CAPITAL INTENSITY AND FIRM PROFITABILITY INTERCONNECTEDNESS IN NIGERIA

***Nangih, Efeeloo (FCA, FCTI) and **Onuora, J. K. J. (Ph.D. CNA, FIMC, CMC)**

Department of Accountancy, Chukwuemeka Odumegwu Ojukwu University Igbariam Campus Anambra State, Nigeria.

ABSTRACT

This study examined the influence of capital intensity on profitability of listed oil and gas firms in Nigeria. It specifically sought to determine the extent to which property, plant and equipment, intangible non-current assets, non-current prepayments as well as investment property, affect the profit margin of oil and gas firms in Nigeria. The study adopts the ex post facto research design. Data was generated from nine (9) listed oil and gas companies, which were selected through the purposive sampling procedure. The period of the study was five years (2014 to 2018). The random effect regression model was used to analyse the relationships between the variables of study, after applying the Hausman Test. The results showed that all the variables had significant positive effects on the profit margin except intangible non-current assets, which was not significant. It was therefore concluded that firms with higher capital intensity were bound to perform financially better than those with lower ones. Consequently, it was recommended that oil and gas firms should strive to have an optimal capital intensity that will ensure improved performance of their firms at all times.

Keywords: ***capital intensity, financial performance, profit margin, intangible assets, property plant and equipment, prepayments.***

Introduction

The Nigerian Petroleum Industry plays a critical role in the economic development of the country and is considered as the biggest contributor to the national coffers, as well as the national economy. Therefore, an examination of the role and financial performance oil and gas companies is very vital not only to researchers but also to the managers of the economy of the country.

The International Accounting Standards Board's Conceptual Framework for financial reporting specifies that assets are resources under the control of the entity arising from past events from which future economic benefits are expected to flow to the entity. Further, the International Accounting Standards 1 that deals with the Preparation and presentation of financial statements classifies assets into two types- tangible and intangible non-current assets. Tangible non-current assets constitute major part those resources, capable of bringing about those benefits to entity. They entail assets held for use in the production or supply of goods or services or for rental to others, or for administrative purposes, which are controlled by the enterprise as a result of past events, and from which future economic benefits are expected to flow. Examples are property, plant and equipment (such as land, building, motor vehicles, furniture and fittings, plant and machinery, etc.); intangibles (such licenses and franchises, copyrights, patents, goodwill, etc.); investment property, non-current prepayments and so on. Chukwu and Egbuhuzor (2017) posits that the quality of non-current assets acquired by an entity indicate the competitive strength of the entity. They further stated that the stock of tangible assets available to firms determine how well their products can satisfy desired objectives.

The term "Capital Intensity" describes the amount of cash or its equivalent invested in property, plant and equipment and other non-current assets of a business entity. The more capital invested, the more

the firm is said to be capital intense and this will affect the firm either positively or negatively. Shahean and Malik (2012) opined that capital intensity is the value of total investment made by an entity in non-current assets and is usually determined by dividing the value of total non-current assets in the statement of financial position by the value of the total assets of the firm. The concept of capital intensity, is very important to a firm, as it shows the ratio between non-current assets and the total assets of the firm. It is of great importance, not only because it impacts on the financial situation of the company, but also affects the assets efficiency and its performance. Chukwu and Egbuhuzor (2017) again posits that given the huge investments mostly made by companies in tangible non-current assets (that is their capital intensity), it is reasonable and necessary to evaluate the returns from these investments periodically.

Financial performance, on the other hand, is an assessment of the firm's ability to utilize its assets in the generation of profits as well as wealth maximization. Ishaya, et al. (2014) assert that the performance of a firm has to do with how effectively and efficiently the firm will be able to achieve their set goals which may be financial or operational, such as: motive to maximize profit both to shareholders and on assets; growth and expansions in relations to sales and market value respectively. Okpara and Ifurueze (2020), on their part, opined that corporate financial performance identifies the financial strengths and weaknesses of a firm by establishing relationships between the items of the financial position and income statement. Firm performance may be assessed in terms of profitability, liquidity, asset utilization or market potentials or growth targets. A trend analysis is conducted by assessing the firm's performance on a year-on-year basis with regards to profitability, liquidity, asset utilization, market growth, as the case may be. Again a comparative analysis entails the assessment of the performance of a firm vi-sa-vis the performance of other firms in the same industry. In practice, accounting ratios are the major means of assessing the performance of companies. Commonly, accounting ratios are used for performance measures are profit margin, return on assets, return on equity, earnings per share, net assets per share, etc. This study used the operating profit margin as a measure of financial performance.

The interconnectedness between capital intensity and firm performance has generated a lot of controversies among financial researchers and managers alike. The more capital invested in non-current assets, the more the firm is said to be capital intense and this have serious implications on the performance of the entity. The Financial Reporting Council of Nigeria and other regulatory bodies of accountancy have made it compulsory for companies to make more disclosures about non-current assets and other organizational resources in financial statements; to ensure a more relevant and reliable financial reports. Expectedly too, the users of financial statements would desire to know the influence of these key organizational resources on the performance of the firm. Prior studies have been carried out across different sectors and spanning across jurisdictions on related topics. For instance, Chukwu and Egbuhuzor (2017) investigates the effect of tangible assets on the corporate performance of manufacturing firms in Nigeria and the result revealed a significant positive relationship between return on assets and plant and machinery. Zhang (2017) investigates the relationship between degree of intangible assets and profitability in China from 2014 to 2016. This study gives empirical evidence that intangible assets' ratios have positive and significant effect on firms' financial performance. Ansari and Gowda (2013) evaluate the asset tangibility, capital structure and their impacts on financial performance encompassing three refinery companies and eight drilling and exploration companies listed on Bombay Stock Exchange (BSE) and the results showed that there was a positive and significant relationship between capital structure and financial performance. Again, Okwo, Ugwunta and Nweze (2012) assessed the impact of a company's investment in fixed assets on its operating profit margin in the Nigerian brewery sector over an eleven-year period from 1999 to 2009. The result showed that the relationship was positive, but the result is not statistically significant. However, we are not aware of any that looked at the influence of capital intensity on the net profit margin of listed

Oil and gas companies in Nigeria. This study was meant to fill that gap and therefore forms our point of departure from previous researches. Specifically, we empirically studied the relationship between capital intensity as the predictor variable (with property, plant and equipment, intangible non-current assets, long term investments and non-current prepayments as its proxies); and profitability as the dependent variable (using net profit margin as its measure).

Review of Related Literature

Net Profit Margin

For this study, we used net profit margin (NPM) as a measure of profitability. It is one of the most commonly used profitability measures to know the extent to which a company or a business activity is profitable. It shows what percentage of revenue has turned into profits. In other words, the figure indicates the percentage of many kobo of profit the firm has made for each naira of sale. For instance, if a firm report that it achieved a 25% profit margin during the last year, it means that it had a net profit of N0.35 for each naira of sales generated. Kiabel, Nangih and Oyedokun (2017) posits that operating profit margin measures the amount of revenue of an enterprise that is left over after deducting their operating costs. The net profit margin is a ratio of a company's profit (sales minus all expenses) divided by its revenue. The net profit margin must be high enough when compared with similar businesses, as the higher the profit margin, the high the profitability level.

Capital Intensity Dimensions and Measures

Tangible non-current assets are usually acquired or constructed either for use in the production of good and services by the entity or for administrative purposes. They are distinct from other classes of assets possessing the following: the entity expects to use it for a period longer than one year; the assets will lead to a flow of economic benefits from such asset in future periods usually more than one accounting period; the entity can reliably measure the acquisition (production) costs of the asset; and the risks related to such tangible asset has been transferred to the entity. This study conceptualized capital intensity under the following headings -Property, plant and equipment, intangible non-current assets, long term investments and non-current prepayments. They are discussed below;

Investment in Property, Plant and Equipment

Property, plant and equipment is used as one of the measures of capital intensity in this study. Noncurrent assets are distinguished from other current assets because they are long term in nature; are not normally acquired for resale, they are usually tangible and are used to generate income directly or indirectly for entity. They are also not normally liquid assets (i.e. not easily and quickly converted into cash without a significant loss in value). Property, plant and equipment (also called tangible non-current assets) are those assets that have some physical existence. They are grouped into different classes such as land, land improvements, buildings, vehicles, etc. Based on their function and depreciated over their useful lives except land which has unlimited useful life (unless it is a land obtained on lease). Property, plant and equipment are presented in the statement of financial position at the carrying amount (net of accumulated depreciation and accumulated impairment losses). Chukwu and Egbuhuzor (2017) posits that the stock of tangible assets available to many firms will determine how well they will perform. Property, plant and equipment ratio is derived by dividing the total value of property, plant and equipment by the value of total assets of the entity. It shows the ratio of property plant and equipment to total assets. The higher the ratio of PPE, the greater the value of PPE to total assets, meaning that property, plant and equipment constitute the bulk or the greater of the entity's total assets.

Investment in Intangible Non-Current Assets

According to IAS 38 *Intangible non-current assets* defines intangible non-current assets to be identifiable nonmonetary asset without physical substance. Hence, they are resources under the control of the entity as a result of past transactions or other past events that will lead to inflows of future economic benefits, but just do not have a physical form. They include patented technology, computer software, licensing, franchise agreements and trademarks, etc. Anuonye (2017) opined that assets are said to be intangible where; 1. They have no physical substance and are non-financial, 2. They entail expectations of economic benefits that carry no legal rights or legal rights in relation only to persons, 3. The assets can be identifiable, that is, capable of being disposed of separately without disposing of the business entity as a whole. He emphasized that intangible assets have positive impacts on the financial position and performance of the enterprises, as they influence an organization's ability to generate cash flows.

Intangible assets reflect core competitive competence of firms. Tsai et al. (2012) stated that intangible assets represent the future profitability and growth opportunities that promote increasing firm value. Erawati and Sudana (2005) revealed that intangible assets would affect the firm's financial performance which is reflected in firm's return and income. Hidayati et al. (2012) posits that there is positive relationship between intangible assets and the competitive advantage of a company. Intangible non-current asset ratio is determined by dividing the total non-current asset value by the amount of total assets shown on the statement of financial position as at a particular date. It indicates the relationship or ratio of intangibles to the total assets of the firm

Investment in Long Term Financial Assets

Long term investments form part of non-current assets of a firm. They are investments that are not convertible to cash within one accounting period. Long-term investment assets on the statement of financial position are investments made by a company to help it sustain a successful and profitable future. These could include available for sale investments, investment in associates, investment in subsidiaries, long term investment in financial assets, investment properties etc. They are different from current assets which are usually liquid assets that are involved in many of the immediate operations of the firm and can be convertible to cash within one accounting period such as inventory, cash, assets held for sale, or trade and other receivables. Long term investment ratio is obtained by dividing the total long term investments by total assets of the company as contained on the statement of financial position. It indicates the percentage or ratio of long term asset to total asset. This means that it is a measure or an indication of capital intensity of a company.

Non-Current Prepayments

Non-current assets prepayments are long term prepayments. They are payments made in advance spanning through more than one accounting period. In the ordinary course of business activities, some firms set aside money, or sometimes pre-pay for goods or services before they actually receive delivery of them. This prepayment could be for more than a year or long term in nature such as rent prepaid, salary prepaid, etc. Again companies pre-pay many other types of expenses including taxes, utility bills, rents, insurance, and interest expense for more than one accounting period. These may be pooled together and listed on the statement of financial position under one "non-current prepayment" heading, although each prepaid item could be typically recorded in its own account within the company's general ledger accounting system. For the purpose of this study, non-current prepayment ratio is measured by dividing the total prepayments (long term) by the total assets of the firm.

Theoretical Review

This study was anchored on the theory of performance. Performance theory was propounded by Richard Schechner in 1934. Essentially, the radical nature of performance theory was demonstrated by its all-encompassing nature, as the theory cuts across disciplines, and could be adopted in most social, administrative and natural science researches. Being a theory that is useful in many learning contexts, it focuses on informed learning by an individual or organization through the idea of examining level of performance of the individual or organization. As posited by Harvard's Project Zero, performance could be traceable to learning for understanding (Wiske 1998). The performance theory emphasizes that 'to perform' involves taking or embarking on series of actions, activities or processes that integrate skills and knowledge to produce a sound and valuable result or outcome. They further believe that the location or destination in the journey becomes the level of performance, emphasizing that the performer may either be an individual or a collection of people who come together to achieve or produce common valued results, such as the business enterprise.

The relevance of the Performance theory to this study is pertinent as every organization, including oil and gas companies, seeks to improve their level of performance, be it increase in turnover, operational efficiency, profitability, market value as well as share holders' wealth.

Empirical Review

The following empirical reviews were made during the course of the study: Chukwu and Egbuhuzor (2017) investigates the effect of tangible assets on the corporate performance of manufacturing firms in Nigeria. The study used financial statement data from ten manufacturing companies listed on the stock exchange, and measured corporate performance using return on assets and return on equity. The independent variables comprise plant and machinery as well as land and building, and the models used in the study controlled for board size and board independence. Results from multiple regression analysis reveal a significant positive relationship between return on assets and plant and machinery; but the relationship between return on assets and land and buildings is negative. The study concludes that investments in tangible non-current assets affects the profitability of firms.

Zhang (2017) investigates the relationship between degree of intangible assets and profitability. All the data are based on 17 listed telecommunication firms' financial statements in China from 2014 to 2016. This study gives empirical evidence that intangible assets' ratios have positive and significant effect on firms' financial performance, measured by Return on Assets (ROA).

Ansari and Gowda (2013) evaluate the asset tangibility, capital structure and their impacts on financial performance. 11 oil and gas companies encompassing three refinery companies and eight drilling and exploration companies listed on Bombay Stock Exchange (BSE) constituted the research sample. The required data for analysis of financial performance of select companies were collected from the annual reports and financial statements of the firms covering a period of ten years from 2007. The study used EPS and fixed asset as proxies for financial performance and asset tangibility respectively, employing descriptive statistics, Pearson correlation and linear regression analysis. Results showed that there was a positive and significant relationship between capital structure and financial performance while the relationship between asset tangibility and financial performance was significant and negative.

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 four companies in the Nigerian brewery sector over an eleven-year period from 1999 to 2009. The study 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 which 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) studied the impact of company's investment intensity on its return on assets. 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. Their result showed there was no strong negative (or positive) impact of investment intensity on future rate of return on assets

Chukwu et al (2017) examined the influence of intangible assets on market value of quoted money deposit banks in Nigeria. It specifically looked at the effect of goodwill and software costs on the Earnings per share of quoted banks. The results revealed that computer software costs were not significantly related to market value while goodwill arising from business combination was positively related to market performance. Ji and Lu (2014) studied the problem associated reliability of intangible assets and how that affect market valuation of accounting data. Using over 6650 firms listed on the Australian Stock Exchange for ten-year period between 2001-2009, the result showed a high association between intangibles and market value of firms.

Berkman et al (2018) in his paper discussed the value relevance of cyber security awareness and its association with market value. The research develops a cyber-security awareness score based on textual analysis of cyber-related disclosures for a sample of 2264 firms from USA and 9677 observations, using a comprehensive dictionary. This evidence of capital market effects of cyber security awareness and tone of cyber-related disclosures should be particular interest to management, and, rather than providing information about their vulnerabilities, corporations should disclose information related to strategies for mitigating cyber security risks.

Methodology

This study adopts the ex post facto research designs in a bid to examine the functional relationship between capital intensity and firm performance of listed oil and gas firms. The study was based on ex-post facto research design because it sought to analyse with the available data, the effect of green cost as a predictive measure of financial performance. The choice of ex-post design was also based on the nature of the data which already existed and the research made no attempt to manipulate its value or nature. The study covered the period of five years from 2014 – 2018. The study used secondary data collected from the published financial statements of the selected listed oil and gas firms. The secondary data collected were analysed using descriptive statistics, correlation and regression analysis. The descriptive statistics was used to evaluate the characteristics of the data: Mean, maximum, minimum, and standard deviation and also checks for normality of the data. The random effect regression model was used in analysing the relationship between the variables of study, after applying the Hausman Test. The correlation analysis was also used to evaluate the relationship between the variables and to check for multi-colinearity. The multiple regression analysis was used to evaluate the effect of the independent variables on the dependent variable.

Model Specification

In a bid to capture the impact of capital intensity on the financial performance of the oil and gas firms in Nigeria. To test the stated hypotheses, Pool regression analysis was employed. Multivariate analysis

was used by modelling PRFM as a function of explanatory variables. While the Capital Intensity model was adopted from prior studies of Chukwu and Egbuhuzor (2017). This model modified and extended the model tested by prior studies and panel regression was adopted thus: PRFM =*f* (PPER + INTR + PPMR+ INVR +U). This is further restated in a regression model thus:

$PRFM = \beta 0 + \beta 1PPER + \beta 2INTR + \beta 3PPMR + \beta 4INVR + \mu$

Where, PRFM = Profit Margin, PPER = Plant, Property and Equipment Ratio, INTR = Intangibles Ratio, PPMR = Prepayments Ratio, INVR = Investment Property Ratio and U = Error Term. These ratios were derived by dividing each variable by the value of the total non-current assets.

Data Analysis and Discussion of Findings

Table 1: Descriptive Statistics

	PPER	INTR	PPMR	INVR	PRFM
Mean	0.612584	0.004382	0.075553	0.105260	-0.672237
Median	0.713424	0.001987	0.033765	0.000565	0.013652
Maximum	1.000000	0.019860	0.592553	0.755694	0.099544
Minimum	0.004425	0.000000	0.000000	0.000000	-7.042364
Std. Dev.	0.310749	0.005279	0.136656	0.225353	1.769868
Skewness	-0.556614	1.174861	2.615992	2.304765	-2.524585
Kurtosis	2.062020	3.273625	8.895784	6.592461	8.311581
Jarque-Bera	3.884991	10.25945	113.9122	62.61484	98.46284
Probability	0.143346	0.005918	0.000000	0.000000	0.000000
Sum	26.95371	0.192803	3.324324	4.631433	-29.57843
Sum Sq. Dev.	4.152284	0.001198	0.803018	2.183717	134.6946
Observations	44	44	44	44	44

Source: Author's Computation using Eviews

Table 1 reveals that property, plant and equipment constitutes the greatest proportion of noncurrent assets, which is about 61% of the total non-current assets of the firms. This is followed by investment property, which is about 10.5% of the total non-current assets of the firms. On the other hand, intangibles constitute a very negligible proportion of the non-current assets of the firm.

Table 2: Correlation Matrix

	PPER	INTR	PPMR	INVR	PRFM
PPER	1.000000				
INTR	-0.110658	1.000000			
PPMR	-0.031717	-0.284852	1.000000		
INVR	-0.541448	-0.040036	-0.126994	1.000000	
PRFM	0.203122	0.221797	0.219190	0.141999	1.000000

Source: Author's Computation using Eviews

In table 2, all the variables are positively correlated with PRFM but with a low degree of correlation. This table also suggests absence of multi-colinearity between the variables in the model.

Table 3: Hausman 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	8.276967	4	0.0819

Source: Author's Computation using Eviews

In table 3, the p-value of 0.0819 implies that the random effects test be applied in determining the effect of the independent variables on the dependent variable.

Table 4: Random Effects Panel Regression

Dependent Variable: PRFM
Method: Panel EGLS (Cross-section random effects)
Date: 03/01/20 Time: 12:27
Sample: 2014 2018
Periods included: 5
Cross-sections included: 9
Total panel (unbalanced) observations: 44
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.470862	0.924189	-3.755578	0.0006
PPER	2.823816	1.073160	2.631309	0.0121
INTR	82.36513	50.61700	1.627223	0.1117
PPMR	4.255913	2.004158	2.123542	0.0401
INVR	3.607031	1.568427	2.299777	0.0269

Effects Specification	S.D.	Rho
Cross-section random	0.678993	0.2214
Idiosyncratic random	1.273128	0.7786

Weighted Statistics

R-squared	0.699476	Mean dependent var	-0.445253
Adjusted R-squared	0.517371	S.D. dependent var	1.431316
S.E. of regression	1.341233	Sum squared resid	70.15738
F-statistic	2.629523	Durbin-Watson stat	1.746273
Prob(F-statistic)	0.033839		

Unweighted Statistics

R-squared	0.737018	Mean dependent var	-0.672237
Sum squared resid	89.30011	Durbin-Watson stat	1.586299

Source: Author's Computation using Eviews

The result in Table 4 indicates that the model estimators determine 51.7% of the variations in PRFM. The F-statistic of 2.63 and p-value of 0.034 also indicates a good fit of the model. The t-statistic, on the other hand, indicate that all the variables significantly influence profit margin except intangibles.

Discussion of Findings

First, the Hausman Test was employed to determine whether the random or fixed effect regression should be applied in the study. From the result in Table 3, the Chi-square statistic of 8.277 and the p-value of 0.0819 implied that the random effect regression test should be applied. From the results obtained from the random effect regression, all the variables are positively signed; which implies that the higher the intensity of capital employed, the higher the financial performance. This result was at variance with the findings of Okwo, Ugwunta and Nweze (2012) who assessed the impact of a company's investment in fixed assets on its operating profit margin and found out that that there was no strong positive impact of investment in fixed assets on the operating profit of brewery firms in Nigeria. Second, all the variables met their expected apriori signs, which is positive sign; implying that an increase in any of them will result in an increase in the profit margin. Property, plant and equipment, prepayments and investment property were found to be significant at 5% level of significance. The positive relationship between these variables and profit margin implies that firms with higher capital intensity are bound to perform better. The probable reason for this is that higher capital investment results in business expansion, which may lead to higher profitability. As the scope of operations expand, the firm may earn scale economies, which implies lower costs; and eventually higher profit margin. This finding was in agreement with the works of Chukwu and Egbuhuzor (2017) who investigates the effect of tangible assets on the corporate performance of manufacturing firms in Nigeria using financial statement data from ten manufacturing companies listed on the stock exchange and found out a significant positive relationship between return on assets and plant and machinery; but the relationship between return on assets and land and buildings is negative. The study concludes that investments in tangible non-current assets affects the profitability of firms.

However, intangibles ratio was found to be insignificant. This was in agreement with the findings of Chukwu et al (2017) examined the influence of intangible assets on market value of quoted money deposit banks in Nigeria whose results revealed that computer software costs were not significantly related to market value while goodwill arising from business combination but was at variance with the study conducted by Ji and Lu (2014) who studied the problem associated reliability of intangible assets and how that affect market valuation of accounting data in Australia where the result showed a high association between intangibles and market value of firms. The reason is that intangibles constitute a very negligible proportion of the non-current assets of the oil and gas firms. This may accrue to the fact that the firms do not enjoy much good will or that their operations are not intensively driven by technology. In the case of the former, low goodwill may be as a result of the lack of commitment of the firms to their corporate social responsibility; as was the case between the Ogonis and Shell Petroleum Development Company; where little or none improvement was made to the environment in which much revenue was being derived. On the other hand, if the technological inputs are low, financial performance may also decline. For instance, a lot of oil spills could have been avoided if there were robotics monitoring oil pipelines in the country.

Conclusion and Recommendations

This study examined the influence of capital intensity on profitability of listed oil and gas firms in Nigeria (particularly net profit margin). The study specifically sought to determine the extent to which property, plant and investment ratio, intangibles ratio, prepayments ratio as well as investment property ratio influence the profit margin of oil and gas firms in Nigeria. From the results obtained from the

random effect regression model, all the variables have significant positive effects on the profit margin except intangibles ratio, which was not significant. It was therefore concluded that firms with higher capital intensity are bound to perform financially better than those with lower capital intensity. Consequently, it is recommended that firms, especially those in the oil and gas sector, should invest more in non-current assets in order to improve their financial performance. More so, firms in the oil and gas sector should re-evaluate their intangible asset portfolios in order to enhance its contribution to the overall performance of their firms. It was recommended that financial managers should strive to have an optimal capital intensity that will ensure improved performance of their firms at all times.

REFERENCES

Abubakar, S. & Abubakar, M. (2015). Intangible Assets and Value Relevance of Accounting Information of listed High Tech Firms in Nigeria. *Research Journal of Finance and Accounting, 6(11) 60-80.*

Anuonye, N.B (2017). Human Resource Accounting: Measuring and Creating Value in the Global Market through Intellectual Capital. *The Nigerian Accountant. January/March 2017.*

Akenga G. (2015). Effect of Liquidity on Financial Performance of Firms Listed at the Nairobi Securities Exchange. *International Journal of Science and Research 6 (7), 279-285*

Aivazian, V.A., Ge, Y., & Qui, J. (2005). The impact of leverage on firm investment: Canadian evidence, *Journal of Corporate Finance, 11, 277-291*

Azimi, T. Arbabian, R. & Khanmohammad, D. (2015). Impact of the Company's Liquidity on Sensitivity of the Investment -Cash Flow on the Stock Exchange Based on Industry. *International Research Journal of Applied and Basic Sciences, 4 (4): 943-946.*

Azhagaiah, A. & Ramachandran, V. (2007). The Impact of Firm Size on Dividend Behaviour: A Study with Reference to Corporate Firms across Industries in India. *Managing Global Transitions, 8(1), 49-78.*

Bernoth, K., Colavecchio, R., & Sass, M. (2010). Drivers of Private Equity Investment in CEE and Western European Countries. DIW Berlin: *German Institute for Economic Research.*

Bharath, S. T., Dahiya, S., Saunders, A. & Srinivasan, A. (2009). Lending Relationships and Loan Contract Terms. *Review of Financial Studies, hhp064*.

Bothwell, J. L., Cooley, T. F., & Hall T. E. (1984). A New View of the Market Structure Performance Debate. *The Journal of Industrial Economics, 32(4), 397–417.*

Chukwu G.J & Egbuhuzor C.A (2017). Tangible Assets and Corporate Performance: Evidence from the Manufacturing Industry in Nigeria. *Research Journal of Financial Sustainability Reporting, 2(1) 271-277.*

Chukwu A.N, Ohaka J. & Nwanyanwu L.A (2017). Intangible Assets and Market Value of Quoted Deposit Money Banks in Nigeria. *Uniport Journal of Business, Accounting and Finance Management, 8(1), 184-199.*

International Accounting Standards Board (2018). *International Financial Reporting Standards. London: IFRS Foundation*

Ji, X & Lu, W. (2014). The Value Relevance and Reliability of Intangible Assets: Evidence from Australia before and After IFRS. *Asian Review of Accounting 22(2) 182-216*

Okwo, I.M, Ugwunta D.O & Nweze A.U (2012). Investments in Fixed Assets and Firm Profitability: Evidence from the Nigerian Brewery Industry. *European Journal of Business and Management, 4(20) 10-18.*

Olatunji, T.E & Tajudeen A.A (2014). Investment in Fixed Assets and Firm Profitability: Evidence from the Banking Sector. *Asian Journal of Social Sciences and Management Studies, 1(3) 78-82.*

Nangih, E. & Ofor, T.N (2019). Nexus between Liquidity and Investment of Oil and Gas Companies in Nigeria. *Journal of Accounting and Business 6(2), 247-261.*

Nangih, E, Okoye, P.V.C & Okoye A. (2019). Liquidity-Stock Returns Interconnectedness of Oil and Gas Firm in Nigeria. *A paper presented at the NAA Conference at the Ignatius Ajuru University of Education Port Harcourt, 3rd-4th December 2019.*

Appendix

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	8.276967	4	0.0819

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
PPER	0.662929	2.823816	10.272980	0.5002
INTR	-49.087069	82.365125	2610.153619	0.0101
PPMR	0.734509	4.255913	14.978273	0.3629
INVR	4.044105	3.607031	52.817739	0.9520

Cross-section random effects test equation:
Dependent Variable: PRFM
Method: Panel Least Squares
Date: 03/01/20 Time: 12:29
Sample: 2014 2018
Periods included: 5
Cross-sections included: 9
Total panel (unbalanced) observations: 44

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.344419	2.392805	-0.561859	0.5783
PPER	0.662929	3.380037	0.196131	0.8458
INTR	-49.08707	71.91825	-0.682540	0.5000
PPMR	0.734509	4.358316	0.168530	0.8673
INVR	4.044105	7.434898	0.543936	0.5904

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.626960	Mean dependent var	-0.672237
Adjusted R-squared	0.482557	S.D. dependent var	1.769868
S.E. of regression	1.273128	Akaike info criterion	3.561537
Sum squared resid	50.24648	Schwarz criterion	4.088684
Log likelihood	-65.35381	Hannan-Quinn criter.	3.757028
F-statistic	4.341749	Durbin-Watson stat	1.822306
Prob(F-statistic)	0.000479		