Corporate Social Responsibility and Financial Performance: A Two Least Regression Approach

Alexander Olawumi Dabor[1] & Marylyn Kaka[2] & Kingsley Idogen[3]

[1]Department of Accounting, Edo University, Iyahmo, Nigeria
[2,3]Department of Accounting, Veritas University, Abuja, Nigeria
Correspondence: Alexander Olawumi Dabor, Edo University Iyahmo, Nigeria.
Email: alexander.dabor@edouniversity.edu.ng

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Abstract: The objective of this study is to investigate the casuality between corporate social responsibility and firm financial performance. The study employed two least square regression approaches. Fifty-two firms were selected using the scientific method. The findings revealed that corporate social responsibility and firm performance in manufacturing sector are mutually related at 5%. The study recommended that management of manufacturing companies in Nigeria should expend on CSR to boost profitability and corporate image

Keywords: CSR, Two Least Square Regression, Performance, ROE, Firm Size

1. Introduction

The existence of business organizations come with several different intents. Scholars have tried to establish reasons for the existence of firms. Many are of the opinion that the reason for setting up businesses is primarily for profit making. Many other researchers believe that firm existence is for the enhancement shareholders' wealth. Whatever the ideal reason may be, there is a need to put necessary measures in place to ensure that this primary motive is achieved and also sustained in the long run. It is worthwhile to stress that the activities of businesses are affected by the society and these businesses in return also affect societal activities. Since stakeholders (including society) affect and are affected by the operations of organizations, it is germane for management to put them into consideration while drawing its plans and strategies for executing the plans.

One way amongst several other ways that organizations can put the society into their plans is in the provision for Corporate Social Responsibility (CSR). CSR has drawn the attention of many researchers in recent times because it gives a planform on which mutual relationship between firm and the operating community is built. This mutual relationship leads to growth and development of society at large. Despite the perceived impact of CSR on the host community there have been several debates on its impact on the society in the recent times. Carroll and Buchholtz (2003) opine that CSR is the incessant responsibility of businesses to act morally and pay it quarter to economic development in order to better the standard of living of the employee and their household as well as of the host community and it environs. The interconnection between CSR and corporate performance continues to be a vital research

topic in the field of management and accounting in particular. This is may be as a result of the vital role it plays in the structuring of the society. Siegel and Vitaliano (2007) assert that contemporary hypothsis and pragmatic investigations reveal that corporate entities can purposefully involve themselves in socially responsible activities in order to rise private profits.

Siegel and Vitaliano (2007) explain that corporations do not exist solely to maximize profit but also to advance the interest of the society as a whole. Freidman (2008) argues that the responsibility of a corporation is to uphold the interest of the shareholders by maximizing profitability and to also to remain obedient to the laws of its host community. The author further reports that only the laws of the land can induce organizations to be socially responsible. Tsoutsoura (2004) documents that companies with perceived substantial corporate social responsibility commitment habitually possess greater capacity to induce and retain human capital hence maintain low staff turnover and low recruitment and training costs.

Extent literature (Roth & O' Donnell, 1996; Sanda, Mikailu & Tukur, 2005) report that the relationship between corporate social responsibility and firm performance is subject to endogeneity, or reverse causality. It suffices to say that, it is uncertain whether performance causes CSR or whether CSR causes performance. To account for this, this study utilized a two-equation system to allow for performance and CSR variables to be potentially endogenous. The study focuses on the causality between CSR and firm financial performance. To the best of our knowledge this study is the first study indigenous study to look at this subject from the banks perspective.

2. Literature Review

2.1 Conceptual Framework

2.1.1 Corporate Social Responsibility

The genesis of corporate social responsibility is not unclear despite the fact that it is said to be linked with the 19th century. Contemporary corporate social responsibility was initiated by Bowen in 1953 (Blocher, Chen & Lin, 1999) Since then, many theories and approaches have been proposed in this regard, paving way for the concept of CSR to dominate the society-business interface.

Heenetigala (2010) defines CSR as an ongoing obligation by a corporate entity to act morally and contribute to economic growth and improved standard of living of employees and their household well as the immediate environment of the host community. McWilliams, Siegel and Wright (2006) explain that CSR is an activity that seems to add some add value to the community, further than the stake of the entity and statutory requirement. Banerjee (2008) defines Corporate Social Responsibility as a tactical way by which a firm vicissitudes its operations to assuage its negative impact on the host community.

2.2 Theoretical Framework

Stakeholder theory and legitimacy theory are the pillar on with this work is built. These theories individually recognizes the existence of all stakeholders – investors, community, government, to mention but a few, as they lay emphasis on the presupposition that whether an organization is private or public, it is indebted to numerous sets, which are critical to the existence of that organization. When an

organisation expend on the community, it anticipates to make profit from the money expended in form of reputational assets (Asemah et al., 2013).

The stakeholder theory was introduced in 1963 at the Stanford Research Institute (Shehu, 2015). Stakeholders were defined as those sets without whose backing the firm's existence will be impossible. The stakeholder theory was later transformed and spearheaded by Freeman in the 1980s. Hawke (2009) (as cited in Abdulrahman, 2014) opines that stakeholder theory is correct if and only if a firm can optimally attend to the welfares of shareholders by attending the need of all interest groups . Asemah, Okpanachi, and Edegoh (2013) state that as an fundamental aspect of the normative CSR theory, mandate managers take due diligence not to only safeguard the firm's interest but to protect the legitimate interest of all interest groups. Thus, the need of all interested party must be met at all times.

Legitimacy theory was propounded by Prabhu (1998) and Reverte (2009). This theory postulates that corporations as matter of duty must the community at heart, not just the owners of the business. As such business whose operations are in conformity with community led down principles and international best practices, the community has the right to discontinue the operations of such firm in it domain. Reverte (2009) also argue that the legality of a firm is built and preserved through emblematical activities, which make large chunk of the firm's corporate image. When is there is a real and prospective discrepancy between the firm and collective norms of community, this discrepancy will threaten the firm's legitimacy in the form of legal sanctions, economic sanctions, to mention but a few. Thus, firms are mandated by the social contract to carry out various communally anticipated activities in return for endorsement of its objective and other recompenses. This will eventually guarantee its perpetual permittivity of operations in foreseeable future.

2.3 Review of Related Literatures

Cornett et al. (2014) perform a on impact corporate responsiveness on profitability of American commercial banks. Their result reveals corporate social responsibility is positively related with profitability. Muryaza, Akhtar, Ijaz and Sadiga (2014) performance a study to ascertain the impact of corporate social responsibility on corporate profit of Pakistani firms. Their result shows that profitability is positively related with corporate social responsibility.

Adeboye and Olawale (2012) examine the link between CSR as effective business tools and profitability of Nigerian banks. Their study reveals that CSR has a direct link with profitability. Uwalomwa (2011) investigates the influence firm characteristics on corporate social responsibility disclosure in the Nigerian financial sector. The findings reveal that firm characteristics positively influence level of corporate social responsibility disclosure

Fauziah (2016) carried out a study to investigate the connection between profitability and social responsiveness quoted firms in Malaysia between 2009 and 2013. The findings reveal that profitability is positively related with CSR. Chette et al. (2015) work on link between corporate performance and Corporate Social Responsibility of South African firms. Their results show that corporate performance is directly linked with CSR.

Shehu (2015) examines the connection between corporate performance and corporate social responsibility of Conglomerates quoted on the floor on the Nigerian stock exchange. The study shows employees relation is positively connected with corporate performance while environment management system is negatively connected with corporate performance.

Uadiale and Fagbemi (2011) investigate the between corporate performance and CSR in developing economies. The study considered employee relations (ER), company performance (CP) and environmental management system (EMS) to be the independent variables, while the individual dependent variables were Returns on Assets (ROA) and Return on Equity (ROE) The study used forty quoted Nigerian firms as its sample. The results showed that corporate performance is positively related with CSR.

Bolanle et al. (2012) performed a study to investigate the causality between corporate social responsibility and profitability of Nigerian banks. The study reveals that there a bidirectional relationship between profitability and CSR.

3. Methodology

3.1 Population and Sample Size

The population of this study comprises all 60 manufacturing firms that are quoted with the Nigerian Stock Exchange, as of December 31, 2015. Scientific method was employed to arrive at 52 firms. The study employed secondary data gotten from fact book

Model specification nce

Peformance= f(CSR)……i

CSRit= f (ROAit)…….……...ii

Equation 2 can be written in more detail form as follows:

$CSRit = \alpha_0 + \beta_1 ROAit + \beta_2 FSIZEit + \beta_3 LEV + eit$…….……..……..……(1)

$ROEit = \alpha_0 + \beta_1 CSRit + \beta_2 FSIZEit + \beta_2 CTL + eit$……..……..……..(2)

Where; α_0 = represents constant

eit = represents the error term

ROE= Return on assets

CSR= Corporate Social Responsibility

Control Variables: The control variable is firm Size. Total asset is the proxy for the firm size.

LEV= Leverage

***A priori* Expectation**

The expected signs of parameter estimates of financial performance measures in this study are;

$\beta_1 > 0$, $\beta_2 > 0$, and $\beta_3 > 0$.

3.2 Method of Data Analysis

Panel data analysis was used as the method of analysis and the model was estimated using the both OLS and 2 step least square regression estimation technique.

Table 1: Data interpretation and analysis

Dependent variable			
Variables	**OLS**	**Panel LS**	**2SLs bi-directio**
C	30382782* {4.575} (0.000.)	15.0369* {143.93} (0.00)	7540185* {3.210} (0.0018)
FSIZE	29.31831 {0.0635} (0.7165)	-9.98E {17.3233} (0.000)	10137964 {1.3.21} (0.167) Dff(9076860)
ROA	-924394 {- 2.1045} (0.0387)		-0.1272 {-2.105} (0.038) Dff(91239.9)
LEV	=5.24203 {- 0.9185} (0.3585)	-0.3471 {-7.4055} (0.000)	-782414.6 {-2.1049} (0.038) dif(-678241)
CSR	-6.57E '- {- 2.07} (0.038)		
R^2	0.81	0.60	0.63
ADJ R^2	0.66	0.49	0.48

F-Stat	5.4	1.3	3.5
P(f-stat)	0.045	0.05	0.01
D.W	1.87	2.22	1.54

Source: Researcher's computation. ( ) represent, t value, {} represents, p-value * connotes regression

Table 1 shows the regression result examining the causative relationship between CSR and performance in the Nigerian manufacturing sector. The regression analysis was conducted using OLS, GLS and 2SLs. First, study examines OLS which act as a check for other methods. The R^2 for the 37.0 this indicates that the explanatory variable (ROA) explains about 37% the dependent variable (CSR) during the period under review. The F-stat 123.4 with p value =0.000 at 5% this implies that the null hypothesis of no significant connection between the independent and dependent variables is rejected. It is also suggests that combined statistical relevance of the model. The D. W statistics of 1.4 shows the serial correlation is absence in the residuals. The result further reveals that ROA has a negative relationship with CSR (t-2.10, value = p 0.0387).

Second, the study employed panel least square method. The R^2 for the panel LS shows an estimation value of 0.34 this indicates that about 34% the dependent variable (ROA) is explained the explanatory variable (CSR) during the period under review. The F-stat 1.3 with p value =0.05 at 5% this implies that the null hypothesis of no significant connection between the independent and dependent variables is rejected. It is also suggests that combined statistical relevance of the model. The D. W statistics of 1.5 shows the serial correlation is absence in the residuals. In addition, the result shows that ROA has a negative relationship with CSR (t-6.57E, value = p 0.038).

Finally, the stepwise regression result reports R^2 of 0.41 this implies that the explanatory variables about 41% the dependent during the period under review. The D. W statistics of 1.45 implies that serial correlation is absence in the residuals. In addition, the result shows that bi-directional relationship between corporate performance and corporate social responsibility at 5% p=0.000.

4. Conclusion and Recommendation

The study was aimed at finding the relationship between CSR and performance. The study employed 2SLs approach. The result shows that the relationship between corporate social responsibility and firm performance in the Nigerian manufacturing sector is subject to endogeneity, or reverse causality at 5% p=0.000. The study implies that profitability affects engagement CSR activities by Nigerian manufacturing firms while on other hand engagement on CSR activities by Nigerian management firms has positive effect on their financial performance. The study recommended that management of manufacturing companies in Nigeria should expend more on CSR to boost profitability and their corporate image.

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APPENDIX

Dependent Variable: CSR
Method: Panel Least Squares
Date: 08/05/17 Time: 05:24
Sample: 2002 2015
Periods included: 14
Cross-sections included: 52
Total panel (unbalanced) observations: 723

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	30382762	6640474.	4.575390	0.0000
FSIZE	29.31139	80.62487	0.363553	0.7163
ROA	-924394.5	439244.9	-2.104508	0.0357
LEV	-524203.2	570673.0	-0.918570	0.3586

Effects Specification

Period fixed (dummy variables)

R-squared	0.370129	Mean dependent var	15845523
Adjusted R-squared	0.250081	S.D. dependent var	20042046
S.E. of regression	19991064	Akaike info criterion	36.48270
Sum squared resid	2.82E+17	Schwarz criterion	36.59047
Log likelihood	-13171.50	Hannan-Quinn criter.	36.52430
F-statistic	3.230453	Durbin-Watson stat	1.468198
Prob(F-statistic)	0.023829		

Variable: ROA
Dependent Method: Panel EGLS (Period random effects)
Date: 08/05/17 Time: 05:29
Sample: 2002 2015
Periods included: 14
Cross-sections included: 52
Total panel (unbalanced) observations: 723
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.03690	0.104478	143.9247	0.0000
CSR	-6.57E-09	3.17E-09	-2.070709	0.0387
FSIZE	9.98E-05	5.76E-06	17.32303	0.0000
LEV	-0.347133	0.046875	-7.405586	0.0000

Effects Specification

	S.D.	Rho
Period random	0.000000	0.0000
Idiosyncratic random	1.707532	1.0000

Weighted Statistics

R-squared	0.340919	Mean dependent var	15.60317
Adjusted R-squared	0.308169	S.D. dependent var	2.083521

S.E. of regression	1.695008	Sum squared resid	2065.724
F-statistic	123.9707	Durbin-Watson stat	1.548237
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.340919	Mean dependent var	15.60317
Sum squared resid	2065.724	Durbin-Watson stat	0.348237

Dependent Variable: CSR
Method: Stepwise Regression
Date: 08/05/17 Time: 05:51
Sample (adjusted): 1 779
Included observations: 774 after adjustments
No always included regressors
Number of search regressors: 3
Selection method: Bi-directional
Stopping criterion: p-value = 0.5
Stopping criterion: number of search regressors = 3

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
ROA	1022627.	54517.04	18.75793	0.0000
FSIZE	-84.37109	42.45252	-1.987422	0.0472

R-squared	-0.419441	Mean dependent var	15409659
Adjusted R-squared	-0.370061	S.D. dependent var	19541449
S.E. of regression	19743257	Akaike info criterion	36.43710
Sum squared resid	3.01E+17	Schwarz criterion	36.44912
Log likelihood	-14099.16	Hannan-Quinn criter.	36.44173
Durbin-Watson stat	1.426575		

Selection Summary

Added ROA
Added FSIZE

*Note: p-values and subsequent tests do not account for stepwise selection.

Dependent Variable: CSR(full sample)
Method: Least Squares
Date: 04/01/16 Time: 20:53
Sample: 2005 2014
Included observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	72437574	20543556	3.526048	0.0168
ROA	-2.15E+08	55686547	-3.853629	0.0120
ROE	-0.336297	0.087029	-3.864207	0.0118
NIM	3.38E+08	79769286	4.237753	0.0082

FSIZE	-10340247	3029651.	-3.413016	0.0190

R-squared	0.813639	Mean dependent var	6297766.
Adjusted R-squared	0.664550	S.D. dependent var	1741526.
S.E. of regression	1008657.	Akaike info criterion	30.79299
Sum squared resid	5.09E+12	Schwarz criterion	30.94428
Log likelihood	-148.9650	Hannan-Quinn criter.	30.62702
F-statistic	5.457418	Durbin-Watson stat	1.869229
Prob(F-statistic)	0.045490		

Dependent Variable: CSR(bank)
Method: Least Squares
Date: 04/01/16 Time: 21:23
Sample: 2005 2014
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	26235.22	106524.6	0.246283	0.8153
ROA	-106110.4	2630648.	-0.040336	0.9694
ROE	91239.75	478970.2	2.190491	0.0264
NIM	104173.4	112764.9	0.923810	0.3980
FSIZE	-0.002894	0.006190	-0.467537	0.6598

R-squared	0.606258	Mean dependent var	62632.00
Adjusted R-squared	0.498736	S.D. dependent var	89945.26
S.E. of regression	107511.3	Akaike info criterion	26.31543
Sum squared resid	5.78E+10	Schwarz criterion	26.46673
Log likelihood	-126.5772	Hannan-Quinn criter.	26.14947
F-statistic	1.324819	Durbin-Watson stat	2.215122
Prob(F-statistic)	0.050738		

Dependent Variable: CSR(Manufacturing)
Method: Panel Least Squares
Date: 04/01/16 Time: 21:29
Sample: 2005 2014
Periods included: 10
Cross-sections included: 10
Total panel observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7540185.	2348410.	3.210762	0.0018
ROA	10137964	7291151.	1.390448	0.1677
ROE	-0.127213	0.060434	-2.104975	0.0380
NIM	-782414.6	1374982.	-0.569036	0.5707
FSIZE	-0.033101	0.021316	-1.552908	0.1238

R-squared	0.630430	Mean dependent var	9274714.
Adjusted R-squared	0.483427	S.D. dependent var	18328014
S.E. of regression	17450858	Akaike info criterion	36.23686
Sum squared resid	2.86E+16	Schwarz criterion	36.36793

Log likelihood	-1788.725	Hannan-Quinn criter.	36.28989
F-statistic	3.524853	Durbin-Watson stat	1.539645
Prob(F-statistic)	0.010010		

Descriptive Statistics for full sample

	CSR	ROA	ROE	NIM	FSIZE
Mean	9274714.	0.087717	-17989617	0.346469	35411448
Median	267890.0	0.042580	-0.200000	0.130000	8.421100
Maximum	1.03E+08	2.057000	1.211111	10.40000	5.04E+08
Minimum	2000.000	-0.500000	-1.82E+08	-5.200000	0.123000
Std. Dev.	18328014	0.251285	31358635	1.289962	85350876
Skewness	2.844975	5.400500	-2.663005	4.339184	2.905815
Kurtosis	11.68549	41.42756	11.55437	42.31819	12.49663
Jarque-Bera	444.7294	6572.524	418.8674	6687.592	511.3390
Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	9.18E+08	8.684000	-1.78E+09	34.30047	3.51E+09
Sum Sq. Dev.	3.29E+16	6.188108	9.64E+16	163.0722	7.14E+17
Observations	100	100	100	100	100

Descriptive Statistics for bank

	CRS	ROA	ROE	NIM	FSIZE
Mean	48022.00	0.026408	0.042653	0.597347	71541309
Median	22200.00	0.020000	0.140000	0.310000	1933065.
Maximum	307500.0	0.910000	1.100000	10.40000	5.04E+08
Minimum	2000.000	-0.500000	-4.800000	-5.200000	1102348
Std. Dev.	63239.56	0.166237	0.794457	1.802800	1.11E+08
Skewness	2.003254	2.253688	-4.765610	2.841394	1.748587
Kurtosis	7.377235	19.70888	29.64763	21.16854	6.155765
Jarque-Bera	71.89176	611.4856	1635.254	739.8797	45.30271
Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	2353078.	1.294000	2.090000	29.27000	3.51E+09
Sum Sq. Dev.	1.92E+11	1.326464	30.29576	156.0042	5.87E+17
Observations	50	50	50	50	50

Descriptive Statistics for manufacturing companies

	CSR	ROA	ROE	NIM	FSIZE
Mean	18690320	0.150408	-3.6346370	0.096132	7.426554
Median	7880000.	0.078298	-24454690	0.046484	7.508930
Maximum	1.03E+08	2.057000	1.211111	0.800600	8.421100
Minimum	267890.0	0.005190	-1.82E+08	0.016755	0.123000
Std. Dev.	22508516	0.305515	36422522	0.137884	1.138660
Skewness	1.881478	5.361945	-1.955236	3.962919	-5.517132

Kurtosis	6.284121	32.90148	7.429718	19.09239	36.08883
Jarque-Bera	50.92997	2060.246	71.28314	656.9758	2483.945
Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	9.16E+08	7.370000	-1.78E+09	4.710471	363.9012
Sum Sq. Dev.	2.43E+16	4.480300	6.37E+16	0.912577	62.23428
Observations	50	50	50	50	50

Correlation

	CSR	ROA	ROE	NIM	FSIZE
CSR	1.000000				
ROA	0.201492	1.000000			
ROE	-0.297788	-0.267499	1.000000		
NIM	-0.091355	-0.036755	0.106895	1.000000	
FSIZE	-0.211337	-0.014594	0.240442	0.051323	1.000000

Dependent Variable: DAC
Method: Stepwise Regression
Date: 08/02/17 Time: 01:49
Sample: 2004 2015
Included observations: 144
Number of always included regressors: 6
No search regressors
Selection method: Stepwise forwards
Stopping criterion: p-value forwards/backwards = 0.5/0.5

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2008.670	0.505378	3974.590	0.0000
CSR	7.77E-06	3.31E-06	2.351531	NA
ROA	1.201759	1.848161	0.650246	0.5166
ROE	-0.000629	0.011292	-0.055703	0.9557
FSIZE	1.00E-09	9.20E-10	1.088289	0.2784
NIM	-0.098647	0.232832	-0.423682	0.6725

S.E. of regression	3.446515	Akaike info criterion	5.353378
Sum squared resid	1639.228	Schwarz criterion	5.477120
Log likelihood	-379.4432	Hannan-Quinn criter.	5.403660
Durbin-Watson stat	0.910826		

Selection Summary

No regressors were chosen by the stepwise routine