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The Nexus between Asset Tangibility and Firms' Financial Performance: A Panel Study of Non-Financial Firms Listed on the Ghana Stock Exchange (GSE)

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Abstract

This study sought to explore the nexus between asset tangibility and the financial performance of non-financial firms listed on the Ghana Stock Exchange (GSE). Specifically, the study sought to; examine the association between tangibility and the firms' financial performance as measured by ROA, determine the connection between tangibility and the firms' financial performance as measured by ROE; and to find out the affiliation between tangibility and the firms' financial performance as measured by ROCE. This study was a quantitative study as it aimed to classify features, quantify them in terms of numbers and create a statistical model to test hypothesis and explain observations. The study was specifically correlational in nature because, it sought to examine the relationship between asset tangibility and the firms' financial performance. The study was finally panel in nature because, it sought to gather information on the same study units at different points in time. A balanced secondary panel data sourced from the audited and published annual reports of the Ghana Oil Company Ltd, Total Petroleum Ghana Ltd, Starwin Products Ltd,

Camelot Ghana Ltd, Aluworks Ltd, Clydestone Ghana Ltd, African Champion Industries Ltd, Benson Oil Palm Plantation Ltd, Fan Milk Ltd, Guinness Ghana Breweries Ltd, Unilever Ghana Ltd, PZ Cussons Ghana Ltd, Produce Buying Company Ltd, Mechanical Lloyd Company Ltd and Sam Woode Ltd for the period 2008 to 2017 was used for the study. Both the descriptive and inferential techniques of data analysis were employed for the study. In the descriptive technique of data analysis, the mean, standard deviation, variance, minimum and maximum values, range, skewness and kurtosis of the study's variables were analysed, whilst the Pearson Product-Moment Correlation Coefficient technique of data analysis was employed to establish the link between asset tangibility and the firms' financial performance (inferential analysis). All the data analysis were conducted through the use of STATA version 15 statistical software package at an alpha (α) level of 5% ($p \leq 0.05$). From the study's Pearson Product-Moment Correlation Coefficient estimates, asset tangibility had an insignificantly positive relationship with the firms' financial performance as measured by ROA. However, financial performance as measured by ROE and ROCE had a significantly adverse association with asset tangibility. The significantly negative affiliation between asset tangibility and the firms' financial performance may imply, the firms were using their tangible assets as collateral to secure more debt financing. This may be so because, the tangibility of firms' assets can serve as a proxy for agency costs of debt and the costs of financial distress. Firms with more tangible assets have in general a greater ability to secure debt as these assets can be used as collateral. Thus, asset tangibility is expected to have a positive link with leverage. But highly levered firms tend to have minimal profitability. The sampled firms must therefore be cautious in using their tangible assets as a bait for more debt financing. Also, the firms should concentrate on building goodwill for themselves. This point is raised because, firms with high levels of intangible assets (for instance goodwill) have more growth prospects and investment opportunities in the long-term. They also boost of innovation, research and development.

Keywords: Nexus, Asset Tangibility, Financial Performance, Non-Financial Firms, Ghana Stock Exchange (GSE), Return on Assets

(ROA), Return on Equity (ROE), Return on Capital Employed (ROCE).

1.0 INTRODUCTION

Tangible assets are physical items of value which are used to generate revenues for corporations, and are not for sale to customers (Kenton, 2017). Firms' tangible assets are grouped into fixed or current. Current assets include items such as cash, inventory and market securities. The lifespan of these assets expire within one accounting period and can be easily sold to raise cash in times of emergencies (O'Sullivan & Sheffrin, 2003; Kenton, 2017; Birch, 2016; and Downes & Goodman, 2003). On the other hand, fixed or non-current assets are those assets used in a business for more than one accounting period. They are reported on the statement of financial position as Property, Plant and Equipment (PPE), and include assets like trucks, machinery, plant, property, equipment, office furniture and buildings among others (O'Sullivan & Sheffrin, 2003; Kenton, 2017; Birch, 2016; and Downes & Goodman, 2003). Asset tangibility has been found to be an important determinant of a company's ability to finance investments externally (Almeida & Campello, 2007). The basic reasoning is that, the tangibility of assets determines the external financiers' valuation of a firm's transferable assets in case of default **(**Diemo, 2007). Since financiers rely, to some extent, on the option to liquidate a company's assets in order to cope with opportunistic behaviour or asymmetric information issues, the degree of overall asset tangibility finally establishes an upper bound on a firm's total debt capacity (Almeida & Campello, 2007; Diemo, 2007; Diamond & Rajan, 2000; and Diamond & Rajan, 2001).

Numerous studies on the connection between asset tangibility and firms' financial performance have been conducted. Discoveries from these studies are however

contrasting. For instance, Birhan (2017) investigated the determinants of insurance companies' profitability in Ethiopia. Employing both primary and secondary data, the study uncovered that, the tangibility of assets had a significant association with the profitability of Nile Insurance, Dire Dawa Branch. Khan, Shamim and Goyal (2018) also examined the profitability determinants of five telecommunication companies listed on the National Stock Exchange (NSE) in India. Using a balanced panel data for the period 2004 to 2017, the study disclosed a trivial affiliation between tangibility and the firms' profitability. In Sri Lanka, Pratheepan (2014) delved into the profitability determinants of 55 manufacturing companies listed on the Colombo Stock Exchange for the period 2003 to 2012. From the study's panel data analysis, tangibility had a significantly converse association with the firms' profitability as measured by ROA.

Further, Pouraghajan and Bagheri (2012) studied the impact of capital structure on the profitability of 40 listed companies on the Tehran Stock Exchange. Using secondary data, the study disclosed a positive connection between asset tangibility ratio and the firms' financial performance. Korkmaz and Karaca (2014) also investigated the profitability determinants of 78 manufacturing firms in Turkey for the period 2000 to 2011. From the study's panel data analysis, tangibility calculated as the ratio of fixed assets-to-total assets, had a significant association with the firms' profitability as measured by ROA. In Romania, Vintilă and Nenu (2015) analyzed the determinants of the financial performance of 46 firms listed on the Bucharest Stock Exchange for the period 2009 to 2013. From the study's findings, asset tangibility had a significantly negative association with the firms' financial performance as measured by ROA and ROE. Finally, Kocaman, Altemur and Aldemir (2016) delved into the profitability determinants of 15 listed industrial firms in Turkey for the

period 1997 to 2013. From the study's panel data analysis, asset tangibility was significantly negatively related to the firms' profitability.

The contradictions in the aforementioned study's findings may be as a result of the differences in geographical environments or the disparities in sectors under which the studies were conducted. Irrespective of the numerous sectorial studies with their divergent revelations, there have been limited research that particularly sought to explore the nexus between asset tangibility and the financial performance of non-financial firms listed on the Ghana Stock Exchange (GSE). This study was therefore viewed as timely and necessary to be undertaken to help fill that gap.

1.1 Purpose of the Study

The general purpose of this study was to explore the nexus between asset tangibility and the financial performance of non-financial firms listed on the Ghana Stock Exchange (GSE). This study seeks to inform action. Thus, the study aims to contextualize its findings within a larger body of research. The study draws its power from the fact that, it is empirical, rather than merely theorizing about what might be effective or what could work. This gives policymakers solid information upon which they could base their decisions. Further, this study utilizes methodologies that could be replicated; produces results that could be examined by peers; and creates knowledge that could be applied to real-world situations. More specifically, the study sought to:

1. Examine the relationship between asset tangibility and the firms' financial performance as measured by ROA.
2. Establish the association between asset tangibility and the firms' financial performance as measured by ROE.

3. Explore the affiliation between asset tangibility and the firms' financial performance as measured by ROCE.

1.2 Research Hypothesis

According to Alina (2017), a hypothesis is a suggested solution for an unexplained occurrence that does not fit into current accepted scientific theory. The basic idea of a hypothesis is that, there is no pre-determined outcome. For a hypothesis to be termed a scientific hypothesis, it has to be something that can be supported or refuted through carefully crafted experimentation or observation (Alina, 2017). In order to achieve the study's goal, the following hypothesis were formulated for testing:

H_{01}. There is no significant relationship between asset tangibility and the firms' financial performance as measured by ROA.

H_{02}. There is no significant association between asset tangibility and the firms' financial performance as measured by ROE.

H_{03}.There is no significant affiliation between asset tangibility and the firms' financial performance as measured by ROCE.

2.0 LITERATURE REVIEW

Mohammed, Ahmed and Mohammed (2016) investigated the influence of capital structure on the performance of consumer goods' companies listed on the Nigerian Stock Exchange. Secondary data sourced from the annual reports of seven (7) listed firms operating in consumer goods for the period 2008 to 2013 was employed for the study. From the study's findings, tangibility had an insignificant association with the firms' financial performance as measured by ROA. Odusanya, Yinusa and Ilo (2018) examined the determinants of the profitability of

114 firms listed on the Nigerian Stock Exchange for the period 1998 to 2012. Through the Generalized Method of Moments (GMM) approach of data analysis, tangibility had an insignificant influence on the firms' profitability.

Ajayi and Zahiruddin (2016) investigated the effect of capital structure on the performance of firms in Nigeria. Panel data extracted from the annual financial statements of 100 non-financial firms listed on the Nigerian Stock Exchange (NSE) for the period 2010 to 2014 was used for the study. From the study's findings, assets tangibility had a significantly positive association with the firms' financial performance as measured by Tobin's Q. In Ethiopia, Sambasivam and Ayele (2013) explored the influence of firm specific factors on the profitability of insurance companies for the period 2003 to 2011. From the study's regression analysis, tangibility was not a significant determinant of the firms' profitability as measured by ROA. On the food sector of Pakistan, Bhutta and Hasan (2013) examined the impact of firm specific factors on the profitability of listed firms for the period 2002 to 2006. From the study's multivariate regression analysis, tangibility had an insignificantly positive association with the firms' profitability.

Derbali (2014) examined the determinants of the financial performance of insurance companies in Tunisia. Panel data from eight (8) life insurance companies for the period 2005 to 2012 was employed for the study. From the study's multiple regression output, tangibility was not a significant predictor of the firms' financial performance. Kamran, Mohammad and Muhammad (2017) explored the determinants of the financial performance of listed financial firms in Pakistan. Data for the period 2008 to 2012 was used for the study. From the study's multiple regression analysis, tangibility had a significant influence on the firms' financial performance. Mehmet and Mehmet (2018) examined the influence of financial characteristics on the profitability of energy firms listed on

Borsa Istanbul Stock Exchange. Quarterly (2008:Q1-2015:Q4) panel data of 10 quoted energy firms was employed for the study. From the study's multiple regression analysis, tangibility proxied by the ratio of tangible fixed assets to total assets had a significantly negative effect on the firms' profitability as measured by ROA.

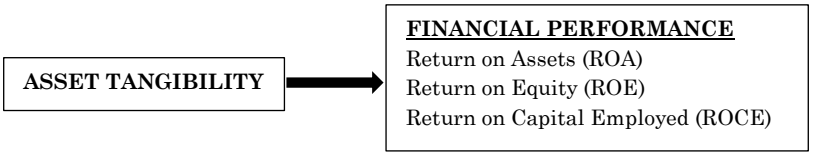
Vuong (2017) explored the determinants of the financial performance of 58 real estate firms listed on the Vietnamese Stock Exchange. From the study's multivariate regression analysis, tangibility as measured by the ratio of fixed assets to total assets had a significantly negative impact on the firms' financial performance as measured by ROA and ROE. Al-Jafari and Al Samman (2015) explored the profitability determinants of 17 industrial firms listed on the Muscat Securities Market for the period 2006 to 2013. From the study's ordinary least squares regression analysis, tangibility had a significantly positive influence on the firms' profitability as measured by profit margin. Kisavi and Mohamed (2015) investigated the influence of financial leverage on the performance of firms in Kenya. Panel data extracted from the financial statements of 47 firms listed on the Nairobi Securities Exchange (NSE) for the period 2007 to 2011 was adopted for the study. From the study's findings, asset tangibility had a significantly positive association with the firms' financial performance as measured by ROE and Tobin's Q.

Kristina and Dejan (2017) researched on the profitability determinants of the agricultural industry in Hungary, Romania, Bosnia and Herzegovina, and Serbia. Panel data for the period 2011 to 2014 was used for the study. From the study's findings, tangibility as measured by the ratio of fixed assets to total assets had a significantly negative influence on agricultural firms' profitability in Hungary and Romania. Amirhassan (2014) explored the determinants of profitability in the Turkish airline industry for the period 1994

to 2013. From the study's panel data analysis, assets tangibility had a significantly negative influence on the profitability of the industry. Cuong, Quan and Lan (2018) explored the influence of internal factors on the financial performance of listed construction-material firms on the Vietnam stock market. Panel data from 30 listed firms was employed for the study. From the study's findings, tangibility measured as the ratio of fixed assets to total assets had a significantly positive impact on the firms' financial performance.

Demis (2016) researched on the macroeconomic and firm specific determinants of the profitability of nine (9) insurance companies in Ethiopia. From the study's discoveries, tangibility of assets had an insignificant influence on the firms' profitability. Isik (2017) researched on the profitability determinants of real sector firms listed on the Borsa Istanbul Stock Exchange. Panel data from 153 listed firms for the period 2005 to 2012 was used for the study. From the study's findings, asset tangibility was a significant determinant of the firms' profitability as measured by ROA. Guruswamy and Marew (2017) delved into the profitability determinants of some selected life insurance companies in Ethiopia. A panel data sourced from the national bank of Ethiopia and the ministry of finance and economic cooperation was used for the study. Through the descriptive, correlation and regression analysis, the study disclosed an immaterial association between tangibility and the firms' profitability.

Figure 1: Conceptual Framework



(Source: Authors, 2019)

Figure 1 shows that tangibility had an association with the firms' financial performance as measured by Return on Assets (ROA), Return on Equity (ROE) and Return on Capital Employed (ROCE). Return on assets was calculated as the ratio of net income to total assets of the firms. Return on equity was also calculated as the net income divided by the total equity of the firms, whilst the ratio of net income to capital employed was used to compute the firms' ROCE. On the other hand, asset tangibility (TAN) was calculated as the ratio of total tangible assets to the total assets of the firms'.

3.0 RESEARCH METHODOLOGY

This study was a quantitative study. The study was quantitative because, it aimed to classify features, quantify them in terms of numbers and create a statistical model to test hypothesis and explain observations. The study was specifically correlational in nature because, it sought to examine the relationship between asset tangibility and the firms' financial performance. The study was finally panel in nature because, it sought to gather information on the same study units at different points in time. All non-financial firms that listed and traded their shares on the Ghana Stock Exchange (GSE) as of 31st December, 2017 formed the study's target population. Because the study wanted to deal with a balanced data, a sample was made out of the entire population. The number of years in existence, technical suspension due to one reason or the other, unaudited financial records, non-existence of trend records, incomplete financial statements and the presentation of annual reports in foreign currencies either than that of the Ghana currency (because of the non-stability of the Ghana Cedi to major foreign currencies) were the factors or filters that were considered during the sampling process.

Considering these factors or filters in making a choice out of the entire population implies, the study adopted the purposive or selective sampling technique in its sampling process. After critically considering the various factors or filters during the sampling process, fifteen (15) firms comprising of the Ghana Oil Company Ltd, Total Petroleum Ghana Ltd, Starwin Products Ltd, Camelot Ghana Ltd, Aluworks Ltd, Clydestone Ghana Ltd, African Champion Industries Ltd, Benson Oil Palm Plantation Ltd, Fan Milk Ltd, Guinness Ghana Breweries Ltd, Unilever Ghana Ltd, PZ Cussons Ghana Ltd, Produce Buying Company Ltd, Mechanical Lloyd Company Ltd and Sam Woode Ltd were selected for the study. This number represented 36.59% of the total number of listed firms or 53.57% of the total number of non-financial firms listed on the Ghana Stock Exchange (GSE). A balanced secondary panel data extracted from the audited and published annual reports of the sampled firms for the period 2008 to 2017 was used for the study. The annual reports of the firms comprised of the comprehensive income statement, statement of financial position, statement of cash flows, statement of changes in equity and notes to the accounts. These annual reports were obtained from the official website of the Ghana Stock Exchange (GSE).

Both the descriptive and inferential techniques of data analysis were employed for the study. In the descriptive technique of data analysis, the mean, standard deviation, variance, minimum and maximum values, range, skewness and kurtosis of the study's variables were analysed, whilst the *Pearson Product-Moment Correlation Coefficient* technique of data analysis was employed to establish the link between tangibility and the firms' financial performance as measured by ROA, ROE and ROCE (inferential analysis). All the data analysis were conducted through the use of STATA version 15 statistical software package at an alpha (α) level of 5% ($p \leq 0.05$).

4.0 RESULTS OF THE STUDY

In this section, results that relate to the study are presented. The results are on the descriptive statistics of the study's variables and the bivariate associations that existed between Tangibility (TAN) and the firms' financial performance as measured by Return on Assets (ROA), Return on Equity (ROE) and Return on Capital Employed (ROCE).

4.1 Descriptive Analysis

As explained by Nick (2007), Babbie (2009), Mann (1995), Trochim (2006) and Dodge (2003), descriptive statistics implies, a simple quantitative summary on a collected data set. Descriptive statistics help people to understand an experiment or a data set in detail and brings to light everything needed to put those experiments or data sets into perspective. Thus, descriptive statistics tries to capture a large set of observations and give people a clear idea about the data set (Nick, 2007; Babbie, 2009; Mann, 1995; Trochim, 2006; and Dodge, 2003). The descriptive statistics of mean, standard deviation, variance, minimum and maximum values, range, skewness and kurtosis of the study variables were analysed. From Table 1, ROA of the sampled firms had a mean value of 0.0052693, a standard deviation of 0.4849762 and a variance of 0.2352019. This is an indication that, the data values of ROA deviated from both sides of the mean by 0.4849762, implying, the ROA data values were not too widely dispersed from the mean.

Table 1: Descriptive Statistics on Study Variables

Variables	ROA	ROE	ROCE	TAN
Mean	0.0052693	0.167214	0.1945633	0.9812759
Std. Dev.	0.4849762	1.184918	1.09571	0.0637665
Variance	0.2352019	1.404031	1.20058	0.0040662
Minimum	-5.6487	-4.5277	-1.5666	0.535
Maximum	0.7656	12.8951	12.8951	1.0000
Range	6.4143	17.4228	14.4617	0.465
Skewness	-10.64317	7.859589	10.44939	-5.019578
Kurtosis	124.8778	91.75657	122.057	29.23077
Obs (N)	150	150	150	150

(Source: STATA Output, 2019)

The maximum and minimum values of ROA were 0.7656 and -5.6487 respectively, leading to a range of 6.4143. The ROA distribution was negatively skewed with a coefficient of -10.64317. This means, the left tail of the ROA distribution was longer than that of the right tail. In other words, a greater portion of the ROA distribution fell on the right side of the normal curve. The kurtosis coefficient of 124.8778 [excess (K)= 124.8778-3.0=121.8778] shows that, the ROA distribution was not of normal shape. As also displayed in Table 1, non-financial firms listed on the Ghana Stock Exchange (GSE), had a mean ROE of 0.167214, a standard deviation of 1.184918 and a variance of 1.404031. This shows that, ROE of the sampled firms deviated from both sides of the mean by 1.184918, implying, the ROE data values were a bit widely dispersed from the mean. The maximum and minimum values of ROE were 12.8951 and -4.5277 respectively, leading to a range of 17.4228. The ROE distribution was positively skewed with a coefficient of 7.859589. This shows that, the right tail of the ROE distribution was longer than that of the left tail. In other words, a large portion of the ROE distribution fell on the left side of the normal curve. The kurtosis coefficient of 91.75657 [excess (K)= 91.75657-3.0=88.75657] implies, the ROE distribution was not normally distributed.

Further, non-financial firms listed on the Ghana Stock Exchange (GSE) had a mean ROCE of 0.1945633, a standard deviation of 1.09571 and a variance of 1.20058. This indicates that, the data values of ROCE deviated from both sides of the mean by 1.09571, implying, the ROCE data values were a bit widely dispersed from the mean. The maximum and minimum values of ROCE were 12.8951 and -1.5666 respectively, leading to a range of 14.4617. The ROCE distribution was positively skewed with a coefficient of 10.44939. This shows that, the right tail of the ROCE distribution was longer than that of the left tail. Put simply, a large portion of the ROCE distribution

fell on the left side of the normal curve. The kurtosis coefficient of 122.057 [excess (K)= 122.057-3.0=119.057] implies, the ROCE distribution was of abnormal shape. Finally, the average tangibility of the listed firms during the study period was 0.9812759 with a standard deviation of 0.0637665 and a variance of 0.0040662. This shows that, TAN of the sampled firms deviated from both sides of the mean by 0.0637665, indicating that, the data values of TAN were not too widely dispersed from the mean. TAN also had a minimum value of 0.535 and a maximum value of 1.00, leading to a range of 0.465. The data for TAN was highly negatively skewed with a coefficient of -5.019578, whilst its kurtosis coefficient of 29.23077 [excess (K)=29.23077 -3.0=26.23077] implies, the TAN distribution was of abnormal shape.

4.2 Correlational Analysis

According to Mahdavi (2012), Nikolić, Muresan, Feng and Singer (2012), Park (2018) and Székely and Rizzo (2009), correlation is a statistical measure (expressed as a number) that describes the size and direction of a relationship between two or more variables, and ranges from -1.0 to +1.0. A correlation between two variables, does not however automatically mean that, a change in one variable causes a change in the value of the other variable (Mahdavi, 2012; Nikolić, Muresan, Feng & Singer, 2012; Park, 2018; and Székely & Rizzo, 2009). The Pearson Product-Moment Correlation Coefficient technique of data analysis was adopted to examine the relationship between asset tangibility and the firms' financial performance depicted in Table 2 as follows. From Table 2, an insignificantly positive association between TAN and the firms' ROA was uncovered at α=5% [r =0.0665, (p=0.4191)>0.05]. Though the association between TAN and ROA was statistically insignificant, the positive correlation coefficient between them implies, an increase in TAN led to an

increase in ROA and vice-versa, and a decrease in TAN also led to a decrease in ROA and vice-versa. The strength of association between TAN and ROA is substantiated by the coefficient of determination (r^2 =0.004) which shows that 0.4% of the variations in ROA was accounted by TAN and 0.4% of the variations in TAN was also accounted for by ROA. The unexplained variations [99.60% (100-0.4)] may be attributed to other variables that were not included in the study.

Tangibility also had a significantly negative affiliation with the firms' ROE at the 95% confidence interval [r=-0.3664, (p=0.0000)<0.05]. The negative coefficient between TAN and ROE implies, an increase in TAN led to a decrease in ROE and vice-versa. The degree of association between TAN and ROE is substantiated by the coefficient of determination (r^2 =0.1342) which indicates that 13.42% of the variations in ROE was accounted for by TAN and 13.42% of the variations in TAN was explained by ROE. The unexplained variations [86.58% (100-13.42)] may be accounted for by other inherent variabilities.

Table 2: Correlational Matrix of Study Variables

Variable	ROA	ROE	ROCE	TAN
ROA	1.0000			
ROE	0.0037 (0.9642)	1.0000		
ROCE	-0.0156 (0.8498)	0.9516* (0.0000)	1.0000	
TAN	0.0665 (0.4191)	-0.3664* (0.0000)	-0.3865* (0.0000)	1.000

*Note: * implies significance at 5% and values in parenthesis ( ) represent probabilities.*

(Source: STATA Output, 2019)

The study finally discovered a significantly adverse association between TAN and ROCE at the 5% level of significance [r= -0.3865, (p=0.0000)<0.05]. The inverse connection between TAN and ROCE implies, an increase in TAN led to a decrease in ROCE and vice-versa. The degree of association between TAN

and ROCE is justified by the coefficient of determination (r^2 =0.1494) which shows that 14.94% of the variations in ROCE was accounted for by TAN and 14.94% of the variations in TAN was explained by ROCE. The unexplained variations [85.06% (100-14.94)] may be accounted for by other variables that did not form part of the study.

5.0 DISCUSSIONS AND TESTS OF HYPOTHESIS

This section presents discussions on the major findings of the study. The discussions are linked to the review of relevant literature that supported the topic understudy and are arranged in the order of; the association between tangibility and the firms' financial performance as measured by ROA; the connection between tangibility and the firms' financial performance as measured by ROE; and the affiliation between tangibility and the firms' financial performance as measured by ROCE. Each sub-section ends with a test of hypothesis that was formulated for the study.

5.1 Association between Tangibility and the Firms' Financial Performance (ROA)

An insignificantly positive association between TAN and the firms' ROA was uncovered at α=5% [r =0.0665, (p=0.4191)>0.05]. This finding was in line with that of Mohammed, Ahmed and Mohammed (2016) whose research on listed consumer goods' companies in Nigeria, found an insignificant association between tangibility and the firms' financial performance as measured by ROA. The finding also supported that of Odusanya, Yinusa and Ilo (2018) whose research on 114 firms listed on the Nigerian Stock Exchange, discovered an insignificant relationship between tangibility and the firms' profitability. The finding was however inconsistent with that of Kamran, Mohammad and Muhammad (2017)

whose study on listed firms in Pakistan, found a significant affiliation between tangibility and the firms' financial performance. The finding was also inconsistent with that of Ajayi and Zahiruddin (2016) whose study on 100 non-financial firms listed on the Nigerian Stock Exchange (NSE), revealed a significantly positive association between tangibility and the firms' financial performance as measured by Tobin's Q.

Test of Hypothesis One: An insignificantly positive association between tangibility and the firms' ROA was discovered at α=5% [r =0.0665, (p=0.4191)>0.05]. The study therefore failed to reject the null hypothesis *($H_{0\alpha}$)* that, there was no significant association between tangibility and the firms' financial performance as measured by ROA, and concluded that, tangibility of the sampled firms had an insignificantly positive link with the firms' financial performance as measured by ROA.

5.2 Relationship between Tangibility and the Firms' Financial Performance (ROE)

A significantly negative affiliation between tangibility and the firms' ROE was also uncovered at the 95% confidence interval [r=-0.3664, (p=0.0000)<0.05]. This finding was in tandem with that of Mehmet and Mehmet (2018) whose research on 10 energy firms listed on Borsa Istanbul Stock Exchange, established a significantly negative link between tangibility and the firms' profitability. The finding was also in tandem with that of Vuong (2017) whose study on 58 real estate firms listed on the Vietnamese Stock Exchange, disclosed a significantly negative relationship between tangibility and the firms' financial performance as measured by ROE. The finding was however inconsistent with that of Kisavi and Mohamed (2015) whose research on 47 listed firms on the Nairobi Securities Exchange (NSE), found a significantly positive association between tangibility and the firms' financial

performance as measured by ROE. The finding was also not consistent with that of Al-Jafari and Al Samman (2015) whose study on 17 industrial firms listed on the Muscat Securities Market, uncovered a significantly positive connection between tangibility and the firms' profitability.

Test of Hypothesis Two: A significantly negative affiliation between tangibility and the firms' ROE was uncovered at the 95% confidence interval [r=-0.3664, (p=0.0000)<0.05]. The study therefore failed to accept the null hypothesis *(H_{0b})* that, there was no significant association between tangibility and the firms' financial performance as measured by ROE, and concluded that, tangibility had a significantly inverse association with the firms' financial performance as measured by ROE.

5.3 Affiliation between Tangibility and the Firms' Financial Performance (ROCE)

The study finally discovered a significantly adverse association between tangibility and the firms' ROCE at the 5% level of significance [r=-0.3865, (p=0.0000)<0.05]. This finding supported that of Kristina and Dejan (2017) whose panel study for the period 2011 to 2014 established a significantly negative connection between tangibility and agricultural firms' profitability in Hungary and Romania. The finding was also consistent with that of Amirhassan (2014) whose study on the Turkish airline industry for the period 1994 to 2013, found a significantly negative affiliation between tangibility and the firms' profitability. The finding was however inconsistent with that of Cuong, Quan and Lan (2018) whose research on 30 construction-material firms listed on the Vietnam stock market, discovered a significantly positive relationship between tangibility and the firms' financial performance. The finding was finally inconsistent with that of Demis (2016) whose study on nine (9) insurance companies in Ethiopia, revealed an

insignificant association between tangibility and the firms' profitability.

Test of Hypothesis Three: A significantly adverse association between tangibility and the firms' ROCE was established at the 5% level of significance [r=-0.3865, (p=0.0000)<0.05]. The study therefore failed to accept the null hypothesis *(H_{0c})* that, there was no significant affiliation between tangibility and the firms' financial performance as measured by ROCE, and concluded that, tangibility had a significantly negative relationship with the firms' financial performance as measured by ROCE.

Table 3: Summary of the Test of Hypothesis

Hypothesis	Analytical Tool	Result
H_{01}: There is no significant relationship between asset tangibility and the firms' financial performance as measured by ROA.	Correlation	Accepted
H_{02}: There is no significant association between asset tangibility and the firms' financial performance as measured by ROE.	Correlation	Rejected
H_{03}: There is no significant affiliation between asset tangibility and the firms' financial performance as measured by ROCE.	Correlation	Rejected

(Source: Authors, 2019)

6.0 CONCLUSION AND RECOMMENDATIONS

This study sought to explore the nexus between asset tangibility and the financial performance of non-financial firms listed on the Ghana Stock Exchange (GSE). Specifically, the study sought to; examine the association between tangibility and the firms' financial performance as measured by ROA, determine the connection between tangibility and the firms' financial performance as measured by ROE; and to find out the affiliation between tangibility and the firms' financial performance as measured by ROCE. A balanced secondary panel data sourced from the audited and published annual

reports of the Ghana Oil Company Ltd, Total Petroleum Ghana Ltd, Starwin Products Ltd, Camelot Ghana Ltd, Aluworks Ltd, Clydestone Ghana Ltd, African Champion Industries Ltd, Benson Oil Palm Plantation Ltd, Fan Milk Ltd, Guinness Ghana Breweries Ltd, Unilever Ghana Ltd, PZ Cussons Ghana Ltd, Produce Buying Company Ltd, Mechanical Lloyd Company Ltd and Sam Woode Ltd for the period 2008 to 2017 was used for the study. From the study's Pearson Product-Moment Correlation Coefficient technique of data analysis, tangibility had an insignificantly positive relationship with the firms' financial performance as measured by ROA. However, financial performance as measured by ROE and ROCE had a significantly adverse association with tangibility at α=5% ($p \leq 0.05$). The significantly negative affiliation between tangibility and the firms' financial performance may imply, the firms were using their tangible assets as collateral to secure more debt financing. This may be so because, the tangibility of firms' assets can serve as a proxy for agency costs of debt and the costs of financial distress. Firms with more tangible assets have in general a greater ability to secure debt as these assets can be used as collateral. Thus, asset tangibility is expected to have a positive link with leverage. But highly levered firms tend to have minimal profitability. The sampled firms must therefore be cautious in using their tangible assets as a bait for more debt financing. Also, the firms should concentrate on building goodwill for themselves. This point is raised because, firms with high levels of intangible assets (for instance goodwill) have more growth prospects and investment opportunities in the long-term. They also boost of innovation, research and development.

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