

Effect of Market Structure and Conduct on the Performance of Selected Agro-Based Firms in Nigeria.

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Abstract

In this study, the validity of the structure, conduct and performance (SCP) paradigm is tested with view to ascertaining which version of the hypothesis holds sway in Nigeria listed agro-based sector. Data collected from 22 listed agro-based firms for the period 2000-2010 were analyzed using the Ordinary Least Square (OLS) regression technique as well as granger causality test. The data was first examined for unit roots using the Augmented Dickey Fuller (ADF) and the Phillips- Peron (PP) tests. Result revealed that all the variables were stationary at first difference except market share (MKTS), return on capital employed (ROC) and cost efficiency (CEFF) that were later stationary at first difference. The major determinants of profitability were market share, capital to labour ratio and cost efficiency variables. Surprisingly, total number of firm branches and firm sizes carried the expected positive signs but failed to significantly explain the variation in profit of the sampled agro-based firms. Findings further revealed that the behavior of agro-based firms were consistent with the relative market

Power (RMP) and the efficient market (EM) hypothesis, implying that the traditional SCP paradigm is not validated. Result also revealed that granger causality runs uni-directionally from market share, cost efficiency and capital to labour ratio to return on capital employed and from return on capital employed to firm size and from capital to labour ratio to cost efficiency. This, therefore, inform the need to pursue policies that would reduce branch network and focus on few productive branches, increase their market share and enhance their efficiencies as the way out.

Keywords: Market structure, conduct, hypothesis, agro-based firms, performance.

1.0 INTRODUCTION

Since the pioneering work of Mason 1939 on Institutional structure, conduct and performance relationship termed the SCP hypothesis, which was later modified by Bain in 1959, several versions of the hypothesis have emerged in theoretical literature, some relaxing the assumptions of the traditional SCP. Several alternative models have also been built in the literature explaining the relationship between structure, conduct and performance in relevant organization. Two competing hypothesis are embedded in the SCP paradigm: the traditional "structure performance hypothesis" and the "efficient structure hypothesis". While the first School of thought averred that the degree of market concentration is invariably related to market competition. The proponent of the efficiency structure hypothesis opined that performance is directly related to efficiency rather than collusive activities suggested by the traditional SCP paradigm. The SCP hypothesis averred that performance is determined by the conduct of the firm, which invariably is determined by the market structure (Ferguson and Ferguson, 1994). According to Aleksandrova and Luby (2004), SCP hypothesis states that certain market characteristics like concentration and barrier to entry affects firm's profitability within the market.

Market structure refers to those characteristics of market organization that are likely to affect the behavior and performance of firms such as the number of sellers, the degree of freedom of entry and exit and the degree of product differentiation (Lipsey and Steiner, 1981). It can be examined in terms of the degree of seller's concentration. Several measures of concentration exist that can be use to infer about the structure of the market. Sahoo and Mishra (2012) listed such measures of concentration to include price cost margin, profitability, Herfindahl- Hirshman Index (HHI), n- firm concentration ratio and market shares of firms. In this paper, two indices are use as a variable for market structure viz: market shares and the size of the firms. Market conduct refers to the behavior of the firm whether competitive or collusive (Anonymous, 2006). It implies the behavior

of the firm in the market to the decisions firms make and the way such decisions are taken (Ferguson and Ferguson, 1994). Firm performance to some extent depends on how such firms conduct their activities. This includes advertising and marketing of its product, cost minimization as well as their capital to labour ratio. Investment in marketing and distribution would raise the firm's competitiveness by broadening their marketing and service networks, which invariably, enhances their efficiency and increase their bargaining power. In this paper firm conduct is examined in terms of its cost intensity and its capital to labour ratio. Performance entails how well firms satisfy customer requirement in the current time period (Ferguson and Ferguson (opp cit)). It can be measured by indices like cost, level of profit earned, marketing efficiency as well as stock price approach. Evanoff and Fortier (1988) and Rhoades (1985) earmarked profitability approach as a simpler measure of financial performance compared to the stock price approach. In order to measure performance, this paper uses the return on capital employed (ROCE) as a variable for performance.

Studies such as Ganesan (2001), Kambhampati and Parika (2003) and Allen and Shaik (2005) have investigated the factors that affect the performance of industries in the context of market structure and conduct. Apart from these, several other studies have also been carried out on the SCP in the literature. Majority of these researches seems to focus on the banking sector and other industries. While some of these studies suggest that market concentration enhances performance (Katib, 2004, Molyneux and Forbes, 1995), others such as Smirlock (1985), Varma and Sainer (2010), found efficiency to be important determinant of firm performance. However, despite the widespread recognition and adoption of this paradigm, little has been done in terms of its application in the Nigerian agro-based sector. In line with this, this study seeks to determine the effect of market structure and conduct on the performance (profitability) of Nigeria listed agro-based firms. It will also seek to ascertain which version of the hypothesis holds sway in the Nigerian listed agro-based subsector.

2.0 STUDY HYPOTHESES

The study was guided by the following hypothesis;

- (i) Ho: The structure of the Nigerian agro-based firms has no direct positive effect on the performance of agro-based firms in Nigeria.
- (ii) Ho: The conduct of the agro-based firms has no direct positive effect on performance (profitability)
- (iii) Ho: The behavior of the Nigerian agro-based firms does not follow the prediction of the Structure-conduct-performance (SCP), relative market power (RMP) or the efficient market power hypothesis.

3.0 UNDERLYING THEORY

The underlying theory behind the study is the market structure, conduct and performance (SCP) hypothesis. This hypothesis was first introduced by Mason in 1939 and later modified by Bain in 1959. Recently, more in-depth studies have been carried out on the SCP hypothesis giving rise to diverse views and the emergence of two additional but contrasting versions: the relative market power hypothesis (RMP) and the efficient market hypothesis.

3.1 The structure, conduct and performance hypothesis (SCP)

This hypothesis asserts that the structure of the market affects the conduct of firms which in turn affects the performance of the firm. The SCP hypothesis can be represented as:

$$\text{Performance} = f(X, Z)$$

where X is a set of SCP variables

Z are other associated variables

According to this theory, performance is determined by the conduct of the firm, which in turn is determined by the structure characteristics of the market (Ferguson and Ferguson, opp cit). The SCP framework suggests that

possibility of collusive behavior increases when the market is concentrated in the hands of a few firms, implying a positive correlation between concentration and performance. In line with this school of thought, a strong negative relationship exists between measure of market structure and performance.

3.2 The relative market power hypothesis (RMP)

This hypothesis emphasize market share as the key endogenous variable. According to Berger (1995), the hypothesis stipulates that the positive relationship between structure and performance arises because firms with large market shares and well differentiated products exercise market power in pricing their products and as such, earn abnormal profit. The hypothesis assumes that market share is positively related to market power and that there is a positive unidirectional relationship between market share and profitability.

3.3 The Efficient market hypothesis (EMH)

The efficient market hypothesis was advocated by Damsetz (1973) and Peltzman (1977). This school of thought attributed performance to efficiency. There are two versions to this hypothesis: the Scale efficiency(S-EFF) and the X-efficiency(X-EFF).

3.3.1 X-efficiency or managerial efficiency hypothesis (X-EFF)

The proponent of this hypothesis asserts that firms with superior management or production technologies have lower cost and hence, higher profits (Berger, 1995). According to Pearce (1992), the view expressed by this school of thought is that share prices in the stock market are the best available estimates of their real value because of the highly efficient price mechanism inherent in the stock market. According to this view, profits are made as a result of differences in cost efficiency and those firms with superior management and productive technologies have lower production costs. The theory also sees market share as a good surrogate for efficiency. However, while most researchers view market share as variable for X- efficiency, others see it as reflecting the effect of scale efficiency (S-EFF). In this study, we consider market share as a variable for X-efficiency. Accordingly, a positive relationship between market share and profitability would support the X-efficiency hypothesis.

3.3.2 The scale efficiency hypothesis (S-EFF)

Proponent of the scale efficiency (S-EFF) version of the efficient market system hypothesis (EMS) believes that profits are made by differences in cost efficiency. According to Berger (1995), though firms have good management and technology, some firms simply produces at more efficient scales than others and hence, has lower unit costs and higher unit profits. Such firms are perceived to possess large market shares, thereby, yielding a positive relationship between performance (profit) and structure. Therefore, the basic condition for this version of the efficiency hypothesis to hold sway is that profitability must be positively related to market share or any measure of efficiency

4.0 LITERATURE REVIEW

Several researches have been done on the structure, conduct and performance (SCP) hypothesis. Berger (Opp cit) use cross sectional data covering a period of 10 years to test the entire four hypotheses (SCP, RMP, ESX and ESS). His findings revealed a positive significant relationship between market share and X-efficiency on profitability and market concentration. His findings lend support to the X-efficiency version of the ESS hypothesis and the relative market power hypothesis.

Al-karasneh et al. (2000) use time series Commercial bank data for the period 1980-1993 to evaluate the effect of market structure on performance of Jordan banks. Following the method of Smirlock (1985), he tested the SCP and the efficient structure hypothesis by estimating the profit function:

$$\Upsilon = a_0 + a_1CR + a_2MS + a_3MSCR + a_4EX$$

Where π is a profit measure

CR is a measure of market structure

MS is a measure of market share.

MSCR is the interaction of market share and concentration

X is a vector of control variables

His findings revealed that both market share and concentration were very significant determinants of performance.

Sahoo and Mishra (2012) examined the structure- Conduct- performance relationship in Indian banking sector using a data set of 59 banks and applying the two stages Least Square Method of estimation. His findings revealed the existence of strong inter-linkages amongst structure of the market, banks' conduct and their financial performance. While market share of a bank depended directly on its market size, asset base, selling efforts, and past financial performance, its selling efforts varied directly with market share, asset base, and past financial performance. On the other hand, returns on assets of a bank vary directly with its market share, but inversely with its asset base and selling efforts. The regression results essentially suggest for multidirectional and dynamic SCP relationships in Indian banking sector. It is also found that the nature of ownership has significant influence on market share, selling efforts and financial performance of the banks. Compared to the nationalized banks, market share of the private banks (both domestic and foreign) was found to be lower. But private banks made greater selling efforts and had better financial performance than their public sector counterparts.

5.0 ANALYTICAL TECHNIQUE

5.1 Data source

Data for this study were sourced from the Stock Exchange Fact Book and Annual Statements of Accounts of the sample firms for the period 2000-2010. A total sample of 22 agro-based firms was used for the study. Data series of interest were Return on capital employed (ROC), Market share (MKTS), capital to labour ratio (K/L), Cost Efficiency (C-EFF), Firm Size (FSZ) and Total number of bank branches (TNB).

5.2 Model specification

5.2.1 Data Analysis

Ordinary Least Square (OLS) regression analysis was used to analyze those variables that affect profitability of listed agro-based firms. The generalized form of the multiple regression model is specified as;

$$Y = \alpha + \sum \beta X + \epsilon \dots \dots \dots (1)$$

Where

Y = Profitability of the firms and represents the dependent variable in the model.

α is the constant intercept of the equation.

β represents the coefficients for the explanatory variables in the estimated model.

X is the vector of explanatory variables in the estimation model.

ϵ is the error term.

Σ is the summation sign.

Accordingly, we express profitability as a function of SCP variables in our model as;

$$ROC_t = f (MKTS_{it}, FSZ_{it}, S-EFF_{it}, K/L_{it}, TBN_{it}) \dots \dots \dots (2)$$

It is stated econometrically in line with the method of Smirlock (1985) and Al-karasneh et al.(2000) as follows:

$$\text{Log}ROC_{it} = b_0 + b_1 \text{log}MKT_{it} + b_2 \text{log}FSZ_{it} + b_3 \text{log}C-EFF_{it} + b_4 \text{log}K/L_{it} + B_5 \text{log}TNB_{it} + \mu \dots (3)$$

Where:

ROC_{it} = Return on capital employed by firm i in time t (measured as ratio of Net profit after tax to total shareholder's fund of firm i in period t)

$MKTS_{it}$ = proportion of total market share accounted for by agro-based firm i in time t (measured as the ratio of total asset of firm i to the total assets of agro-based firms in the sample)

FSZ_{it} = Size of firm i in year t measured as natural log of its total asset.

$C-EFF_{it}$ = Cost efficiency of firm i in time t (measured as the ratio of total cost incurred by agro-based firms to its total income)

K/L_{it} = Capital to labour ratio of firm i in time t (measured as the ratio of total capital employed by firm i to the number of employee of firm i in period t)

TNB_{it} = Total number of branches of firm i in period t

μ = Stochastic error term

5.3 Apriori Expectation

In this model, ROC is taken as a variable for market performance, cost efficiency(C-EFF) and capital to labour ratio (K/L) are taken as variables for market conduct while market share (MKTS) and firm size (FSZ) are taken as variables for market structure. Total number of firm branches is included as a control variable.

Market share: The relationship between return on capital employed (ROC) and market share is expected to be positive because large market sizes enable firms to boost production, differentiate their products, increase their sales volumes and hence, generate more profit.

Firm Size: Size is directly related to economy of scale. Large scale firm would reap economy of scale and hence, perform better. Given this, a positive relationship is anticipated between firm size and performance.

Capital to labour ratio (K/L): According to Al-karasneh et.al (2000), the theoretical literature of firm's capital adequacy assumes that firm maximizes leverage so as to maximize products. In line with this, a positive relationship is expected between K/L and profitability. Since debt must be service and repaid, firms increasing their leverage also pay high cost for their funding requirement and debt servicing. This is capable of impacting negatively on performance (profitability). Hence, the sign of the K/L is assume to be indeterminate (either positive or negative) prior to estimation.

Cost efficiency variable (C-EFF): The cost efficiency variable is expected to be positive and significant if the efficiency market hypothesis holds sway.

Total number of firm branches: This was added as one of the control variables. Accordingly, the sign of this variable is expected to be positive; reason being that numerous firm branches can be interpreted as an indication of large market share.

5.3.1 Assumptions

- (i) Under the SCP hypothesis: Concentration is positive and statistically significant to profitability (a measure of performance) while market share (MKTS) and scale efficiency (S-EFF) variables

are not. Hence, a negative value for market share and scale efficiency would support the SCP hypothesis

- (ii) Under the relative market power hypothesis (RMP): Market share is positive and significantly related to profitability because concentration is weakly related to profitability through its correlation with market share. Therefore, a positive value of market share with performance variable (profitability) would lend credence to the relative market hypothesis.
- (iii) Under the context of efficiency market hypothesis (EMH): Differences in cost is perceived as the principal determinant of profitability. Hence, a positive relationship is anticipated between efficiency measure and profitability. Consequently, a significant positive relationship between cost efficiency (C-EFF) with profitability (ROC) would support the efficiency market hypothesis.

6.0 Estimation Technique.

The analysis was carried out using an econometric software Eview version 7.1c. Two estimation procedures that were employed include;

(i) Test for stationarity

This was carried out using the unit root test. It has become common knowledge that a large number of time series data used in econometric analysis are non-stationary meaning they have the tendency to either decrease or increase over time. Engle and Granger (1987) and Philips (1986) averred that such data if use for regression analysis would lead to spurious regression. Therefore, in examining each of the time series variables for the presence of a unit root (an indication of stationarity), an Augmented Dickey Fuller (ADF) and the Phillips-Peron (PP) tests were used to carry out the unit root. The ADF test minimizes autocorrelation in the error term since it involves the first difference in lags such that the error term is distributed as white noise. The test formula for ADF and the PP tests are based on the test regression below;

$$Y_t = a_0 + a_1 Y_{t-1} + \sum_{i=1}^j \lambda_i \Delta Y_{t-1} + U_t \dots \quad (1)$$

Where Δ is the first difference operator, Y_t is the variable under consideration, the a 's and λ 's are parameters to be estimated and U_t is the error term. Here the lag length j chosen for ADF ensure U_t is empirical white noise. The significance of a is tested against the null that $a = 0$ based on the t statistics obtained from the OLS estimated in equation (3). For both tests, a t-statistic larger in absolute value than the critical value results is a rejection of the null hypothesis of unit root in favour of the stationarity alternative. If the null hypothesis of non stationarity cannot be rejected, the variables are difference till they become stationary, that is, till the existence of a unit root is rejected.

(ii) Granger causality test

After establishing the existence of stationarity among the variables, we proceeded to carry out the causality test with view to ascertaining the existence of un-directionality or bi-directionality between the dependent and the independent variables. In doing so, the original causal model of Granger (1969) was modified and used.

6.0 FINDINGS AND DISCUSSION

6.1 Unit root test

Table 1 below presents the result of the unit root test. From the ADF result, all the variables were integrated of the order 0 except market share (MKTS), return on capital employed (ROC) and cost efficiency (CEFF) that were later stationary at first difference. The result of the Philip- Perron test confirms that of the Augmented Dickey Fuller test.

Table 1: Result of unit root test

logged Variable	Augmented Dickey- Fuller		Philip Perron		OT
	Level	First Difference	Level	First Difference	
Ln ROC _{it}	-2.959036	-4.004798***	-2.959036	-4.468362***	1(1)
Ln MKTS _{it}	-2.246812	-3.452462***	-2.609436	-4.377071***	1(1)
LnCEFF _{it}	-1.73559	-3.331985	-1.775546	-4.582643***	1(1)
LnK/L _{it}	-3.936132	-	-4.166836	-	1(0)
LnTNB _{it}	-6.212161	-	-6.847351	-	1(0)
1%	-3.259808	- 3.320969	-3.259808	-3.320969	
5%	-2.771129	-2.801384	-2.771129	-2.801384	

Note: OT means order of integration. Critical values (CV) are defined at 1% and 5% significant levels and asterisks * and *** represent 5% and 1% significance levels respectively. Variables are as defined in equations 2 and 3.

6.2 Testing for Short and Long Run Relationship

After ascertaining the stationarity of the variables, an attempt was made to carry out a cointegration test and estimate the error correction model. However, this was not possible because of the smaller number of observations and there was no way the number of observations could be increased since bank allocation to Small Scale Enterprises started in 1992. So, we proceeded to carry out the Ordinary Least Square (OLS) regression analysis, the result which is reported in section 3.3 below.

6.3 Regression result of determinants of profitability

Table 2 presents the result of the diagnostic test carried out to examine the effect of the explanatory variables on the profitability of agro-based firms in Nigeria. Result revealed the R^2 value of 0.6316, implying that the specified explanatory variables explain about 63.16 percent of the adjusted total variation in the profitability of the sampled agro-based firms. Fstat value of 41.56 is significant at 1 percent level of probability indicating the goodness of fit of the estimated equation. Also, the Durbin Watson statistics of 2.112 indicates the absence of autocorrelation in the estimated equation.

The coefficient for Market share (MKTS) was positive and significantly related to profitability variable (ROC) at the 5% level of probability. Its coefficient shows that increasing market share by 1 unit would increase the profitability of agro-based firms by 0.8457 units. This is expected because market share is often positively related with efficiency. More efficient firms are also more profitable firms that have higher market shares. This finding support those of Berger (1995), Allen and Shaik (2005), Katib,(2004) and Molyneaux and Thornton (1992). It also support the relative market power (RMP) and the efficient market (EMH) hypotheses.

The cost efficiency (C-EFF) coefficient was positive and significant at 5% level. This implies a good degree of cost efficiency among the firms and can be attributed to sound management practices as well as the application of appropriate technology. This finding is consistent with Berger (1995). Kari et al. (2012) also reported a positive significant relationship between measure of efficiency and performance (profitability). The result of this study also lends support to efficient market hypothesis.

The K/L variable was significant and positively related to profitability at the 5% level. This is in line with theoretical postulation because a good combination of labour and capital by agro-based firms can improve their efficiency and hence, profitability. This result compares favorably with that of Al-karasneh (2000).

The variables for Firm size (FSZ) and total number of firm branches (TBN) carried the expected positive sign but were not significant. The positive sign for firm size is in line with the theoretical literature because size is directly related to economy of scale. Large scale firm would reap economy of scale and hence, perform better. Also, increase in firm size would imply an increase in tangible assets that can be mortgaged as security of loans to boost the liquidity status of the firm. This entails more capital at their disposal to expand their businesses and improve upon their efficiency through investment in research and development as well as advertisement. The positive sign for total number of firm branches is justified in that increase in firm branches would imply higher market shares.

Table 2: OLS regression result for relationship between agro-based firm's profit and some SCP variables in Nigeria

Variable	Estimate coefficient	Standard Error	t-statistics
Constant	47.2281	22.9131	2.0612**
LogMKTS _{it}	0.8457	0.3793	2.5556**
LogFSZ _{it}	0.1249	0.0982	1.2287
LogC-EFF _{it}	3.4143	1.5604	2.1881**
LogK/L _{it}	14.2572	7.0638	2.0183**
LogTNB _{it}	0.0152	0.6645	0.2287

Diagnostic statistics

$R^2 = 0.6316$ Adjusted $R^2 = 0.5973$ DW = 2.112

Fcal = 41.56

Akaike Criterion = 161.36

Schwartz Criterion = 201.44

Hanan-Quinon Criterion = 112.81

Dependent Variable: ROC

Note: Asterisks ** and *** represent 5% and 1% significance levels respectively. Variables are as defined in equation (2) and (3).
Source: Authors computation from E-view version 7.1

6.4 Granger Causality Result

Result of the Granger causality test presented in Table 3 showed that causality runs uni-directionally from market share (MKTS), cost efficiency (CEFF) and capital to labour ratio (K/L) to return on capital employed (ROC) and from return on capital employ (ROC) to firm size (FSZ), capital to labour ratio (K/L) to cost efficiency (CEFF) .

Table 3: Granger causality Result

Null Hypothesis:	Obs	F-Statistic	Prob.
FSZ does not Granger Cause ROC	9	1.10805	0.4362
ROC does not Granger Cause FSZ		9.06991	0.0640
MKTS does not Granger Cause ROC	9	5.36401	0.0612
ROC does not Granger Cause MKTS		0.69558	0.1547
CEFF does not Granger Cause ROC	9	6.55390	0.0804
ROC does not Granger Cause CEFF		1.65379	0.3280
K/L does not Granger Cause ROC	9	4.75253	0.0599
ROC does not Granger Cause K/L		1.01047	0.4619
TNB does not Granger Cause ROC	9	1.65458	0.3279
ROC does not Granger Cause TNB		0.81450	0.5217
MKTS does not Granger Cause FSZ	9	0.03113	0.9697
FSZ does not Granger Cause MKTS		0.59936	0.6040
CEFF does not Granger Cause FSZ	9	0.85397	0.5087
FSZ does not Granger Cause CEFF		1.70886	0.3196
K/L does not Granger Cause FSZ	9	0.34957	0.2432
FSZ does not Granger Cause K/L		1.00690	0.4628
TNB does not Granger Cause FSZ	9	0.69945	0.5632
FSZ does not Granger Cause TNB		0.37645	0.7147
CEFF does not Granger Cause MKTS	9	1.12314	0.2086
MKTS does not Granger Cause CEFF		0.88231	0.1471
K/L does not Granger Cause MKTS	9	0.37055	0.7181
MKTS does not Granger Cause K/L		0.55464	0.2250
TNB does not Granger Cause MKTS	9	0.7092	0.3343
MKTS does not Granger Cause TNB		2.81037	0.2053
K/L does not Granger Cause CEFF	9	7.21157	0.0414
CEFF does not Granger Cause K/L		0.40272	0.7000
TNB does not Granger Cause CEFF	9	1.24290	0.4044
CEFF does not Granger Cause TNB		0.72614	0.6656
TNB does not Granger Cause K/L	9	0.51114	0.3531
K/L does not Granger Cause TNB		0.10864	0.9004

6.5 Test of hypothesis

Hypothesis 1: Ho: The structure of the Nigeria agro-based firms has no positive effect on the conduct and hence, performance of agro-based firms in Nigeria.

Result: From the result presented in Table 1, the variable for market structure (MKTS) was positive and significantly related to profitability while firm size (FSZ) on the other hand was positive though not significant.

We therefore reject the null hypothesis and conclude that the structure of agro-based firms has a direct positive impact on their performance (measured in ROC) in Nigeria.

Hypothesis 2: Ho: The conduct of the Nigerian agro-based firms has no direct positive effect on their profitability

Result: The t-values for the conduct variables (capital to labour ratio (K/L) and cost efficiency of the firms (C-EFF) had significant positive impacts on the profitability at the 5 % probability level as shown in Table 2. Hence, we reject the null hypothesis and conclude that the conduct of the Nigerian agro-based firms has a direct positive impact on their profitability.

Hypothesis 3: Ho: The behavior of the Nigerian agro-based firms does not follow the prediction of the Structure-conduct- performance (SCP), relative market power (RMP) or the efficient market power hypothesis.

Result: Judging from the evidence presented in Table 2 and in line with our stated assumptions, the calculated t-values for market share Variable (MKTS) and Efficiency variables (C-EFF) were positive and significant as 5% levels. While the positive and significant value of market share support the both the relative market power (RMP) and the efficient market (EM) hypothesis, the positive and significant value of the efficiency variable (C-EFF) support the efficient market hypothesis. We, therefore, conclude that the behavior of Nigerian agro-based firms follows the prediction of the relative market power and the efficient market hypothesis, respectively.

7.0 Conclusion

The study examined the validity of the structure, conduct and Performance (SCP) paradigm in the Nigerian agro-based sector. Result revealed that the variable for market share, capital to labour ratio and cost efficiency exerted significant positive impact on the profitability of agro-based firms. Result also revealed that granger causality runs uni-directionally from market share, cost efficiency and capital to labour ratio to return on capital employed and from return on capital employed to firm size and from capital to labour ratio to cost efficiency. Findings further lend support to the relative market power (RMP) and the efficient market power hypothesis. This implies that the SCP hypothesis was not validated in this study. Hence, it can be concluded that the structure- conduct- relationship in Nigerian agro-based firms reflects a combination of superior firm management and greater market power with large market shares.

8.0 Policy Implications

The following policy recommendations are given base on the findings of the study:

- (i) From the result, total number of firm branches was not a significant determinant of profitability; hence, agro-based investors should reduce the proliferation of branches and instead concentrate on few viable and productive branches. This would improve their efficiency and profitability.
- (ii) Market share was found to exert a significant positive impact on profitability; therefore, attention should be directed towards pursuing strategies that would increase their market share. This can be achieve through advertising and the adoption of modern promotional strategies
- (iii) Efficient firms were found to be profitable; hence, to improve efficiency, effort should be directed towards the employment of trained and knowledgeable managers as well as the employment of superior production technologies that would reduce the unit cost of production. This in addition with the evolution and adoption of appropriate internal control system would minimize cost and improve the firm's efficiency level.

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