Assessing Organizational Performance through Financial Ratios: The case of the Agricultural Sector in Nigeria

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Abstract

This paper assesses the performance of organizations in the agricultural sector quoted on the Nigerian Stock Exchange from the perspective of financial ratios. Data were collected from published financial statements for the periods 2011 – 2015. Results of Net Profit Margin (NPM), Earnings Per Share (EPS), Return on Equity (ROE) and Return on Assets (ROA) ratios indicate that though at a low level, agricultural organizations in Nigeria are profitable. Information on Quick Ratio (QR) which assesses liquidity, reflect that not all the companies are able to meet short term obligations as at when due. The Gearing Ratio (GR) discloses too much dependence on long term loan and thus highlights finance as a major constraint to investment in agriculture. The adoption of cost reduction strategies and reduction in the use of long – term loans will enhance agricultural production in Nigeria.

Keywords: Performance, financial ratios, agriculture, Nigeria.

I. Introduction

The need to assess organizational performance has constituted a major factor in accounting literature. This is because investors and financiers require guidance in making investment and financing decisions. Financial ratios are commonly used measures for assessing financial performance (Dyckman, Dukes, & Davies, 1998, Libby, R.R.,Libby, P.A., & Short, D.G., 2001). They are accounting related and posseses the benefit of being comparable both to industry custom and historical performance (Fry *et al*, 1998).

Ryu & Jang (2004) measured the performance of commercial hotel and casino hotel companies using liquidity, solvency and operational efficiency indicators. Results indicate that traditional ratios generated different results from cash flow ratios in liquidity. Similarly, Asiri & Hameed (2014) evaluated firm's value in the Bahrain Bourse using financial ratios and found that (ROA) is the most determinant factor in explaining the market value followed by financial leverage and beta. In addition, the size of a firm was found to have a significant effect on its market value.

This paper departs from these extant empirical works as it focuses on the agricultural sector in Nigeria. This notwithstanding, it is also aimed at exhuming the potentials of the agricultural industry to investors (local and international), adopting a popularly acknowledged measure of performance – financial ratios. The next sections will discuss literature review, followed by methodology, data presentation and analysis. Findings, conclusion and recommendations are presented in last two sections of the paper.

II. Literature Review

II.1. Financial Ratios

In quantitative studies, ratios provide yardsticks or indexes for comparison between two or more items. They also provide analysis of trends of events or occurrence of activities over a period of time. In accounting literature, data contained in statement of financial position and income statement will be difficult to comprehend if they are not subjected to analyses. In this direction, financial ratios provide the solution of clarity by serving as analytical tools for assessing the performance of organizations using prepared financial statements.

Therefore, the most practical way to interpret or make sense of a firm's historical financial statements is through ratio analysis (Barringer & Ireland, 2013). It involves comparing one figure against another to produce a ratio and assessing whether the ratio indicates a weakness or strength in the company's affairs. For instance, investment ratios such as earnings per share (EPS), dividend per share (DPS), dividend cover, price – earnings (P/E) ratio, market to book (M/B) and dividend yield assist equity investors and others to assess the value and quality of an investment in the ordinary shares of a company (Asiri & Hameed, 2014: 1-9). Investors identify appropriate companies for investment through financial analysis of financial statements (Malikova & Brabec: 2012: 149 - 163). Financial ratios provide quick and relatively simple device of assessing the financial health of a business; they are used for detailed financial analysis because they are capable of highlighting areas of good and bad performance as well as areas of significant changes which may require more careful analysis (Mcleaney & Atrill, 2005).

Assessing organizational performance from the perspective of financial ratios identifies key components of organizations which impact their ability to continue in operation as going concerns. Assenting to this, the body of knowledge discusses financial ratios in the areas of profitability, liquidity, long term solvency and stability and activity (Dyckman *et al* 1998, Libby *et al* 2001, Pandey 1979, Van Horne 2002). Profitability ratios measure the ability of an organization to earn profit in the short and long terms in relation to sales and to investment; liquidity ratios evaluate the ability of an organization to meet short term or current obligations while long term solvency and stability ratios assess a company's long term solvency or liquidity. On the other hand, activity ratios provide indices of management's efficiency in the utilization of assets/resources. Shareholders, management, employees, creditors, government and purchasers of business make informed decisions by reference to these key financial ratios.

Adoption of financial ratios in assessing organizational performance confers enormous advantages to users of financial statements. According to Pandey (1979), they assist in identifying a company's short –term and long-term profitability, provide a measure of ability to meet obligations as at when due and an assessment of efficiency in utilization of resources. Also, financial ratios facilitate the comparison of figures and make possible, analysis of trend of events over time.

Despite the merits associated with the application of financial ratios in assessing organizational performance, Pandey (1979) outlines some weaknesses accompanying their utilization: it is difficult to arrive on an acceptable basis for comparison, particularly, where industry averages are not available; differences in accounting policies and practices make comparisons meaningless and price level changes as a consequence of inflation make interpretation of ratios invalid. Financial ratios are computed from historical financial statements which do not provide a better reflection of future results. And results produced are relative figures expressed in decimal places which fail to give absolute accuracy. Be it as it may, financial ratios are adjudged as best indicators of performance (Fatima & Shehzad, 2014: 32).

II.2. A Brief on the Agricultural Sector in Nigeria

Agriculture has for ages constituted the mainstay of the Nigerian economy. As stated by Carbaugh (in Omorogiuwa, Zivkovic & Ademoh, 2014: 133 - 147), it employs 70% of the adult population. In the 1960's, agriculture was the major revenue earner of the country accounting for about 70% of export incomes (Central Bank of Nigeria [CBN], 1968). The oil

boom of 1970's reversed the trend and redirected the attention of government to prospecting for oil. This affected investment in agriculture and in 2006 according to CBN (2007), its contribution to Gross Domestic Product (GDP) declined to 34%. Since then, food importation has occupied a major portion of public expenditure; USD635bn on wheat, USD356bn on rice, USD217bn on sugar and $97bn on fish in 2010 (Omorogiuwa, 2014: 133 – 147).

To regain the lost agricultural glory, government put in place several policies. In 1976, Operation Feed the Nation (OFN) was launched while in 1980, Green Revolution programme came into place. Agricultural Development Project (ADP) assisted by the World Bank, Directorate of Food, Roads and Rural Infrastructures (DFRRI) and National Agricultural land Development Authority (NALDA) were created in 1986 as a result of the structural Adjustment Programme (SAP) introduced to cope with economic difficulties of that year. These policies were aimed at encouraging people to direct resources to domestic agriculture, enhance food production and reduce associated imports (Anthony, 2010: 1- 7). In addition, River Basin Development Authorities were created in 1979 by decree No.87 of 1979 for water resource development and the maintenance of irrigation, dams etc for agriculture (Akinbamowo, 2013: 146 – 153).

Credit schemes were introduced to make funds available to farmers and improve food production. For instance, in 1973, the Nigerian Agricultural Cooperative Bank was established together with Rural Banking programme in 1977; also CBN extended credits to farmers at lower interest rates (Anthony, 2010: 1- 7). These notwithstanding, the New Partnership for Africa's Development (NEPAD) was launched in 2004 by African leaders including that of Nigeria with the objective to boost food production, reduce hunger and poverty (Anthony, 2010: 1-7). Continued importation of food despite abundant arable land, material and human resources provide supportive evidence that these policies could not achieve their objectives of ensuring sustainable agricultural production.

Policy makers in the agricultural sector may wish to take pro –active steps to revamp abandoned agricultural projects and advise the government to increase allocation of fund to the agricultural sector. This will improve food production; reduce unemployment and poverty, particularly, amongst rural dwellers.

III. Methodology

The study adopted a historical approach using published financial statements over the periods 2011 – 2015. From the website of the Nigerian Stock Exchange (www.nigerianstockexchange.com/agriculture), seven agricultural companies were listed. These constituted the population. One company was delisted and the financial results of two others were not available. The remaining four companies constituting the sample size were studied. Quoted agricultural companies were used for the study for easy accessibility to annual financial reports and to have a defined population which a pilot study may not generate. Out of the four companies studied, two are in the oil palm sub-sector, one in fisheries and the other in animal feed sub-sector.

Performance is measured using financial ratios. The paper adopts ROA, NPM, QR, EPS, GR and ROE as well as Revenue Earned (RV) in assessing the financial performance of the companies studied. The Atman's (1993) multiple discriminate analysis model which puts together financial ratios to produce a measurement index, z known as "distress score" to differentiate between companies with good and poor performances is also used to enhance

evaluation of these companies in addition to the ratios. The formula for the z (distress score) is:

$$Z = 1.2\,X(1) + 1.4X(2) + 3.3X(3) + 0.6X(4) + 1.0X(5)$$

Where:

X(1) = working capital/ total assets
X(2) = retained earnings /total assets
X(3) = earnings before interest and taxes/ total assets
X(4) = market value of equity / book value of total liabilities, and
X(5) = sales / total assets.

z scores of less than 1.8 indicate eminent failure, between 1.8 and 2.7 are signals of possibility of being at risk while z scores in excess of 2.7 indicate long term solvency situation. Similarly, ROA assesses efficiency of management in utilizing resources of a company while NPM evaluates how much profit after tax is earned from one naira of RV. Profit after tax is used in computing NPM in order to ascertain the amount due to shareholders after all charges including finance costs and taxes have been made. This approach eliminates imagination of amount available for shareholders when earnings before interest and taxes are used instead. QR is a measure of liquidity and thus, assesses the ability of an organization to settle short –term obligations as they become due. EPS on the other hand, measures the earnings of the equity shareholders on each equity or ordinary share invested while ROE rates management efficiency in utilizing shareholders funds to earn income. RV earned exposes the gross income potentials of the companies while GR is a measure of the relationship between fixed interest loans including preference shares and ordinary shares issued; it as well highlights the dependence on loans in financing company operations.

IV. Data Presentation and Analyses

Tables 1 to 7 present information on gross revenue (RV) and relevant ratios adopted in evaluating the performance of the companies studied. Table 1 shows their RV. With the exception of company C which is in the fishing sub-sector, A, D and B in the palm oil (crop production) and animal feeds sub-sectors respectively, post impressive revenue with steady increase; though company D had a slight reduction between 2011 and 2012 and 2013 and 2014. On the average, companies engaged in palm oil (crop production) record higher RV than others; however, performance of B is encouraging over a period of 5 years.

Table 1. Revenue (RV) in ₦'000

	Years					
	2011	2012	2013	2014	2015	Average
Companies						
A	8,536,172	11,251,521	8,485,143	9,137,704	10,448,353	9,571,779
B	3,623,939	5,433,057	6,113,864	7,914,488	8,963,293	6,409,728
C	105	9,873	21,084	94,363	72,212	39,527
D	11,121,011	10,146,164	8,880,425	8,655,718	9,738,025	9,708,269

Source: Published financial statements.

NPM performance is disclosed in Table 2. Companies A and D in palm oil sub-sector document higher NPM than B in animal feed sub-sector. That of C in the fishing sub-sector reflects excessive overheads which highly erode profit margins. Average NPM of approximately 24k, 3k and 29k per naira of RV for companies A, B and D are indications of inefficient cost management.

Data on EPS are disclosed in Table 3. On a price of 50k per ordinary share, companies A and D are likely to gravitate more investors than B and C. Their mean EPS are ₦2.83 and ₦8.72. ROE which measures the efficiency of management in utilizing shareholders' equity to earn profit is presented in Table 4. Results are that for every one naira shareholders' equity, profit after tax are approximately 13k, 15k and 15k respectively for A, B and D. Company C's performance is negative, providing nothing for equity holders. Though, ROE for A, B and D are positive, they are low and indicate inefficient use of shareholders' equity in managing company operations.

ROA which measures efficiency of management in utilizing its assets to earn profit is shown in Table 5. Company C in the fishing sub-sector has consistently reported negative performance. Its ROA is (2.23%) reflecting poor utilization of assets in earning profits. For every one naira asset applied in the business, ROA of A, B and D are approximately 8k, 6k and 10k respectively. These are low, taking into consideration RV performances of these organizations.

Table 2. Net profit margin (NPM) in percentages (%)

	Years					
	2011	2012	2013	2014	2015	Average
Companies						
A	20.83	31.55	15.25	29.30	22.36	23.86
B	2.70	2.64	3.45	3.21	2.10	2.82
C	(24,083.25)	(316.35)	(117.91)	(14.78)	(48.09)	(4,916.08)
D	39.28	35.40	23.61	18.80	27.70	28.96

Source: Published financial statements.

Table 3. Earnings Per Share (₦)

	Years					
	2011	2012	2013	2014	2015	Average
Companies						
A	1.78	3.55	1.29	5.19	2.32	2.83
B	0.08	0.12	0.18	0.13	0.09	0.12
C	(0.42)	(0.52)	(0.41)	(0.23)	(0.58)	(0.43)
D	22	18	2.19	1.39	2.76	8.72

Source: Published financial statements

Table 4. Return on equity (ROE) in percentage (%)

	Years					
	2011	2012	2013	2014	2015	Average
Companies						
A	9.49	20.77	7.44	17.88	7.69	12.65
B	20.00	22.69	12.18	12.81	9.64	15.46
C	(2.20)	(5.06)	(4.20)	(2.41)	(6.40)	(4.05)
D	20.64	14.06	1.88	15.14	22.36	14.82

Source: Published financial statements.

QR which measures liquidity and ability to meet short –term obligations as they become due is presented in Table 6. Surprisingly, company C which has posted poor profitability performance indicates superior ability to meet short obligations with a mean record of ₦3.17 current assets for every ₦1.00 (one naira) current liability. Low current liability level may account for this as opposed to improved cash flow attributable to profitability; though, the years 2011 and 2013 disclosed inability to settle short term obligations. D, in the palm oil (crop production) sub-sector, also on the average, has a liquidity record of ₦1.22 current assets for every ₦1.00 current liability; however, the years 2014 – 2015 were unfavorable in

terms of liquidity. Liquidity situations of A and B are poor as the results reflect inability to meet short – term obligations with low mean QR data of 41k and 21k current assets per ₦1.00 current liability respectively.

Table 5. Return on assets (ROA) in percentage (%)

	Years					
	2011	2012	2013	2014	2015	Average
Companies						
A	7.12	12.67	3.96	10.43	4.21	7.68
B	6.30	6.93	5.74	4.42	4.11	5.50
C	(2.19)	(2.76)	(2.11)	(1,17)	(2.94)	(2.23)
D	16.79	11.56	1.41	8.14	13.45	10.27

Source**:** Published financial statements.

Table 6. Quick ratio (QR)

	Years					
	2011	2012	2013	2014	2015	Average
Companies						
A	0.38:1	0.24:1	0.46:1	0.41:1	0.57:1	0.41:1
B	0.33:1	0.17:1	0.32:1	0.09:1	0.15:1	0.21:1
C	0.39:1	1.88:1	0.48:1	9.37:1	3.73:1	3.17:1
D	2.13:1	2.03:1	1.16:1	0.24:1	0.52:1	1.22:1

Source: Published financial statements.

Table 7. Gearing ratio (GR) in percentages (%)

	Years					
	2011	2012	2013	2014	2015	Average
Companies						
A	357.43	403.09	830.21	470.95	808.42	574.02
B	96.70	154.90	86.91	192.69	52.53	116.75
C	593.41	850.89	967.97	1,024.13	1,057.73	898.83
D	50.84	NIL	349.44	393.60	709.95	375.96

Source: Published financial statements.

Table 7 shows the GR of the companies investigated. All the companies are highly geared indicating too much dependence on borrowed funds (long-term loans) in running company operations. On the average, the companies -A, B, C and D borrow approximately ₦5.74, ₦1.17, ₦8.99 and ₦3.76 respectively per ₦1.00 of ordinary shares issued. This situation exposes the equity shareholders to risk as a consequence of high finance costs arising from the burden imposed by over dependence on long term loans.

The distress scores "z" computed using the "z" model developed by Atman (1993) are disclosed in Table 8.

Table 8. Distress ratio (z – score)

	Years					
	2011	2012	2013	2014	2015	Average
Companies						
A	3.52	2.59	1.93	2.34	1.92	2.46
B	2.92	3.41	3.05	2.45	3.45	3.06
C	1.19	0.44	0.38	0.41	0.58	0.60
D	4.97	4.78	3.34	1.98	2.62	3.54

Source: Computed from published financial statements.

Average "z" scores are 2.46, 3.06, 0.60 and 3.54 for A, B, C and D. Adopting the distress score specifications, A is at the risk of failure; C has failed while B and D in the animal feeds and palm oil (crop production) sub-sectors have potentials of long term solvency. Though, D has a mean score of 3.54 which portrays a healthy situation, its scores of 1.98 and 2.62 in 2014 and 2015 which are less than 2.7 puts it at risk. Care is needed for it to continue in operation as a going concern.

V. Discussion of Results

Results indicate that agricultural companies with the exception of the organization in the fishing sub-sector, post impressive RV as a consequence of demand for their products. They are organizations in the palm oil (crop production) and animal feeds sub-sectors. Data on NPM, ROA and ROE present the companies studied as profitable excluding company C in the fishing sub-sector, which from inquiry during the collection of financial statements, has discontinued operations. These profitability performances are low as a result of high overhead costs. Prior studies by Omorogiuwa, Zivkovic & Ademoh (2014:133 – 147) in which the regional agricultural boards (Cocoa Marketing Board, Groundnut Board, Seed Cotton Board and Palm Produce Board) were criticized for poor performance in the agricultural sector, accord with this finding. The excessive GR in Table 7 indicating too much reliance on long term loans for operations provides supportive evidence. Aside the existence of finance costs/charges arising from use of long term loans, the labor intensive nature of agricultural companies also account for the high overhead costs.

In addition, the ability to meet short term obligations as revealed by the QR in Table 6 is only visible in one palm oil (crop production) organization, giving that company C in the fishing sub-sector has discontinued operations. In total, liquidity assessment is poor as two companies for the periods under examination cannot settle short term indebtedness when due.

This notwithstanding, introduction of cost reduction strategies and the reduction of dependence on long-term loans will enhance profitability and liquidity and subsequently improve the performance of agricultural companies in Nigeria.

VI. Conclusion and Recommendations

Agricultural companies in Nigeria, particularly those in the palm oil (crop production) and animal feeds sub-sectors are profitable. However, the reported profitability performance as highlighted by financial ratios is low. High overhead costs and dependence on long term loans are viewed as contributory. Adoption of cost reduction strategies and reduction of dependence on long-term loans may reverse the trend.

Companies studied are those listed on the Nigerian Stock Exchange. Unquoted agricultural companies such as those in rubber, coconut and cocoa plantations post impressive profit results. Others are those in cassava, yam, oranges, guava, rice and plantain production. Nigerian economy possesses the potentials for investment in agriculture. The fast growing population offers sufficient demand for agricultural products and supplies the needed manpower for sustainable agricultural activity.

This study is significant as it enriches literature in the agricultural sector in Nigeria, an emerging economy. Further, it exposes finance as the main constraint confronting investors in the agricultural sector particularly, those entering the Nigerian agricultural business environment for the first time. Findings by Marchet (2001), Nwangola (2006) & Kachru

(2007) (in Tersoo, 2013: 23) in which inadequate working capital amongst others was identified as endogenous constraints to agribusiness, confirm this assertion.

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