ECONOMIC PERFORMANCE AND ACCRUAL ACCOUNTING REFORM: *OECD* VERSUS NON-*OECD* COUNTRIES

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ABSTRACT: *This paper examines whether economic performance indices of nations signals accrual accounting reform or whether they have random effect. The secondary analysis of accrual accounting data distilled from the report of the PWC global survey of accounting and financial reporting practices of 100 central governments was done using the logistic multiple regression model. Economic performance proxied by gross domestic product per capita positively signaled the likelihood of accrual accounting reform with OECD countries 10 times more likely to implement full accrual accounting than non-OECD countries. Growth rate of gross domestic product and debt as percentages of gross domestic product both negatively signaled the adoption accrual accounting reform while tax revenue as percentage of gross domestic product returned a mixed result. The results suggest that poorer non-OECD countries may be constrained by the cost of implementing accrual accounting reform and may therefore require assistance of multilateral development institutions. This study provides empirical evidence of some of the constraints militating against accrual accounting reform that have been canvassed in the literature.*

KEYWORDS: Economic Growth, Gross Domestic Product, Tax Revenue, Public Debt, Public Finance, Public Sector Accounting

INTRODUCTION

The traditional system of accounting in governments and public-sector enterprises is the cash accounting model. Since the 1980s however, there has been a gradual and steady shift from cash basis accounting to accrual accounting model. Accrual accounting reform signals the adoption of business style accounting system by public sector enterprises and all government institutions including central and local governments. Accounting researchers have documented the benefits associated with the adoption of accrual accounting by governments around the world. These include better accountability and transparency, better performance management, and usefulness of information for decision making by external users such as investors and loan providers (Gutherie, 1998; Van der Hoek, 2005; and Lye, Perera and Rahman, 2005). Accrual accounting reform was one of the main thrust of the financial management component of the new public management (*NPM*) that sought to improve public sector productivity and enthrone new ways of assessing achievement. It is expected that the improved productivity associated with the *NPM* would translate to greater national productivity and economic growth and development.

Some of the other factors that accelerated the adoption of accrual accounting in the public sector recently were documented by Cavanagh, Flynn, and Moretti (2016) to include the recognition of the limitations of cash accounting, the development of international standards based on accrual accounting principles such as the Government Finance and Statistics Manual

(*GFSM*) and the International Public Sector Accounting Standards (*IPSAS*), and the professionalization of the accounting cadre resulting in the introduction of accrual accounting methods in government accounting systems. According to Cavanagh, Flynn, and Moretti other factors that influenced the rapid adoption of accrual accounting include the introduction of computer based Financial Management Information System (*FMIS*) which significantly reduced the transaction cost of processing government wide accounting information.

In a study of the accounting and reporting practices of central governments around the world that covered 100 accounting jurisdictions conducted by *PWC* (2013) it was found that by 2012, 26 central governments had adopted accrual accounting, 20 had adopted modified accrual accounting while the remaining countries (54) were practicing cash accounting or modified cash accounting. The survey achieved its number one objective of establishing a baseline of government accounting practices thereby documenting the reforms that are driving global accounting practices towards accrual accounting. The study summarized the benefits of accrual accounting reform to include better accounting that leads to better decision and better use of public resources, change of corporate culture of government entities, the transformation of the public financial management which is expected to impact positively on the entire gamut of government business and service delivery as well as long-term sustainability of government finances. Financial statements produced under accrual accounting are expected to provide more useful information for making resource allocation and investment evaluation decisions due to their higher quality and reliability. The ensuing trust will inevitably lead to confidence in government ability to manage resources entrusted to them.

The prominence of economic considerations underlying accounting reform was highlighted by researchers who categorized the factors that influence the accounting system in a country into three major sets namely legal, economic and political factors. Some of the economic factors cited by Choi, Mueller (1992) are the level of economic development, growth pattern of an economy, and level of sophistication of the administration and financial community. Other factors are the level of inflation (Mueller, Gernon, Meek, 1987), and the strength of the system of external level of funding (Nobes, 1998). It has also been argued that there is mutual interdependency between accounting system and the environment in which it operates and, in this case, the economic environment (Černe, 2009). Thus, the accounting system of a country does not only reflect the level of economic development but equally influence the economy in which it operates. Solid financial accounting systems facilitates sound economic and investment decisions of users of accounting information and supports the effective functioning of the capital markets. Thus, it is expected that countries that have economic systems that supports better resource allocation decisions are more likely to embark on accrual accounting reforms than those that do not. Therefore, economic performance indices are expected to explain the adoption of accrual accounting reform. The broad classification of economies into developed and developing economies had persisted for many years. However, recent classification of economies into developed, transition and emerging economies is gaining prominence. This study adopts the broad classification and therefore classifies economies into *OECD* and non-*OECD* economies and seeks to examine how some of the inherent differential characters of these economies help to explain changes to the accounting system of central governments.

Despite the well-articulated benefits of accrual accounting systems and the notions of the usefulness of accrual accounting to efficient resource allocation in the economy, there has been limited empirical evidence to support the compelling arguments. Without empirical facts, some

scholars have doubted that accrual accounting reform is able to deliver the hoped-for promise. In fact, Pessina and Steccolini, (2003) empirically demonstrated the superiority of cash-based accounting system over and above the accrual accounting system casting doubt as to whether the economic performance indices can explain the adoption of accrual accounting reform. This study provides the evidence that explains why some countries are abandoning the cash accounting model to embrace accrual accounting model.

Rationale

The paucity of empirical studies in this domain is perhaps not unconnected with the indirect relationship between accounting reform and economic performance and national development. Previous studies had focused on government accounting reform and its impact on institutional capacity (Chan, 2006), impact on Greek National Health system (Stamatiadis, 2011), and impact of accrual accounting reform on public sector management (Deaconu, Nistor and Filip, 2011) and Greek Public Hospitals (Eriotis, Stamatiadis and Vasiliou, 2011). Thus, previous studies of accounting reform have been directed at their effects on institutional capacities to deliver services. Other studies have focused mostly on qualitative aspects of the process and expected outcomes, and on theoretical and critical analysis. For instance, Cangiano (1996) documents the New Zealand experience in implementing accrual accounting, Biondi and Soverchia (2010) carries out a theoretical analysis of the accounting rules relating to the governments of the European Union, and Cardoso, Aquino, Pigato (2014) documents the process and experience of Brazil in the adoption and implementation *IPSAS* and Accrual Accounting. None of these studies was directed at explaining why countries choose to adopt accrual accounting.

The situation analysis of studies on government accounting reforms in Nigeria is like those stated above. For instance, Chukwunedu and Okoye (2012) carried out a qualitative study of the perception of auditors, practitioners and accounting academics on the adoption of accrual accounting in Nigeria while Babatunde and Fofie (2016) focused on capacity building of public servants to implement accrual accounting. Most of these studies did not relate the expected benefits of accrual accounting reforms to economic and financial performance metrics and certainly did not focus on explaining the role of economic performance indicators on the adoption of accrual accounting reform.

The *PWC* survey report provides a natural opportunity for research on how the economic performance of countries can explain the various stages of accounting reform and particularly accrual accounting reform. This study explores the opportunity provided by the report which details the various stages of accrual accounting reform of central governments of at least 100 countries.

The remaining sections of this paper discusses theoretical underpinnings of the relationship between economic performance variables and accrual accounting reform (Section 2), hypothesis, materials and methods (Section 3), result of data analysis and discussion (Section 4) and conclusion (Section 5).

Economic performance and accrual accounting reform

In a study of accounting and budgeting practices in the member countries of the International Organization for Economic Co-operation and Development, OECD/IFAC (2017) sought, amongst other objectives of the study, to determine why countries decided to move or not to

move to accrual accounting system. The study found that at least three-quarters of OECD countries of highly developed nations have adopted some form of accrual accounting model as at 2016 although not all have adopted full accrual accounting system. The study also found differential methods of implementation in terms of the reporting of assets and liabilities such as government guarantees and pension liabilities. The survey further found that the adoption of accrual accounting model of the international public sector accounting standard remains low and most of the countries that adopted some form accrual accounting preferred national standards.

On the reason for countries to move to accrual accounting, respondents in the study under reference echoed the findings in the literature that they were motivated by the benefits of accrual accounting which included the need to modernize service delivery and improve productivity in government and to make better informed decisions. There was also the need to comply with the European Public Sector Accounting Standard applicable to member countries of the European Union who are also members of the OECD. Accountability and transparency was also given as a motivating factor for adopting accrual accounting reform and this included the improvement of fiscal transparency and accountability, presenting fair view of public finances, responding to external reporting requirement and promoting informed decision making. Accrual accounting reform was also found to be useful in strategic resource management and in improving awareness of the need to manage costs. Despite all these and other benefits of accrual accounting reform, yet some countries even within the OECD are yet to adopt it. The question that begs for answer therefore is what is it that determines adopters and non-adopters of accrual accounting reform. This study adopts the framework that economic considerations are the determinant of accrual accounting reform in the context of economic development.

One of the early proponents of the reasons why countries adopt an accounting system was Doupnik and Salter (1995) who advanced six socio-economic factors classified as institutional factors by Nobes (1998) and four cultural factors (namely individualism, power distance, uncertainty avoidance and masculinity). The socio-economic or institutional factors were taxation, inflation, level of economic development, legal system and capital market. All these factors are directly related to the economy of a country and cultural factor of individualism also alludes to whether the economic system is based on capitalism which emphasizes the property rights of the individual or socialist economic system that promotes community property rights. Consequently, the economic system which influences the level of economic growth contributes to the accounting system in place.

Nobes (1998) sought to develop a general theory for explaining the differences in accounting system between countries and ended up classifying accounting system in terms of whether the financial reporting system is geared towards a financing system that is characterized by the dominant/strong equity outsider (Class *A* accounting system) or the weak equity outsider (Class *B* Accounting system). While the Class *A* accounting system is oriented towards the equity holder, the class *B* accounting system is oriented towards the creditors, loans and bond holders. The dominant financing system in place in a country is likely to affect the computation of profits, investor confidence, capital market performance and ultimately the growth of the economy. The level of economic growth and development may therefore explain the adoption accrual accounting reform.

HYPOTHESIS, MATERIALS AND METHODS

Hypothesis

In the light of the mutual interdependence of the accounting system, affecting and being affected by the socio-economic environment, this study explores the relationship between economic development and accrual accounting reform and so hypothesizes as follows:

Ho: There is no significant relationship between economic performance and accrual accounting reform

Materials and Methods

The ex-post facto research method is used in this study leveraging on *PWC* (2012 and 2015) Global Survey on Accounting and Reporting by Central Governments that indicated the system and stage of accrual accounting reform by 100 central governments. The data of the 100 countries covered in the 2012 survey and the result of the 2015 survey as it affects them was regressed against some economic performance indices obtained from sources such as the *CIA* fact books, World Bank and Organization for Economic Cooperation and Development (*OECD*) data bases. The classification of countries and using such classification to relate to economic variable is not new. La Porta, Lopez-De Silanes, Schleifer & Vishny (1997) and La Porta, Lopez-De Silanes, Schleifer (2007) used classification of countries in terms of legal origins to relate to economic performance. This study draws inspiration from these studies. A descriptive Statistics and Correlation Analysis of the Data was done to explain their nature. The *PWC* survey was done in 2012 and 2015. Therefore, the data for pre-year 2015 and Post year-2015 was also tested to determine if there was significant difference between them using a test of difference between means. The Logistic Multiple Regression Model was used for analysis as accrual accounting reform was represented by categorical variables of the of the order of 1 for the accrual accounting reform and 0 otherwise. Following the model developed by Nobes (1998) in which accounting system was categorized into Class A and Class B by reference to financing system geared towards equity and those geared towards creditors, I adopt macro-economic indicators that are the equivalents of these two classes. Consequently, economic development is proxied by growth rate of Gross Domestic Product (*GDP*) and debt as a percentage of *GDP*. Accrual Accounting Reform may be fully implemented with the adoption and implementation of standards such as the International Public Sector Accounting Standard or the European equivalent or a modified version of Accrual accounting may be applied. Therefore, accrual accounting reform is evaluated as accrual accounting (*ACMA*) comprising both full or modified accrual accounting while full accrual accounting (*ACAC*) imply full compliance with public sector accrual accounting standard. The aim is to determine the economic consequences of full implementation of accrual accounting reform distinctly. Consequently, we analyze two models; one for full or modified accrual accounting reform (ACMA) and the other for only full accrual accounting reform. The conceptual Specification is presented as Figure 1 below:
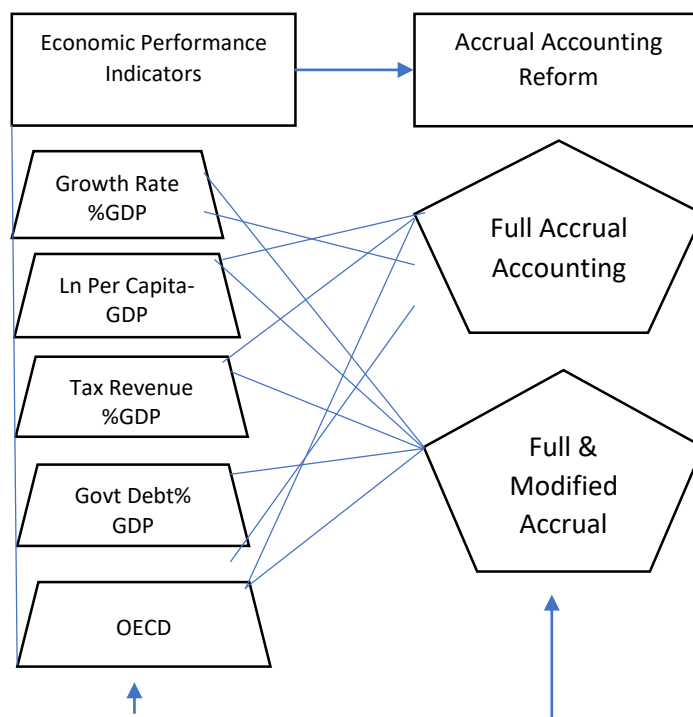
Figure 1: Conceptual Framework of Economic Performance and Accrual Accounting Reform

Source: The Author

The conceptual framework shows the relationship between economic performance indicators and accrual accounting reform with the direction of causality flowing from the former being the explanatory variables to the latter being the dependent variable. The framework illustrates a two by five matrix resulting in ten relationships.

Model Specification

Model 1

$ACMA = f(GRGDP, LnPCGDP, TGDP, DGDP, OECD)$

Mathematical Form of the Model

$ACMA = a_0 + a_1 GRGDP + a_2 LnPCGDP + a_3 TGDP + a_4 DGDP + a_5 OECD + \mu$

Model 2

$ACAC = f(GRGDP, LnPCGDP, TGDP, DGDP, OECD)$

Mathematical Form of the Model

$ACAC = a_0 + a_1 GRGDP + a_2 LnPCGDP + a_3 TGDP + a_4 DGDP + a_5 OECD + \mu$

Where,

Dependent Variable

$ACMA$ = Accrual Accounting and Modified Accrual Accounting is 1 otherwise 0

$ACAC$ = Full Accrual Accounting is 1 otherwise 0

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Independent Variables

GRGDP = Growth Rate of Gross Domestic Product (*GDP*)

LnPCGDP = Natural Log of *GDP* per Capita

DGDP = Government Debt as % of GDP

TGDP = Tax Revenue as % of GDP

Indicator Variable

OECD = Organization for Economic Cooperation and Development member state is 1 otherwise0

RESULT OF DATA ANALYSIS AND DISCUSSION

Table 1

Descriptive Statistics

	ACMA	ACAC	GRGDP	LNPCGDP	TGDP	DGDP	OECD
Mean	0.507692	0.292308	3.328852	9.554608	20.13071	52.51763	0.328205
Median	1.000000	0.000000	3.066719	9.790908	18.00000	46.39100	0.000000
Maximum	1.000000	1.000000	12.31982	11.76274	48.00000	236.3880	1.000000
Minimum	0.000000	0.000000	-4.028257	6.643109	1.433561	3.300000	0.000000
Std. Dev.	0.501228	0.455994	2.967453	1.185273	9.997924	33.17127	0.470769
Skewness	-0.030773	0.913289	0.147026	-0.626121	0.580313	2.132880	0.731727
Kurtosis	1.000947	1.834096	3.058836	2.614738	2.807805	10.75777	1.535425
Jarque-Bera	32.50001	38.15270	0.730662	13.94686	11.24494	636.8354	34.82927
Probability	0.000000	0.000000	0.693967	0.000936	0.003616	0.000000	0.000000
Sum	99.00000	57.00000	649.1262	1863.149	3925.488	10240.94	64.00000
Sum Sq. Dev.	48.73846	40.33846	1708.321	272.5453	19391.95	213464.7	42.99487
Observations	195	195	195	195	195	195	195

The Table 1 below shows that most of the data series are positively skewed but the closest to a symmetric distribution of a normal distribution of 0 is *GRGDP* (Skewness 0.014). *ACMA* though is negatively shewed is also near the symmetric distribution of a normal distribution of 0 with skewness of -0.03. The Kurtosis measures the shape of the peak of the bell shaped normal distribution and a Kurtosis of 3 indicates that the distribution is symmetrical around the mean. The closest to this shape is *GRGDP* (3.05) and *TGDP* (2.81). Furthermore, the Jarque-Bera statistics measures the difference between the Skewness and Kurtosis of a normal distribution and that of the observed distribution. The probability value associated with the Jarque-Bera statistic tests the extent of deviation from normality of the distribution of the residuals around the mean. Where the Jarque-Bera statistic is significant and returns a null or close to null probability of 0 then it means the extent of the deviation is large therefore the

distribution is not normal. On the other hand, where the Jarque-Bera statistic is not significant, then we have a normal or close to normal distribution that is acceptable. Consequently, all the variables that the Jarque-Bera Statistic returned 0 or near 0 probability are deemed not to be normal distributions while those that are greater than 0 such as *GRGDP* (0.694) is accepted as normal distribution. Further evidence of the shape of the distributions are in Figure 2 in the Appendix.

Table 2

Correlation Analysis of Explained and Explanatory Variables

Covariance Analysis: Ordinary

Date: 07/10/18   Time: 23:11

Sample: 1 196

Included observations: 195

Balanced sample (listwise missing value deletion)

Correlation

t-Statistic

Probability	ACMA	ACAC	GRGDP	LNPCGDP	TGDP	DGDP	OECD
ACMA	1.000000						

ACAC	0.632872	1.000000					
	11.35559	-----					
	0.0000	-----					
GRGDP	-0.239001	-0.146620	1.000000				
	-3.419405	-2.059166	-----				
	0.0008	0.0408	-----				
LNPCGDP	0.365187	0.343711	0.364450	1.000000			
	5.449725	5.084770	5.437049	-----			
	0.0000	0.0000	0.0000	-----			
TGDP	0.253664	0.181990	0.408748	0.307376	1.000000		

				⁻ 4.487451	-----		
	3.643171	2.571220	6.222028				
				0.0000	-----		
	0.0003	0.0109	0.0000				
DGDP					0.276294	1.000000	
	0.096144	-0.016835	0.396551	⁻ 0.251078			
					3.993874	-----	
	1.341890	-0.233917	6.001077	⁻ 3.603522			
				0.0004	0.0001	-----	
	0.1812	0.8153	0.0000				
OECD					0.528821	0.353077	1.000000
	0.404304	0.463251	0.402995	⁻ 0.618042			
					8.655967	5.242766	-----
	6.141066	7.261891	6.117326	⁻ 10.92179			
				0.0000	0.0000	0.0000	-----
	0.0000	0.0000	0.0000				

Table 3

Test of Equality of Means of Pre Year-2015 and Post Year-2015 Data

Test for Equality of Means Between Series
Date: 07/10/18   Time: 23:35
Sample: 1 196
Included observations: 196

Method	df	Value	Probability
Anova F-test	(5, 1169)	393.4795	0.0000
Welch F-test*	(5, 513.886)	2406.303	0.0000

*Test allows for unequal cell variances

Analysis of Variance

Source of Variation	df	Sum of Sq.	Mean Sq.
Between	5	395634.7	79126.95
Within	1169	235080.6	201.0955
Total	1174	630715.4	537.2362

Category Statistics

Variable	Count	Mean	Std. Dev.	Std. Err. of Mean
ACMA	196	0.505102	0.501254	0.035804
GRGDP	196	3.313086	2.968053	0.212004
LNPCGDP	196	9.552100	1.182752	0.084482
TGDP	195	20.13071	9.997924	0.715966
DGDP	196	52.45683	33.09706	2.364076
OECD	196	0.326531	0.470145	0.033582
All	1175	14.37583	23.17836	0.676182

The correlation coefficient between *ACMA* and *ACAC* in Table 2 above, is expectedly high and significant at 0.63 given that the former represents the count of those countries that have implemented by full and modified accrual accounting reform while the latter represents only those that have adopted full accrual accounting reform. It is also note-worthy that all the other variables were positively correlated with *ACMA* except *GRGDP*. Similarly, all the variables are also positively correlated with *ACAC* except both *GRGDP* and *DGDP*. This gives a prior insight of the relations between these indicators and accrual accounting reform and also perhaps suggests a need for further study of the effect of accrual accounting reform on fiscal performance.

A test of the difference between data points for pre-2015 and post-2015 in Table 3 above, shows that there is significant difference between them as shown by both the *ANOVA F*-Test of 393.48 and the Welch F-Test of 2406.3 both of which have a null probability of 0.000 which is significant at 1% level of significance. Most of the difference are within each data series rather than between them. This indicates that there are significant changes within the variables between the two data points even as accrual accounting reform picks more momentum across more accounting jurisdiction.

Table 4

Result of logistic multiple regression test of the relationship of economic performance indices and *ACMA*

Dependent Variable: *ACMA*
Method: ML - Binary Logit (Quadratic hill climbing / EViews legacy)
Date: 07/10/18   Time: 21:53
Sample: 1 196
Included observations: 195
Convergence achieved after 4 iterations
Coefficient covariance matrix computed using second derivatives

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-3.353375	1.741115	-1.925993	0.0541
GRGDP	-0.063523	0.062866	-1.010441	0.3123
LNPCGDP	0.343989	0.172357	1.995800	0.0460
TGDP	0.013998	0.019913	0.702956	0.4821
DGDP	-0.006724	0.005358	-1.254958	0.2095
OECD	1.291343	0.496322	2.601825	0.0093

McFadden R-squared	0.151567	Mean dependent var		0.507692
S.D. dependent var	0.501228	S.E. of regression		0.453820
Akaike info criterion	1.237516	Sum squared resid		38.92503
Schwarz criterion	1.338224	Log likelihood		-114.6578
Hannan-Quinn criter.	1.278291	Deviance		229.3156
Restr. Deviance	270.2812	Restr. log likelihood		-135.1406
LR statistic	40.96566	Avg. log likelihood		-0.587989
Prob(LR statistic)	0.000000			

Obs with Dep=0	96	Total obs	195
Obs with Dep=1	99		

The result in Table 4 above shows that both higher levels of *GRGDP* and *DGDP* decreases the log odds of full and modified accounting reform by 0.063523 and 0.013998 respectively although both are not significant given their respective p-values of 0.3123 and 0.2095. More specifically, with 1% increase in either *GRGDP* or *DGDP*, the probability of having full and modified accrual accounting reform decreases by 0.94 or 0.99 respectively (if all other Variables are held constant). These probability values are the exponents of the respective log odds coefficients. The log odds of accrual accounting reform increases with higher level of *LNPCGDP* and *TGDP* with the former significant at 5% level of significance while the later is not. The respective probability of accrual accounting reform increases by 1.4 and 1.01 respectively. The log odds that *OECD* countries adopts accrual accounting increases 1.29 times more than Non-*OECD* countries. This translates to a probability of *OECD* adopting accrual accounting higher than Non-*OECD* by 3.64 times.

Overall, the model establishes a significant relationship between economic development and accrual accounting reform. With the *LR*-statistic of 40.96566, the null hypothesis that there is

no significant relationship between economic development and accrual accounting reform is rejected given the probability of 0.00 at 1% level of significance.

Table 5

Result of Logistic Multiple Regression Test of the Relationship of Economic Development Proxies and *ACAC*

Dependent Variable: *ACAC*
Method: ML - Binary Logit (Quadratic hill climbing / EViews legacy)
Date: 07/10/18   Time: 21:48
Sample: 1 196
Included observations: 195
Convergence achieved after 5 iterations
Coefficient covariance matrix computed using second derivatives

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-3.294548	2.289438	-1.439021	0.1501
GRGDP	-0.013014	0.080089	-0.162499	0.8709
LNPCGDP	0.275221	0.224306	1.226993	0.2198
TGDP	-0.017858	0.021692	-0.823258	0.4104
DGDP	-0.015957	0.006575	-2.426945	0.0152
OECD	2.392349	0.576040	4.153093	0.0000

McFadden R-squared	0.217306	Mean dependent var		0.292308
S.D. dependent var	0.455994	S.E. of regression		0.396207
Akaike info criterion	1.007354	Sum squared resid		29.66927
Schwarz criterion	1.108061	Log likelihood		-92.21698
Hannan-Quinn criter.	1.048129	Deviance		184.4340
Restr. Deviance	235.6400	Restr. log likelihood		-117.8200
LR statistic	51.20600	Avg. log likelihood		-0.472908
Prob(LR statistic)	0.000000			

Obs with Dep=0	138	Total obs	195
Obs with Dep=1	57		

From Table 5 above, higher levels of *GRGDP, TGDP* and *DGDP* decreases the log odds of full accounting reform by 0.013014, 0.017858 and 0.015957 respectively although the first two are not significant given their respective p-values of 0.8709 and 0.4104 while *DGDP* is significant with p-value of 0.0152 at 5% level of significance. This specifically means that if all other variables are constant, with a 1% increase in either *GRGDP, TGDP or DGDP*, the probability of having full and modified accrual accounting reform decreases by 0.99, 0.98 or 0.98 respectively (if all other Variables are held constant). These probability values are the exponents of the respective log odds coefficients. The log odds of accrual accounting reform increases with higher level of *PCGDP* by 0.275221 although this is not significant at 5% level of significance with a p-value of 0.2198. The respective probability of accrual accounting reform increases by 1.32 times. The log odds that *OECD* countries adopts accrual accounting increases 2.39 times more than Non-*OECD* countries. This translates to a probability that *OECD* countries adopts accrual accounting is higher than Non-*OECD* by 10.94 times.

Overall, the model 2 is also significant in establishing a relationship between economic development and accrual accounting reform. The *LR*-statistic of 51.206 is significant with a p-value of 0.00. The null hypothesis that there is no significant relationship between economic development and accrual accounting reform is rejected.

Further analysis of the results above shows that countries that have higher *GDP* per capita embraces accrual accounting reform as shown by the positive log odds coefficient *LNPCGDP*. This indicates that the more developed the economy the more likely that they embrace accrual accounting reform as typified in the fact that *OCED* countries were found to be more than 10 times likely to have adopted full accrual accounting reform than Non-*OECD* countries. One reason that may be attributed to this is the fact canvassed in the literature that the implementation of accrual accounting reform is costly and poor nations would find it more difficult to implement. This study provides the empirical evidence.

The increase in the growth rate per *GDP* decreases the log odds of accrual accounting reform suggesting a negative relationship to accrual accounting reform. This may be due to the fact that higher levels of growth is correlated with poorer nations as shown in the negative correlation between both *OECD* with *GRGDP* of -0.402995 in Table 2 above which was significant with a p-value of 0.00 at 1% level of significance.

It was found that higher level of debt per *GDP* decreases the log odds of accrual accounting reform indicating that the higher the relative debt the lower the likelihood of accrual accounting reform. This may due to inability to bear the additional cost of implementation of accrual accounting reform as higher level of debt weights negatively on the fiscal balance of the nations. This result supports the idea that economic stability of nation impacts positively on accrual accounting reform.

The relationship of Tax Revenue as a percentage of *GDP* presents a mixed relationship with accrual accounting reform. While the log odds of accrual accounting reform when defined as the implementation full and modified accrual accounting is positive, the converse is the case when accrual accounting reform is defined as full implementation only. This suggests that higher levels of tax revenue as percentage of *GDP* increases the log odds full and modified accrual accounting and decreases the log odds of full accrual accounting. This suggests that countries that have higher levels of tax revenue percentage of *GDP* are less likely to implement full accrual accounting reform. They perhaps have less incentive to do. The positive correlation of tax revenue as a percentage of *GDP*, *TGDP* and *OECD* of about 0.52 suggest that the converse 0.48 positive correlation with Non-*OECD* countries indicates a split in the fiscal revenue performance.

IMPLICATION FOR POLICY AND PRACTICE, CONCLUSION AND FUTURE RESEARCH

Implication of the Result for Policy and Practice

The implication of the result of this study for policy and practice is that the intervention of multilateral development agencies and donor institutions in OECD countries is required to assist the non- OECD countries to strengthen their economic institutions to benefit from accrual accounting reforms. Such intervention should assist the non-OECD countries in the areas of public financial management including debt management and tax administration as well as

budget and planning. These are expected to have direct positive impact on the economic performance indices used in this study.

CONCLUSION

There is evidence that economic performance indicators explain the adoption of accrual accounting reform in OECD and non-OECD countries. OECD countries with higher income per capita were found to have adopted both full and modified accrual accounting reform more than non-OECD countries. The inherent cost of doing so which includes costs of changing or amending the regulatory and legal basis of existing cash accounting systems but also cost of training and retraining of the manpower to implement the accrual accounting system may have hampered the ability of non-OECD countries in carrying out the reforms. However, the finding that non-OECD countries' higher growth rate of *GDP* does not indicate that some of these low-income countries have the financial capacity to implement accrual accounting reform. This is further reflected by the fact that higher level of debt per *GDP* decreases the log odds of accrual accounting reform indicating that some of these low-income countries may be suffering from debt over hang which then further reinforces the need for assistance to these countries from multilateral development institutions such as the World bank and International Monetary Fund.

Future Research

The result relating the log odds of tax revenue as a percentage of *GDP* to accrual accounting reform suggests countries that have higher levels of tax revenue percentage of *GDP* are less likely to implement full accrual accounting reform. The converse holds when the sample includes those that implemented only modified accrual accounting. This may be interpreted to mean that OECD and non-OECD countries who have lower tax percentage of GDP are less likely to implement full accrual accounting reform. On the other hand, it may be interpreted that OECD and non-OECD countries who only implemented modified accrual accounting are more likely to have higher tax revenue as percentage of GDP. The mixed relationship perhaps is occasioned by a split between *OECD* and Non-*OECD* countries' emphasis on tax revenue as a tool for driving economic growth. There is a need therefore, to carry out further research as to the effects on accrual accounting reform of tax revenue as a percentage of *GDP*. Such study should focus on the split between OECD and non-OECD countries.

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APPENDIX

Figure 1

Theoretical Distribution of the Data of Proxies of Economic Performance and Accrual Accounting Reform