

Granger Causality between Corporate Tax Planning and Firm Value of Non-Financial Quoted Companies in Nigeria

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Abstract

The study examined the causal relationship between corporate tax planning and firm value of non-financial quoted companies in Nigeria between 2004 and 2014. A panel data of financial characteristic of 50 non-financial quoted firms spreading over ten sectors were collected from the audited annual financial reports of the sampled firms and the Nigerian Stock Exchange fact books. The pairwise VAR Granger Causality test conducted between tax planning and firm value shows that there is no causality that between tax planning and firm value within the sampled period at 5% level of significance. This implies tax planning did not granger causes firm value and vice versa. This result indicates that causality do not runs in any direction between Tax Planning (ETR) to Firm Value (Tobin Q). These suggest that there is a significant non-directional causality between Tax Planning (ETR) to Firm Value (Tobin Q) meaning that the two null hypotheses are accepted. That is, there was no significant casual nexus between Tax Planning (ETR) to Firm Value (Tobin Q).

Keywords: Firm Value, Tax Planning, Causality, Nigeria

1. Introduction

Corporate bodies are legally bound to pay whatever is prescribed within the legal framework of the tax enabling Act or Decree. Within the tax laws are provisions or loopholes which the management of corporate bodies can explore through adequate tax planning towards paying less tax thereby making fund available for the use of the shareholders and in the long run enhancing the firm's value. The Government, through various tax policies, sometimes affords taxpayers some tax reliefs in order to encourage investment in certain sectors of the economy it desires to encourage or for some other reasons. Taxpayers who are alert to good tax planning can take advantage of such tax reliefs by managing their business activities in such a way as to enjoy such reliefs thereby pay less tax. Payment of tax is a cash outflow to the company paying tax. Paying less tax reduces cash outflow thereby resorting into cash saving which a readily available for re-investment in other profitable undertaking within the firm. Thus, since one of the objectives of a business is to maximize profit, and one reliable means of achieving this, is through cost minimization; coupled with the fact that tax liability is a major expense normally incurred by any firm (representing between 20-30%) in the sources and application of fund in company's financial statement, this tax payment has implications for cash flow and availability of fund for re-investment with its attendant effect on wealth maximization objective of the firms. Tax planning, therefore, includes not only strategies aimed at the minimization of tax liability but also considers the cash flow effect on the business in terms of when it is most advantageous for a business to settle its tax liability without incurring any penalty. Minimizing tax liability through adequate tax planning is an act of transferring value from the state to the firm (Kiabel & Akenbor, 2014).

In literature, the relationship between tax planning activities and firm value is no longer in doubt in developed countries such as U.S. or U.K setting. Veracity of their findings has shown mixtures in the directions of the association between tax planning activities with firm value. For instance, Desai and Hines (2002) and Wang (2010) findings showed positive significant relationship between tax planning and firm value while Abdul-Wahab (2010) had negative significant relationship and Desai & Dharmapala, 2009(a) results indicated no direct significant relationship between tax planning activities and firm value. Therefore, based on these mixed findings of previous studies, the extent of tax planning is presumed to be related to firm value in unpredicted directions. Thus, it is needful that the causation between tax planning activities and firm value be investigated to establish the prevalent direction between them. Research is lacking on this relationship in Nigeria.

Therefore, the objective of this study is to examine the causal relationship between corporate tax planning and the firm value of non-financial quoted companies in Nigeria over a sample period of 2004 to 2014. Section one presents the introduction to the study, section two specifies some literature that was reviewed and section three explains the methodology used in this study. Section four presents the results while the conclusion reached in this study is in section five.

2. Literature Review

In literature, firm value and tax avoidance activities under the agency perspective has been highly debated. For instance, Desai and Dharmapala (2009a) found no relation between tax avoidance and firm value; however, they do find a positive relation between the two for firms with high institutional ownership. Their findings suggest that tax avoidance has a net benefit in an environment in which monitoring and control effectively constrain managerial opportunism afforded by tax avoidance activities. Hanlon and Slemrod (2009) examine the market reaction to news about a firm's involvement in tax shelters. The authors find a negative market reaction to tax shelter disclosure, suggesting that investors are concerned about the possibility that tax shelters are intertwined with managerial diversion and performance manipulation. Furthermore, the authors find that the negative reaction is less pronounced for firms with stronger governance; however, this result seems to be sensitive to how governance is empirically measured.

Stickney and McGee (1982) used data from Compustat for 1978 and 1980 for U.S. companies. They defined ETR as total income taxes payable divided by book income before taxes adjusted for the effect of timing differences. They found that lower Effective Tax Rate tend to be related to firms that are heavily capital intensive, highly leveraged and in natural resource industries. Foreign operations and firm size were less important indicators of lower Effective Tax Rates. Capital intensity was measured by a combination of factors. Foreign operations were determined by foreign sales. Natural resource involvement included mineral, petroleum, timber, and similar activities. Size was measured by sales and assets. Leverage was calculated based on long-term debt divided by stockholders' equity and long-term debt divided by total equities.

Desai and Hines (2002) provided evidence on firm performance and tax planning behaviour of firms. Again, the study investigates the relationship between tightening of tax systems and market value of firms. The study was based on 850 listed US firms. The study sample was purposively selected to reflect the characteristics desired by the researchers. The study was cross sectional and the data relates to year 2000. Correlative-description design was adopted. Desai and Hines established that intensive tax planning is associated with higher firm performance. Still on US, Desai and Dharmapala (2007) provided a comprehensive study that incorporates tax planning, corporate governance and firm performance. The study used 4,492 observations on 862 firms over the period 1993 to 2001. This panel data was drawn from the Compustat and Execucomp databases, merged with data on institutional ownership of firms from the CDA/Spectrum database. Firms' performance is measured using Tobin's q and governance quality is proxied by the level of institutional ownership. Tax planning is measured by inferring the difference between the income reported to capital markets and tax authorities (the book-tax-gap). Two analysis models were adopted—the OLS model and the IV estimation model. The OLS results shows that the average effect of tax planning on corporate performance is not significantly different from zero. In other words, there is no relationship between tax planning and firm performance.

Abdul-Wahab (2010) provided a result that differs from the findings of Desai and Hines (2002), Desai and Dharmapala (2009a), and Chen, Chen, Cheng and Shelvin (2010). His study sought to establish a relationship between tax planning savings of firms and their value. The study simultaneously investigates the moderating influence of corporate governance.

He employed 240 firms listed on the London stock exchange from 2005 to 2007. Tax planning was proxied by the difference between the effective tax rate of the entities and the applicable statutory tax rates. Self-constructed governance index was constructed using corporate governance mechanisms. Firms' value was represented by the Tobin's Q. The data was analysed using panel regression analysis model. As a check, the OLS model was also used. The results indicate a negative relationship between firm value and tax planning activities. He explained the relationship with reference to tax planning cost and risk. The study suggested that tax planning cost and risks associated with tax planning have the potential of derailing the benefits that should have accrued to shareholders. The researcher maintains that as tax planning activities increase, the tax costs and risks outweighs the benefits.

Wang (2010) examines the relation among tax avoidance, corporate transparency and firm value. The authors used cash effective rates and permanent book-tax difference to measure tax avoidance, which firm value as proxy by Tobin's Q using sample S and P 1500 firms in the period 1994-2001. They found positive significant relationship between tax avoidance and firm value.

Lestari and Wardhani (2015) analysed the impact of tax planning on firm value with board diversity as moderating variable. The research was conducted for non-banking and financial firms in Indonesia Stock Exchange for 2010 to 2011. The study found evidence of positive relationship between tax planning and firm value. The study also found that board diversity could increase the positive influence of tax planning into firm value.

In Indonesia, Lestari and Wardhani (2015) analyzed the impact activities tax planning (TP) to firm value with board diversity as moderating variable. The research was conducted for non-banking and financial firms in Indonesia stock exchange for 2010-2011. The results of this study are: Firstly, they found evidence of positive relationship between TP and firm value. Secondly, they found evidence that board diversity (Age and Bstudy of member director) could increase the positive influence of TP into firm value, except for Minority could decrease the positive influence of TP into firm value. Finally, the results of the sensitivity test with the full model and the full sample suggested that TP had robust positive effect in increasing firm value, then the moderating influence of board diversity (Bstudy and Minority) on the relationship between TP and firm value was consistent but other variables of board diversity (Age) are not consistent. Thus, it is needful that association between tax planning activities and firm value be investigated to establish the prevalent direction between them. Research is not conclusive on this relationship in Nigeria.

3. Methodology

This section describes the method to be used in carrying out the study and the procedure to be adopted in the collection of necessary information. This study covers non-financial quoted companies in Nigeria cutting across all sectors between 2004 and 2014. The list of quoted companies as released by Nigerian Stock Exchange online November 2014 was 231 companies sub-divided into 31 Sectors out of which 74 of these 231 were financial related companies, given Non-Financial Quoted Companies of 151 which serves as population for this study. From this, a sample of fifty (50) companies out of non-financial quoted companies that covers 10 sectors were purposively selected on stratified random sampling basis. Secondary data were obtained from the audited financial reports of the sampled.

This study employed the Granger causality analysis developed by Sims (1980) and Granger (1980). The study also employs the Granger causality test to ascertain causal relationship existence between the two variables (corporate tax planning and firm value), whether a uni-directional or bi-directional (feedback) relationship exists between them and these variables can be used to predict each other or not. To find out whether causality runs in the opposite direction, i.e., from FV to ETR, a repeat test was conducted with FV and ETR interchanged (Granger, 1969; Akaike, 1969; Folorunso, 2000). Using Granger causality paradigm, the study expresses Causal relationship models as follows:

$$FV_t = \sum_{i=1}^k a_i FV_{t-i} + \sum_{j=1}^k \beta_j ETR_{t-j} + \varepsilon_t \dots \dots \dots (1)$$

$$ETR_t = \sum_{i=1}^k \delta_i ETR_{t-i} + \sum_{j=1}^k \gamma_j FV_{t-j} + \mu_t \dots \dots \dots (2)$$

Or, equivalently, in matrix form:

$$\begin{bmatrix} FV_t \\ ETR1_t \end{bmatrix} = \begin{bmatrix} \alpha \\ \delta \end{bmatrix} + \begin{bmatrix} a_i & \beta_i \\ \delta_i & \gamma_i \end{bmatrix} \begin{bmatrix} FV_{t-i} \\ ETR_{t-i} \end{bmatrix} + \dots + \begin{bmatrix} a_k & \beta_k \\ \delta_k & \gamma_k \end{bmatrix} \begin{bmatrix} FV_{t-k} \\ ETR_{t-k} \end{bmatrix} + \begin{bmatrix} \varepsilon_t \\ \mu_t \end{bmatrix} \dots \dots \dots (3)$$

Where: FV = Firm Value = TobinQ = Total market value/Total Asset Value of firm
 ETR = Effective Tax Rate (measurement of Corporate tax planning)

From equation 1 and 2 depicted above, FV and ETR1 stand for the pair-wise series under consideration and k is the required lag length to be gotten by Akaike (1969)'s Final Prediction Error (FPE) criterion. If for example $\sum \beta_j = 0$ and $\sum \gamma_j = 0$ then ETR does not Granger cause FV in equation (1) and similarly FV does not Granger cause ETR in equation (2). Thus it implies that ETR and FV other things being equal, are assumed to be independent. The paper carries pair-wise Granger causality tests among the Predictant FV, the predictor ETR series respectively. Where α and δ are the intercept terms a_i, β_i, δ_i and γ_i are the coefficients of the endogen variables; and the ε_t and μ_t are the stochastic error terms.

Before proceeding to estimation using the pairwise Granger Causality Test as developed by Granger (1969), Panel Cointegration Test proposed by Pedroni [1999] and Vector Auto Regression (VAR) model was employed to test for the co-integration of the panel data. However, diagnostic test that was carried out include the VAR lag selection criteria, the VAR Wald exclusion test, the Portmanteau test for autocorrelation, VAR residual Serial correlation test, VAR Residual Normality test, VAR Residual Heteroscedasticity test, VAR Variance decomposition and the VAR stability condition check was performed. In order to determine the appropriate lag length VAR selection and exclusion test was employed.

Corporate Tax Planning

Researchers and policymakers have been using ETR as an important measurement of the corporate tax burden for several decades (Rego, 2003; Derashid and Zhang, 2003; Callihan, 1994 and Dyreng, Hanlon and Maydew, 2008). Rego (2003) interpreted ETR as a measure of the effectiveness of tax planning. Similar to Armstrong, Blouin, and Larcker, (2012), Phillips(2003) and Rego (2003)], this study utilized the concept of Effective Tax Rates (ETR) since it is considered the most appropriate tool to measure the distribution of a company's tax burden. Dyreng et al. (2008) and Minnick &Noga (2010) defined Effective Tax Rates (ETR) as the ratio of total tax expense to pre-tax income for a given firm.

$$ETR = (\text{Total tax expense} / \text{Pre-tax income}) * 100$$

4. Results And Discussion

A significant correlation between tax planning and firm value does not necessarily indicate causality but it could rather be a common linkage in a sequence of events. One type of significant correlation situation is when both variables are influenced by a common cause and therefore are correlated with each other. There is need to investigate whether tax planning and firm value causes each other or not.

Panel Cointegration Test

The results of the cointegration tests using Pedroni are extracted. Table 1 presents the panel and group statistics along with the respective variance ratios and rho statistics (non-parametric tests). For the model, there is strong evidence of panel cointegration according to both the Augmented Dickey Fuller (ADF)-t and Phillips and Perron (non-parametric)-t statistics.

Table 1: Pedroni Panel Cointegration

	Panel v-Statistic		Panel rho-Statistic		Panel PP-Statistic		Panel ADF-Statistic	
	Statistic	Prob	Statistic	Prob	Statistic	Prob	Statistic	Prob
TOBINQ ETR	-0.7415	0.7708	-0.8789	0.1897	-5.0217	0.0000	-5.4990	0.0000
	Group rho-Statistic		Group PP-Statistic		Group ADF-Statistic			
	Statistic	Prob	Statistic	Prob	Statistic	Prob	Statistic	Prob
TOBINQ ETR			2.4751	0.9933	-3.9944	0.0000	-3.1337	0.0009

Source: Author's Computation, 2015

Tests for Stationarity

In order to avoid the possibility of biased results emanating from a likely existence of unit roots in the variables under study, an important concern in data analysis is to know whether a series is stationary (do not contain a unit root) or not stationary (contains a unit root).

Time series data are often assumed to be non-stationary and thus it is necessary to perform a pretest to ensure there is a stationary co-integrating relationship among the variables in order to avoid the problem of spurious regression which is a condition for using the Granger Causality test. Therefore, to test for the stationarity, quantitative analysis of unit roots test of Levin, Lin & Chu t (assuming common unit root process), Im, Pesaran and Shin W-stat, Augmented Dickey-Fuller test (ADF) and PP - Fisher Chi-square were used.

Levin, Lin test assumes common unit root process while the other three tests assume individual unit root process. As all the p-values are smaller than 1%, the null hypothesis is rejected, we conclude that the two variables series are stationary.

Table 2: Showing the Result of the Unit root tests

Test	ETR (p-value)	TOBINQ(p-value)
Levin, Lin & Chu t	-1.95795** (0.0251)	-7.58257*** (0.0000)
Im, Pesaran and Shin W-stat	1.29503* (0.0977)	-2.75222*** (0.0030)
ADF – Fisher Chi-square	123.257* (0.0573)	141.270*** (0.0042)
PP – Fisher Chi-square	212.267*** (0.0000)	174.627*** (0.0000)
Status	I(0)	I(0)
Remarks	Stationary	Stationary

Source: Author's Computation, 2015

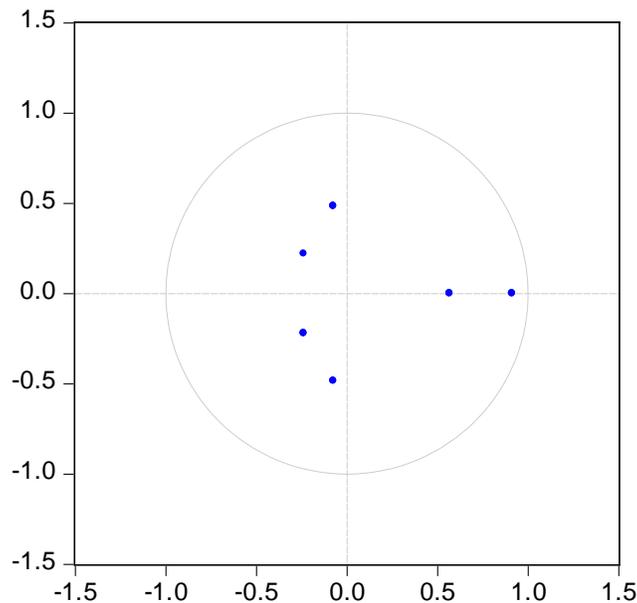
To further buttress the test of stationarity, the root test is carried out. Table 3 and figure 1 display the inverse root of the Autoregressive (AR) and/or Moving Average (MA) characteristics polynomial. According to Lütkepohl (1991), the estimated VAR is stable (stationary) if all roots have modulus less than one and all MA roots lie *inside* the unit circle. The result shows that all roots have modulus less than one and lines inside the unit circle at Lag of 3. The estimated VAR is stable (stationary) as all roots have modulus less than one and lie inside the unit circle; hence, the VAR is stationary only at Lag of 3. These results corroborate with each other.

Table 3: Showing the Result of the AR Roots of Characteristic Polynomial

Roots of Characteristic Polynomial	
Endogenous variables: TOBINQ ETR	
Exogenous variables: C	
Lag specification: 1 3	
Root	Modulus
0.913690	0.913690
0.567408	0.567408
-0.074166 - 0.485204i	0.490840
-0.074166 + 0.485204i	0.490840
-0.238298 - 0.220029i	0.324343
-0.238298 + 0.220029i	0.324343
No root lies outside the unit circle.	
VAR satisfies the stability condition.	

Source: Author's Computation, 2015

Figure 1: Inverse Roots of AR Characteristic Polynomial
Inverse Roots of AR Characteristic Polynomial



Source: Author's Computation, 2015

Autoregression Lag Order Selection Unrestricted Criteria

For the selection of the joint lags, we considered the VAR Lag Order Selection Criteria in table 4. The results specify the maximum lags to “test” for as displayed. The table indicates the selected lag from each column criterion by an asterisk "*". However, Hsiao (1981) suggests searching over the lag lengths (k1 to k4) and applying information criterion to determine the optimal length of the lag structure. Akaike information criterion, sequential modified LR test statistics Schwarz information criterion suggests 1 lag while sequential modified LR test statistic, final prediction error, Akaike information criterion, and Hannan-Quinn information criterion suggest 3 lags

Table 4: Showing the Result of the VAR Lag Order Selection Criteria

VAR Lag Order Selection Criteria						
Endogenous variables: TOBINQ ETR						
Exogenous variables: C						
Sample: 2004 2014						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-3055.867	NA	132955.8	17.47353	17.49557	17.48230
1	-2886.046	336.7305	51545.75	16.52598	16.59211*	16.55230
2	-2877.474	16.89973	50216.58	16.49985	16.61008	16.54372
3	-2866.643	21.22950*	48294.40*	16.46081*	16.61513	16.52224*
4	-2863.886	5.371147	48639.38	16.46792	16.66633	16.54689
* indicates lag order selected by the criterion						
LR: sequential modified LR test statistic (each test at 5% level)						
FPE: Final prediction error						
AIC: Akaike information criterion						
SC: Schwarz information criterion						
HQ: Hannan-Quinn information criterion						

Source: Author's Computation, 2015

Vector Auto Regression Estimates

Using the model defined under model specification, the casual nexus between Firm Value (TobinQ) and Tax Planning (ETR) was examined. The VAR approach was adopted and upon verification of the appropriate lag; it was found that the optimal lag should be 2. Both Hsiao suggested 4 lag length and 3 lag length were tested and the two results are at optimal level. However, a 3 lag length was used and the robustness was tested i.e. inverse roots of AR characteristic polynomial.

Table 5: Showing the Result of the Vector Auto Regression Estimates

Vector Autoregression Estimates		
Sample (adjusted): 2006 2014		
Included observations: 400 after adjustments		
Standard errors in () & t-statistics in []		
	TOBINQ	ETR
TOBINQ(-1)	0.725980 (0.04798) [15.1298]	-0.065201 (0.14773) [-0.44136]
TOBINQ(-2)	-0.078516 (0.06493) [-1.20924]	0.006255 (0.19990) [0.03129]
TOBINQ(-3)	0.233877 (0.05394) [4.33580]	0.250110 (0.16607) [1.50606]
ETR(-1)	-0.016639 (0.01710) [-0.97321]	0.130190 (0.05264) [2.47331]
ETR(-2)	0.019954 (0.01756) [1.13634]	0.162275 (0.05406) [3.00159]
ETR(-3)	-0.016956 (0.01792) [-0.94606]	0.038049 (0.05518) [0.68955]
C	1.546114 (0.80189) [1.92808]	9.989277 (2.46881) [4.04619]
R-squared	0.608358	0.068613
Adj. R-squared	0.602378	0.054393
Sum sq. resids	29429.90	278951.5
S.E. equation	8.653626	26.64207
F-statistic	101.7444	4.825191
Log likelihood	-1427.236	-1877.041
Akaike AIC	7.171179	9.420206
Schwarz SC	7.241030	9.490056
Mean dependent	12.09417	19.69218
S.D. dependent	13.72344	27.39761
Determinant resid covariance (dof adj.)	52854.73	
Determinant resid covariance	51021.00	
Log likelihood	-3303.149	
Akaike information criterion	16.58575	
Schwarz criterion	16.72545	

Source: Author's Computation, 2015

Granger Causality Test

To capture the direction of causality tax planning and firm value of non-financial quoted companies in Nigeria, pairwise Granger Causality test technique is employed. Two variables may correlate without one causing changes in the other. Thus, Granger Causality test helps in adequate specification of the model that explains the relationship between the variables. In this test, the null hypothesis is that there is no causality between the two variables. This is rejected if the probability of F-statistics is less than 0.05.

The pairwise VAR Granger Causality test conducted between tax planning and firm value is presented. The result shows that there is no causality that between tax planning and firm value within the sampled period at 5% level of significance. This implies tax planning did not granger causes firm value and vice versa.

Table 6: Showing the Result of the VAR Granger Causality/Block Exogeneity Wald Tests

VAR Granger Causality/Block Exogeneity Wald Tests			
Sample: 2004 2014			
Included observations: 450			
Dependent variable: TOBINQ			
Excluded	Chi-sq	df	Prob.
ETR	2.083491	2	0.3528
All	2.083491	2	0.3528
Dependent variable: ETR			
Excluded	Chi-sq	df	Prob.
TOBINQ	0.867208	2	0.6482
All	0.867208	2	0.6482

Source: Author's Computation, 2015

In order to check the direction of causality and the significance of the observed nexus, chi-square statistics was derived by the application of the Pairwise Granger Causality test, for a lag equal to 3. The chi-square statistics shows that Firm Value (TobinQ) has no significant casual effect on Tax Planning (ETR) (chi-square = 1.29568, $P < 0.2755$). Likewise, there was no significant casual nexus from Tax Planning (ETR) to Firm Value (TobinQ), with the chi-square = 0.90223 and $P = 0.4401$. This result indicates that causality do not runs in any direction between Tax Planning (ETR) to Firm Value (TobinQ). These suggest that there is a significant non-directional causality between Tax Planning (ETR) to Firm Value (TobinQ) meaning that the two null hypotheses are accepted. That is, there was no significant casual nexus between Tax Planning (ETR) to Firm Value (TobinQ).

Table 7: Showing the Result of the Pairwise Granger Causality Tests

Pairwise Granger Causality Tests			
Sample: 2004 2014			
Lags: 3			
Null Hypothesis:	Obs	F-Statistic	Prob.
TOBINQ does not Granger Cause ETR	400	1.29568	0.2755
ETR does not Granger Cause TOBINQ		0.90223	0.4401

Source: Author's Computation, 2015

The conclusion from these findings is that significant feedback do not existed from any direction and there exists non-directional causality between Tax Planning (ETR) to Firm Value (TobinQ). For the robustness of the study, the residual error correlation was tested. The following tests were also, found appropriate: VAR Residual Portmanteau Tests for Autocorrelations and VAR. Portmanteau Autocorrelation Test computes the multivariate Box-Pierce/Lung-Box Q-statistics for residual serial correlation up to the specified order. The Q-statistics and the adjusted Q-statistics were tested. Under the null hypothesis of no serial correlation up to lag h , both statistics are approximately distributed X^2 with degrees of freedom $k^2(h-p)$ where p is the VAR lag order. The result shows no residual autocorrelations up to lag 4.

Table 8: Showing the Result of the VAR Residual Portmanteau Tests for Autocorrelations

VAR Residual Portmanteau Tests for Autocorrelations					
Null Hypothesis: no residual autocorrelations up to lag h					
Sample: 2004 2014					
Included observations: 400					
Lags	Q-Stat	Prob.	Adj Q-Stat	Prob.	df
1	0.554663	NA*	0.556053	NA*	NA*
2	1.644996	NA*	1.651865	NA*	NA*
3	3.942339	NA*	3.966568	NA*	NA*
4	13.83901	0.0078	13.96320	0.0074	4
5	16.17318	0.0400	16.32692	0.0379	8
6	27.87584	0.0058	28.20780	0.0052	12
7	32.70679	0.0081	33.12479	0.0071	16
8	37.09263	0.0114	37.60014	0.0099	20
9	39.67058	0.0232	40.23743	0.0202	24
10	42.27015	0.0409	42.90365	0.0356	28

*The test is valid only for lags larger than the VAR lag order.
df is degrees of freedom for (approximate) chi-square distribution
*df and Prob. may not be valid for models with exogenous variables

Source: Author's Computation, 2015

Normality Test reports the multivariate extensions of the Jarque-Bera residual normality test, which compares the third and fourth moments of the residuals to those from the normal distribution. In principle, rejection of normal distribution invalidates the test statistics. But measures of skewness are found to be not informative in small samples (Bai and Ng, 2001). In conclusion, the "Unrestricted Vector Auto regression ETR and TOBINQ" model may be considered representative and stable to describe the autoregressive connection between ETR and TOBINQ and vice-versa as all the p-values are less than 1%.

Table 9: Showing the Result of the Jarque-Bera residual normality test

VAR Residual Normality Tests				
Orthogonalization: Cholesky (Lutkepohl)				
Null Hypothesis: residuals are multivariate normal				
Sample: 2004 2014				
Included observations: 400				
Component	Skewness	Chi-sq	df	Prob.
1	1.777947	210.7397	1	0.0000
2	-1.102591	81.04719	1	0.0000
Joint		291.7869	2	0.0000
Component	Kurtosis	Chi-sq	df	Prob.
1	15.46273	2588.663	1	0.0000
2	6.745942	233.8680	1	0.0000
Joint		2822.531	2	0.0000
Component	Jarque-Bera	Df	Prob.	
1	2799.402	2	0.0000	
2	314.9152	2	0.0000	
Joint	3114.318	4	0.0000	

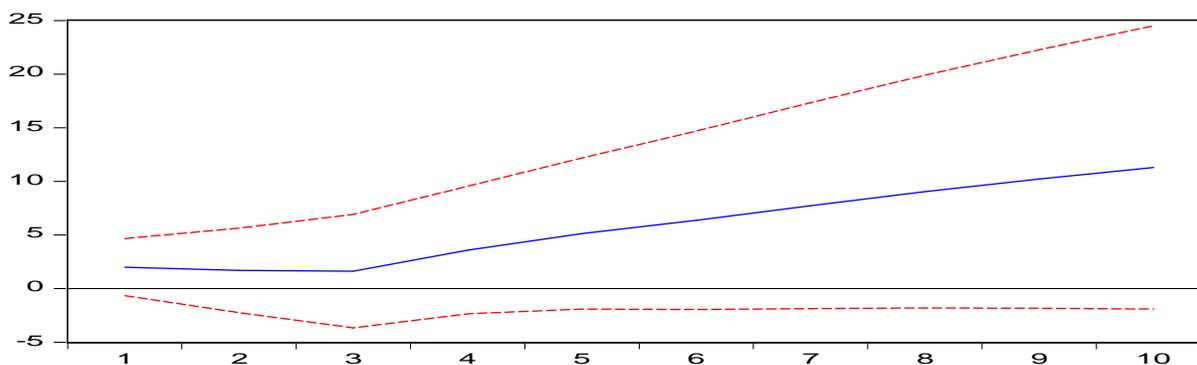
Source: Author's Computation, 2015

This analysis demonstrates the empirical findings that there is no long run connection between Tax Planning to Firm Value. The VAR model has established that there is no robust set of relationships between Tax Planning to Firm Value.

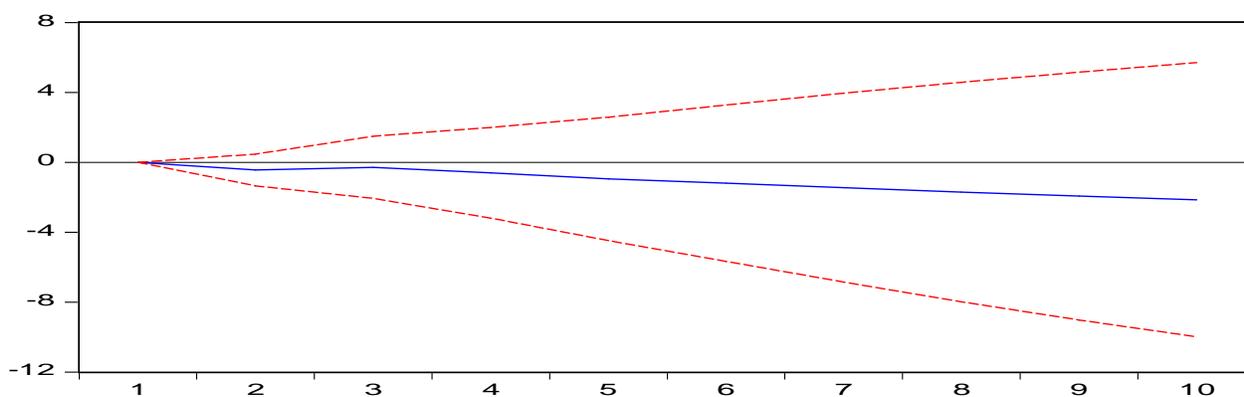
Based on the findings of the study, Tax planning is not a good indicator for enhance firm value among the non-financial quoted firms in Nigeria. This will give some clues to the researchers and investors when evaluating corporate performance especially in Nigeria context.

Finally, we can identify a series of impulse response functions. An impulse response function traces the effect of a one-time shock to one of the innovations on current and future values of the endogenous variables Tax Planning (ETR) to Firm Value (TobinQ). In this case, the accumulated responses of Tax Planning (ETR) to Firm Value (TobinQ) to Generalized One S.D. Innovations ± 2 S.E., for 10 years indicate that a positive impulse in ETR do not determine a consistent increase or decrease in TOBINQ's level over the entire period indicates that a positive impulse in TOBINQ determines no specific increase or decrease in ETR's level over the entire period. This buttress the fact there is no causal relationship between ETR and Tobinq.

Accumulated Response of ETR to Cholesky
One S.D. TOBINQ Innovation



Accumulated Response of TOBINQ to Cholesky
One S.D. ETR Innovation



5. Conclusion

For the past half century, the topic tax planning, corporate governance and firm value have attracted intense debate in the financial and fiscal management arena. The study investigated the causal relationship between tax planning and firm value of non-financial quoted companies in Nigeria. A panel data of financial characteristic of 50 non-financial quoted firms spreading over ten sectors were collected from the annual financial statement of the firms over the period of 2004 to 2014 from the Nigerian Stock Exchange fact books. Financial related firms were excluded in the study owing to the peculiarity of fiscal policies which is exogenously determined by their Regulation Bodies such as Central Bank of Nigeria. Non-quoted companies were also excluded due to paucity of data since their financial records are not made public.

The pairwise VAR Granger Causality test conducted between tax planning and firm value shows that there is no causality that between tax planning and firm value within the sampled period at 5% level of significance. This implies tax planning did not granger causes firm value and vice versa. This result indicates that causality do not runs in any direction between Tax Planning (ETR) to Firm Value (TobinQ).

These suggest that there is a significant non-directional causality between Tax Planning (ETR) to Firm Value (TobinQ) meaning that the two null hypotheses are accepted. That is, there was no significant casual nexus between Tax Planning (ETR) to Firm Value (TobinQ). The study recommends the need for firms to institute more robust tax planning practices that will help reduce their effective tax liabilities and therefore improve their overall value. Also, it is recommended that Nigeria quoted companies could engage the services of professional tax consultants, rather than relying on the top management team only for issues relating to tax planning activities.

References

- Abdul-Wahab, N. S. (2010). *Tax planning and corporate governance: Effect on shareholders' valuation*. Unpublished PhD thesis, University of Southampton, UK. Retrieved from <http://eprints.soton.ac.uk>
- Aganyo C.A. (2014). *The Effects of Corporate Tax Planning on Firm Value for Companies Listed at the Nairobi Securities Exchange*, Unpublished Master's thesis. University of Nairobi, Kenya.
- Akaike, H. (1969). Fitting Autoregressive Models for Regression, *Annals of the Institute Statistical Mathematics*, 21, 243-247
- Armstrong C. S., Blouin, J. F., & Larcker, D.F. (2012). The incentives for tax planning, *Journal of Accounting and Economics*, 53, 391 – 411.
- Bai J, and Ng S (2001). A New Look at Panel Testing of Stationarity and the PPP Hypothesis. Boston College Working Papers. In: *Economics* 518, Boston College, Department of Economics.
- Baiman S (1982). Agency research in managerial accounting: a survey, *Journal of Accounting Literature*. (1), 154-213.
- Bryman, A. and Cramer, D. (1997). *Quantitative Data Analysis with SPSS for Windows*. London, UK: Routledge.
- Callihan D. S., (1994). Corporate effective tax rates: A synthesis of the literature, *Journal of Accounting Literature*, 12, 1-43.
- Chen, S., Chen, X., Cheng, Q. & Shevlin, T.J. (2010). Are Family Firms More Tax Aggressive Than Non-family Firms? *Journal of Financial Economics*, 95, 41-61.
- Cheng, B. S., and T. W. Lai (1997), "Government Expenditures and Economic Growth in South Korea: A VAR Approach," *Journal of Economic Development*, 22(1), 11- 24.
- Demski J. S. (1980). A simple case of indeterminate financial reporting. *Information Economics and Accounting Research*, ed. By G. Lobo and M. Maher (University of Michigan: Ann Arbor).
- Derashid C. & Zhang, H. (2003). Effective tax rates and the "industrial policy" hypothesis: Evidence from Malaysia, *Journal of International Accounting, Auditing and Taxation*, 12(1), 45-62.
- Desai, M. (2005). The Degradation of Reported Corporate Profits. *Journal of Economic Perspectives*, 19, 171-192.
- Desai, M. A., & Dharmapala, D. (2007). Corporate tax avoidance and firm value. *University of Connecticut and University of Michigan*, 1-27.
- Desai, M. A., & Hines, J. R. Jr. (2002). Expectations and expatriations: Tracing the causes and consequences of corporate inversions. *National Tax Journal*, 55, 409-441.
- Desai, M.A., and Dharmapala, D. (2006). Corporate Tax Avoidance and High-Powered Incentives. *Journal of Financial Economics*, 79, 145-179.
- Desai, M.A., and Dharmapala, D. (2009a). Corporate Tax Avoidance and Firm Value. *The Review of Economics and Statistics*, 91, 537-546.
- Desai, M.A., and Dharmapala, D. (2009b). Earnings Management, Corporate Tax Shelters, and Book-Tax Alignment. *National Tax Journal*, 62, 169-186.
- Dickey, D. A. & Fuller, W. A. (1979). Distribution of the Estimators for Autoregressive Time Series with a Unit Root, *Journal of the American Statistical Association*, 74, 427-431.
- Dyreg S. D., M. Hanlon, and E. L. Maydew, (2008): "Long-run corporate tax avoidance," *The Accounting Review*, 83(1), 61 – 82.
- Dyreg, S.D., Hanlon, M., Maydew, E.L., (2010). The Effects of Executives on Corporate Tax Avoidance. *The Accounting Review* 85, 1163-1189.
- Eisenhardt, K. M. (1989). Agency theory: An assessment and review. *Academy of Management Review*, 14: 57-74.
- El-Faitouri, R. (2014). Board of Directors and Tobin's Q: Evidence from U.K. Firms. *Journal of Finance and Accounting* 2(4), 82-99.
- Folorunso, B.A. (2000): An Empirical Investigation of the Relationship between Currency Devaluation and Inflation in Nigeria (1970-1998), *The Nigerian Economic and Financial Review*, 5(2), 77-89.
- Granger, C. W. J. (1969). Investigating Causal Relations by Econometric Models and Cross-Spectral Methods. *Econometrica*. 37, 424-438.

- Granger, C.W.J., (1980), Testing for Causality: A Personal Viewpoint, *Journal of Economic Dynamics and Control*, 2, 329-352.
- Greene, W.H. (2008). *Econometric Analysis*. Upper Saddle River, N.J: Prentice Hall.
- Gujarati, D. N. (2004). *Business econometrics*. New Delhi: McGraw-Hill.
- Gupta, S., & Newberry, K. (1997). Determinants of the variability in corporate effective tax rates: evidence from longitudinal data. *Journal of Accounting and Public Policy*, 16, 1–34.
- Hall, S. G.(1994). *Applied Economic Forecasting Techniques*, Harvester Wheatsheaf, New York.
- Hanlon, M., and S. Heitzman.(2009). A Review of Tax Research. *Working Paper*. Massachusetts Institute of Technology.
- Hanlon, M., and Slemrod, J. (2009). What Does Tax Aggressiveness Signal? Evidence from Stock Price Reactions to News about Tax Shelter Involvement. *Journal of Public Economics*, 93:126-141.
- Harris M, &Raviv A. (1976). *Optimal incentive contracts with imperfect information*. Working paper, Carnegie-Mellon University.
- Harris M,&Raviv A. (1978). Some results on incentive contracts with application to education and employment, health insurance, and law enforcement. *Am. Econ. Rev.* 20-30.
- Hoffman, W. H. (1961). The theory of tax planning. *The Accounting Review*, 36(2), 274–281.
- Holmstrom, B. R. (1979). Moral hazard and observability. *Bell J. Econ.* Spring, 74-91.
- Hsiao, C. (1981). Autoregressive Modeling and Money-Income Causality, *Journal of Monetary Economics*. 7: 85-106.
- Inger, K. K. (2012). *Relative valuation of alternative methods of tax taxavoidance*. Unpublished PhD thesis, Virginia Polytechnic Institute and State University, Virginia. Retrieved from <http://www.papaers.srn.com/sol3/>
- Janssen, B., &Buijink, W. (2000). Determinants of the variability of corporate effective tax rates (ETRs): Evidence for the Netherlands. MARC Working Paper, WP/3/2000-08, Universiteit Maastricht, the Netherlands.
- Jensen, M. C., &Meckling, W. H. (1976). Theory of firm: Managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
- Kawor, S.&Kportorgbi, H. K. (2014). Effect of Tax Planning on Firms Market Performance: Evidence from Listed Firms in Ghana, *International Journal of Economics and Finance*, 6(3), 162-168.
- Khaoula F., Amor Ayed, A., &Zemzem.A., (2014). Tax planning and firm value: evidence from European companies. *International Journal Economics & Strategic Management of Business Process* 4,
- Kiabel, B. D. &Akenbor, C.O. (2014).Tax Planning and Corporate Governance in Nigerian Banks. *European Journal of Business and Management*, 6(2), 235-243.
- Kwiatkowski, D., P.C.B. Phillips P. Schmidt, and Y. Shin (1992). Testing the null hypothesis of stationarity against the alternative of a unit root: How sure are we that economic time series have a unit root? *Journal of Econometrics*, 54. 159- 178.
- Kwiatkowski, D., P.C.B. Phillips, P. Schmidt, Y. Shin (1992): Testing the Null Hypothesis of Stationarity against the Alternative of a Unit Root, *Journal of Econometrics*, 54, pp. 159-178, North-Holland.
- Lestari N. &Wardhani R. (2015). The Effect of the Tax Planning to Firm Value with Moderating Board Diversity, *International Journal of Economics and Financial Issues*, 5, 315-323
- Lev, B. and S. R. Thiagarajan, S. R. (1993).Fundamental information analysis, *Journal of Accounting Research*, 31, 190-215.
- Lim, K. (2011), “Tax avoidance, cost of debt and shareholder activism: Evidence from Korea”, *Journal of Banking and Finance*, 35:2, pp.456-470.
- Lutkepohl, H. (1991). *Introduction to Multiple Time Series Analysis*. Springer-Verlag, Berlin
- Minnick, K., & Noga, T. (2010). Do corporate governance characteristics influence tax management? *Journal of Corporate Finance*, 16, 703-718.
- Namazi M (1985). Theoretical developments of principal-agent employment contract in accounting: the state of the art, *Journal of Accounting Literature*, 4, 113-163.
- Osuegbu, E. (2007). Good tax planning and tax avoidance as legal options to the illegality of tax evasion. *The Federal Inland Revenue Services Journal*, 7(2), 45-67.
- Park, W. (1998). Granger Causality between Government Revenues and Expenditures in Korea, *Journal of Economic Development*, 23, 145-155.
- Pedroni, P (1999). Critical Values for Cointegration Tests in Heterogeneous Panels with Multiple Regressors,” Working Paper, Indiana University, July 25, 1-19.
- Phillips J. (2003). Corporate tax planning effectiveness: The role of compensation-based incentives, *The Accounting Review*, 78(3), 847-874.
- Porcano, T. M. (1986). Corporate tax rates: progressive, proportional or regressive. *The Journal of the American Taxation Association*, 7, 17-31.

- PwC (2013). Growing Scrutiny of international transactions, *Journal of International Transfer Pricing*, 33, 1-6.
- Rego, S. (2003). Tax-avoidance Activities of U.S. Multinational Corporations. *Contemporary Accounting Research*, 20 (4), 1-35.
- Ross, S. (1973). The Economic Theory of Agency: The Principal's Problem. *American Economic Review* pp. 134-139.
- Sargan, J. D. (1958). The Estimation of Economic Relationship using Instrumental Variables, *Econometrica*, 26, 393-415.
- Siegfried, J.J. (1972). *The Relationship between Economic Structure and the Effect of Political Influence: Empirical Evidence from the Corporation Income Tax Program*, PhD. Dissertation, University of Wisconsin.
- Sims, C. A. (1980), "Macroeconomics and Reality," *Econometrica*, 48, 1-48.
- Spence M, Zeckhauser R (1971). Insurance, information, and individual action. *Am.Econ. Rev.* 380-391.
- Stickney, C. P., & McGee, V. E. (1982). Effective corporate tax rates. The effect of size, capital intensity, leverage, and other factors. *Journal of Accounting and Public Policy*, 1, 125-152.
- Stock, J. (1994), "Unit roots, structural breaks and trends," in Engle, R. and McFadden, D. (eds.) *Handbook of Econometrics*, Volume 4: 2739-2841, Elsevier, Amsterdam.
- Wahab, A. & Holland, K. (2012). Tax Planning, Corporate Governance and Equity Value. *British Accounting Review*, 44, 1-43.
- Wang .(2010). *Tax Avoidance, Corporate Transparency, and Firm Value*" Working Paper.
- Watts, R. and Zimmerman, J. (1978). Towards a Positive Theory of the Determination of Accounting Standards. *The Accounting Review*, 53 (1), 112-134.