



## A study into growth and firms' financial performance: Evidence from the Ghana Stock Exchange (GSE)

**Mohammed Musah<sup>1</sup>, Yusheng Kong<sup>2</sup>, Stephen Kwadwo Antwi<sup>3</sup>, Mary Donkor<sup>4</sup>, Prince Ewudzie Quansah<sup>5</sup>, Anthony Frank Obeng<sup>6</sup>**

<sup>1,3,4</sup> Ph.D. Candidate, School of Finance and Economics, Jiangsu University, 301 Xuefu Road, Zhenjiang, Jiangsu, P.R China

<sup>2</sup> Professor, School of Finance and Economics, Jiangsu University, 301 Xuefu Road, Zhenjiang, Jiangsu, P.R China

<sup>5,6</sup> Ph.D. Candidate, School of Management, Jiangsu University, 301 Xuefu Road, Zhenjiang, Jiangsu, P.R China

### Abstract

This study sought to examine the relationship between growth and the financial performance of non-financial firms listed on the Ghana Stock Exchange (GSE). Specifically, the study sought to; establish the association between growth and the firms' financial performance as measured by ROA; explore the connection between growth and the firms' financial performance as measured by ROE; and to determine the link between growth and the firms' financial performance as measured by ROCE. Panel data extracted from the audited and published annual reports of fifteen (15) non-financial firms for the period 2008 to 2017 was used for the study. The *Pearson Product-Moment Correlation Coefficient* technique of data analysis was employed to assess the bivariate associations between growth and the firms' financial performance, and from the results, growth had a significantly positive connection with the firms' financial performance as measured by ROA. However, an insignificantly positive affiliation between growth and the firms' ROE and an insignificantly negative relationship between growth and the firms' ROCE were also established at  $\alpha=5\%$ . The positive associations between growth and the firms' ROA and ROE is an indication that, an increase in growth led to an increase in the firms' financial performance. Therefore, determinants of firms' growth like, size; innovation; age; solvency; leverage; operational efficiency; profitability; liquidity; inflation; economic growth (GDP); exchange rate; interest rate; product diversification; market share expansion; business location; price competition; market demand forces; government policies; and labour regulations among others, should be properly taken into consideration by the sampled firms and all other establishments operating in the Ghanaian business environment.

**Keywords:** growth, financial performance, Ghana stock exchange (GSE)

### 1. Introduction

Firms' growth rate is at least as powerful in explaining their overall returns as other well-known effects such as size, operational efficiency, liquidity, leverage, inflation, exchange rate, economic growth (GDP) and interest rate among others (Cooper, Gulen, & Schill, 2009; Watanabe, Xu, Yao & Yu, 2012; Sean, 2015; Jaideep, Gokhan & Umut, 2017; and Alan & Kevin, 2018) <sup>[14, 52, 49, 31, 3]</sup>.

As indicated by Nicholas (2018), Pin-Huang, Kuan-Cheng and Nien-Tzu (2018) and Fuwei, Guohao and Guofu (2018) <sup>[42, 46, 22]</sup>, the key to managing assets' growth in businesses is to forecast sales correctly. According to the authors, if actual sales differ greatly from forecasted sales, then firms' assets such as inventory, will unexpectedly either build up or decline. The same will happen to firms' accounts receivable and could spell doom for those corporations (Nicholas, 2018; Pin-Huang, Kuan-Cheng & Nien-Tzu, 2018; and Fuwei, Guohao & Guofu, 2018. Georgios (2017), Georgios, Angeliki and Georgios (2017), Russ, Richard and Peter (2017) and Robert and Christian (2017)) <sup>[46, 42, 22, 23, 24, 48, 47]</sup> postulates that, some businesses fail because of unexpected growth as well as low sales. As such, management have to be watchful on the rate at which their outfits grow (Georgios, 2017; Georgios, Angeliki & Georgios, 2017; Russ, Richard & Peter, 2017; and Robert & Christian, 2017) <sup>[23, 24, 48, 47]</sup>.

As opined by Becchetti and Trovato (2002), Beck,

Demirgüç-Kunt and Maksimovic (2005) and Beekman and Robinson (2004)) <sup>[9, 10, 11]</sup>. profitability determines the long-term growth prospects of firms. According to the authors, a higher rate of profitability creates a scope for investments; and good investments lead to accelerated growth. To Nelson and Winter (1982) <sup>[40]</sup>, profitable firms are more motivated to grow, because they do not only have the financial means to expand, but their ongoing profit creation makes it possible to sustain their growth. Highlighting further, Andersson, Andersson, Gran and Mossberg (2007) <sup>[6]</sup> were of the view that, firms that make an effort to build or develop their competences are more likely to grow.

A lot of studies have been conducted to explore the link between growth and firms' financial performance. The findings of those studies have however been divergent. For instance, Khan, Shamim and Goyal (2018) <sup>[32]</sup>'s study on five listed telecommunication companies in India; Ehekoba and Ananwude (2016) <sup>[17]</sup>'s research on listed construction and real estate firms in Nigeria; Lazăr (2016) <sup>[35]</sup>'s study on listed firms in Romanian; Fareed, Ali, Shahzad, Nazir and Ullah (2016) <sup>[21]</sup>'s research on 16 firms operating in the power and energy sectors of Pakistan; Akben-Selcuk (2016) <sup>[1]</sup>'s study on publicly quoted firms in Turkey; Ali, Mahmoud, Fadi and Mohammad (2018) <sup>[4]</sup>'s research on listed industrial and service firms in Jordan; Yazdnafar (2013)'s study on 12,530 non-financial micro firms operating in the industrial sectors of Sweden; Al-Jafari and

Al Samman (2015)<sup>[2]</sup>'s research on 17 industrial firms listed on the Muscat Securities Market in Oman; Nikolaus (2015)<sup>[43]</sup>'s study on 276 Indonesian and 62 Dutch firms; Hikma, Abdul, Masdar and Mursalim (2018)<sup>[26]</sup>'s research on 55 manufacturing companies listed on the Indonesian Stock Exchange; Emine (2015)<sup>[18]</sup>'s study on 24 non-life insurance companies in Turkey; and Kimondo, Irungu and Obanda (2016)<sup>[34]</sup>'s research on 39 quoted non-financial firms listed on the Nairobi Securities Exchange; among others, established a significantly positive association between growth and firms' financial performance.

Also, Charumathi (2012)<sup>[13]</sup>'s study on Indian life insurance companies; Irm, Priyarsono and Tria (2017)<sup>[28]</sup>'s research on insurance companies in Indonesia; Farah and Nina (2016)<sup>[20]</sup>'s study on small and medium enterprises listed on the Indonesian Stock Exchange; Memoona, Syed, Mobeen and Muhammad (2017)<sup>[37]</sup>'s study on 213 listed firms on the Karachi Stock Exchange; Naeem, Misbah, Sidra, Hafiz and Nasrullah (2016)<sup>[39]</sup>'s research on five (5) banks in Pakistan; and Dhanraj and Ruchita (2016)<sup>[16]</sup>'s study on the Indian banking sector; among others, provided evidence of a significantly positive affiliation existing between growth and firms' financial performance.

However, Sivathaasan, Tharanika, Sinthuja and Hanitha (2013)<sup>[50]</sup>'s research on 11 publicly traded manufacturing firms listed on the Colombo Stock Exchange; Cuong, Quan and Lan (2018)<sup>[15]</sup>'s study on 30 listed construction-material firms on the Vietnam Stock Market; Bhutta and Hasan (2013)<sup>[12]</sup>'s research on the food sector of Pakistan; Batchimeg (2017)<sup>[7]</sup>'s study on 100 listed Joint Stock Companies (JSC) on the Mongolian Stock Exchange (MSE); Guruswamy and Marew (2017)<sup>[25]</sup>'s research on some selected life insurance companies in Ethiopia; Vuong (2017)<sup>[51]</sup>'s study on 58 real estate firms listed on the Vietnamese Stock Exchange; Marius, Delia and Cecilia (2014)<sup>[36]</sup>'s research on 55 firms listed on the Bucharest Stock Exchange; Nousheen and Arshad (2013)<sup>[44]</sup>'s study on listed food sector firms in Pakistan; Hosein, and Amir (2014)<sup>[27]</sup>'s research on listed 102 firms on the Tehran Stock Exchange; Ofoegbu, Duru and Onodugo (2016)<sup>[45]</sup>'s research on listed pharmaceutical companies in Nigeria; and Ngoc, Trang and Payel (2017)<sup>[41]</sup>'s study on 739 very large and large firms listed on the London Stock Exchange; among others, found an insignificant connection between growth and firms' financial performance.

Irrespective of the countless studies on growth and its link with corporate financial performance, there have been limited research that particularly sought to explore the nexus between growth and the financial performance of non-financial firms listed on the Ghana Stock Exchange (GSE). This study was therefore undertaken to help fill that gap. Specifically, the study sought to examine the relationship between growth and the firms' financial performance as measured by ROA; determine the association between growth and the firms' financial performance as measured by ROE; and to investigate the affiliation between growth and the firms' financial performance as measured by ROCE.

The study's findings add to the existing pool of literature on growth and its link with firms' financial performance. This serves as a reference material for students and researchers who may want to conduct further studies on the relationship between growth and firms' financial performance. The rest of the study is organised as follows; section two presents literature that supported the topic understudy; whilst section

three concentrated on the research methodology. In the fourth section, various results that related to the study are outlined; whilst the fifth section discusses the study's findings and tests hypothesis that were formulated for the study. The sixth section finally presents the study's conclusion and policy implications.

## 2. Review of Related Literature

Khan, Shamim and Goyal (2018)<sup>[32]</sup> 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 that, growth had a significantly positive influence on the firms' profitability. Echekeoba and Ananwude (2016)<sup>[17]</sup> examined the association between corporate performance and the financial structure of construction and real estate firms listed on the Nigerian Stock Exchange for the period 1993 to 2013. From the study's findings, growth opportunities had a significantly positive relationship with the firms' financial performance as measured by ROA. Sivathaasan, Tharanika, Sinthuja and Hanitha (2013)<sup>[50]</sup> investigated into the profitability determinants of 11 publicly traded manufacturing firms listed on the Colombo Stock Exchange for the period 2008 to 2012. From the study's findings, growth rate had no significant influence on the firms' profitability.

Cuong, Quan and Lan (2018)<sup>[15]</sup> 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, growth had an insignificant impact on the firms' financial performance. On the food sector of Pakistan, Bhutta and Hasan (2013)<sup>[12]</sup> 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, growth had an insignificantly positive association with the firms' profitability.

Batchimeg (2017)<sup>[7]</sup> conducted a research to examine the determinants of the financial performance of firms listed on the Mongolian Stock Exchange (MSE) for the period 2012 to 2015. Panel data from 100 listed Joint Stock Companies (JSC) from six (6) major sectors in the Mongolian economy was employed for the study. From the study's regression results, growth in assets was not a significant determinant of the firms' financial performance as measured by Return on Assets (ROA), Return on Equity (ROE) and Return on Sales (ROS). Lazăr (2016)<sup>[35]</sup> examined the determinants of the performance of Romanian listed companies for the period 2000 to 2011. From the study's findings, sales growth had a significantly positive influence on the firms' performance. Fareed, Ali, Shahzad, Nazir and Ullah (2016)<sup>[21]</sup> examined the profitability determinants of 16 firms operating in the power and energy sectors of Pakistan. Panel data for the period 2001 to 2012 was used for the study. From the study's random effects regression model, growth had a significantly positive effect on the firms' profitability.

Meseret and Getahun (2017)<sup>[38]</sup> examined the determinants of the financial performance of wheat flour producing firms in Hawassa City, South Ethiopia. Panel data from eight (8) flour manufacturing companies for the period 2008 to 2012 was used for the study. From the study's multiple regression output, growth had an insignificant influence on the firms' financial performance as measured by ROA and ROE. Isik

(2017) <sup>[30]</sup> 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, growth opportunities had an insignificant impact on the firms' profitability as measured by ROA. Akben-Selcuk (2016) <sup>[1]</sup> examined the profitability determinants of all publicly quoted firms in Turkey for the period 2005 to 2014. From the study's findings, growth was significantly positively related to the firms' profitability as measured by ROA.

Ali, Mahmoud, Fadi and Mohammad (2018) <sup>[4]</sup> conducted a study to examine firm-specific and macroeconomic factors that affected the performance of industrial and service firms listed in Jordan. Panel data for the period 2007 to 2016 was employed for the study. From the study's regression estimates, sales growth had a significantly positive influence on the firms' financial performance as measured by ROA and MBV. In Sweden, Yazdnafar (2013) examined the profitability determinants of 12,530 non-financial micro firms operating in four industrial sectors. Adopting a seemingly unrelated regression analysis, the study revealed that, growth had a positive effect on the profitability of the firms. Al-Jafari and Al Samman (2015) <sup>[2]</sup> 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, growth had a significantly positive influence on the firms' profitability as measured by profit margin and ROA.

Nikolaus (2015) <sup>[43]</sup> researched on the determinants of the financial performance of 276 Indonesian and 62 Dutch firms for the period 2009 to 2013. From the study's findings, growth had a significantly positive influence on the firms' financial performance as measured by Tobin's Q. Hikma, Abdul, Masdar and Mursalim (2018) <sup>[26]</sup> examined the determinants of profitability and firm values in the manufacturing sector of Indonesia. Data from 55 companies listed on the Indonesian Stock Exchange for the period 2014 to 2016 was used for the study. Through the Structural Equation Modeling (SEM) approach, growth had a significantly positive impact on the firms' profitability. Charumathi (2012) <sup>[13]</sup> examined the profitability determinants of Indian life insurance companies. The study's findings provided evidence of a significantly inverse influence of premium growth on the firms' profitability as measured by ROA.

Emine (2015) <sup>[18]</sup> researched on firm-specific factors that affected the profitability of non-life insurance companies in Turkey. Panel data from 24 non-life insurance companies for the period 2006 to 2013 was adopted for the study. From the study's findings, premium growth rate had a significantly positive influence on the firms' profitability. Guruswamy and Marew (2017) <sup>[25]</sup> 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 a significantly inverse association between growth and the firms' profitability.

Vuong (2017) <sup>[51]</sup> examined the determinants of the financial performance of 58 real estate firms listed on the Vietnamese Stock Exchange. From the study's multivariate regression analysis, growth had an insignificantly positive influence on

the firms' financial performance as measured by ROA and ROE. Marius, Delia and Cecilia (2014) <sup>[36]</sup> studied the link between microeconomic factors and the financial performance of firms in Romania. Data from 55 firms listed on the Bucharest Stock Exchange for the period 1999 to 2012 was used for the study. From the study's results, growth had an insignificant impact on the firms' financial performance as measured by ROA and ROE.

Nousheen and Arshad (2013) <sup>[44]</sup> examined the influence of firm specific factors on the profitability of food sector firms listed on the Karachi Stock Exchange for the period 2002 to 2006. From the study's multivariate regression output, growth had an insignificant effect on the firms' profitability. Irm, Priyarsono and Tria (2017) <sup>[28]</sup> conducted a study to examine firm specific and macroeconomic factors that determined the profitability of insurance companies in Indonesia. Panel data for the period 2010 to 2014 was employed for the study. From the study's findings, premium growth had a significantly negative effect on the firms' profitability.

Farah and Nina (2016) <sup>[20]</sup> delved into factors that affected the profitability of small and medium enterprises listed on the Indonesian Stock Exchange. Secondary data sourced from index PEFINDO 25 was used for the study. From the study's regression output, growth had a significantly inverse influence on the firms' profitability. Hosein, and Amir (2014) <sup>[27]</sup> researched into factors that affected the dividend payout ratio of some firms listed on the Tehran Stock Exchange. Panel data from 102 listed companies for the period 2005 to 2010 was adopted for the study. From the study's multivariate regression analysis, growth opportunities had an insignificant influence on dividend payout.

Kimondo, Irungu and Obanda (2016) <sup>[34]</sup> explored the effect of liquidity on the financial performance of non-financial firms quoted on the Nairobi Securities Exchange. Secondary data obtained from the audited annual reports of 39 quoted non-financial firms for the period 2010 to 2014 was used for the study. From the study's multivariate regression estimates, the control variable sales growth, had a significantly positive influence on the firms' financial performance as measured by ROA.

Ofoegbu, Duru and Onodugo (2016) <sup>[45]</sup> studied the effect of liquidity on the profitability of pharmaceutical companies in Nigeria. Secondary data from the annual reports and the financial statements of some listed pharmaceutical companies for the period 2000 to 2011 was used for the study. From the study's multiple regression analysis, sales growth had an insignificant influence on the firms' financial performance as measured by ROA.

Ngoc, Trang and Payel (2017) <sup>[41]</sup> explored the influence of capital structure on the financial performance of firms in the United Kingdom. Secondary data derived from 739 very large and large firms listed on the London Stock Exchange for the period 2006 to 2015 was employed for the study. From the study's regression estimates, growth being one of the explanatory variables had no significant effect on the firms' financial performance as measured by ROA, ROE, EPS and Tobin's Q. Memoona, Syed, Mobeen and Muhammad (2017) <sup>[37]</sup> studied the effect of capital structure on the performance of non-financial firms in Pakistan. Data from 213 listed firms on the Karachi Stock Exchange for the period 1999 to 2015 was adopted for the study. From the study's full sample regression analysis, sales growth being a

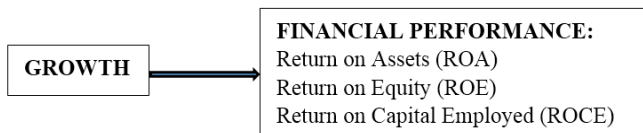
control variable, had a significantly adverse effect on the firms’ financial performance as measured by ROA, ROE, Tobin’s Q and PE ratio.

Naeem, Misbah, Sidra, Hafiz and Nasrullah (2016) [39] analyzed the effect of capital structure on the performance of banks in Pakistan. Secondary data extracted from the annual reports of five (5) banks for the period 2005 to 2015 was adopted for the study. From the study’s findings, growth rate had a significantly negative association with the banks’ profitability. Dhanraj and Ruchita (2016) [16] explored the influence of capital structure on the performance of the Indian banking sector. Data extracted from the annual reports of private banks, nationalized banks, SBI and its associates and foreign banks for the period 2009 to 2014 was adopted for the study. From the study’s results, growth had a significantly adverse association with the banks’ financial performance as measured by ROA, but an insignificantly negative relationship with the banks’ ROE.

**2.1 Hypothesis Development**

According to Alina (2017) [5], 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) [5]. The ambition of this study could not be achieved without the test of some hypothesis. Therefore, based on the reviews of various literature, the following hypothesis were formulated for testing;

- H<sub>01</sub>: There is no significant relationship between growth and the firms’ financial performance as measured by ROA.
- H<sub>02</sub>: There is no significant association between growth and the firms’ financial performance as measured by ROE.
- H<sub>03</sub>: There is no significant affiliation between growth and the firms’ financial performance as measured by ROCE



**Fig 1:** Research model

Figure1 shows the conceptual model that guided the conduct of the study. In the study, financial performance was proxied 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, growth was calculated as the difference between the size of current year and the size of previous year, divided by the size of previous year.

**3. Research Methodology**

This study was a quantitative study. The study was quantitative because, it was based upon numerical measurements and thus, tended to use numbers and statistical methods as its key research indicators and tools.

The study was also quantitative in nature because, it tended to be associated with researcher detachment, producing ‘objective’ numerical data that was independent of the researchers-thus, it was a very controlled and exact approach to research. The study was further quantitative in nature because, it tended to be associated with a pre-determined research design, using measurements and analyses in a systematic and logically ordered fashion that could be replicated relatively easily by other researchers.

The study was also quantitative because, its validity and reliability could be measured numerically using statistical tests. The study was finally quantitative because, it emphasized on proof rather than discovery. Specifically, the study was correlational in nature because, it measured two variables (growth and financial performance) and assessed the statistical affiliation between them with no influence from any extraneous variables. In other words, the correlational research design allowed the researchers to determine the strength and direction of the linear relationship that existed between the variables being studied. Further studies could narrow the findings down and, if possible, determine causation experimentally. The study was finally panel in nature because, the units of analysis were followed at specified time intervals over a long period of time.

All non-financial firms that listed and traded their shares on the Ghana Stock Exchange (GSE) as of 31<sup>st</sup> 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 judgemental 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 bivariate associations between growth 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 ( $\alpha$ ) level of 5% ( $p \leq 0.05$ ).

**4. Empirical Results**

This aspect first presents the descriptive analysis of the study variables. The descriptive analysis covers the mean, standard deviation, variance, minimum and maximum values, range, skewness and kurtosis of the various variables under consideration; whilst the final part concentrates on the bivariate associations between growth and the firms’ financial performance as measured by ROA, ROE and ROCE.

**4.1 Descriptive Analysis of Study Variables**

As shown in Table 1, non-financial firms listed on the Ghana Stock Exchange (GSE), had a mean ROA of 0.0052693, a standard deviation of 0.4849762 and a variance of 0.2352019. This means, the ROA of the sampled

firms deviated from both sides of the mean by 0.4849762, implying, the ROA data values were not too widely dispersed from the mean. 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 shows that, the left tail of the ROA distribution was longer than that of the right tail. In other words, a large portion of the ROA distribution fell on the right side of the normal curve. The kurtosis coefficient of 124.8778 implies, the ROA distribution was not normally distributed.

Non-financial firms listed on the Ghana Stock Exchange (GSE) also had an average ROE of 0.167214, a standard deviation of 1.184918 and a variance of 1.404031. This is an indication that, the data values of ROE 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 greater portion of the ROE distribution fell on the left side of the normal curve. The kurtosis coefficient of 91.75657 shows that, the ROE distribution was not of normal shape.

**Table 1:** Descriptive statistics on study variables

Variable	Obs	Mean	S.D	Variance	Min.	Max.	Range	Skewness	Kurtosis
ROA	150	0.0052693	0.4849762	0.2352019	-5.6487	0.7656	6.4143	-10.64317	124.8778
ROE	150	0.167214	1.184918	1.404031	-4.5277	12.8951	17.4228	7.859589	91.75657
ROCE	150	0.1945633	1.09571	1.20058	-1.5666	12.8951	14.4617	10.44939	122.057
GROWTH	150	0.0175123	0.0550848	0.0030343	-0.2074	0.5214	0.7288	4.369479	50.98005

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 implies, the ROCE distribution was of abnormal shape.

Finally, growth of the sampled firms had a mean value of 0.0175123, a standard deviation of 0.0550848 and a variance of 0.0030343. This implies, the data for growth deviated from both sides of the mean by 0.0550848, indicating that, the data values were not too widely dispersed from the mean. The minimum and maximum values of growth were -0.2074 and 0.5214 respectively, leading to a range of 0.7288. The distribution for growth was highly positively skewed with a coefficient of 4.369479, whilst the kurtosis coefficient of 50.98005 [excess (K)=50.98005-3.0=47.98005] signifies that, the growth distribution was not normally distributed due to its leptokurtic nature.

**Correlational Analysis**

This aspect of the study sought to examine the strength and direction of the linear relationship that existed between growth and the firms’ financial performance as measured by ROA, ROE and ROCE. The *Pearson Product-Moment Correlation Coefficient* technique of data analysis was used for that purpose and from Table 2, there was a significantly positive association between growth and the firms’ ROA at the 95% confidence interval [ $r=0.3222$ , ( $p=0.0001$ ) $<0.05$ ]. The positive association between growth and ROA implies, an increase in growth led to an increase in ROA and vice-versa, and a decrease in growth also led to a decrease in ROA and vice versa. The strength of association between growth and ROA can be justified by the coefficient of determination ( $r^2 = 0.1038$ ) which indicates that 10.38% of the variations in ROA was accounted for by growth and 10.38% of the variations in growth was explained by ROA. The unexplained variances [89.62% or ( $1-r^2 = 0.8962$ )] may be attributed to other variables that were not included in the study. The relationship between growth and ROE was weakly positive ( $r = 0.0129$ ) and statistically insignificantly different from 0 at the 5% significance level [ $(p=0.8756) > 0.05$ ]. Even though the correlation between growth and ROE was not significant, the positive link between them is an indication that an increase in growth led to an increase in ROE and vice-versa, and a decrease in growth also led to a decrease in ROE and vice versa. The

degree of association that existed between growth and ROE can be substantiated by the coefficient of determination ( $r^2 = 0.0002$ ) which shows that 0.02% of the variations in ROE was accounted for by growth and 0.02% of the variations in

growth was explained by ROE. The unexplained variations [99.98% or  $(1-r^2 = 0.9998)$ ] may be aligned to other factors that did not form part of the study.

**Table 2:** Correlational matrix of study variables

Variable	ROA	ROE	ROCE	Growth
ROA	1.0000			
ROE	0.0037(0.9642)	1.0000		
ROCE	-0.0156(0.8498)	0.9516*(0.0000)	1.0000	
GROWTH	0.3222*(0.0001)	0.0129(0.8756)	-0.0061(0.9410)	1.000

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

Finally, growth had an insignificantly negative affiliation with the firms' ROCE at  $\alpha=5\%$  [ $r = -0.0061$ ,  $(p=0.9410) > 0.05$ ]. The inverse connection between growth and ROCE implies, an increase in growth led to a decrease in ROCE and vice-versa. The strength of association between growth and ROCE can be proven by the coefficient of determination ( $r^2 = 0.0004$ ) which shows that 0.004% of the variations in ROCE was accounted for by growth and 0.004% of the variations in growth was explained by ROCE. The unexplained variances [99.996% or  $(1-r^2 = 0.99996)$ ] may be attributed to other inherent variabilities that were not incorporated into the study.

**5. Discussions and Tests of Hypothesis**

This aspect discusses the study's findings and tests the various hypothesis that were developed for the study. The section is divided into; the relationship between growth and the firms' financial performance as measured by ROA; the association between growth and the firms' financial performance as measured by ROE; and the affiliation between growth and the firms' financial performance as measured by ROCE.

**5.1 The Relationship between growth and the firms' financial performance as measured by ROA**

From the study's findings, growth had a significantly positive association with the firms' ROA at the 95% confidence interval [ $r=0.3222$ ,  $(p=0.0001) < 0.05$ ]. This finding supported that of Khan, Shamim and Goyal (2018) [32] whose research on five (5) telecommunication companies listed on the National Stock Exchange (NSE) of India, found a significantly positive connection between growth and the firms' financial performance. The finding also supported that of Echekeba and Ananwude (2016) [17] whose study on real estate firms listed on the Nigerian Stock Exchange, established a significantly positive affiliation between growth and the firms' financial performance as measured by ROA.

The finding was however inconsistent with that of Sivathaasan, Tharanika, Sinthuja and Hanitha (2013) [50] whose research on 11 publicly traded manufacturing firms listed on the Colombo Stock Exchange, discovered no significant relationship between growth and the firms' profitability. The finding was also inconsistent with that of Cuong, Quan and Lan (2018) [15] whose study on 30 construction-material firms listed on the Vietnam Stock Market, uncovered an insignificant link between growth and the firms' financial performance.

**5.1.1 Test of Hypothesis One**

From the study's findings, growth had a significantly

positive association with the firms' financial performance as measured by ROA [ $r=0.3222$ ,  $(p=0.0001) < 0.05$ ]. The study therefore failed to accept the *null hypothesis (H<sub>01</sub>)* that, growth had no significant relationship with the firms' financial performance as measured by ROA and concluded that, growth had a significantly positive connection with the firms' financial performance as measured by ROA.

**5.2 The association between growth and the firms' financial performance as measured by ROE**

The study also discovered an insignificantly positive association between growth and the firms' ROE at the 5% significance level [ $r = 0.0129$ ,  $(p=0.8756) > 0.05$ ]. This finding was in line with that of Bhutta and Hasan (2013) [12] whose research in the food sector of Pakistan, established an insignificantly positive association between growth and the firms' profitability. The finding was also in line with that of Batchimeg (2017) [7] whose study on 100 Joint Stock Companies (JSC) listed on the Mongolian Stock Exchange (MSE), found an insignificant link between growth and the firms' financial performance as measured by Return on Assets (ROA), Return on Equity (ROE) and Return on Sales (ROS). The finding was however inconsistent with that of Lazăr (2016) [35] whose research on listed Romanian firms, uncovered a significantly positive relationship between sales growth and the firms' performance. The finding was also inconsistent with that of Fareed, Ali, Shahzad, Nazir and Ullah (2016) [21] whose study on 16 firms operating in the power and energy sectors of Pakistan, disclosed a significantly positive association between growth and the firms' profitability.

**5.2.1 Test of Hypothesis Two**

An insignificantly positive association was found between growth and the firms' financial performance as measured by ROE [ $r = 0.0129$ ,  $(p=0.8756) > 0.05$ ]. The study therefore failed to reject the *null hypothesis (H<sub>02</sub>)* that, growth had no significant association with the firms' financial performance as measured by ROE and concluded that, growth was insignificantly positively related to the firms' financial performance as measured by ROE.

**5.3 The Affiliation between Growth and the Firms' Financial performance as measured by ROCE**

An insignificantly negative affiliation was further found between growth and the firms' ROCE at  $\alpha=5\%$  [ $r = -0.0061$ ,  $(p=0.9410) > 0.05$ ]. This finding was in tandem with that of Meseret and Getahun (2017) [38] whose research on eight (8) wheat flour producing firms in Hawassa City, South Ethiopia, disclosed an insignificant connection between growth and the firms' financial performance. The finding

was also in agreement with that of Isik (2017) [30] whose study on 153 real sector firms listed on Borsa Istanbul Stock Exchange, found an insignificant association between growth and the firms’ financial performance. The finding was however inconsistent with that of Akben-Selcuk (2016) [1] whose research on publicly quoted firms in Turkey, discovered a significantly positive relationship between growth and the firms’ profitability. The finding was also inconsistent with that of Ali, Mahmoud, Fadi and Mohammad (2018) [4] whose study on industrial and service firms listed in Jordan, provided evidence of a significantly positive connection between growth and the firms’ financial

performance.

**5.3.1 Test of Hypothesis Three**

An insignificantly negative affiliation was found between growth and the firms’ ROCE at  $\alpha=5\%$  [ $r= -0.0061$ , ( $p=0.9410$ ) $>0.05$ ]. The study therefore failed to reject the null hypothesis ( $H_{03}$ ) that, growth had no significant affiliation with the firms’ financial performance as measured by ROCE and concluded that, growth had an insignificantly adverse association with the firms’ financial performance as measured by ROCE.

**Table 3:** Summary of the test of hypothesis

Hypothesis	Analytical Tool	Result
H <sub>01</sub> : There is no significant relationship between growth and the firms’ financial performance as measured by ROA.	Correlation	Rejected
H <sub>02</sub> : There is no significant association between growth and the firms’ financial performance as measured by ROE.	Correlation	Accepted
H <sub>03</sub> : There is no significant affiliation between growth and the firms’ financial performance as measured by ROCE.	Correlation	Accepted

**6. Conclusion and Policy Implications**

This study sought to examine the relationship between growth and the financial performance of non-financial firms listed on the Ghana Stock Exchange (GSE). Specifically, the study sought to; establish the association between growth and the firms’ financial performance as measured by ROA; explore the connection between growth and the firms’ financial performance as measured by ROE; and to determine the link between growth and the firms’ financial performance as measured by ROCE. Panel data extracted from the audited and published annual reports of fifteen (15) non-financial firms for the period 2008 to 2017 was used for the study. The *Pearson Product-Moment Correlation Coefficient* technique of data analysis was employed to assess the bivariate associations between growth and the firms’ financial performance, and from the results, growth had a significantly positive connection with the firms’ financial performance as measured by ROA. However, an insignificantly positive affiliation between growth and the firms’ ROE and an insignificantly negative relationship between growth and the firms’ ROCE were also established at the 95% confidence interval. The positive associations between growth and the firms’ ROA and ROE is an indication that, an increase in growth led to an increase in the firms’ financial performance. Therefore, determinants of firms’ growth like, size; innovation; age; solvency; leverage; operational efficiency; profitability; liquidity; inflation; economic growth (GDP); exchange rate; interest rate; product diversification; market share expansion; business location; price competition; market demand forces; government policies; and labour regulations among others, should be properly taken into consideration by the sampled firms and all other establishments operating in the Ghanaian business environment.

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