in this study. The estimated coefficient indicates that increase on long term portfolio investment will increase market value of the firms by 0.01 percent (see table 4.2). The positive relationship between long term portfolio investment and market value of the quoted manufacturing firms confirm our a-priori expectation and justify theories of

investment. It could be recalled that the neoclassical theories assume optimization behavior on behalf of the decision maker (investor). The neoclassical and Tobin's theory of investment explicitly assumes profit/value maximization. The accelerator theory of investment assumes this implicitly, by assuming that investment is determined by an optimal capital stock this means that investments are made until the net present value is equal to zero. The positive relationship between the variable contradict the findings of [Okeke \(2019\)](#) that capital structure with regard to long term debt was negatively but statistically significant to firm value, while equity capital was positively insignificant to firm value.

The multiple regression results further revealed that long term investment have positive but no significant relationship with market value of the quoted manufacturing with the periods covered in this study. The estimated coefficient indicates that increase on long term portfolio investment will increase market value of the firms by 0.03 percent (see table 4.2). The positive relationship between long term investment and market value of the quoted manufacturing firms confirm our a-priori expectation and justify theories of investment. It could be recalled that the neoclassical theories assume optimization behavior on behalf of the decision maker (investor). The neoclassical and Tobin's theory of investment explicitly assumes profit/value maximization. The accelerator theory of investment assumes this implicitly, by assuming that investment is determined by an optimal capital stock this means that investments are made until the net present value is equal to zero. The positive relationship between the variable confirm the findings of [Uzokwe \(2019\)](#) whose findings validated the relevance of capital structure theory formulated by Gordon in 1956.

However, the multiple regression results further revealed that subsidiary investment have negative but no significant relationship with market value of the quoted manufacturing with the periods covered in this study. The estimated coefficient indicates that increase on subsidiary investment will reduce market value of the firms by 0.01 percent (see table 4.2). The negative relationship between subsidiary investment and market value of the quoted manufacturing firms contradict our a-priori expectation and justify theories of investment. The negative effect of subsidiary investment on the market value of the quoted firms can be traced to shocks in the business environment such as the financial crisis. The negative relationship between the variable contradict the findings of [Uzokwe \(2019\)](#) whose findings validated the relevance of capital structure theory formulated by Gordon in 1956.

5. CONCLUSION AND RECOMMENDATIONS

Conclusion

The result showed that the adjusted R² is 0.602379 indicating that the independent variables explained 60.2 percent of the systematic variation in the stock prices of the quoted manufacturing. the study found that term portfolio investment, long term portfolio investment and long term investment have positive relationship with the stock prices of the quoted manufacturing firms while subsidiary investment have negative relationship with stock prices of the manufacturing firms. The probability coefficient short term portfolio investment and long term portfolio investment are statistically significant while long term and subsidiary investment are statistically not significant

The study concludes that there is significant relationship between short term portfolio investment and market value. That there is no significant relationship between subsidiary investment and market value, that there is significant relationship between long term portfolio investment and market value and that there is no significant relationship between long term investment and market value of the quoted manufacturing firms.

Recommendations

From the findings of the study we recommend that:

- Proper investment analysis should be carried out in appraising short term investment to enhance market value of manufacturing firms.
- There is need for management to integrate the objectives of long term investment with the market value objective of Nigeria manufacturing firms.
- The finance manager of the manufacturing firms should widen the portfolio investment and the financial market should be well examined to achieve profitability.
- Investment in subsidiaries of the manufacturing firms should be increased and management should formulate policies of managing subsidiary investment.
- There is need for manager to formulate measures and policies of investment management among the manufacturing firms.

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