
DETERMINANTS OF ASSETS TANGIBILITY: EVIDENCE FROM SMALL CAP FIRMS IN NIGERIA.

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ABSTRACT

This study investigated the determinants of assets tangibility evidence from small cap firms in Nigeria. Determinants were measure by leverage financing, firm performance and firm age while assets tangibility on the other hand was represented by Assets Tangibility (ASSTAN). Three hypotheses were formulated to guide the investigation and the statistical test of parameter estimates was conducted using OLS regression model. Ex-post facto design was adopted and data for the study were obtained from the Nigerian Stock Exchange Factbook and published annual financial reports of the twenty three manufacturing. The finding indicates that leverage financing and firm age has negative significant impact on assets tangibility evidence from small CAP firms in Nigeria. While firm performance has positive insignificant impact on assets tangibility evidence from small CAP firms in Nigeria quoted on NSE with data spanning from 2014-2018 at 1% significant level. Based on this, the study concludes that asset tangibility has information content as investor look at the investment pattern of firm in tangible assets to determine the long run survival of such firm.

Keywords: *Leverage Financing, Firms Performance, firms Age, Assets Tangibility*

1.0 Introduction

The survival of every firm may depend on the investment in asset which was used in generating earnings. Hence, the investment in assets is of great interest to the various stakeholders which also measure the efficiency of the management (return on assets) based on the utilization and number of times the firm is able to turn the assets over (assets turn over) within the accounting period. According to Siblikov (2009), the investment in assets is a useful metric in measuring the long run survival, performance and capital structure of a firm, especially firms which relies on leverage financing. Assets can be broadly classified into two classes, namely, tangible and intangible assets. Giambona, Golec, and Schwienbacher, (2014), believe that tangible assets are generally more liquid than intangible assets. Hence, most tangible assets do have higher second hand market value and in most cases, especially in bankruptcy, these tangible assets can be easily sold. Furthermore, it has been argued that the ownership of tangible assets is one of the key factors that give most entities an increased advantage in negotiations for loan. In line with this view, Siblikov (2009), opined that the question of whether tangible assets negatively or positively affect the level of debt in an entity has not been proved beyond reasonable doubt.

This has made the tangibility of entities assets very important in determining the financial structure (Giambona, Golec, & Schwienbacher, 2014). An entity's tangible assets can be grouped based on various criteria. Hence the grouping of assets is very important in revealing in some extent the liquidity and transferability of the assets. There are various factors that can be used to determine the nature of assets of an entity, those factors help reveals the reason why most firms stock pile assets.

Campello and Giambona (2013), argued that tangible assets serve as collateral for entity using debt financing or secured loan. This is because; asset tangibility can increase the recovery value for lenders.

This no doubt, can positively be a linked with which lenders and borrowers can obtain external financing and grant loan facility to entities. The study of Campello and Giambona (2013), shows that most firms ability to redeploy tangible assets is a very important factor in determining the level of corporate leverage financing. Picker, (1992), in his study, states that Assets tangibility (quality and nature) has the capacity of conveying information to the lender about the borrower's repayment prospect and help reduce the adverse selection problem.

Assets are organizational resources at the disposal of the management to achieve the wealth maximization objective of the firm. The tangibility of such assets has advantage to firms using debt financing and it also tied down the capital of the firms. However, most managers prefer holding large amount of tangible assets because of its collateral advantage in leverage financing and investment tax shield (Khalid, 2013). Those assets also form a basis for the evaluation of management efficiency in its utilization toward profit generation. However, holding large quantity of assets also tied down the fund of the entity. Therefore there is the need to evaluate the key determinants of assets tangibility in firms with small market capitalization.

The factors that determine the asset tangibility is lacking. Some researchers attempted to study assets tangibility of firms with respect to leverage financing, debts financing, firm performance and firm age, but none of them have carried out study in Nigeria using small Cap firms.

The main objective of this study is to examine the determinants of assets tangibility evidence from small CAP firms in Nigeria. While the specific objectives are to evaluate the effect of leverage financing, firm performance and firm age on assets tangibility evidence from small CAP firms in Nigeria.

To achieve this purpose, the following hypotheses were formulated:

H₀₁: Leverage financing has no significant impact on assets tangibility evidence from small CAP firms in Nigeria.

H₀₂: Firm performance has no significant effects on assets tangibility evidence from small CAP firms in Nigeria.

H₀₃: Firm age has no significant effect on assets tangibility evidence from small CAP firms in Nigeria.

Review of Related Literature

Assets tangibility

Assets tangibility is the proportion of an entity's assets held in physical form apart from current assets. That is the proportion of physical non-current assets to the total assets of an entity. Campello and Giambona, (2013), in their study maintained that since most entities used debt financing which required the use of collateral, tangible assets can be used as collateral to alleviate firms' financial constraints by reducing borrowing costs and firms with low asset tangibility tend to hold more cash from a precautionary motive standpoint. $\text{Assets tangibility} = \frac{\text{Total tangible non-Current Asset}}{\text{Total asset}}$ (Charalambakis & Psychoyios, 2012)

Leverage Financing

Leverage financing is the used of debt in financing an entity's investment in assets or on operating activities. According to Olakunle and Oni (2010), leverage financing involves interest payment and other associated cost which are tax deductible in determination of tax liability. In accessing debt, an entity needs collateral which is its assets. The use of collateral reduces the risk involve and consequently the cost of the debt (Alayemi, 2013). $\text{Leverage financing} = \frac{\text{Borrowing (Debt)}}{\text{Total asset}}$ (Mwaniki & Job, 2017)

Firm Performance

Firm performance is an indicator of how profitable a company is, relative to its total assets. It gives investors, managers, and analysts an idea of how efficient company management is at using, its assets to generate earnings (Mashiri & Sebele, 2014). The conceptual framework of firm performance is that it stands as one of the best means by which a company can measure its profitability/success. Waggoner, Neely and Kennerley (1999), found that Return on Asset (ROA) can offer significant valuable information that will enable management to monitor their performance and that of their affiliates, identify problems, report progress, improve motivation and communication. According to Hutchinson and Gul (2004); Mashayekhi and Bazazb (2008), accounting-based performance measures present the management actions outcome and are hence preferred over market-based measures when the relationship between corporate governance and firm performance is investigated. As a result, when a company shows a positive performance through ROA, it indicates its achievement of prior planned high performance while a negative performance results in investor's loss (Nuryanah & Islam, 2011).

Firm Age

Firm age is the period from the date the company is listed on the Nigeria Stock Exchange (NSE) to the current reporting year. Firms are classified into two broad categories: old and young firm. Old firms are firms listed and actively traded over the last ten years. A firm is considered a young firm when it is listed or actively traded below/within the last ten years. Young firms are mostly on the growth level in firm's hierarchy. Hence, they may invest more in assets which has short and long run benefit. They rely more on the use of debt financing. This usually results to holding of more tangible asset for collateral purpose. The firm age is associated with ample of experience, expertise and reduction in perceived risks, (Mahajan & Singh, 2013).

Small Cap Firms

Market capitalization refers the total naira market value of a firm's outstanding shares. Commonly referred to as "market cap," it is calculated by multiplying a company's shares outstanding by the current market price of one share. Using market capitalization to show the size of a firm is important because company size is a basic determinant of various characteristics in which investors are interested, including risk. Small CAP firms constitute about 70 percent of the total firms quoted in the Nigeria stock exchange (NSE). The NSE was one of the top performing exchanges globally in 2012.

- The NSE All Share Index (ASI) grew 35.45%, and average daily turnover for equities was N2.65 billion (\$17.07million), up 4.74%.
- The capitalization of listed equities grew 37.36% from N6.54 (\$41.87billion) to N8.98trillion (\$57.83billion).

Theoretical Framework

This study is anchored on research based theory

Research Based Theory (RBT)

The evolution of the Resource Based theory (RBT) is also known as Resource Based View (RBV) originates from Penrose's pioneering idea presented in the 1950s in her book 'The theory of the growth of the firm', where a firm is described as a pool of resources that should be organized into their best uses in order to create grounds for firm success (Penrose 1995).

The RBV is based on the thought that tangible and intangible firm-level resources and the capability to coordinate those assets or inputs of production in a strategically successful way form the grounds for competitiveness in the dynamic business environment (Wernerfelt 1984; Barney 1986, 1991, 2001; Conner 1991; Helfat & Peteraf 2003; Brown & Blackmon 2005). The role of company managers is crucial to firm-level competitiveness, since their perceptions of the environmental circumstances dictate the selection of resources (Fahy 2002) to be exploited, developed and protected (Dierickx & Cool 1989). In addition, in structuring the firm-level resource portfolio, managers should also be able to make successful decisions on strategic resource divestments (Sirmon, Hitt, & Ireland, 2007).

Empirical Review

Mwaniki, and Job (2017) examine the relationship between asset tangibility and financial performance of firms listed under service sector in Nairobi stock exchange in Kenya between 2010 and 2014. The study used secondary data collected from the annual reports of the selected firms, the study measure asset tangibility using property, plants and equipment, and current assets funds as independent variables. While earning per share; return on assets; return on equity, profit margin (return on sales); and current ratio was used as dependent variable. The study finds that asset tangibility had a significant statistical effect on the financial performance of firms listed under service sector in Kenya. The result reveals that property, plants and equipment, and long-term investments and funds have a statistically significant effect on financial performance, while current assets and intangible assets do not have statistical significance on financial performance.

Skogh and Sward (2015), examined the impact of asset tangibility on the firm characteristics. The study proxy firm characteristics with leverage, firm age, firm size and tax shield. The study used panel data and was analysed using regression analysis. The result reveals that that there is a significant positive relationship between the leverage, tax shield and firm size, and no significant relationship between asset tangibility and firms age.

Skogh and Swärd (2015), evaluates the impact of tangible assets on debt ratio of listed firm on Swedish stock exchange between 2005 and 2015. The study decomposed tangible assets into current and noncurrent tangible assets and applied the multiple regression analysis on the pool data collected from the listed firms in Swedish. The study found that tangible assets have significant impact on debt ratio.

Mou (2014) examines the impacts of asset tangibility on financial performance of firms listed on Shanghai Stock Exchange. The study used return on assets and return on equity as dependent variables and independent variables are liquidity as measured by tangible non-current asset (TA), asset intangible asset ratio (INTA), leverage (LEVE) and used firm size as a dummy variable. The study finds that asset tangibility has significant effect on financial performance of firms listed on Shanghai Stock Exchange. The result also shows a positive and significant relationship between assets tangibility and firm performance and a negative and significant relationship between leverage and firm performance.

Alayemi (2013) evaluate the relationship between assets tangibility and corporate efficiency of food and beverage firms in the Nigerian Stock Exchange between 2007- 2011. The study used secondary data collected from the financial statement of the sampled companies and adopted ex-post facto research design method. The study finds that return on asset has significant effect on debtors' turnover.

Bagchi (2013), examine the effect of asset tangibility on the value of manufacturing firm listed on Greek stock exchange between 1999 and 2011 financial year. The study was based on descriptive design and made use of panel regression analysis. The study found that in most firm, the level of asset tangibility is low especially firm that use low level of leverage. While the firm that is highly geared have higher level of asset tangibility. The result also reveals that assets tangibility has significant effect on leverage and value of firms listed in the manufacturing sector of the Greek Stock Exchange.

Khalid (2012) examined the relationship between asset tangibility and leverage. Using fixed assets and current assets as a proxy for assets tangibility. The study used panel data collected between 2007 to 2011 financial year. The data was analysed using multiple regression analysis. The results showed that a fixed asset ratio is negatively associated with leverage, after controlling for the effects of operating size, while current asset has no significant impact on leverage.

Zhou, (2012), examined the relationship between asset tangibility and leverage evidence from the listed Real Estate Companies in China. They used principal component analysis and regression analysis on the data from 2006-2011 of all listed real estate companies in china. The study revealed that the fixed asset of a company is negatively linear-correlated to its leverage.

Liberti and Mian (2010), examine the relationship between financial development and assets tangibility of firm listed on the Malaysia stock exchange. Using current asset ratio and fixed asset ratio as proxy for assets tangibility. The study shows that institutions such as creditor rights and information sharing, reduces borrowing constraints by lowering the difference in collateral requirement between high and low risk borrowers. They also document that firms in better financially developed countries pledge a less amount and a wider range of assets including firm specific assets as collateral which enhances the level of asset tangibility.

Campello and Giambona (2010) examine the relationship between asset tangibility and leverage, of quoted companies in USA. The study evaluates how the tangible asset composition affects debt ratios panel data analysed using regression analysis, the study found that the relationship between tangible assets are negatively or positively associated with debt is not clear.

Olakunle and Oni (2010), assessing the impact of asset tangibility on capital structure: Choice for listed firms in Nigeria. The study used samples of two hundred and sixteen listed firms on the Nigeria stock exchange between 1997 and 2007. The study proxy asset tangibility using fixed asset ratio. Results shows that Nigerian firms do not follow observed patterns observed in western countries. In analysing firm leverage, Nigeria firms were found to have a positive non-statistical significant correlation between asset tangibility and leverage.

Kahle, and Stulz (2009), on the effect of assets tangibility on cash holding using the ordinary least square regressions. Assets tangibility was proxy by current asset ratio and fixed effects. The result reveals that asset tangibility affects corporate cash holdings negatively among U.S firms. The study also found that current assets ratio and fixed assets ratio has positive impact on the cash holding of firm in USA.

Methodology

The study used panel data and was based on ex-post- facto research design. It also used secondary data that was collected from the annual financial report of twenty (23) manufacturing firms between 2014 and 2018. The data was collected from the published financial statement of the various quoted selected manufacturing firms used in the study and the Nigerian Stock Exchange Fact-book. The population of the study is forty (40) manufacturing firms listed on the Nigeria Stock Exchange. Only twenty three (23) firms were selected for the study using judgmental sampling method and based on the availability of data for a period of 2014 to 2018. Secondary data collected was analysed using descriptive statistics, correlation and regression analysis.

Model Specification

The model was adopted from the work of Mou (2014) which states $ROA=f(TA, INTA, LEVF, FS)$ and $ROE=f(TA, INTA, LEVF, FS)$. The model was modified to suit the variables used for this study. Hence the model for the study was anchored on the objective.

$$ASSTAN = f(LEVF, ROA, FAGE) \dots\dots\dots 1$$

This can be econometrically express as

$$ASSTAN_{it} = \beta_0 + \beta_1 LEVF_{it} + \beta_2 ROA_{it} + \beta_3 FAGE_{it} + \mu_{it} \dots\dots\dots 2$$

Where:

ASSTAN means Assets tangibility, LEVF means Leverage Financing, ROA means Return on Assets, FAGE means Firm Age, β_0 means Constant, β_1, β_3 means the coefficient of the regression equation, μ means Error term, i means the cross section of firms used.

Data Presentation, Analysis and Interpretation

This study used panel data and adopted the panel regressions analysis to identify the possible causal effects relationship that exists between the selected determinants and assets tangibility among quoted firms in Nigeria. The study however conducted some preliminary analysis such as descriptive statistics, correction analysis to ascertain the normality of the data and check for the presence of multi-collinearity.

Descriptive Statistics

The descriptive statistics result shows the mean (average) for each of the variables, their maximum values, minimum values, standard deviation and the Jarque-Bera (JB) statistics (normality test).

	ASSTAN	ROA	FAGE	LEVER
<i>Mean</i>	0.598330	0.147835	13.00000	0.367400
<i>Maximum</i>	0.770000	0.410000	29.00000	0.713000
<i>Minimum</i>	0.364000	0.009000	1.000000	0.164000
<i>Std. Dev.</i>	0.102851	0.069300	5.558303	0.125223
<i>Jarque-Bera</i>	9.067138	104.7953	14.34404	5.988125
<i>Probability</i>	0.010742	0.000000	0.000768	0.050084
<i>Observations</i>	115	115	115	115

Sources: Researcher’s summary of descriptive statistics 2020 from e-view 8 results

Table 4.1 shows the mean (average) for each of the variables, their maximum, minimum values, standard deviation and the Jarque-Bera (JB) statistics. The result provided some insight into the nature of the selected companies that were used for the study. It was observed that the companies selected have mean assets tangibility value of 0.598, minimum value of 0.364 and maximum value of 0.7700 respectively. The mean value shows that the tangible assets ratio to total assets is 59.8. The large difference between the maximum and minimum value shows that some of the firms used maintain high level of tangible assets compare to others. The table shows mean leverage financing value of 0.367, maximum and minimum 0.7130 and 0.164 respectively. While firm performance has a mean value of 0.148, maximum of 0.410 and minimum of 0.0090. These values indicates that all the firms used in the study used leverage financing, the large difference between the mean and the maximum value reveals some of the firms used high level of leverage financing. Firm Age has a mean value of 13.0, maximum value of 29.00 and minimum value of 11.0 this reveals that firm used are heterogeneous with respect to age.

Lastly, the Jarque – Bera (JB) which test for normality or the existence of outlier or extreme value among the variables shows that all the variables are normally distributed at 1% level of significance except leverage which was distributed at 5% level. The result means that any variables with outlier are not likely to distort our conclusion and are therefore reliable for drawing generalization.

Correlation Analysis:

In examining the relationship between the variables, the study employed the Pearson correlation coefficient (correlation matrix). The summary of the result is presented in table 4.2 below

Table 4.2: Pearson Correlation Matrix

	ASSTAN	LEVER	ROA	FAGE
ASSTAN	1.000000			
LEVER	-0.186116	1.000000		
ROA	-0.051850	-0.108589	1.000000	
FAGE	0.228938	-0.345429	0.136239	1.000000

Source: Researcher’s summary of Correlation analysis result (2020) from e-view 8

The table above (4.2) shows the relationship among the variables assets tangibility, firm performance, and leverage financing and firm age. The correlation analysis table shows that there is a positive association between assets tangibility, and firm age. While the relationship between assets tangibility, and firm performance, and leverage financing shows negative. This suggests that the more an entity acquire more tangible assets, the more the firm benefits through access to credit facility and tax shield. Leverage financing has negative relationship with firm performance and firm age.

In checking for multi-collinearity, the study observes that no two variables were perfectly correlated. This means that there is absence of multi-collinearity problem in the model used for the analysis.

Effect Test (Fixed and Random):

The study used Hausman effect test to select between fixed and random effect, which result is presented below.

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	21.833970	3	0.0001

Source: Researcher’s summary of Hausman effect test result (2020) from e-view 8 result

The Hausman effect test result shows a chi-square value of 21.40 and probability value 0.00, the chi-square probability value is less than 10 percent. Based on the result, the study accept the fixed effect and reject the random effect, hence we use the fixed effect to correct the problem of heterogeneity in the data used for the study. Table 4.4 below is the regression result adjusted for fixed effect.

Table 4.3 Regression Analysis Result

Variables	
C	0.8653 [17.2868] (0.0000)
LEVER	-0.2015 [-2.6356] (0.0099)
ROA	0.0855 [0.8074] (0.4216)
FAGE	-0.0158 [-4.8409] (0.0000)
Durbin Watson	2.0302
R- Sq	0.7159
R.Sq (Adj)	0.6361
F-statistic	8.9715
F-statistic prob.	0.0000

Source: Researcher (2020) summary of regression analysis result.

Note: the three values are the coefficient, t-test; [] and p-value ()

The above table report, the OLS regression result. The study shows that R-sq(Adj.) 0.6361 (63.61%) this indicates that all the independent variables jointly explain about 63.61% of the variation/changes in assets tangibility of listed manufacturing firms in Nigeria. The F-statistics value of 8.9715 and its

probability value of 0.000 shows that the model used is appropriate and statistically at 1% levels. The Durbin Watson statistics result was 2.0302 can be approximated into 2, this indicates the absence of autocorrelation in our model hence the model used is appropriate for the study.

H₀₁: Leverage financing has no significant impact on assets tangibility evidence from small CAP firms in Nigeria.

The analysis result of leverage financing and assets tangibility showed a coefficient value of -0.2015, t-value of -2.6356 and a p- value of 0.0099. The coefficient value of 0.2015 reveals that Leverage financing has negative contribution of about 0.2015 percent on assets tangibility. The p- value of 0.0099 shows that the effect of Leverage financing is statistically significant at 1% level. Based on the result, the study accepts the alternate hypothesis and rejects the null hypothesis.

H₀₂: Firm performance has no significant effects on assets tangibility evidence from small CAP firms in Nigeria.

The analysis result showed a coefficient value of 0.0855, t-value of 0.8074 and a p- value of 0.4216. The coefficient value of 0.0855 shows that firm performance makes positive contribution of about 0.08 percent to assets tangibility of small CAP firms in Nigeria. The p – value of 0.4216 shows that the positive effect of firm performance on assets tangibility is not statistically significant even at 10% level. This means that though firm performance positively impact on assets tangibility the impact is not significant. Thus firm performance is not a determinant of assets tangibility among small CAP firm in Nigeria. Based on the result, the study rejects the alternate hypothesis.

H₀₃: Firm Age has no significant effect on assets tangibility evidence from small CAP firms in Nigeria.

The analysis result shows a coefficient value of -0.0158, t-value of -4.8409 and a p- value of 0.0000. The coefficient value shows that firm age has negative impact on assets tangibility of small CAP firms used in the study. The probability value of 0.000 indicates that firm age has significant impact on assets tangibility. Based on the result, the study accepts the alternate hypothesis.

Summary of Findings

- ❖ Leverage financing has negative significant impact on assets tangibility evidence from small CAP firms in Nigeria.
- ❖ Firm performance has positive insignificant effect on assets tangibility evidence from small CAP firms in Nigeria.
- ❖ Firm Age has negative significant effect on assets tangibility evidence from small CAP firms in Nigeria.

5.0 Conclusion and Recommendations

Asset tangibility has information content as investor look at the investment pattern of firm in tangible assets to determine the long run survival of such firm. The key factors that determine the assets tangibility of firm is of great importance to investors and management. Based on the findings, the study recommends as follows:

1. Management of small Cap firms should reduce the idea of tying most debts to their tangible assets as collateral because; any contingent failure to meet up with the creditors requirements will amount to losing the tangible assets.

2. Management of small CAP firms should endeavour to invest in substantial amount of tangible assets, because their usage is what turns in into long run profit to the firm.
3. Managers of small CAP firms should invest in tangible assets overtime both in the way of replacement and in technological advancement, so that on a long run the firm would still be sound in its assets tangibility measures.

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APPENDIX I

Cross-section random effects test equation:

Dependent Variable: ASSTAN

Method: Panel Least Squares

Date: 05/28/20 Time: 12:08

Sample: 2014 2018

Periods included: 5

Cross-sections included: 23

Total panel (balanced) observations: 115

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.865301	0.050055	17.28686	0.0000
LEVER	-0.201501	0.076452	-2.635641	0.0099
ROA	0.085466	0.105858	0.807368	0.4216
FAGE	-0.015813	0.003267	-4.840866	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.715915	Mean dependent var	0.598330
Adjusted R-squared	0.636116	S.D. dependent var	0.102851
S.E. of regression	0.062042	Akaike info criterion	-2.526120
Sum squared resid	0.342584	Schwarz criterion	-1.905527
Log likelihood	171.2519	Hannan-Quinn criter.	-2.274225
F-statistic	8.971477	Durbin-Watson stat	2.030182
Prob(F-statistic)	0.000000		

	ASSTAN	LEVER	ROA	FAGE
Mean	0.598330	0.367400	0.147835	13.08696
Median	0.632000	0.364000	0.140000	12.00000
Maximum	0.770000	0.713000	0.410000	29.00000
Minimum	0.364000	0.164000	0.009000	4.000000
Std. Dev.	0.102851	0.125223	0.069300	5.446011
Skewness	-0.659917	0.553192	1.475834	0.943734
Kurtosis	2.612299	2.839972	6.627392	3.389938
Jarque-Bera	9.067138	5.988125	104.7953	17.79906
Probability	0.010742	0.050084	0.000000	0.000136
Sum	68.80800	42.25100	17.00100	1505.000
Sum Sq. Dev.	1.205921	1.787604	0.547488	3381.130
Observations	115	115	115	115

	ASSTAN	LEVER	ROA	FAGE
ASSTAN	1.000000	-0.186116	-0.051850	0.228938
LEVER	-0.186116	1.000000	-0.108589	-0.345429
ROA	-0.051850	-0.108589	1.000000	0.136239
FAGE	0.228938	-0.345429	0.136239	1.000000