Title Page

EFFECT OF CASH FLOW ON THE PROFITABILITY OF QUOTED CEMENT MANUFACTURING COMPANIES IN NIGERIA

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BEING A DISSERTATION SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES NASARAWA STATE UNIVERSITY, KEFFI IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER'S OF SCIENCE (M.Sc.) DEGREE IN ACCOUNTING AND FINANCE

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DECLARATION

I hereby declare that this dissertation has been written by me and it is a report of my research work. It has not been presented in any previous application for M.Sc. Degree in Accounting and Finance. All quotations are indicated and sources of information specifically acknowledged by means of references.

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01/03/2021

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CERTIFICATION

This dissertation entitled "Effect of Cash Flow on the Profitability of Quoted Cement Manufacturing Companies in Nigeria" meets the regulation governing the award of Master of Science (M.Sc.) in Accounting and Finance of the School of Postgraduate studies, Nasarawa State University, Keffi and is approved for its contribution to knowledge and literally presentation.

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DEDICATION

This dissertation is dedicated to the memory of my late mother Alhaja Juweratu Taiwo Yinusa.

"My Lord! Bestow on her Your mercy as She did bringing me up when I was young" Q:17:24.

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Abstract

This study examines the Effects of Cash Flow on the Profitability of Quoted Cement Manufacturing Companies in Nigeria. The population of the study is the four (4) quoted cement companies in Nigeria as at 2018 while Descriptive and ex-post facto research designs are used for the study. Panel regression analysis is used on panel data collected from the CBN Statistical Bulletin and the Annual reports and accounts of the sampled companies for the period spanning through 2009-2018. The study utilizes operating, investing and financing cash flows and regressed against profitability in terms of ROA as explanatory variable. It is found from the panel regression results that, operating and investing cash flows have significantly and positively affects profitability of quoted cement companies in Nigeria. However, financing cash flow has negative and insignificant effect on profitability of quoted cement companies in Nigeria. The study recommends that, quoted cement companies in Nigeria should try to ensure sustainable flow of cash to the operations and investments opportunities available to the companies to enhance their profitability.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Cash flow is the inflow and outflow of cash in a firm. Inflows are cash received by the firm, while any cash expended is called an outflow. Cash flow helps in the expansion of a firm's operations, and providing dividends to the stakeholders. It also enables replacement of necessary assets, and gives the firm good market opportunities (Libby, 2001). It is imperative for both the business analysts and managers to have a better understanding the different uses of cash in business transactions and the different sources of cash. Rose (2007) supports this view by saying that information on cash flow helps users of its financial statement access important information of the sources and uses of almost all financial resources within a specified time.

Therefore, a company's cash flow is an essential factor, which boosts its operations. For maximal values of the stakeholders, designing and adopting an appropriate cash flow mix is essential for each corporate bodies as a result of its importance in the operations and performance of a firm (Efobi, 2008). According to Uremadu (2004), a firm's cash flows refer to all the funds, which the firm expend on inventories, fixed assets, marketable securities and account receivables, bringing corporate profit. Well managed cash flows and poorly managed ones are distinguished by a firm's ability to select effectively adequate fund sources for financing the operations of the firm (Watson, 2005; Efobi, 2008; Onsare, 2013; Nwanyanwu, 2015). An organization must design various means of choosing the best cash flow components in order to be

structured well and used effectively; using such a cashflow will boost the performance and productivity of the organization (Uremadu, 2004; Wanja, 2011; Habib, 2011).

Cash flow is also seen as an indicator of the actual money, which an organization spent or received within a specific period (Albrecht, 2003). This excludes non-cash accounting charges, e.g. depreciation. Cash is the back bone of the organization, and the organization can collapse if cash is not well managed. Profit and solvency and not interchangeable; A company, therefore, may be profitable, but it not solvent. The company's financial performance, flexibility and solvency are set on its ability to draw on positive cash flows from its operations, investments and financial activities (Khoshdel, 2006; Turcas, 2011; Bingilar & Oyadonghan, 2014). All the cash equivalents, and inputs and outputs liquidities are cash flows of an organization. Both demand deposits and cash at hand are liquidities. Cash equivalents refers to the company's short-term investments. The investments have a liquidity degree easily changed to cash, whose risk value change is significant. Cash flows are more direct determinant of liquidity, and contribute to the performance of the corporation. Information of cash flow enables the users to derive important information relating to the use of the resources of almost all the financial resources within a particular time (Shahmoradi, 2002; Adelegan, 2003; Ashitiani, 2005; Ross, 2007).

Maheshwari (2001) notes that profitability of a firm means the ability to make profit from all the business activities of a firm or an enterprise. It shows how efficiently the management can make profit by using all the resources available in the market. According to Harward "profitability is the 'the ability of a given investment to earn a return from its use (Srivastava & Srivastava, 2006). Profit maximization is said to be the main objective of all firms. Increasing profitability involves determining which

areas of a financial strategy are working and which ones need improvement. The management of any firm is charged with a responsibility of making the right decisions that would maximize the returns of an organization. In reality, firms do have profits targets, and sometimes they pay managers for reaching them, but the goals of firms are broader than their profits alone (Chandra, 2002).

According to Bodie, et al (2004), managers must know internally the organization's present financial situation at (performance, control functions and problems). Because liquidity indexes best show the ability of the organization to pay, and suppliers' rights on short-term generally, suppliers are usually concerned about the liquidity of a company (Fabozzi & Markomits, 2006), while the organization's ability to draw on medium and long-term cash flow to service debt is the concern of the investors in bounds lending the organization for payment on medium or long term (Bragg, 2002).

Investors in search of how to diversify their businesses mostly invest their surpluses in promising firms with high cashflows. Organizations with high cashflows usually attract investors and creditors because they evaluate organizations based on their financial flexibility and debt kickback capacity. Moreover, reduction of debts and cash are impossible if a company does not possess cash paying. Jensen propounded in 1986 the theory of free cash flows. The theory developed to gradually emerge among new financial topics that describe organizations' behaviour, which defy early economic theories (Griffith & Carroll, 2001; Turcas, 2001; Thanh & Nguyen, 2013).

An essential instrument to assess firms' financial performance is cash flow; it indicates an organization's cash balance paying the costs of asset development or maintenance (Habib, 2011). Cash flows are important to shareholders in determining how financially

sound the business is. The managers enhance the organizational value of the business by investing free cash flows in businesses, which have positive Net Present Value (NPV). Organizations are at liberty to finance their investments with either internal and/or external sources. Whereas depreciation and retained earnings are among internal sources, equity and debt are external sources (Jensen & Smith, 2005).

The cash flows in some of the quoted cement manufacturing companies in Nigeria have been an issue as some of these companies have been reporting low flow of cash. This study intends to examine whether cash flows of quoted cement manufacturing companies in Nigeria have effects on the profitability of the companies, and also to assess the causal relationship between the cash flows and the profitability of the Companies.

1.2 Statement of the Problem

Daily operations of an organization crucially depend on it flow of cash. Liquidity in the business facilitates provision of working capital allowing the firm to source for inputs and pay its liabilities including its suppliers, staff and meet its tax obligations. An organization is at risk of insolvency if it cannot convert the debtors to liquid cash run even if has high sales and makes profits. The reason is that the company's flow of cash will fail to fulfil its short-term obligations because it cannot manage its credit sales. As a result of this, the company will not get investors, and lack investment capital. Rather than growing, it will continue to shrink, and its profits will decrease. Business failure may, therefore, result from problems of cash flow. On the contrary, cash flow sensitivity reduces, and problems of over spending are solved as growth opportunities improve (Schoubben & Van Hulle, 2008).

Furthermore, in companies where there is poor cash flow management, the managers often serve their own personal interests, while the stakeholders' goals and those of the management at odds. This is why it is argued that there is a significant negative correlation between corporate performance and cash flows (Chikashi, 2003; Thanh and Nguyen, 2013; Zhou, Yang & Zhang, 2012; Watson, 2005 and Ashtiani, 2005).

By contrast, the studies by scholars such as Shahmoradi, (2002), Khoshdel, (2006), Adelegan, (2003) and Miar (1995) shows that there is a significant positive correlation between corporate performance and cash flows. There is mixed findings among the various scholars regarding cashflow and profitability. There is, therefore, a need for more investigations into this phenomenon.

Organizations have measured their financial performance for long using the traditional financial analysis methods. These methods, however, have several weaknesses. The financial performance of an organization cannot be assessed sufficiently by balance sheet and income statement; cash flow information has shown this (Bernstein & Wild, 1999). This is why the present study is essential; it examined the relationship between cash flow and profitability of quoted Cement Manufacturing Companies in Nigeria. In addition, accounting information of income statement and the balance sheet is not reliable enough to carry out a liquid analysis on an organization (Bernstein & Wild, 1999).

The study by Mong'o (2010) examines whether cash flow has effect on the profitability of Kenyan commercial banks. The study focuses on the period between 2005 and 2009. The study mainly aims at explaining the effect of the various cash flow components on the growth of profitability, and it has the objective of establishing the existing causality

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among cash flow and profitability. The need to have a clear picture and understanding of the relationship between cash flow and profit propels the study. The present study anchored on the previous work of Mong'o (2010) because they are similar in topics and employ the same variables. They, however, differ terms of the sector and geographical setting of the studies. While Mong'o focus on the cash flow effects on the profitability of the Kenyan commercial banks in Kenya, the present study focuses on the quoted Cement Manufacturing Companies in Nigeria. More so, the study look at the effects of the cash flows on the financial performance and the causality that runs between the variables.

As stated above, there is plethora of studies which examined relationship between cash flow and profitability. However, studies differ in their findings on the significance or otherwise of cash flow on profitability. The study thus explored further investigations in this area, which has not been exhaustively explored and therefore required further investigation.

Furthermore, the study extent to current period unlike other studies which generalization of the finding cannot be applied to quoted cement manufacturing firms in Nigeria.

1.3 Research Questions

The following research questions are raised in line with the objectives of the study:

i. What is the effect of operating cash flow on the profitability of quoted Cement Manufacturing Companies in Nigeria?

ii. In what way Investing Cash Flow affects the Profitability of quoted Cement Manufacturing Companies in Nigeria?

iii. How does Financing Cash Flow affect the Profitability of quoted Cement Manufacturing Companies in Nigeria?

1.4 Objectives of the Study

The main objective of the present study is to investigate the impact of cash flow on the financial performance of quoted Cement Manufacturing Companies in Nigeria. The specific objectives are to:

i. Evaluate the effect of Operating Cash Flow on Profitability of quoted Cement Manufacturing Companies in Nigeria.

ii. Assess the effect of Investing Cash Flow on Profitability of quoted Cement Manufacturing Companies in Nigeria.

iii. Determine the effect of Financing Cash Flow on Profitability of quoted Cement Manufacturing Companies in Nigeria.

1.5 Statement of Hypotheses

Based on the objectives of the present study, the hypotheses are stated in null as follows:

H_{01}: Operating cash flow does not significantly affect profitability of quoted Cement Manufacturing Companies in Nigeria.

H_{02}: Investing cash flow does not significantly affect profitability of quoted Cement Manufacturing Companies in Nigeria.

H_{03}: Financing cash flow does not significantly affect profitability of quoted Cement Manufacturing Companies in Nigeria.

1.6 Significance of the Study

The significance of the present study is in its capacity to provide useful information for the potential users. The result of the study is relevant for bodies in making appropriate decisions in their various establishments. This study aid the Nigerian economy, general, and the managers of quoted Cement Manufacturing Companies, specifically, in managing their cash flows better. This in turn help them increase growth and profitability of their companies. It also helps toward making appropriate predictions and planning thereby insulating the companies from potential insolvency and liquidity problems. In this regard, the study has the ability to show the correlation between profitability and cash flow; this help the companies with the projection of their needed cash flow, investment plans, and company expansion. It could help the take preventive measures against any forecast reduction in cash flow.

The present study helps the government and policy makers significantly by keeping them better informed on cash flow generally, and the cash flow conditions of the selected companies specifically. This in turn enable both the government and the policy makers make informed policy decisions on its taxation and licensing, while still preserving innovation, investment and economic growth, and efficiently regulate the various sectors of the economy.

The investors willing to invest in the cement sector or the quoted companies will find this study very useful. It has the ability to show the potential investors whether the cement sector or the selected companies are safe to invest their capital and they will not take unnecessary risk. In addition, it exposes them to both the available benefits and risks of cash flow in the sector, and thereby enable them make their investments

decisions appropriately taking cash flow into consideration. The study also benefits future researchers as it contributes to the body of literature in the field and serve as a reference material for scholars working in related field of study.

Based on the foregoing, the study provides creditors, accountants, investors, management and auditors a new way to assess the performance of firms rather than holding to the conventional accounting systems, which are in vogue. Instead of the conventional accounting systems, the analysis of the firm's performance done with the statement ratios of cash-flow.

Cash flows concerns investing and operating activities. While investing activities ensure the sustainability of revenue inflow, operating activities concern expenditures as a result of which the sustainability of cash inflow is not guaranteed. The issue is how best had these investing activities been evaluated with cash flow analysis or ratios in determining corporate performance instead of the traditional ratio analysis. Many scholars have argued that the traditional ratios like income statement, balance sheet statements, etc. are mere history-based; they have no use in making decision for the future because they are sunk cost records by nature. The study also expands the frontier of knowledge by adding to the existing body of literature as the dimension of the quoted Cement manufacturing companies in Nigeria will be brought to the fore. This however serve as a step to future researchers in the area.

1.7 Scope of the Study

This study is on the effect of Cash Flow on the profitability quoted Cement Manufacturing Companies in Nigeria. Thus, the study gives attention to cash flows in terms of cash from operating activities, cash from investing activities, and cash from

financing activities. The financial performance indicator that is looked upon is return on assets. The study is limited to period of 10 years spanning through 2009-2018. This period is considered adequate enough to establish the effect of cash flow on profitability in the quoted Cement Manufacturing Companies in Nigeria.

CHAPTER TWO

LITERATURE REVIEW

2.1 Conceptual Framework

This section covers the conceptual review of the variables used in the study. They are cash flow and corporate performance. Various definitions of these concepts were made, and the study aligns with one of these definitions.

2.1.1 Concept of Cash Flow

Classification of cash flows are based on the cash generated through activities. The activities relate to investing, financing and operating. Operating cash flow concerns the activities of the firm through which the net profit is determined. Regarding IAS 7, operating activities are generated mainly from the major activities from which the firm gets its income. They are derived from the company's transactions and other activities recorded in its net profit and net loss records. Examples of these are commissions, fees cash receipts, receipts of sales, salary and wages payment, and receipt of cash payment to suppliers, etc. In the same vein, FRS 1 concerns the cash flows which result from operating activities. They are the cash effects of company's business transactions, which are recorded in its profit and loss records to get its operating profit (Alexandar & Britton, 1999).

Cash Flow from investing activities

Investing activities generated cash flows refer to the firm's inflows and outflows of cash from the disposal or sales of the firm's productive facilities, and the cash invested by the firm in other firms' security. On the other hand, financing activities cash flow refers to the firm's inflows and outflows of cash obtained from external sources to finance the operations of the firm (Libby, Libby & Short, 2001). Cash paid for acquiring plant and equipment, property, and cash paid to acquire debt instruments of other firms, excluding cash paid disposal or acquisition or a movement in liquid resources. Receipts from sales or disposals of property, plant or equipment and receipts from repayment of the reporting entities loans to other entities or sales of debt instruments of other entities other than receipts forming part of an acquisition or disposal or a movement in liquid resources (FRS 1 in Alexander and Britton, 1999). Cash inflows within liquid resources management comprise: (1) "disposal or redemption of any other investments held as liquid resources"; (2) "withdrawals from short-term deposits not qualifying as cash".

Cash Flow from Financing activities

Financing activities include cash profit generated from shares issued or other equity instruments, cash spent to buy shares or redeem the entities shares, cash profit from mortgages, bonds, debentures issued, and other long-term or short-term borrowings. Other are cash spent on settling debts and "cash payments by a lessee for the reduction of the outstanding liability relating to a finance lease" (IAS, No. 7).

Cash flow generating activities are divided into three categories- dimension of financing, dimension of operating, and dimension of investing - to determine the impact of each category on the firm's performance. This shows the significance of cash flow information to a company. From IAS 7, a statement of cash flows, used together in connection with other, provide the users with financial information, with which they could measure the changes in the financial structure (solvency and liquidity) and net assets of the firm, and the possible effect of the change on timing and amounts of cash flows for the purpose of adapting to the varying opportunities and circumstances. There is the tendency for balance sheet to provide static financial information which indicate that it assesses one point alone at a time (Albrecht, 2003). Moreover, income statement has a feature of several expenses and non-cash allowances, e.g. depreciation and amortization.

By contrast, cash flows statement includes in the financial statements any observable changes that took place. In the same vein, it stresses cash amount available for operations and investment, which is the stakeholders' main, while book keeping deception is eliminated (Amuzu, 2010). Therefore, the main focus of the cashflow statement on the ability of organization to internally generate cash, to manage its current liabilities and current assets, details about its investments in external financing and productive assets (Libby, Libby & Short, 2001). A firm's ability to procure raw materials for manufacturing activities and excute projects depends on the position of its cashflow (Nwachukwu, 2002).

Cash flows statement is usually prepared with either of the available two methods, which are direct methods and indirect methods according to IAS 7. Gross inflow and outflow of cash are reported in direct method. A measure to predict the cash

requirements of the organization is also provided, while non-cash items (profit from non-current assets disposed, depreciation, etc.) are discarded. In indirect methods, however, non-cash items are adjusted with the net profit. with non-cash items. Also, changes in working cash are included to get the net operating cash flow. The weakness of this method is that the entire cash flow is not reported, and the working capital movements included could not help in measuring the firm's cash flow. In addition, it is very difficult to understand the working capital movements used in places of cash flow except for people who have some background in finance and accounting.

The purpose and relevance of cash flow statement are greatly reduced and undermined by indirect method in the study by Jones, Romano and Smyrnios (1995). The study by Krishnan and Largay (2000) investigates which of the direct method and the indirect method is better to forecast future cash flows. The study uses some companies which used the direct method between 1988 and 1993 in the United States of America. The findings show that future cash flows are better predicted with past cash flow data than other accrual data and past earnings. In addition, it is revealed also that combining other accrual information and earnings with direct method cash flows information enhances the accuracy of cash flow forecast. It appears from the available literature that the direct method is better than the indirect method because the cash transactions reports of the former are absolute, which is not true for the latter.

Cash flow refers to the balance left when opening balance is deducted from the closing balance. That is, the difference between the duo. The term "cash flow" came into existence towards the end of 1950s (Mason, 1996). It is very crucial to the health

of an organization. If a firm does not have adequate cash required for immediate necessities, it cannot continue for a long time. However, several companies could survive, engaging in short-term and medium-term transactions even if they run at losses. They could still manage to carry along if they could afford variable costs and delay debt settlement, for instance.

Cash received or generated by a company is called cash inflows. Companies usually get from goods and services sold or rendered. On the other hand, cash spend by the company is called cash outflow. Cash flows out of a company majorly through salary and wages payment, expenditure incurred on power, taxes, transportation, raw materials, etc. The term net cashflow refers to the difference between inflow cash and outflow cash. A cashflow could be positive, and also, at times, negative. If the cash which an organization makes exceeds its expenditure, then it has a positive cash flow. In this case, there will be timely payment of bills in the organization. occurs when a business receives more money than it is spending. This enables it to pay its bills on time. A negative cash flow means the business is receiving less cash than it is spending. If the reverse is the case, however, the organization has a negative cashflow. This is when it finds it tends to find it difficult to settle its bills, and it could lead to borrowing to cover up. Therefore, one essential component of investment decision is the ability of an organization to generate cash flows. The value of securities is directly affected by future cash flows since they are the eventual investment profits being expected. Therefore, cash flows are an essential information need for financial valuation models (Gilchrist & Himmelberg, 1995).

2.1.2 Concept of Corporate Performance

The concept of performance is the tool employed to measure the degree of success of a company in its operations. Performance is activity based, that is, it is based on the nature of activity. Therefore, it differs from one company to the other. In non-profit organizations, performance could be measured with the its contributions to the community, the number of its members, etc. Factors to determine the performance of a profit making one, on the other hand, the amount of sales, profits made, the number of subscribers or clients, etc. However, accounting-related determinants, such as liquid ratio, return on asset, net profit, etc., are usually employed to assess performance of an organization (Nwanyanwu, 2013) because they could be compared to both historical performance and industry norms (Fry, Stones & Hattwick, 1998).

Profit refers to the balance left after subtracting the total costs from the total revenue of an organization. The company profit tax is calculated based in this surplus. This indicates that the firm's revenue surpasses its total costs. Generally, the profit made by an organization belongs to its owners; and they are free to spend it outside the company. Profitability refers to a firm's ability to make profit. This shows that the firm is managed well through a judicious use of the available resources by its managers as a result of which some return is generated. The efficiency of an organization on the overall is assessed with profitability. The analysis of both input and out tends to be the best tool to assess organizational efficiency.

In assessing profitability the output as an input proportion. It could also be matched with the results obtained at various periods of operations or the results obtained by

other companies in the industry. A firm's profitability is also assessed through the comparison the output and the input, that is, the capital spent and the income received.

Since the primary purpose of business is to make profits, the profit made by an organization is a determinant of its efficiency. Organizational efficiency is rated higher as its profit rises and vice versa. Therefore, it appears safe to say that profitability is relative, and it is measured with profit relation the factors, which could affect profit directly (Barad, 2010).

Growth firms refers to the enterprises, which could rapidly develop and grow their business activities. This rapid growth, however, has a side effect; there tends to be a great pressure on the balance sheet of the enterprise because capital demands will plummet proportional to the growth of the enterprise. Although the growth firms tend to make no profit at the initial stages, there is eagerness on the part of the investors to view the business as a longer-term enterprise. They believe that increased cash flow and profits will eventually result from the rapid revenue growth. Internal Growth requires an increase in sales. This why the firm often ensures that existing products are promoted and new ones are launched, which definitely increase the productive capacity of the firm. Growth is often by issuance of new shares, retaining profits or even borrowing. In addition, enterprises could grow externally through takeovers and mergers. Businesses could be combined to become a single entity for better growth and performance. In such a situation, the parties involved usually meet and mutually reach the agreements on which their union is based (Singh, 1975).

A firm's profitability refers to its ability to get returns from all tits business transactions. This indicates that the management organization is efficient in its use of available resources, thus the resulting profits. According to Harward "profitability is the 'the ability of a given investment to earn a return from its use" (Srivastava & Srivastava, 2006). One of the major goals of every business is to maximize profit. In order to increase profitability of a firm, the management must be able to identify the parts of its financial strategy which are successful or promising and at the same time it should know where improvement is required, because making the right business decisions is crucial to profit maximization, and that is a duty of a firm's management. Although the objectives of companies are much more than profit making, in practice, however, managers are given specific profit targets to meet, and they are actually paid to achieve that (Chandra, 2002), and rewarded for the achievement.

Profitability ratios is a commonest financial instrument employed to measure the bottom-line and returns of a firm. Because they are the determinants of a firm's overall performance and efficiency, both business stakeholders and the managers are very concerned about profitability measures. Profitability ratios comprise margin and returns (Petersen & Kumar, 2010). Ratios, which reflect margins indicate the company's ability to turn sales into profits at different assessment stages. Ratios are very important instruments of profitability assessment because they show the company's ability to assess its overall efficiency in making profits (Khan & Jain, 2003). Therefore, a firm's profitability is assessed with margin ratios. For example, gross profit margin measures income from sold goods as a percentage of sales.

In addition, overall organizational efficiency is also assessed with EBIT also called operating profit margin (Maheshwari, 2001). This is used in manufacturing companies, and return on assets ratio is another tool for assessing profitability of manufacturing companies. This assesses the extent to which a firm is efficient the management of the firm's assets, particularly, with regards to the returns generated. In this case, the total returns generated is evaluated in relation to the investment level of the company in total assets.

Similarly, return on equity ratio also assesses profitability. This instrument is very important in the measurement of the profits that accrue on the capital invested in the company, "a ratio of net income divided by stockholders' equity" (James et al., 2005). The present study is based on the belief that a company, which has sufficient cash inflow position, tends to have improved performance in terms of profitability. As a result, it will use Return on Assets (ROA) in the assessment of organizational performance.

2.2 Empirical Review

This covers the empirical review of the study. Literature in relation to each of the categories of the cash flow is reviewed ranging from operating cash flow, investing cash flow, down to financing cash flow.

2.2.1 Operating Cash Flow and Corporate Performance

Ashitiani's (2005) study investigates the association between investments, operating cashflows, financing, accounting ratios, and stock returns in the Stock Exchange of Tehran. The data for the study is obtained from the 650 listed firms between 1998 and 2004. Simple liner regression and Pearson correlation are

employed for statistical analysis of the data. The findings reveal that there exists a meaningful correlation between increasing net profit, investing cash flows, increasing operating earnings, operating cash flows, and stock returns. However, financing cash flows and growing of trade sale do not meaningfully correlate with stock return. Despite the fact that the objective was achieved, the period renders the findings obsolete.

Zhou, Yang and Zhang (2012) investigates the correlation between financial performance and free cash flow in some Chinese real estate firms. The data for the study is obtained from the listed Chinese real estate firms between 2006 and 2011. The data is statistically analysed using regression analysis and principal component analysis. The results indicate existence of a negative linear correlation between financial performance and firm's free cash flow, and there will be decrease in financial performance if there is too much free cash flow. The study used multivariate regression results without conducting multicollinearity diagnostics test therefore, the result may not give a clear relationship between the variables of the study. Findings from China cannot be generalised to the Nigeria companies.

Ali, Alireza and Jalal (2013) investigates the relationship between Iranian stock returns and various incomes and cash flow indicators of organizational performance. Data between 2003 and 2011 was statistically analysed using simple and multiple regressions. The findings show the existence of a significant correlation cash flow and the firm's performance. In addition, there is a better correlation earning indicators, and stock returns in measuring performance than cash flow indexes in several firms, which have higher accruals.

Also, Adelegan (2003) investigates the correlation between divided changes and cash flow in Nigeria. Data is obtained from the information provided by 63 quoted Nigerian companies between 1984 and 1997, and ordinary least squares (OLS) technique is employed for the statistical analysis of the data. The findings show the existence of a significantly positive association between company performance and cash flow. Also, the correlation between dividend changes and cash flows is substantially dependent on several factors such as the policy capital structure choice, growth level, changes in economic, and the company size. The study is obsolete based on the scope of the study.

The study by Brush, Bromiley and Hendrickx (2000) explored the free cash flow hypothesis for company performance and growth of sales. The white and Durbin-Watson tests is employed for the statistical analysis of the data between 1988 and 1995. The findings show existence of a significantly positive correlation between flash flow and company performance. have a significant positive relationship, and that company performance and sales growth are differently affected by various governance conditions. As at 2000, the result from 2005 data may not give a clear effect of cash flow on company performance, the study could have extent the period to 1999.

Miar's (1995) analysed the contents of the information in Tehran stock exchange cash flows financial ratios. 480 listed firms constitute the same and information between 1988 and 1994 forms the data, which is statistically analysed using the ordinary Least Square (OLS) technique. The findings show that existing information in cashflow statement ratios causes a great rise in the relationship between balance sheet and the income statement ratios, and stock returns. But there

is a weaker correlation among the cash flows ratios comparing with ratios of income statement and balance sheet in stock returns.

Farshadfar (1999) investigates the relationship among accrual earnings and operating cash flows, and stock returns. The statistical linear regression technique per year and the mean of 5 years is employed for data analysis. The study reveals lack of any meaningful liner correlation between operating accrual earnings and operating cash flows, and stock returns. The study does not conduct collinearity test on the free cash flows variables as such, the result may not give a clear correlation of the independent variables on the dependent variables.

The study by Khoshdel (2006) examines the association among operating earning and free cash flows, and the net growth of operating assets in market value and stock returns in the stock exchange of Tehran. simple linear regression method and Pearson correlation are employed to test the hypotheses for the study. The results show that there exists among returns on assets, operating earning with returns on equity and net growth of operating assets a significantly positive association. The study does not conduct collinearity test on the free cash flows variables as such, the result may not give a clear correlation of the independent variables on the dependent variables.

In a study on listed firms in Nairobi Securities Exchange (NSE), Akumu (2014) assessed the impact of free cash flow on profitability of 30 companies out of 61 listed firms in Securities Exchange of Nairobi from 2009 to 2013. The study employs a descriptive survey in the analysis of free cash flow impacts on firms' profitability. The study employs regression model using SPSS. Profit After Tax is

used for measuring free cash flow. The result of regression indicates existence of a significant positive relationship between the variables. They study also indicates an inverse correlation between independent variables and firms' profitability, that is, a rise in one segment cause firm's to reduce correspondingly. decrease in one unit of profitability of listed firms in NSE.

The study by Hubbard (1998) reveals existence of a significantly positive correlation between profitability and free cash flows. Increment in a firm's cash flow level makes its profit level too rise correspondingly. This is as a result of investment. The company need to make important investment decisions to use excess cash. Companies, which access excess cash, for instance, could acquire overpriced companies instead of sharing dividends. A company could do this, and it is healthy even its financial capacity will be low after the purchase because that is a non-profitable investment.

2.2.2 Financing Cash Flow and Corporate Performance

Ikechuku, Nwankaego and Celestine (2015) study the effect of cash flow statement on company's profitability in Nigerian banks. They sampled 3 banks out of the population of the entire banks. They obtained data from the annual published reports of the banks between 2009-2013, which were analysed using the multiple regression analytical tool. They discovered that cash flow operations and finance are significantly and positively effect on company's profitability of banks, while the empirical results also show that investing cash flow has significant negative effect on profitability of the firms. They focus on profitability alone, forgetting the vital aspect of firms' liquidity. The sample size is also very low for making industry

conclusions. The study is a recent work which should have considers the problem of liquidity in banks as against the high reported profitability.

Amah, Ogbonnaya, Chidiebere and Uzoma (2016) examined the relationship between cash flow and performance in the banking sector of Nigeria. They adopted the ex post facto research design in collecting data from the annual reports of four quoted banks in the NSE (Zenith bank Plc, Diamond bank Plc, UBA bank Plc and FCM bank Plc) for the period 2005-2013 and were analyse through econometric analysis with the correlation technique. They measured performance with Profit After Tax (PAT) as the dependent variable while the independent variable (cash flow) was measured by the cash flow of operating activities, financing activities and investing activities. They observed that cash flow from operations significantly and positively has relation with performance of banks of Nigeria while the financing cash flow and investing cash flow have negative and less strong relationship. They recommend that regulatory authorities such as CBN, SEC, CAC and NDIC should be inspecting the banks financial statements and also that external auditors of the listed banks should utilize cash flow ratio in evaluating financial performance which will aid investors make quality decision. There is need for subsequent study based on the gap in the period of study.

Mong'o (2010) investigates the cash flow effects on the profitability of the Kenyan commercial banks from 2005 to 2009. As mentioned earlier, the study specifically aims at examining impact of various cash flow components on the growth of profitability. The profits of different banks is evaluated by the profit after tax as the dependent variable, while the independent variables are the components of cash

flow. The study employs multiple regression for data analysis. The results reveal a substantial improvement in the profits of the commercial banks during period under study. It is also discovered that Cash flow from financing and investment operations have a significantly positive impact on the profits of commercial banks, the impact of operating cash flow is negative.

Amuzu (2013) evaluate cash flows as a measure of performance in emerging economies, specifically Ghana, where companies listed on the Ghana stock Exchange were evaluated on the basis of their cash flow ratio in comparison to those on the United States stock market. They selected nine (9) ratio basis in the analysis under the sufficiency ratios and the efficiency ratios. The sufficiency rations include the long-term debt repayment, cash flow adequacy, reinvestment, dividend pay outs, impact on depreciation write offs, and debt coverage. While the efficiency ratios include operating index, cash flow to asset, and cash flow return on assets. He conducted a desk study research focusing identifying the contribution of cash flows ratios in measuring firm performance as against the cash flow activities of firms. Ratios are performance analysis tools but reported cash flow activities are performance indicators reflected in the financial statement.

Omag (2016) examine the cash flows from financing activities of a leading Turkish automotive industry. He focuses on assessing the financing activities cash flow contribution and it will influence shareholders' wealth and leverage policy. He observed that cash flow management system process through the dividend policy and suggests that it will be able to solidify equity position as well as its credibility with a sound and sustainable growth purpose.

Kordlouie, Mosadegh and Rad (2014) examine the impact of cash flow on capital structure of firm and finance through debit and capital in future. Secondary data were collected from the sample of 415 firms of the Tehran Stock Exchange for a period 2006-2010 to explain the correlation of the variables. A multi variable regression statistical method was employed for analysis using SPSS. They observed that there is a significant relationship between operational cash flow with external financing, finance through stock or debit for the listed firms at Tehran stock exchange. Tehran, Middle East was the study area of their research, while Nigeria will be the research area of my study.

2.2.3 Investing Cash Flow and Corporate Performance

Watson (2005) investigates the relationship among of various measures of earning and cash flow measures of stock returns and company performance. The study employs simple and multiple regressions methods for data analysis. It is discovered that there exists a significantly negative correlation between cash flow and performance. Therefore, there is no assurance that a firm with acceptable performance in the opinions of the shareholders and the management will be acceptable in social aspect.

Nwanyanwu (2015) investigates the correlation between firm performance and cashflow in print media and hospitality sectors. 45 small and medium enterprises (SMES) from the two sectors constitute the sample for the study, using a questionnaire for data collection. In addition, it employs descriptive statistics and Pearson's product moment coefficient of correlation, with the use of statistical package for social sciences (SPSS). The findings show existence of a significantly

positive correlation between net profit and cashflow position. This implies that the net profit performance of print media and hospitality firms is influenced by cashflow position.

Duru, Okpe and Chitor (2015) investigate the cash flow impacts on the performance of Nigerian food and beverages firms. The survey consists of six food and beverages firms listed in the Nigerian Stock Exchange (NSE), and their accounts and annual reports form the data for the study. It employs multiple regression technique for data analysis. The findings discover existence of a significantly positive impact of financing and operating cash flows on the corporate performance of Nigerian food and beverages sector. It also finds existence of a significantly negative correlation between corporate performance and investing cash flow.

Fodio, Onah and Oba (2013) examine the effect of cash flow on investments levels of quoted manufacturing companies in Nigeria. They seek to discover the sensitivity between cash flow and investment of companies in the manufacturing segment. The evaluated the published annual reports of a sampled 16 quoted firms over a period between 2004 and 2008. The data was analysed using the Ordinary Least Square regression model. The result showed that there is a significant positive relationship between investment and cash flow, reflecting that investment levels of firms are affected by cash flow cycle available. They observed that company size has significant negative effect on cash flow and investment relationship. They further observed that industrial classification has varying effect on cash flow and investment levels relationship. Chemical and paints and building materials have a positive effect while conglomerates, food, beverages and tobacco have negative effect.

Rodriquez, Muino and Lamas (2012) investigate whether financial statements, especially, whether cash flow statements offers users with relevant information on investing transactions. They studied a sample of 7,997 firm-year reports in the UK obtained from the Standard and Poor's Global Vantage database for a period 1991-2004. They tested for existence of fixed firms and time effect using F-statistic, then analysed the data by the regression fixed effect technique. They observed that even in the UK where majority of investments are financed with cash, vital information on investments were absent from the cash flow statement. The study was conducted in UK but this study will focus on firms in Nigeria. They focus on the importance of cash flow statement details for investing decisions, not on their influence on corporate performance.

Kimlyk (2014) investigate whether cash flow indicators can offer valuable information on selected firms which would outperform market index. He identified free cash flow as a suitable cash flow indicator measurement to assess performance. Secondary source of data was adopted from the selected firms based on certain purposive benchmarks for a period 2004-2013. They observed that the analysed monthly returns show a statistically significant and are achieved without any related rise in volatility of returns. He further revealed that Fama-French three factor model affirms that portfolio returns are not applicable to the high systematic risk, size or value factors but rather consistent superior performance of selected firms. He considered listed firms on the US stock exchanges in reflection of the firms in Ghana exchange. Nigerian firms are the focus of this research as it seek to provide the importance of the findings to performance assessment of firms within.

2.3 Theoretical Framework

This section covers the review of theoretical underpinnings in which the study is grounded. Various theories such as Dynamic theory, Risk theory, pecking order theory etc are reviewed. However, the study anchors on fundamental theories that support the study findings.

2.3.1 Dynamic Theory

The dynamic theory of profit was propounded by Clark in 1899. Profit refers to the difference between the production cost and the price of a product. Put in another way, profit is the surplus left after deducting the production cost from the price. According to Clark, profit is caused by dynamic change. The dynamic theory postulates that five generic changes exist in the society and each change has an effect on the societal structure. The changes are as follow: (1) increasing population, (2) increasing capital, (3) improving production methods, (4) changing forms of industrial establishment, and (5) the most efficient shops are surviving, the less efficient are passing from the field, consumers' wants are multiplying.

Entrepreneurs in dynamic societies usually face the challenge of continual instability of demand for products. Changes in demand could be the result of changes in population living standard, fashions, income distribution, advancement in technology, international repercussion, new inventions etc. Managers, who have foresight, eye future demand. Profits could be secured if they successfully increase sales by adopting innovations or reducing the production cost.

2.3.2 Risk Theory

The risk theory was propounded by Hawley (1907). It is also called residual theory of profit. Hawley believes that the major role of entrepreneur is risk taking, and profit is the residual income for performing that function. The profit or reward for risk is higher than the actuarial risk value. If entrepreneurs are paid the normal returns alone, they will not be encouraged to take risks. Therefore, there is the need for a reward, which is greater than the value of the risk taken.

According to Hawley, profit has two parts. A part stands for compensation paid for the various losses experienced due to the risk, while the other stands for an inducement to suffer the resultant consequences exposure to the risk. Hawley believed that profits arose from factor ownership if the ownership included risk. If insurance is made against risk, he is not entitled to profits because he is no long an entrepreneur. He goes further to say that profit results from uninsured risk. The uncertainty comes to an end the product is sold. Therefore, profit is a residue.

2.3.3 Modern Portfolio Theory

The modern portfolio theory (MPT) examines investments in relation to the whole market and economy. The theory is an alternative to the older technique, in which every investment is individually assessed based on its own merits. The investors do not disturb themselves about the performance of an investment in relation to others; they, rather, pay attention to the merits of an individual investment. In MPT, however, the focus is largely on the relationship among various investments.

A basic portfolio model was developed by Markowitz (1952), explains that with combination of assets, whose profits show loss positive association, the risk in a

portfolio may be limited. Markowitz argues that in as much as the association between two assets is low, the risk component of a portfolio would be lower than the risk of the assets individually on the average (Goslings & Petri, 1991). In order to reduce a portfolio, therefore, the amount of investment cash available should be spent on investments of various categories of risk. For long property and equity have been the sectors where institutional investors diversify their portfolios (Reddy, 2001).

According to the advocates of MPT, a globally-scattered portfolio further increases the relatively high management costs of a property where efficiency scale cannot be obtained. This is due to the additional costs incurred to monitor the managing agents at the local level. It is highly possible, therefore, for concentration of investments on larger scales in limited markets, but the problem here is that the potential benefits of diversification. There may be problem with market access. In small market capitalization compared to the fund size, there could be unavailability of appropriately sized buildings. Implementation and active management of portfolio strategy could arise if there liquidity problems (Brown, 1991).

There is little research on markets whose correlations with global portfolio are low, and their market practices are the most restrictive. Therefore, one may have problem getting information about them, and it could be costly. In addition, variation in legal structures, terminologies, and methodologies of valuation may pose challenges for comparability. There is the tendency of domination by local facto in individual asset selection, and this is relatively disadvantageous for foreign investors, who do not have any local associates (Ennis & Burik, 1991)

2.3.4 Pecking Order Theory

The Pecking order theory was propounded by Ross (1996). This theory is also called information asymmetry theory. Companies like financing new projects with retained earnings at initial stage, and with debt at a later stage before finally through issuing new equity (Fama & French, 2004). Two assumption underlie the information asymmetry theory. The first assumption is the prospects of the company are better known by the managers than any investors coming from outside. Consequently, when issue new equities in or to fund new investments, investors from outside usually believe that there is overvaluation of the issue because they take it as a sign that the company does not have any good prospects in the managers' perspective. In that case, that will make the share of the company to crash (Ross, 1996).

The second assumption that managers do their best to protect the old stakeholders' interest, and maximize the value of their shares; if the company would be compelled to overvalue new equity for new investors by investing positive NPV projects, the managers could shirk altogether because the existing stakeholders would be partially affected by that (Agca & Mozumdar, 2003).

The pecking order theory is unique among theories of capital structure for its adverse selection costs. However, empirical evidence has effectively controlled for this essential characteristic of the theory, and the advocates of the theory have contended that the reason why mixed empirical evidence on it. For instance, whereas the study by Frank and Goyal (2003) finds support for companies relying on equity financing, Shyam-Sunder and Myers (1999), on the other hand, find evidence for companies relying on debt financing.

Lemmon and Zender (2003) have explained the reason for the contrasting results in terms of firm's debt capacity. According to them, companies, which are near their debt capacity may not have any other option but to issue equity. On the other hand, Frank and Goyal (2003) employ a linear model through piecewise estimate. They discover that companies like debt than equity before their debt capacity is reached (Krishnaswami & Subramaniam, 1999).

As essential is debt capacity is, it cannot explain the findings of Fama and French (2004), which finds widespread equity issuance including large companies, which are free from any duress. Therefore, this suggests that all equity issuances are not explainable by the debt capacity argument in the pecking order theory although equity issuance can be optimal even in cases where companies enough debt capacity or internal cash within the multi-period pecking order.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

The present research adopts ex-post facto research design. A panel data from 2009 to 2018 in its examination of how the dependent variable (Profitability (ROA)) is affected by the independent variables (Operating cashflow, Investing cashflow, and Financing cashflow), and the nature of the existing correlation among the variables.

3.2 Population, Sample and Sampling Technique

The 4 quoted Cement Companies in Nigeria as at 2018 (Ashaka Cement, Cement Company of Northern Nigeria, Dangote Cement, and Lafarge Cement (WAPCO)) form the population for this study. The main criteria for selection of the sample are that the companies are quoted and remained listed to 2018 on Nigerian Stock Exchange, and they have consistently maintained data-set throughout the time under study.

3.3 Method of Data Collection

The study utilized the secondary data from annual financial reports of the selected quoted cement manufacturing companies in Nigeria. These data are considered more suitable considering the nature of the study which involves the use of data from financial statement of companies.

The study used a panel regression model with the aid of Eviews for the analysis of the effects of cashflows in terms of Operating, Investing, and Financing cashflows as independent variables on the profitability (ROA) as dependent variable. Furthermore, post residual diagnostics test such as Heteroskedasticity Test and Multicollinearity Test is conducted to vindicate the panel regression result. Worthy

to note is that, Descriptive statistics and correlation analysis is run before the panel regression analysis.

Panel Regression Models are:

ROA = f (OPRCF, INVTCF, FINCF)

$ROA_{it} = \alpha + \beta OPRTCF_{it} + \beta INVTCF_{it} + \beta FINCF + \mu_{it}$

Where:

ROA= Return on Assets (Profitability)

OPRCF= Operating Cashflow

INVTCF= Investing Cashflow

FINCF= Financing Cashflow

Where i and t, represent the entire 4 quoted Cement Companies in Nigeria and the 10 years' time period respectively, and μ_{it}, an error term.

Measurement of Variables

VARIABLE TYPE	VARIABLE NAME	MEASUREMENT
DEPENDENT	PROFITABILITY	ROA = NET INCOME / TOTAL ASSET
INDEPENDENT	Operating Cashflow	Total amount from operating Cashflow
INDEPENDENT	Investing Cashflow	Total amount from investing Cashflow
INDEPENDENT	Financing Cashflow	Total amount from financing Cashflow

Source: Compiled by the Researcher, 2019

Decision Rule

Eviews is employed for the estimation of the regression analysis model. In this case, the independent and independent variables need be specified; in this case, Operating, Investing, and Financing cashflows are the independent variables, while ROA is the dependent variable. The constant (α) coefficient values of regression (β) is derived from the output of running Eviews. Also, P values and the T statistics of the coefficient is obtained from the output, and on that bases the hypotheses is accepted or rejected at a specified significance level. The P value is a probability of getting a result that is at least extreme as the critical values. If the P-value is less than or equal to the critical value, then null hypotheses are rejected. In addition, R^2, that is, the coefficient of determination, and it evaluates the dependent variable proportion explainable by the regression model. Similarly, the null hypotheses are rejected a P-value less than or equal to critical value. This indicates existence of a slope among the variables. With a significance level or P-value less than or equal to the critical value, there is linear relationship among the variables.

3.6 Justification of the Method

The panel regression is adopted because of the cross-sectional dimensions of the data to be collected. The data is collected from the various quoted cement companies in Nigeria. As a statistical technique, regression analysis is used to investigate and model cause-effect correlation among two variables or more. In addition, parameter estimations are also done with regression methods in several forecasting techniques. It is a means of viewing existence of cause-effect relationship between two variable or more. Furthermore, the study was based on panel data as the data will be collected from various cement companies in Nigeria. Thus, it is likely to be exposed

to problem of heteroskedasticity. This justify why the test of heteroskedasticity is indispensable. Furthermore, test of multicollinearity is conducted to ensure the explanatory variables are not highly correlated. The study focus on ten years (i.e. 2009-2018) cross-sectional (panel) data because is sufficient to establish a line of best fit and describe the relationship that subsists between the variables of the study. The study period is justified as it covers a turning point in the history of cashflow of quoted cement companies in Nigeria.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Data Presentation

In this section, reference is made to the data collected in relation to the study variables ranging from Return on Assets (ROA), Operating Cash Flow Ratio (OPCFR), Investing Cash Flow Ratio (INVCFR), and Financing Cash Flow Ratio (FINCFR). These data are attached at the appendix.

4.2 Data Analysis and Results

Table 4.1 Descriptive Statistics

	ROA	OPCFR	INVCFR	FINCFR
Mean	0.141875	0.159842	-0.068087	-0.031794
Median	0.117544	0.161258	-0.052457	-0.027461
Maximum	0.488220	0.612842	0.114451	0.248358
Minimum	0.028165	-0.275797	-0.353400	-0.418755
Std. Dev.	0.100104	0.159000	0.103348	0.100169
Skewness	1.631985	0.128675	-0.797868	-1.105498
Kurtosis	5.708441	4.356668	3.132734	8.228880
Jarque-Bera	29.98193	3.177961	4.273318	53.71615
Probability	0.000000	0.204134	0.118049	0.000000
Sum	5.675004	6.393673	-2.723486	-1.271765
Sum Sq. Dev.	0.390809	0.985954	0.416548	0.391318
Observations	40	40	40	40

Source: Researcher's Computation using Eviews version 9

The descriptive statistics described the features/characteristics of the study's variables in terms of Return on Assets (ROA), Operating Cash Flow Ratio (OPCFR), Investing Cash Flow Ratio (INVCFR), and Financing Cash Flow Ratio (FINCFR). The average scored for

the respective variables are 0.141, 0.159, -0.068, & -0.032. The study revealed that OPCFR has the highest maximum reached of 0.613, while INVCFR has the lowest maximum reached of 0.114. The lowest minimum reached was revealed by FINCFR (-0.419), but the highest minimum reached was 0.028 depicted by ROA.

The study revealed that return on asset is not normally distributed because it has a probability of Jarque-Bera of 0.000000 which is less than 5 with a median of 0.117544 while the deviation from the average mean is 0.100104. Also, return on asset has a skewness and Kurtosis of 1.631985 and 5.708441 accordingly. In like manner, operating cash flow has a probability of 0.204134 which connotes that operating cash flow is normally distributed within the period of this study with a median of 0.161258 and its standard deviation is 0.159000 as well as 0.128675 and 4.356668 for skewness and kurtosis.

Furthermore, investing cash flow is normally distributed with probability of 0.118049 with median of -0.052457 and standard deviation of 0.103348. Also, the skewness and kurtosis of investing cash flow is -0.797868 and 3.132734. The financing cash flow has a median value of -0.031794 with a skewness and kurtosis of -1.105498 and 8.228880. The financing cashflow is not normally distributed because it has a probability which is less than 5.

Table 4.2 Correlation Matrix

Correlation Analysis: Ordinary
Date: 10/21/19 Time: 11:37
Sample: 1 40
Included observations: 40

Correlation Observations	ROA	OPCFR	INVCFR	FINCFR
ROA	1.000000 40			
OPCFR	0.504767 40	1.000000 40		
INVCFR	0.073046 40	-0.308460 40	1.000000 40	
FINCFR	-0.196283 40	-0.162422 40	0.114826 40	1.000000 40

Source: Researcher's Computation using Eviews version 9

The correlation matrix explains the association between the dependent and the independent variable. This table clearly depicts positive correlation/association between the explained and the explanatory variables except for financing cash flow. These are given by the respective coefficients of 0.505, 0.073, & -0.196 for OPCFR, INVCFR, & FINCFR respectively. However, positive correlations between ROA, and OPCFR, INVCFR, & FINCFR exist.

Table 4.3 Variance Inflation Factors

Variance Inflation Factors
Date: 10/21/19 Time: 11:41
Sample: 1 40
Included observations: 40

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.000398	2.192040	NA
OPCFR	0.008300	2.292088	1.125484
INVCFR	0.019383	1.604764	1.110433
FINCFR	0.019175	1.138640	1.032003

Source: Researcher's Computation using Eviews version 9

The Multicollinearity test explained the correlation between the variables of the study. These variables can only be highly correlated if the Variance Inflation Factor (VIF) is greater than 10. However, since the respective VIFs are less than 10 (i.e. 1.125, 1.110, & 1.032), this means that there is absence of autocorrelation.

Table 4.4 Test of Heteroskedasticity

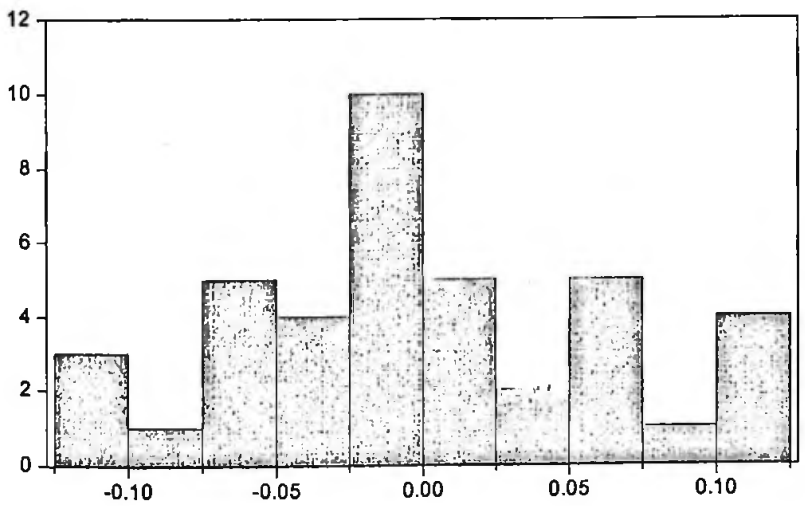
Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.451485	Prob. F(3,36)	0.7178
Obs*R-squared	1.450380	Prob. Chi-Square(3)	0.6938
Scaled explained SS	2.755134	Prob. Chi-Square(3)	0.4309

Source: Researcher's Computation using Eviews version 9

The heteroskedasticity test explains the homokedasticity of the study. The Observed R-Squared of 1.451 and the Probability value of 0.6938 is greater than the t-value of 5% which indicates Homokesdasticity of the residuals. This however, reveals absence of heteroskedasticity in the residuals, since the null hypothesis says that the residuals are Homokesdasticity, and the alternative hypothesis says the residuals are heteroskedasticity.

Table 4.5 Histogram Normality Test



Series: Residuals
Sample 1 40
Observations 40

Mean	4.58e-17
Median	-0.008972
Maximum	0.116578
Minimum	-0.115376
Std. Dev.	0.061354
Skewness	0.183837
Kurtosis	2.464341
Jarque-Bera	0.703524
Probability	0.703448

Source: Eview, 2019

The result indicates that the residual of the variables were normally distributed with a probability of Jarque-Bera of 0.703448 which is greater than 5.

Table 4.6 Hausman Specification Test

Hausman Specification Test
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	26.858174	6	0.0001

Source: Eview, 2019

The Hausman Test indicates that Fixed Effect Model is most appropriate to Random Effect Model given the Chi-Square value of 26.86 and its corresponding P-value of 0.0001 which is less than the critical value of 0.5.

Table 4.7 Regression Analysis
Dependent Variable: ROA
Method: Panel Least Squares
Date: 10/21/19 Time: 11:21
Sample: 2009 2018
Periods included: 10
Cross-sections included: 4
Total panel (balanced) observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.137623	0.016870	8.157764	0.0000
OPCFR	0.155208	0.073896	2.100351	0.0434
INVCFR	0.350167	0.129316	2.707848	0.0106
FINCFR	-0.103339	0.101167	-1.021468	0.3145

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.686980	Mean dependent var	0.141875
Adjusted R-squared	0.630067	S.D. dependent var	0.100104
S.E. of regression	0.060885	Akaike info criterion	-2.602028
Sum squared resid	0.122331	Schwarz criterion	-2.306474
Log likelihood	59.04056	Hannan-Quinn criter.	-2.495165
F-statistic	12.07076	Durbin-Watson stat	1.010568
Prob(F-statistic)	0.000000		

Source: Researcher's Computation using Eviews version 9

The regression line of ROA = 0.137 + 0.155OPCFR + 0.350INVCFR – 0.103FINCFR indicates that, ROA of quoted Cement Manufacturing Companies in Nigeria increases as OPCFR increases, increases also as INVCFR increases, but decreases with increase in FINCFR. The respective p-values indicate significant effects of OPCFR and INVCFR on ROA at 5% level of significance. However, negative insignificant effect of FINCFR on ROA is found. The R-Squared of 0.686 indicates that about 69% of variation in ROA of quoted Cement Manufacturing Companies in Nigeria can be explained by OPCFR, INVCFR and FINCFR. The remaining 31% is captured by the disturbance or error term. The F-statistics of 12.07 and its p-value of 0.0000 indicate fitness of the model.

4.3 Discussion of Findings

It is evident from the above results and analyses that, Cash Flow from operation is positively related to profitability of quoted cement manufacturing companies in Nigeria. This implies that, profitability of quoted cement manufacturing companies in Nigeria increases as OPCFR increases. This finding is consistent with the findings in the previous studies such as Adelegan (2003); Ashitiani (2005); Khoshdel (2006); Akumu (2014); Bingilar and Oyadonghan (2014); and more recently, Duru, Okpe and Chitor (2015). The study aligns with the theory of Free Cash flow.

Similarly, a significant positive effect of investing cash flow on profitability of quoted cement manufacturing companies in Nigeria is found. This means that, profitability of quoted cement manufacturing companies in Nigeria also increases as investing cash flow increases based on statistical evidence found in the study. This finding aligns with the findings in the previous work of Ahmed and Javid (2009); Kemboi (2010); Mong'o (2010); Wanja (2011); Habib (2011); Onsare (2013); Nwanyanwu (2015). The study tallies with

the theory of Risk which say that, the reward for risk taking must be higher than the actual value of risk. Thus, as cash is being invested, returns are more likely expected.

Conversely, insignificant negative effect of financing cash flow on profitability of quoted cement manufacturing companies in Nigeria is found. This is sufficed to say that, profitability of quoted cement manufacturing companies in Nigeria decreases insignificantly with increase in financing cash flow. This finding is in tandem with the findings in previous studies such as Thanh and Nguyen (2013); Chikashi (2013); Parsian and Amir (2013); but inconsistent with the findings in Bingilar and Oyadonghan (2014); and, supports the theory of pecking order which says that, funds should not be raised from external sources until all means of raising internal sources are exhausted in order to reduce fund cost.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

This study examines the effects of cash flow on profitability of quoted cement manufacturing companies in Nigeria. the study adopts descriptive and ex-post facto research designs using panel data of ten years (2009-2018) to explore the effect of independent variables (Operating cashflow, Investing cashflow, and Financing cashflow) on the dependent variable (Profitability (ROA)) and the nature of the relationship that exist between the variables. The population of the study is the 4 quoted Cement Companies in Nigeria as at 2018 (i.e. Ashaka Cement, Cement Company of Northern Nigeria, Dangote Cement, and Lafarge Cement (WAPCO)). Then, a non-probability method in form of judgmental/purposive sampling technique is employed to select companies based on certain criteria, and all of the companies have made the criteria of being selected. The study utilizes the secondary data from annual financial reports of the selected quoted cement manufacturing companies in Nigeria. These data are considered more suitable considering the nature of the study which involves the use of data from financial statement of companies.

The panel regression model is used with the aid of Eviews to determine and analyze the effects of cashflows in terms of Operating, Investing, and Financing cashflows as independent variables on the profitability (ROA) as dependent variable. Furthermore, post residual diagnostics test such as Heteroskedasticity Test and Multicollinearity Test are conducted to vindicate the panel regression result.

Worthy to note is that, Descriptive statistics and correlation analysis were also run before the panel regression analysis.

The regression result confirms that; Operational Cash Flow is positively related to profitability of quoted cement manufacturing companies in Nigeria. This implies that, profitability of quoted cement manufacturing companies in Nigeria increases as OPCFR increases. Similarly, a significant positive effect of investing cash flow on profitability of quoted cement manufacturing companies in Nigeria is found. This means that, profitability of quoted cement manufacturing companies in Nigeria also increases as investing cash flow increases. Conversely, insignificant negative effect of financing cash flow on profitability of quoted cement manufacturing companies in Nigeria is found. This is sufficed to say that, profitability of quoted cement manufacturing companies in Nigeria decreases insignificantly with increase in financing cash flow.

5.2 Conclusions

Based on the finding that, operating cash flow has significant positive effect on profitability, the study concludes that, the profitability of quoted cement manufacturing companies in Nigeria, improves as the companies chose to put more cash on the operations of the business. This means that, as the companies are into operations, they tend to be more profitable. This is to say that, as the investment initiative of these companies' increase, funds will not be left idle, but will be invested for more profitability. Finally, the study concludes that, most of the financing options the companies adopt are external. This conclusion is drawn in the light of the insignificant negative effect of financing cash flow on profitability of quoted cement manufacturing companies in Nigeria.

5.3 Recommendations

In the light of the above findings and conclusions drawn there from, the following recommendations are made:

i. Quoted cement manufacturing companies in Nigeria should make efforts towards ensuring that, stable cash flow is guaranteed into the operations of the business with a view to ensuring sustainability of operations and subsequent profitability. It is worth noting that; it is only when the companies have been operating that they will make profits to remain afloat.

ii. Quoted cement manufacturing companies in Nigeria should also stand to ensure that no fund is left idle. They should put efforts to ensuring that, all investment opportunities are highly exploited with a view to enhancing the companies' profitability. This is to say that, as the work towards investment initiative, the propensity to excel and thrive in the business is guaranteed.

iii. Quoted cement manufacturing companies in Nigeria should try as much as they can, not to seek any external financing until all sources of raising the internal sources are exhausted. This is because external financing sources are associated with high cost of capital that is capable of thwarting the profitability of the companies.

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Literature Map

S/No	Author(s)	Title	Year	Objective of the work	Variable & Measurement	Findings
1.	Bingilar and Oyadongha n	Cash flow and corporate performance in the food and beverages sector of Nigeria	2014	correlation between firm performance and cashflow	Multiple regression	Firm performance is significantly and positively correlated with financing and operating cashflow
2.	Ali et'al	The association between various earnings and cash flow measures of firm performance and stock returns in Iran	2013	Association between earnings and cashflow	Simple and multiple regression analysis	Corporate performance and cashflow have a significant negative relationship.
3.	Thanh and Nguyen	The effect of Banking relationship on firm performance in Vietnam	2013	To establish banking relationship on firm performance	Multiple regression	Increase in relationship among banks results in decrease in company performance. Also, assets and return on assets are negatively related, and cashflow and firms return on equity too

						are negatively correlated
4.	Chikashi	An investigation of comprehensiv e income and firm performance	2013	Relationship between cashflow earnings and firm performance	Pool regression technique (Panel data regression analyses)	There is a negative relationship between cashflow and firm performance
.5.	Zhou, et al	Relationship between free cashflow and financial performance	2012	Examine the correlation between financial performance and free cashflow	Principal component analysis	The free cashflow of a company is negatively correlated with financial performance.
6.	Adelegan	Empirical analysis of relationship between cashflow and dividend changes in Nigeria	2003	To examine relationship between cashflow and dividend changes	Ordinary least square (OLS)	There is significant positive relationship between cashflow and firm performance
7.	Brush, et al	Free cashflow hypothesis for sales growth and firm performance	2000	To establish free cash flow hypothesis for sales growth and firm performance	Durbin – Watson test	There is significant positive relationship between firm performance and cashflow
8.	Miar	The study of information content of cashflow financial ratios in companies	1995	Investigate information content of cashflow financial ratios	Ordinary Least Square (OLS) method	There information available in cashflows statement ratios cause a significant

		listed in Tehran Stock Exchange				increase in the correlation between balance sheet with stock return and income statement ratios
9.	Farshadfar	The association of accrual earnings and operating cashfloes with stock returns.	1999	To establish relationship between accrual profit and operating cashflow	Linear regression analysis	There is no meaningful correlation between accrual earnings with returns on stock and cashflow.
10.	Shahmoradi	Association between accounting earnings and stock returns in firm listed in Tehran Stock Exchange	2002	Examine nexus between stock returns and accounting earnings	Simple regression method and Pearson correlation.	There exists significant correlation between operating earnings with returns on stock, and net profit.
11.	Ashitiani	Relationship between accounting ratio, operating cashflows, investment, financing and stock returns	2005	To examine correlation among investment, operating cashflows, accounting ratio financing, and stock returns	Simple linear regression method and Pearson correlation.	There is Significant correlation between cashflows stock returns and operating earnings.
12.	Khoshdel	Relationship between free	2006	To examine relationship	Simple linear regression	There is a significantly

		cashflow and operating earnings with stock returns and growth of net market value of operating assets in Tehran Stock Exchange		between cashflow and operating earnings	method and Pearson correlation	positive correlation between operating earnings and cashflow
13.	Brush, Bromiley and Henrickx	The free cashflow hypothesis for sales growth and firm performance	2000	Examine the relationship between free cashflow, sales growth and firm performance	Regression model	There is a meaningful positive correlation between cash flow and firm performance
14.	Mong'o	Impact of cashflow on profitability among commercial Banks in Kenya	2010	To explain the effects of different components of cashflow have on the growth of profitability	Multiple regression model	Profitability among commercial Banks improved tremendously , and therefore, cashflow has significant positive impact on bank's profitability.
15.	Akumu	The effect of free cashflow on the profitability of firms listed at the Nairobi Stock Exchange.	2014	To determine the effect of free cashflow on the profitability of firms	Regression model	There is strong positive correlation between the two variables of free cash

				listed at the Nairobi Stock Exchange.		flow and profitability.
16.	Parsian and Amir	Effect of various factors on dividend payout ratio of Tehran Stock Exchange	2013	To determine effect of various factors on dividend payout	Time series regression model	Dividend payout ratio is substantially and negatively affected by free cashflow, profitability current and leverage ratio
17.	Habib	Effect of current ratio, stable profitability and growth opportunities on the stock returns	2011	To examine impact of profitability, growth opportunitie s and current ratio on the returns on stock	Multiple regression model	Free cashflow is positively related to stock return.
18.	Wanja	Relationship between the determinants of working capital management and cash level of Kenya MSE	2011	To examine the nexus that exist between various components of working capital management and cash level	Regression model	Firm with greater cashflow volatility hold more cash to provide a safe cushion for smooth operations
19.	Ahmed and Javid	The effect of free cashflow	2009	To determine the effect of free cashflow	Multiple regression model	Firm with greater frees cashflow pay

		on dividend payout		on dividend payout		larger dividend.

Appendix

	YR	ID	ROA	OPCF	INVCF	FINCF	TASST	PAT	OPCFR	INVCFR	FINCFR
Asha ka	2009	1	0.055871	1,901,276	893,287	689,376	18,474,436	1,032,187	0.102914	0.048353	0.037315
	2010	1	0.062492	992,198	-1,189,298	-805,829	22,230,137	1,389,198	0.044633	-0.0535	-0.03625
	2011	1	0.073212	3,289,101	-2,002,188	-832,102	27,985,979	1,829,281	0.131638	-0.08013	-0.0333
	2012	1	0.085373	1,091,198	-2,198,190	-892,198	25,618,504	2,187,121	0.042594	-0.0858	-0.03483
	2013	1	0.116881	2,189,399	-1,002,181	-902,189	28,725,125	3,287,287	0.077845	-0.03563	-0.03208
	2014	1	0.04331	2,042,923	-1,087,665	-972,115	66,201,835	2,824,311	0.031327	-0.01668	-0.01491
	2015	1	0.06783	2,190,474	-1,535,974	-940,570	67,325,232	4,566,667	0.032536	-0.02281	-0.01397
	2016	1	0.040955	-1,197,691	-1,682,571	-1,007,754	67,423,536	2,761,360	-0.01776	-0.02496	-0.01495
	2017	1	0.028165	3,074,831	-3,740,732	-335,918	71,526,871	2,014,546	0.042988	-0.0523	-0.0047
	2018	1	0.034134	1,187,125	-3,190,199	847,287	70,376,125	2,402,198	0.016868	-0.04533	0.012039
CCNN	2009	2	0.159592	1,209,290	923,109	454,857	8,966,516	1,287,189	0.149933	0.114451	0.056395
	2010	2	0.110025	-945,199	-2,200,103	-895,456	9,108,564	1,002,172	-0.10377	-0.24154	-0.09831
	2011	2	0.093376	5,390,200	-3,108,298	-127,955	8,795,421	821,277	0.612842	-0.3534	-0.01455
	2012	2	0.183398	2,204,202	-1,388,298	-255,896	5,304,193	972,781	0.415558	-0.26174	-0.04824
	2013	2	0.095434	1,432,194	-2,878,956	-357,905	10,721,863	1,023,187	0.133583	-0.26853	-0.03338
	2014	2	0.149759	1,934,290	-1,907,856	-467,923	12,568,170	1,882,198	0.153904	-0.1518	-0.03723

	2015	2	0.072124	2,045,243	-2,786,045	126,975	14,249,000	1,027,188	0.143606	-0.19562	0.008916
	2016	2	0.079763	2,569,229	-2,260,420	223,635	16,058,475	1,201,108	0.170617	-0.15011	0.014851
	2017	2	0.079455	2,799,490	-980,194	-360,490	16,780,011	1,253,805	0.177407	-0.06212	-0.02284
	2018	2	0.09523	4,298,298	-902,188	-126,198	17,116,883	1,632,893	0.250675	-0.05262	-0.00736
Dangote	2009	3	0.32143	103,287,189	9,399,298	2,198,388	236,720,000.00	59,288,288	0.436326	0.039706	0.009287
	2010	3	0.27821	128,198,101	-21,387,297	-3,297,298	316,339,001	880,087	0.405255	-0.06761	-0.01042
	2011	3	0.39234	130,118,112	-32,187,992	-14,287,382	402,033,000	1,577,356	0.323646	-0.08006	-0.03554
	2012	3	0.48822	141,187,021	9,287,388	-28,287,291	526,433,412	2,570,397	0.268017	0.01764	-0.05373
	2013	3	0.327881	142,059,205	-74,061,224	-39,901,428	673,666,223	2,208,824	0.210875	-0.10994	-0.05923
	2014	3	0.157517	275,953,727	-168,619,464	-81,589,914	818,293,275	132,819,200	0.327268	-0.19997	-0.09676
	2015	3	0.188698	195,608,000	-162,124,004	-84,577,002	934,720,521	185,814,907	0.198643	-0.16464	-0.08589
	2016	3	0.191883	249,235,002	-131,571,001	-116,052,011	1,150,943,000	213,171,005	0.224345	-0.11843	-0.10446
	2017	3	0.149454	276,189,108	-287,187,108	-118,745,453	1,750,373,532	262,198,170	0.157429	-0.16317	-0.06769
	2018	3	0.146621	291,176,102	-201,166,267	-95,287,927	2,054,209,243	301,189,287	0.141746	-0.09793	-0.04639
Lafarge	2009	4	0.188875	10,938,188	2,108,188	-10,488,297	48,752,321	9,208,287	0.224358	0.043242	-0.21513
	2010	4	0.16599	10,289,188	1,038,187	-21,187,287	50,595,232	8,398,398	0.203036	0.020519	-0.41875
	2011	4	0.150596	12,108,128	1,003,187	-12,186,287	49,067,485	7,389,378	0.246765	0.020445	-0.24858

	2012	4	0.118207	-21,892,817	2,132,917	8,279,221	79,380,259	9,383,309	-0.2758	0.02687	0.104298
	2013	4	0.138313	21,197,288	4,286,289	9,201,299	108,480,912	16,387,398	0.178909	0.036177	0.077661
	2014	4	0.098251	25,177,150	2,187,289	9,329,289	152,507,595	14,983,982	0.165088	0.014342	0.061173
	2015	4	0.152606	29,178,107	1,936,107	-18,266,277	161,948,633	23,188,290	0.192026	0.012742	-0.12021
	2016	4	0.185231	33,733,822	2,093,919	-33,412,891	161,088,740	29,837,395	0.209421	0.012999	-0.20743
	2017	4	0.06793	-30,907,024	5,048,387	13,459,929	305,878,828	20,778,348	-0.10104	0.016505	0.044004
	2018	4	0.040372	21,267,298	4,266,298	10,177,267	452,012,397	18,289,108	0.046946	0.009418	0.022466

Appendix

Descriptive Statistics

	ROA	OPCFR	INVCFR	FINCFR
Mean	0.141875	0.159842	-0.068087	-0.031794
Median	0.117544	0.161258	-0.052457	-0.027461
Maximum	0.488220	0.612842	0.114451	0.248358
Minimum	0.028165	-0.275797	-0.353400	-0.418755
Std. Dev.	0.100104	0.159000	0.103348	0.100169
Skewness	1.631985	0.128675	-0.797868	-1.105498
Kurtosis	5.708441	4.356668	3.132734	8.228880
Jarque-Bera	29.98193	3.177961	4.273318	53.71615
Probability	0.000000	0.204134	0.118049	0.000000
Sum	5.675004	6.393673	-2.723486	-1.271765
Sum Sq. Dev.	0.390809	0.985954	0.416548	0.391318
Observations	40	40	40	40

Correlation Matrix

Correlation Analysis: Ordinary
Date: 10/21/19 Time: 11:37
Sample: 1 40
Included observations: 40

Correlation Observations	ROA	OPCFR	INVCFR	FINCFR
ROA	1.000000 40			
OPCFR	0.504767 40	1.000000 40		
INVCFR	0.073046 40	-0.308460 40	1.000000 40	
FINCFR	-0.196283 40	-0.162422 40	0.114826 40	1.000000 40

Variance Inflation Factors

Variance Inflation Factors
Date: 10/21/19 Time: 11:41
Sample: 1 40
Included observations: 40

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.000398	2.192040	NA
OPCFR	0.008300	2.292088	1.125484
INVCFR	0.019383	1.604764	1.110433
FINCFR	0.019175	1.138640	1.032003

Test of Heteroskedasticity

Heteroskedasticity Test: Breusch-Pagan-Godfrey

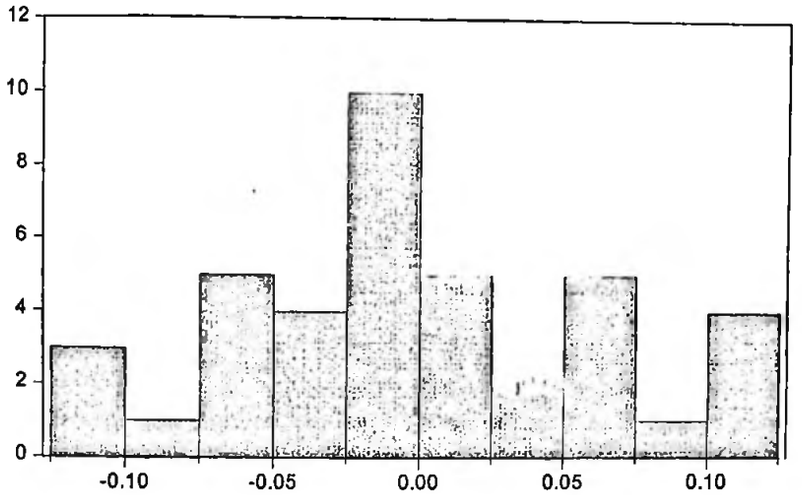
F-statistic	0.451485	Prob. F(3,36)	0.7178
Obs*R-squared	1.450380	Prob. Chi-Square(3)	0.6938
Scaled explained SS	2.755134	Prob. Chi-Square(3)	0.4309

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 10/21/19 Time: 11:43
Sample: 1 40
Included observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.004673	0.003433	1.361119	0.1819
OPCFR	0.017666	0.015669	1.127464	0.2670
INVCFR	0.013970	0.023944	0.583419	0.5632
FINCFR	5.18E-05	0.023816	0.002174	0.9983

R-squared	0.036260	Mean dependent var	0.006544
Adjusted R-squared	-0.044052	S.D. dependent var	0.014352
S.E. of regression	0.014665	Akaike info criterion	-5.512040
Sum squared resid	0.007742	Schwarz criterion	-5.343152
Log likelihood	114.2408	Hannan-Quinn criter.	-5.450975
F-statistic	0.451485	Durbin-Watson stat	1.079013
Prob(F-statistic)	0.717816		

Histogram Normality Test



Series: Residuals	
Sample 1 40	
Observations 40	
Mean	4.58e-17
Median	-0.008972
Maximum	0.116578
Minimum	-0.115376
Std. Dev.	0.061354
Skewness	0.183837
Kurtosis	2.464341
Jarque-Bera	0.703524
Probability	0.703448

Hausman Specification Test

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	26.858174	6	0.0001

Regression Analysis
Dependent Variable: ROA
Method: Panel Least Squares
Date: 10/21/19 Time: 11:21
Sample: 2009 2018
Periods included: 10
Cross-sections included: 4
Total panel (balanced) observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.137623	0.016870	8.157764	0.0000
OPCFR	0.155208	0.073896	2.100351	0.0434
INVCFR	0.350167	0.129316	2.707848	0.0106
FINCFR	-0.103339	0.101167	-1.021468	0.3145

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.686980	Mean dependent var	0.141875
Adjusted R-squared	0.630067	S.D. dependent var	0.100104
S.E. of regression	0.060885	Akaike info criterion	-2.602028
Sum squared resid	0.122331	Schwarz criterion	-2.306474
Log likelihood	59.04056	Hannan-Quinn criter.	-2.495165
F-statistic	12.07076	Durbin-Watson stat	1.010568
Prob(F-statistic)	0.000000		