

RELATING SALES GROWTH AND FINANCIAL PERFORMANCE IN AGRICULTURAL FIRMS LISTED IN THE NAIROBI SECURITIES EXCHANGE IN KENYA

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Abstract

Recent cases of corporate failure in the 21st Century have prompted shareholders and other stakeholders to strictly monitor financial performance of their firms with sales growth being seen as the primary driver of sustainability. This study aimed to determine the effect of sales growth on the financial performance of listed Agricultural Companies at Nairobi Securities Exchange in Kenya from 2003 to 2013. The study was anchored on the theory of the firm growth that recognizes that increments in sales over the years affects financial performance of an organization. A panel design with descriptive and causal study design was adopted and all the listed companies in the agriculture sector in Kenya were studied. Sales increments in each year was used as a measure of sales growth while financial performance was measured by return on assets (ROA), return equity (ROE) and earnings per share (EPS). Inferential statistics (correlation and regression) was used for data analysis. A pooled OLS regression model was used to incorporate the time and space movements. The study affirms that sales growth has a positive and significant effect on financial performance measures ROA and ROE and negative and insignificant effect on EPS. From the study findings there is clear evidence to conclude that as the firm increases sales, financial performance as measured by ROA and ROE also

increases. The study also recommends that agricultural companies need to focus on sales growth opportunities since it exerts a significant effect on financial performance. However, other factors leading to improvement in financial performance need to be explored as a percentage growth in sales only leads to 11% improvement in ROA and ROE.

Keywords: Sales growth, financial performance, agricultural firms, Nairobi Securities Exchange, return on assets, return on equity, earnings per share

INTRODUCTION

The agricultural sector is of great importance to many economies as it provides food, raw material for manufacturing and service industries, contributes to the national income, taxes and trade of the countries, and provides employment (Karakaya, 2009). For example, in China agriculture has been recognized as a tool for poverty reduction for many years. The recent data indicates that the GDP growth from the sector induces growth among the 40 percent poorest. Agriculture has therefore a strong growth linkage effect to the Chinese economy (A De Janvry & Sadoulet, 2016).

Sri Lanka's economy is still driven largely by agriculture which is remains critical to the economy by employing 30 per cent of the labour force, and with small-scale farmers producing most of the country's agricultural output. Consequently, four fifths of the country's poor people depend on small scale farming. As at 2015, more than 81 per cent of the Sri Lanka's population live in rural areas and depend on agriculture as their main economic activity (IFAD, 2016).

Agriculture was the most prominent sector in the Nigerian economy before independence and provided most of the much needed foreign exchange through exports of the agro based products. A strategy paper by the African development bank indicated that agriculture accounted for about 40% of the GDP of Nigeria in 2012 despite its vulnerability to climate change and increasing importance of oil and gas in the Nigerian economy (AfDB, 2012).

The agricultural sector continues to be the most important sector in the Malawian economy. The sector is critically important to the Country's economy and to the livelihoods of most of the people (Chirwa, Kumwenda, Jumbe, Chilonda, & Minde (2008); Doward &Chirwa (2011).

In its blueprint policy document for economic recovery, the Economic Recovery Strategy for wealth and Employment Creation (ERS), the Kenya Government has identified agriculture as the main productive sub- sector through which the country will generate wealth and create employment as well as achieve food security and reduce poverty. Agriculture growth and

development is critical to Kenya's overall economic and social development. The sector directly contributes about 26% of Gross Domestic Product (GDP) and a further 27% through linkages with manufacturing, distribution and services related sectors. The policy document pointed out that a large portion of the population lives in the rural areas and depends mainly on agriculture and fisheries for livelihood. Agriculture therefore remains the main activities in rural areas in the country (Government of Kenya, 2011). Omboi (2011) noted that, the agricultural sector in Kenya had not performed well over the last decade with its growth declining from a rate of 4.4% in 1966 to 1.5 in 1999 and 2.4% in 2000. The growth in the sector started to pick up in 2002 rising to 1.8% in 2004 and 6.7% in 2005. About 50% of Kenyans are food insecure while significant potential for increased production remains largely unexploited (Government of Kenya, 2011). Accordingly, the World Bank report indicated that the growth in the Kenyan economy was aided in 2014 largely by the strong performance from agriculture. The sector was the main export earner and employer in the country and added 14.5% to the year - on - year growth. Despite the diversified Kenyan economy, agriculture accounted for 27.3% of the GDP in the year by activity. Agriculture also accounted for about two-thirds of all exports and at the same time supported close to 80% of the rural population both directly and indirectly (The report Kenya, 2016).

According to the Central Bank of Kenya (2015a), the Agriculture sector expanded by 7.1% in the third quarter of 2015 compared to 5.6% in the second quarter. The sector accounted for about 20% of GDP and contributed 1.4% points to overall GDP growth indicating the importance of agriculture to the Kenyan economy. The Central bank of Kenya (2015b), annual report, indicated that the real GDP of the country grew by 5.3% compared to 5.7% growth in 2013. The agriculture sector contributed to 22.0% of this growth indicating a decline from 22.4% in 2013. This decline in agriculture is attributed to the unfavourable weather in parts of the country. Consequently, due to the importance of firms operating in the agricultural industry, strategies need to be undertaken to maintain strong financial performance as indicated by measures such as the rate of return on assets, return on equity, and operating profit margin. When these indices grow, the firm operates efficiently, profitably, survives, grows and reacts to the environmental opportunities and threats in a proactive manner (Gao, 2010; Miller, Boehije & Dobins, 2013).

Since the establishment of the Nairobi Securities Exchange (NSE) in Kenya, it has become the major securities exchange market in East Africa with about sixty (60) companies listed, grouped into eleven (11) industries. Inclusive of the industries is the agricultural sector, which is currently comprised of seven (7) agricultural companies (NSE, 2014). This study focused on sales growth as a factor affecting the financial performance of the agricultural firms listed in NSE.

Studies have been conducted to examine the factors affecting the performance of firms listed in the stock exchange. Wu, Li and Zhu (2010) investigated the preconditions for financial performance of agricultural listed firms while Menike and Man (2013) investigated the influence of growth opportunities on firm value for firms listed in the Tehran Securities Exchange. On growth, Mwangi, Makau & Kosimbei, (2014) investigated the determinants of sales growth, Hendricks and Singhal (2005) investigated the influences of supply chain glitches on the financial performance of firms, where they discover that firms that experience glitches report lower sales growth, higher cost growth, and higher growth in inventories relative to controls. Brown, Earle and Lup (2004), analyzed 297 growth of employment and sales and external credit of new small enterprises in Romania. Abiola (2012) investigated the influences of microfinance on micro and small enterprises growth in Nigeria, Papadaki and Chami (2002) studied the theories of small business growth and development, Nzotta (2014) investigated the difference between a business owner and an entrepreneur, with growth being a major distinguishing factor on the two while Omondi and Muturi (2013) investigated the growth in scale and scope of agricultural businesses.

Studies such as Omondi & Muturi (2013), Omboi (2011), Mwangi *et al.* (2014) and Wambua (2013) may have the same contextual and conceptual alignment with this study. This study however differs with them as it adopts a panel data analysis with the diagnostic test to draw its inferences.

In summary, this study investigates the effect of sales growth on the financial performance of agricultural firms listed at the Nairobi Security Exchange and contributes to knowledge by highlighting the specific sales strategies that these firms need to take to enhance their financial performance.

THEORETICAL REVIEW

This study is informed by the theory of the firm growth which recognizes that causes of growth of a firm can be both external and internal to the firm and is based on the premise that firms have no determinant long run or optimum size, but only a constraint on current period growth rates (Penrose, 1959). Penrose suggests that external causes, for example raising capital, demand condition and sales increment while of interest 'cannot be fully understood without an examination of the nature of the firm itself. This theory is relevant to this study since it explains sales growth.

The theory has been used to study growth of the firm; for instance Hermelo and Vassolo (2007) used it to establish the determinants of firm's growth and Pervan, Maj, and Višić (2012) used it to study the influence of firm size on its success. Dadashi, Mansourinia, Emamgholipour,

Maryam, Bagheri and Arabi (2013) used the theory to link growth with financial strength variables on financial leverage. Niskanen and Niskanen (2000) on the other hand used it to investigate the determinants of growth in a sample of small and micro Finnish firms.

According to Bhutta & Hasan (2013), the growth opportunities are measured in terms of the fraction of a firm's value represented for by assets-in-place; the smaller the proportion of firm's value narrated by assets-in-place, the larger the firm's growth opportunities. The firms with growth opportunities have moderately more development projects, new product lines, acquisitions of other companies and repair and replacement of existing assets. Moreover, growth opportunities and firm size are positively related to profitability. Those firms with low growth opportunities lean towards high profitability and firms in the middle of the growth opportunities incline to confirm small profitability (Bhutta & Hasan 2013). Consistently with the cited empirical studies, the present study is underpinned on the firm growth theory where growth is proxied using sales growth.

METHODOLOGY

The panel design was used as the main approach with the cross section correlational analysis of secondary data. The population of the study was 7 listed agricultural companies in Kenya and 220 financial accounting personnel. Secondary data from the listed firms was collected on; ROA, ROE, EPS and sales growth. The data was extracted from the annual reports and financial statements of the listed agricultural companies as well as from the NSE handbook and CMA website for the period of study. The period of study was from the year 2003 to the year 2013.

Panel regression model was used to analyze the data. Descriptive statistics were used to describe the data while inferential statistics (regression and correlation analysis) were used to draw inferences of the study. The panel data was analyzed using STATA 11.0 software. The study used the panel data analysis where pooled OLS model was used after diagnostic tests was carried out. A regression model was used to link the independent variable to the dependent variable as follows;

$$Y = \beta_0 + \beta_1 X + \mu$$

Where;

Y = Financial performance as proxied by return on assets (ROA), return on assets (ROE) and earnings per share (EPS).

X = Sales Growth

The specific models are as follows;

$$\text{ROA} = \beta_0 + \beta_1 \text{ Sales Growth} + \mu$$

$$\text{ROE} = \beta_0 + \beta_1 \text{ Sales Growth} + \mu$$

$$\text{EPS} = \beta_0 + \beta_1 \text{ Sales Growth} + \mu$$

In the model, β_0 = the constant term while the coefficient $\beta_{i=1}$ was used to measure the sensitivity of the dependent variable (Y) to unit change in the predictor variable X. μ is the error term which captures the unexplained variations in the model (Greene, 2008).

The analysis of variance (ANOVA) was adopted to test the overall model significance. Prior to running a regression model, pre-estimation tests were conducted. The pre-estimation tests conducted in this case were the multicollinearity and Hausman tests. A critical p value of 0.05 was used to determine whether the overall model was significant or not. Correlation analysis was used to conduct the multicollinearity test. The rule of the thumb is that a correlation between independent variables of more than 0.8 is an indicator of serious multicollinearity. The results indicate that there was no multicollinearity between the independent variable and the dependent variables (ROA, ROE and EPS) since all the values were less than 0.8.

In order to be able to choose between fixed and random influences model for the dependent variables, the Hausman test was used and data was tested for panel influence. The results from Hausman test for ROA, ROE and EPS models produced p values greater than 0.05. The study used random influence since their p values were greater than the critical (0.05). According to Hausman (1978), random effects is efficient, and should be used (over fixed effects) if the assumptions underlying are satisfied.

Post estimation tests were also conducted to ensure no violation of the OLS assumptions on the dependent variables ROA, ROE and EPS by conducting autocorrelation and heteroskedasticity tests. Autocorrelation tests using the Wooldridge test in panel data indicated p values (0.1892; 0.4786; 0.1070) respectively. These were greater than 0.05 indicating no autocorrelation. Heteroskedasticity test using the modified Wald test indicated p values of 0.000 in all cases. These were less than the 0.05 indicating that the error terms are heteroskedastic, thus a violation of the OLS assumption of constant variance of residuals. The presence of Heteroscedasticity was corrected through robust standard errors.

ANALYSIS RESULTS

Descriptive Statistics

The total Mean of sales growth for the period 2003 to 2013 was 12% with a standard deviation of 28.4% indicating small variability in sales growth over time. The Minimum and Maximum values of sales growth over the same period of time were 63% and 95% respectively. Analysis of

variance was conducted among the seven agricultural firms listed in NSE in respect to sales growth.

The H₀: There is no significant difference in means among the seven agricultural firms listed in NSE in respect to sales growth.

The H₁: There is a significant difference in means among the seven agricultural firms listed in NSE in respect to sales growth.

Reject null hypothesis if calculated p-value is <critical p value (0.05)

The results in Table 1 confirmed that there is no significant difference in means among the seven agricultural firms listed in NSE in respect to sales growth since the calculated p value was $0.527 > 0.05$

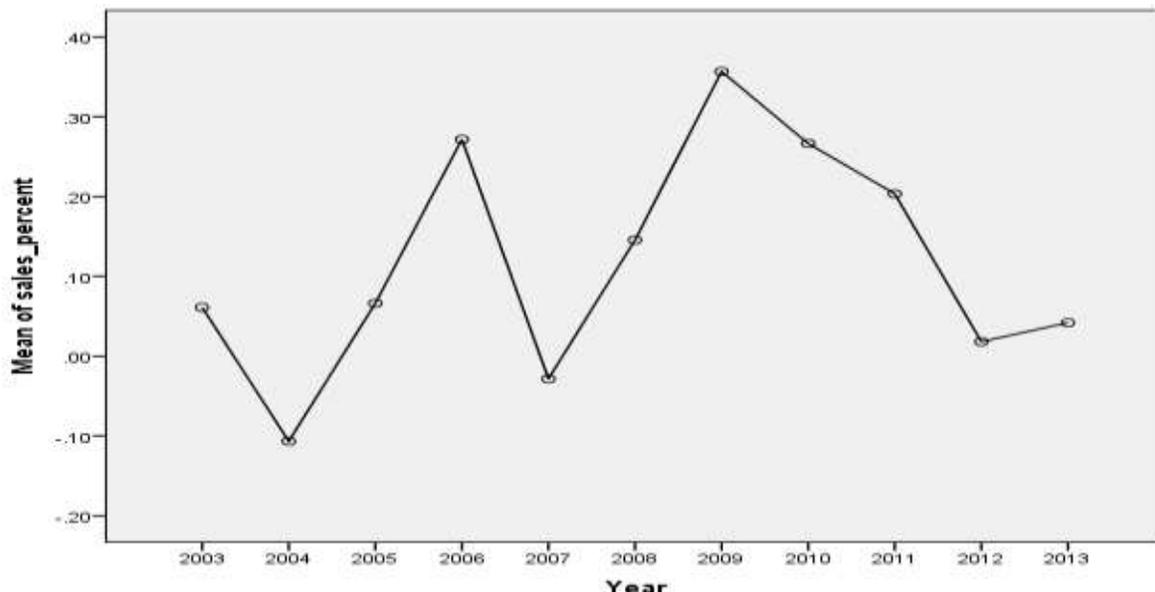
Table 1: Analysis of variance (ANOVA) of Sales growth among the agricultural firms listed in NSE

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	16.232	6	2.705	0.862	0.527
Within Groups	219.563	70	3.137		
Total	235.795	76			

Trend Analysis

Figure 1 shows the sales growth trend for the seven companies from the year 2003 to 2013. The trend line indicates that sales growth has been fluctuating though with a negligible increasing trend.

Figure 1: Sales growth trend



Correlation Analysis

Sales growth is positively and significantly related to ROA ($r= 0.331$, $P= 0.004$). Positively and significantly related to ROE ($r= 0.330$, $P= 0.004$) and negatively and insignificantly related to EPS ($r= -0.090$, $p= 0.434$) as reported in table 2.

Table 2: Correlation analysis results

		ROA	ROE	EPS	Sales growth
ROA	Pearson Correlation	1			
	Sig. (2-tailed)				
ROE	Pearson Correlation	.992**	1		
	Sig. (2-tailed)	.000			
EPS	Pearson Correlation	.253**	.263**	1	
	Sig. (2-tailed)	0.027	.0022		
Sales growth	Pearson Correlation	.331*	.330*	-0.090	1
	Sig. (2-tailed)	.004	.004	0.434	

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Regression analysis

Regression analysis was conducted to empirically determine whether sales growth were a significant determinant of performance which is measured in ROA, ROE and EPS. Regression results in table 3 indicated the goodness of fit for the regression between sales growth and ROA is 0.109. An R squared of 0.109 indicates that 10.9 % of the variations in ROA are explained by sales growth. While 10.9 % of ROE is explained by sales growth and 0.8% of EPS is explained by sales growth.

The overall model significance is also presented in table 3. The overall model of ROA was significant with F statistic of 9.085. The overall model of ROE was significant with F statistic of 9.029 while for EPS was insignificant with F statistic of 0.619.

The relationship between sales growth and ROA is positive and significant ($b_1= 0.025$, p value, 0.004). Sales growth and ROE is positive and significant ($b_1=0.034$, p value, 0.004). Sales growth and EPS is negative and insignificant ($b_1= -0.978$, p value, 0.434).

Table 3: Regression Analysis for Sales growth and Financial Performance (ROA, ROE, EPS)

	ROA	ROE	EPS
Parameter estimate	Coefficient (P value)	Coefficient (P value)	Coefficient (P value)
Constant	0.084 (0.000)	0.127 (0.000)	10.363 (0.000)
Sales growth	0.025 (0.004)	0.034 (0.004)	-0.978 (0.434)
R Squared	0.109	0.109	0.008
F statistic (ANOVA)	9.085(0.004)	9.029(0.004)	0.619(0.434)

The regression equation is as follows;

$$ROA = 0.084 + 0.025 \text{ Sales growth}$$

$$ROE = 0.127 + 0.034 \text{ Salesgrowth}$$

$$EPS = 10.363 - 0.978 \text{ Salesgrowth}$$

DISCUSSION OF THE RESULTS

The study sought to establish the effect of sales growth on the financial performance of the seven listed agricultural companies in the NSE. Findings on the effect of sales growth on return on assets (ROA) showed that sales growth had a positive influence on ROA and that the variations in ROA could be explained by sales growth. The findings agreed with those of Abiola (2012) who conducted a study on the influences of microfinance on micro and small enterprises (MSEs) growth in Nigeria. The study found strong evidence that access to microfinance did not enhance growth of micro and small enterprises in Nigeria. However, other firm level characteristics such as business size and business location, were found to have positive influence on enterprise growth. Mwangi *et al.*, (2014) further stated that organizations need to consider several factors such as overall economy, their customers, distributors, competitors, etc. Further from an operations standpoint, the firm needs to take into account its inventory levels, capacity constraints, ability to procure inventory from its suppliers, etc. before forecasting sales growth.

In addition, the findings revealed that sales growth had a positive and significant relationship with return on equity (ROE) while it was negative and insignificant to earnings per share (EPS). This finding is further supported by overall regression results which show that the overall model has a statistically significant influence on the ROA and ROE and therefore the alternate hypothesis was accepted. This meant that sales growth had a positive effect on financial performance of the listed agricultural companies in NSE. Correlation analysis results from the primary data indicated that sales growth is positively and insignificantly related to ROA,

positively and insignificantly related to ROE and positively and insignificantly related to EPS. The study findings agreed with Hendricks and Singhal (2005) who investigated the influences of supply chain glitches on the financial performance of firms. They found that firms that experience glitches reported lower sales growth, higher growth in cost, and higher growth in inventories relative to controls. Further, firms do not quickly recover from the negative economic consequences of glitches. Omondi and Muturi (2013) also found that rapid growth in business generates dramatic changes in the scale and scope of a firm's activities. According to them, entrepreneurs in rapidly growing business enterprises experienced more difficulties in comparison to small growth companies when deciding or establishing the type of changes or evolution required to support their level of growth. Nevertheless, firms should expand in a controlled way with the aim of achieving an optimum size in order to enjoy benefits of economies of scale resulting in higher levels of financial performance.

CONCLUSION AND RECOMMENDATIONS

Following the study findings, it was possible to conclude that the sales growth is a good predictor of financial performance of agricultural companies listed in the NSE. The study affirms that sales growth has a positive and significant effect on financial performance measures (ROA, ROE) and negative and insignificant effect on EPS. From the study findings there is clear evidence to conclude that as the firm sales increases, financial performance increases.

Since the sales growth has a positive effect on financial performance of agricultural firms listed in NSE, the management and the executives need to look to the different challenges on sales turnover management facing the industry and make recommendations to manage those challenges. The study also recommends that agricultural companies need to focus on sales growth opportunities since it exerts a significant effect on financial performance. Focusing on profits and reinvesting those profits into the firm may be a better strategy in the longer term. Other strategies that may be pursued to increase sales include use of resources to invest in new technologies, diversification in products, diversification and penetration in regional markets and international markets,

LIMITATIONS AND AREAS FOR FURTHER RESEARCH

The study was only limited to one variable (sales growth) that affects the financial performance of the listed companies in the securities market. Thus, more research should be carried out to determine other factors that affect financial performance. Factors such as managerial competency and capital structure of the firm are recommended for future study. This would enable the researchers and concerned investors to mitigate effects of such factors and hence

enhance financial performance. Another research area that could be done is to find out the factors that affect the financial performance of non-listed agricultural firms, specifically small enterprises where the incidence of business failure is greater than larger corporations.

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