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IMPACT OF MACROECONOMIC VARIABLES ON FOREIGN DIRECT INVESTMENT FLOW IN NIGERIA: ARDL MODEL

Primus E. Emenuga

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ABSTRACT: *The study examined the impact of macroeconomic variables on foreign direct investment flow in Nigeria from 1986 to 2017. Data on foreign direct investment (FDI), gross domestic product (GDP), government size (GOVT), exchange rate (EXR), inflation rate (INF) and interest rate (INT) were sourced from CBN Annual report. ARDL cointegration bound test and error correction model estimation techniques were employed. The finding of the ARDL revealed that exchange rate, interest rate, gross domestic product and government size were all significantly related to foreign direct investment in Nigeria. The study concluded that there exists a long-run relationship between macro-economic variables and foreign direct investment in Nigeria and recommended that The Nigerian government should foster economic policy capable of attracting more foreign direct investment into the country.*

KEYWORDS: Macroeconomic, Foreign Direct Investment, ARDL Model, Inflation Rate, Exchange Rate, GDP, Nigeria

INTRODUCTION

Demand for external capital is as a result of excessive aggregate investment over real savings. This became important due to investment with longer period of time which produces non-financial profits couple with bigger government budget which are non-tax financed and the developing state of financial market. Capital inflow from outside the local country could be categorized into official and private capital flows. Donations from foreign principals like World Bank and IMF could be referred to as multilateral official flows whereas flow from nations to nations in shape of advances/assistance could be referred to as bilateral official flows (Obidike & Uma, 2013). On the other hand, private flow could be in four types namely; foreign direct investment; portfolio investment, foreign bond and equity contributions and deposit money banks advances to domestic banks and private entities (Obidike & Uma, 2013).

Following the revelation made by UNCTAD (2015) that FDI inflow has recorded above 40% of outside development finance to maturing and transition countries, it is therefore essential for government to promote special rewards and bonuses that is capable of fascinating foreign investor into the home country (Nigeria). Agbonifob (2005) however stated that the stable and fluctuating parameters of macro-economic performance reflect the economic situation of a country, and the degree of business activities and growth determines the attractiveness of the inflow of foreign direct investments into the country. Therefore, if Nigerian government found its way to attracts FDI into the country, it will assist in provision of employment, training and development of human capital, development of skills and acquisition, technical

or managerial skills to Nigerians, standard of living of the citizens, technological advancement, export promotion etc (Ndubuisi, 2017). Chingarande and Karambakuwa (2011) affirmed that a balance economy with low inflationary business arena allure more foreign direct investment, this implies that inflation and other key macroeconomic indicators have the propensity to attract or distract the inflow of FDI into a system.

Different administrations among African nations formulated several policies towards energizing economic movements as a way to attract FDI. In particular, New Partnership for Africa's Development (NEPAD) was launched under one of these policies to accelerate the pace of capital accumulation via numbers of resources mobilization and conducive arena for FDI (Funke & Nsouli, 2013). Fatefully, attempt to attract the needed FDI into African countries proved abortive. Asiedu, (2001) and Okafor (2012) claimed that the pattern of existing FDI is skewed towards extractive industries, that is, the differential rate of FDI inflow into African countries has been adduced to natural resources (Asiedu, 2006; Okafor, 2012). In Nigeria, different administrations of government have tried to prepare a tradable and enabling environment for foreign investments due to low turnout of foreign investors into the home country. The emergence of this need became imperative as a result of deficiencies in macroeconomic performances. Despite the persistent effort of government to boost various macro-economic indicators to attract greater inflow of FDI, the effect of the indicators on the FDI is vague.

Empirical evidence (Obidike & Uma, 2013; Adeleke, Olowe & Fasesin, 2014; Ojong, Arikpo & Ogar, 2015; Achugamonu, Ailemen, Taiwo & Okorie, 2016, Ndubuisi, 2017) on the subject showed that there are mixed results or inconsistent findings. This could be attributed to econometric tests employed, sources of data and coverage of data. Hence, these discrepancies necessitate further study on macroeconomic determinants of FDI in Nigeria. The objective of the study is to ascertain the effect of macroeconomic variables (GDP, government size, exchange rate, inflation rate and interest rate) on foreign direct investment in Nigeria using Autoregressive-distributed lag (ARDL).

LITERATURE REVIEW

FDI as a concept has been viewed indifferently by prominent number of scholars around the globe ranging from direct to inverse ends with basic features attached to it. United Nations (1999) described FDI as an investment involving a long-term relationship which reflects a greater interest and control of an entity in an economy. Similarly, World Bank (2007) contributed that investment made to acquire long standing ownership and control of firm operating outside the investor's home nation is referred to as FDI. Haruna-danja (2012) opined that FDI is among the fastest growing economic activities in the world which closes the savings gaps in emerging economies.

Going by the studies of Dinda (2009); Asiedu (2006) and Anyanwu (1998), Neo-classical theory became the basis for theory underpinning. The theory necessitated the need for factor of production as a determinant of steady economic growth. Dinda (2009) stipulated that macro-economic determinants such as consumer price index and exchange rate were contributive factors that attract FDI into an economy. Aseiedu (2006) disclosed that exchange rate and low inflation do not only affect FDI into an economy but also a nation which is free

from corruption, basic infrastructures and amenities, employment rate, stability in political governance and tradable environment also serve as major determinants of FDI inflows. On the other hand, Anyanwu (1998) opined that savings ratio, gross fixed capital formation, domestic production and openness to trade were the major factors attributing to FDI.

In Nigeria, Ndubuisi (2017) analyzed the relationship between macroeconomic variables (economic growth, exchange rate, inflation and oil price) and FDI between 1981 to 2014. Johansen co integration and VECM causality methods were applied in the study. The study indicated that there was evidence of long run relationship among the variables. VECM showed evidence of unidirectional causality between FDI and economic growth; bidirectional causality between FDI and exchange rate; unidirectional causality running from inflation rate to FDI in the short run and bidirectional causality between FDI and Oil price.

A study researched on short and long run effect of capital flows and macroeconomic variables over the period of twenty-nine years by Nwinee and Olulu-Briggs (2016) applied granger causality and cointegration tests to evidently showed longrun nexus in the model and found causality test of uni and bi-direction in the model. Specifically, uni-directional causality co-move from interest rate (logINT) to foreign portfolio investment (FPI) as well as from inflation rate (INF) to foreign exchange rate (FEXR) whereas bi-directional causality moves from INF to INT and INT to logINF. The study concluded that in as much as interest rate affect portfolio inflow in the economy, inflation played a frustrating role on foreign exchange and interest rates. Achugamonu, Ailemen, Taiwo and Okorie (2016) employed Johansen cointegration analytical technique to determine the constraining factors towards the inflow of FDI in Nigeria for the period covering 1980-2015. The study discovered that government external and domestic debts, inflation rate and exchange rate have significant long run relationship with foreign direct investment in Nigeria. Imoghele (2016) examined macroeconomic factors influencing FDI inflow in Nigeria for the period of 1986 through 2012. By employing Johansen cointegration and ECM tests, the study showed that truly long run association existed between inflow of FDI and the macroeconomic factors. The study further discovered and established that credit to private sector, GDP and exchange rate were the major indicators that could help attract FDI inflow into the nation.

Ojong, Arikpo and Ogar (2015) evaluated the determinant flow of FDI in Nigeria. Data on domestic investment, openness to trade, market capitalization, gross domestic product and foreign direct investment were sourced from CBN statistical bulletin. Discoveries from the ordinary least square indicated that market capitalization and gross fixed capital formation have inverse effect on FDI inflow while trade openness and gross domestic product have direct effect on FDI inflow in Nigeria. Adaramola and Obisesan (2015) examined the influence of foreign direct investment on the capital market of Nigeria. The study applied OLS, ADF and Johansen co-integration techniques, the study discovered absence of co-integration between FDI and market capitalization. Based on that, OLS was made to conclude the generalize the finding, hence market capitalization has significant influence on FDI. Agya, Amadi and Wunuji (2015) reviewed the contributing factors affecting FDI in Nigeria over the years of 1980-2013 by employing OLS and ADF unit root test. The study discovered that Per capita, gross domestic product, education and trade openness have positively contributed to FDI, whereas wage rate, infrastructure and depreciation of Naira have not positively contributed to FDI in the country.

Ndem, Okoronkwo and Nwamuo (2014) examine the factors of FDI and their effects in Nigeria. The study employed OLS, co-integration and error correction method (ECM) to disclose that market size, openness and exchange rate have positive effect on FDI inflow while political risk and infrastructural investment have negative and significant impact on FDI. Nwankwo, Olukotun & Olorunfemi (2013) applied descriptive narrative methods to study the influence of globalization on FDI in Nigeria. The study showed that Nigeria has benefited tremendously from FDI on employment, technology transfer, local enterprise development. Oladipo (2013) studied the indicators of FDI in Nigeria over the period of 1985 to 2010. Generalised Method of Moment (GMM) estimate was employed and the result showed that EXR, INR, MS and OP have significant influence to determine foreign direct investment in Nigeria while GRE and previous FDI impact negatively. Uwubanmwen and Ajao (2012) analyzed the influence of FDI in Nigeria from 1970 to 2009 with the aid of Cointegration. The empirical study disclosed that consumer price index, exchange rate, trade openness and interest rate were the significant variables influencing FDI inflow into Nigeria. More importantly, the study revealed that government size as well as GDP exhibited an insignificant positive effect on FDI. The analysis showed the presence of a long-run equilibrium relationship between FDI and GDP, but FDI has an insignificant influence on the growth of Nigeria.

RESEARCH METHOD

Data

In order to ensure an adequate and comprehensive research for the study, Annual time series data on foreign direct investment (FDI) represented as the dependent variables while gross domestic product (GDP), government size (GOVT), exchange rate (EXR), inflation rate (INF) and interest rate (INT) represented as the explanatory variables were secondarily sourced from Nigerian CBN statistical Bulletin for the period of 1986-2017. Aside government size (GOVT) which was measured as the ratio of government consumption to GDP, other variables were directly collated from Central Bank of Nigeria Statistical Bulletin.

Model Specification

The model used by Ndubuisi (2017) was relevant and serve as guide for the present study.

The model was stated as;

$$FDI_t = GDP, EXR, INF, OILP \qquad 1$$

By augmenting, the study included government size and interest rate to replace oil price in addendum with the remaining variables in the model, the modified model for the study was stated in equation 3.2 as:

$$FDI_t = \alpha_0 + \alpha_1 GDP_t + \alpha_2 GOVT_t + \alpha_3 EXR_t + \alpha_4 INF_t + \alpha_5 INT_t + \mu_t \qquad 2$$

Where:

FDI_t = Foreign Direct Investment;

GDP_t = Gross domestic product;

$GOVT_t$	=	Government Size;
EXR_t	=	Exchange Rate;
INF_t	=	Inflation Rate;
INT_t	=	Interest Rate;
μ_t	=	Error Term
α_1-α_5	=	coefficients of explanatory variables

It is expected that at the end of the analysis, gross domestic product, government size exchange rate and interest rate will have positive effect on foreign direct investment while inflation is expected to have negative effect on foreign direct investment.

This can be summarized as;

$\alpha_1 > 0$; $\alpha_2 > 0$; $\alpha_3 > 0$; $\alpha_4 < 0$; $\alpha_5 > 0$

Estimation Technique

Autoregressive Distributed Lag model (ARDL) was employed in the study. The technique of ARDL became essential for the study because it can simultaneously establish shortrun and longrun relationship at a time. More so, ARDL is superior to Johansen cointegration based on mixed stationarity level i.e. I(0) and I(1) but must not exceed I(1) unlike Johansen cointegration which rule stated that all variables should be associated of the same order.

Test for Stationarity or Unit Root Test

Prior to testing for cointegration, the time series properties of the variables need to be examined. The study made use of Augmented Dickey-Fuller (ADF) test for unit root regression test which was estimated by equation (3.3) as follow:

$$\Delta Y_t = \alpha_0 + \beta Y_{t-1} + \gamma_1 \Delta Y_{t-1} + \gamma_2 \Delta Y_{t-2} + \gamma_3 \Delta Y_{t-3} + \gamma_4 \Delta Y_{t-4} + \gamma_k \Delta Y_{t-k} + \varepsilon_t \qquad 3$$

Where Δ is the difference operator, Yt the series to being tested, k is the number of lagged differences, and εt *is* error term. The standard Augmented Dickey-Fuller (1979) test for a unit autoregressive root tests the null hypothesis $H0$: δ=0 against the one side alternative, $H1$: $\delta\langle 0$ in the regression. Under the null hypothesis Yt has a stochastic trend; under the alternative hypothesis Yt is stationary. The ADF statistic is the OLS t −*statistc* testing t −*statistc* δ=0. The lag length k can be estimated using the BIC or AIC (Stock & Watson, 2003). The rule of the thumb stated that the series must be mixed with I(0) and I(1) and significant at either 1%, 5% and 10%.

ARDL Approach to Co-Integration

ARDL estimated the long run relationship in the model. To do this, Autoregressive-distributed lag (ARDL) model proposed by Pesaran, Shin and Smith (2001) was employed. The rule of the thumb was that should the F-statistic exceeds the upper critical bounds value, then the H_0 (null hypothesis) is rejected; should the F-statistic falls between the bounds, it is inconclusive and should the F-statistic fall below the lower critical bounds value, it is no co-integration. When long-run relationship exists, the F-test indicates which variable should be normalized.

$$\Delta \ln(FDI)_t = \lambda_0 + \sum_{i-1}^{n} \lambda_1 + \Delta ln(FDI)_{t-1} + \sum_{i-1}^{n} \lambda_2 + \Delta ln(GDP)_{t-1} + \sum_{i-1}^{n} \lambda_3 + \Delta ln(GOVT)_{t-1} + \sum_{i-1}^{n} \lambda_4 + \Delta ln(EXR)_{t-1} + \sum_{i-1}^{n} \lambda_5 + \Delta ln(INF)_{t-1} + \sum_{i-1}^{n} \lambda_6 + \Delta ln(INT)_{t-1} + \beta_0 \ln(FDI)_{t-1} + \beta_1 ln\,(GDP)_{t-1} + \beta_2 ln\,(GOVT)_{t-1} + \beta_3 ln\,(EXR)_{t-1} + \beta_4 ln\,(INF)_{t-1} + \beta_5 ln\,(INT)_{t-1} + \mu_{it} \quad 4$$

Where Ln (FDI) the natural logarithm of foreign direct investment deflator is, Ln (GDP, GOVT, EXR, INF, INT) were the natural logarithm of gross domestic product, government size, exchange rate, inflation and interest rate, Δ is the change in each operator and μ_{it} is the i.i.d stochastic error term. In investigating the long run association with restriction of coefficients α_1, α_2, α_3, α_4, α_5 the null hypothesis in long run was written as follow:

$H_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$

However, for policy reasons, the short-run adjustment of foreign direct investment, gross domestic product, government size, exchange rate, inflation rate, interest rate to changes in its determinants is necessary. The significance of error correction model lies in its ability to correct spurious regression results on time series data. The error correction model (ECM) is specified as:

$$\Delta ln(FDI)_t = \alpha_0 + \sum_{i=0}^{n} \lambda_i\ \Delta ln(FDI)_{t-1} + \sum_{i=0}^{n} \lambda_i\ \Delta ln(GDP)_{t-1} + \sum_{i=0}^{n} \lambda_i\ \Delta ln(GOVT)_{t-1} + \sum_{i=0}^{n} \lambda_i\ \Delta ln(EXR)_{t-1} + \sum_{i=0}^{n} \lambda_i\ \Delta ln(INF)_{t-1} + \sum_{i=0}^{n} \lambda_i\ \Delta ln(INT)_{t-1} + (ECM)_{t-1} \quad 5$$

Where; ECM_{t-1} = Error correction term; $t-1$ shows variables were lagged by one period; Δ = Changes in ECM coefficient.

RESULTS AND DISCUSSION

Unit Root Test

Table 4.1 Showed the result of the Augmented Dickey-Fuller unit root test. The result showed that foreign direct investment, gross domestic product attained stationarity at level, government size, and exchange rate attained stationarity at first difference, inflation and interest rate attained stationarity at level and at 1% and 10% respectively.

Table 4.1: Unit Root Test

Items	Test statistics	Critical value	Order of Integration
FDI	-3.098518	-1.952910	I(0)**
GDP	-3.278383	-3.689194	I(I)**

GOVT	-8.188302	-1.953381	I(1)**
EXR	-4.095864	-1.953381	I(I)**
INF	-3.780915	-2.674290	I(0)*
INT	-4.228863	-2.622989	I(0)***

*Note: * (**,***) denotes 10%, 5% and 1% level of significant respectively*
Source: E-view 9.0

Cointegration

Null Hypothesis: No long-run relationships exist

With no doubt, F-stat of 14.60065 was much higher than the I(1) table value at any % level of significance. The study rejected the null hypothesis. Hence, evidence of long-run relationship among the variables was found among the variables.

Table 4.2: ARDL Bound Test Result

NULL HYPOTHESIS	F - STATISTIC	CRITICAL VALUES BOUNDS		
		SIG…	I(0)	I(1)
No long-run relationships exist	14.60065	10%	2.75	3.79
		5%	3.12	4.25
		2.5%	3.49	4.67
		1%	3.93	5.23

Source: E-view 9.0

Long and Short Run Estimation

Table 4.3 showed that the coefficient of foreign direct investment was statistically negative. Hence, when all the explained variables were held constant, foreign direct investment decreased by 91.39%. The gross domestic product was positive and statistically significant which implied that a percent change in gross domestic product increased foreign direct investment inflow by 84.96%. Government size was positive and statistically significant which implied that government size has a long run relationship with foreign direct investment in Nigeria. Hence, 1% change in government size yielded 16.7% increase in foreign direct investment. Exchange rate and inflation rate portrayed a significant negative relationship with foreign direct investment which implied that the rate of exchange and inflation decreased foreign direct investment by 11.31% and 15.37% respectively. Lastly, interest rate significantly affected foreign direct investment in Nigeria. Hence, 1% increase in interest rate accelerated the pace of foreign direct investment inflow by 61.94%.

Table 4.3: Long Run Co-Integrating Coefficients

Items	Coefficient	Standard Error	Probability
FDI	-91.390619	13.350405	0.0064
GDP	8.496175	1.294613	0.0072
GOVT	0.160759	0.089926	0.1718
EXR	-1.131567	0.342028	0.0454
INF	-0.015373	0.008420	0.1653
INT	6.194955	0.427294	0.0007

Source: E-view 9.0

Error Correction Model

The Error Correction Model (ECM) intends to validate the presence of long-run relationship and incorporate the short-run dynamics into the long-run equilibrium relationship. Evidence from Table 4.4 explored that the coefficient of ECM is correctly signed and significant. The value of the coefficient is estimated to be -0.547153 and this implied 54.71% of the disequilibrium in the level of FDI of last year's shock adjusted back to the long run equilibrium in the present year. The short run effect showed that exchange rate and inflation rate had direct impact on foreign direct investment in Nigeria, this implied that the exchange rate and inflation brought about 25% and 30% changes to foreign direct investment in Nigeria. Interest rate, gross domestic product and government size also brought about an increase estimated to 66%, 23% and 42% in foreign direct investment in Nigeria. Exchange rate and government size were significant at 10%, interest rate and gross domestic product were significant at 5% while inflation was insignificant.

Table 4.4 ECM Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FDI)	0.550556	0.384770	3.224150	0.0484
D(EXR)	2.536513	0.958435	2.646515	0.0772
D(INF)	0.030989	0.014272	2.171297	0.1183
D(INT)	6.693509	1.124204	5.953999	0.0095
D(LGDP)	23.210647	6.409518	3.621278	0.0362
D(GOV)	0.422203	0.147781	2.856955	0.0647
ECM(-1)	-0.547153	0.556635	-6.372489	0.0078

Source: E-view 9.0

DISCUSSION OF FINDINGS

The ARDL result revealed that government size, gross domestic product and interest rate have positive influence on foreign direct investment in the long run while exchange rate and inflation rate have negative impact on foreign direct investment in the long run respectively. On the short run, all the explained variables attained significant direct influence on foreign direct investment except inflation which was insignificant but positive. More so, ECM was

significant with the correctness of its sign and with a large magnitude. The study therefore is connected with the study of Oladipo (2013) who found that macro-economic variables significantly affect foreign direct investment flow in Nigeria.

CONCLUSION

The study empirically investigated the impact of macro-economic variables on foreign direct investment flow in Nigeria under the period of 32 years (1986-2017). The study employed ARDL estimation technique to test the relationship existing between the dependent variable and the explained variables. The findings of the ARDL recorded that real gross domestic product, government size and interest rate positive affected foreign direct investment while exchange rate and inflation rate negatively affected foreign direct investment inflow in Nigeria. The result of the finding of the short-run dynamic explored that the ECM was correctly signed and significant at 5% level of significance leading to an all-time 54% increase, all the variables were positively related to foreign direct investment in Nigeria. However, exchange rate, interest rate, gross domestic product and government size were all significantly related with foreign direct investment while inflation was insignificantly related to foreign direct investment in Nigeria. Based on the findings, the study concluded that there exists long-run relationship between macro-economic variables and foreign direct investment in Nigeria. Government should foster economic policy for an enabling business environment which is capable of attracting foreigners into the country; put in place economic measures aimed at stabilizing exchange rate fluctuations in the country which is considered germane in any business environs.

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THE EFFECT OF COMPANIES' EXCELLENCE AND LIMITATIONS FACTORS ON THE INVESTMENT OPPORTUNITY SET: AGENCY THEORY APPROACH

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ABSTRACT: *This study aims to analyze the influence of factors of excellence and company limitations on the Investment Opportunity Set (IOS). The research population is all go public companies listed on the Indonesia Stock Exchange (IDX) in 2008-2016. The sampling technique uses a purposive sampling method. The data processing uses regression equations with a panel data models and it is analyzed by an analytical confirmatory factor analysis and eviews. The researchers develop the use of IOS proxy by using 8 variables, namely MVABVA, MVEBVE, PER, CAPBVA, CAPBVE, Tobins'Q, PPEFVA, INS. The 3 variables of the companies' advantages of the company are multinationality, size and profitability, while the 2 variables of the companies' limitations are leverage and systematic risk. The results of the study indicate that companies' multinationality has a positive effect on IOS, the research hypothesis is not supported. The size of the company has a positive effect on IOS, the research hypothesis is not supported. The profitability has a positive effect on IOS, the research hypotheses is supported. The companies' leverage has a negative effect on IOS, the research hypothesis is supported. The companies' systematic risk has a negative effect on IOS, the research hypotheses is supported.*

KEYWORDS: Multinationality, Size, Profitability, Companies' Excellence, Companies' Limitations, Investment Opportunity Set

INTRODUCTION

The 2008 global economic crisis affected the economy in Indonesia, both in the capital market and in the financial market. This had an impact on the trading of shares on the Indonesia Stock Exchange which caused the rupiah to slump with the fall of the IHSG at the opening of trade, which affected the exchange rate through IDR 14,040 per US dollar (Jatmiko 2015). Regarding to the rupiah currency, Bank Indonesia stated that it would remain on the money market for the exchange rate stabilization. This was done so that investors still wanted to invest in Indonesia. The investors' decisions through investments caused agency problems.

According to Jensen & Meckling (1976), the agency problems can be reduced by increasing the insider ownership. The investment options or growth choices of a company are inherent, non-observable so that IOS requires a proxy (Gaver & Gaver 1993). This research is interesting because in carrying out its operational activities, companies sometimes do not pay attention to the factors of excellence and limitations they have. Meanwhile, they are important in taking the investment policies by paying attention to the agency problems that arise in determining the investment policies.

The companies' superior factors include multinationality, size and profitability. Multinationality is able to provide an excellence in competing because the company has a mastery on the technology, information, management expertise, and mastery on the market share. The assets owned by larger companies can increase the value of their investment options so that it is easy to grow (Alnajjar & Riahi-belkaoui 2001; Pagalung 2003). The companies' ability to generate profits makes the company superior in getting opportunities to compete with similar companies (Pagalung 2003). The companies' limitations in the form of leverage are the obstacle because it relates to the opportunity to grow the company (Barclay, Morellec & Smith 2001; Gaver & Gaver 1993). The systematic risk which is described by beta size is also a limitation because it is related to the influence of the opportunity on the growth of the company so that it has a negative relationship (Alnajjar & Riahi-belkaoui 2001).

The company's excellence factor of multinationality, size and profitability have a positive effect on the opportunity to grow the company, it is supported by the findings got (Alnajjar & Riahi-belkaoui 2001; Pagalung 2003). The other empirical research proves that the leverage variable has a negative relationship to IOS (Barclay et al., 2001; Gaver & Gaver 1993; Jones & Sharma 2001a; Smith & Watts 1992b). The systematic risk is measured by beta, it indicates that there is a negative relationship between growth and systematic risk (Beaver, Kettler & Scholes 1970; Breen & Lerner 1973; Eskew 1979; Pettit & Westerfield 1972; Rosenberg & McKibben 1973; Thompson 1976) It is hoped that the research can contribute to the science and the economy in Indonesia based on the agency theory approach.

LITERATURE

Investment Opportunity Set (IOS)

Fama (1978) says that the value of a company is determined by the investment decisions. IOS is the availability of alternative investment in the future for the company (Hartono 1999). The company's growth potential as measured by IOS was first stated by Myers & Turnbull (1977), which is an investment decision in the form of a combination of assets held in the future that can affect the value of the company. Furthermore, IOS was developed by Collins and Kothari (1989); Chung & Charoenwong (1991); Gaver & Gaver (1993, 1995a); Cahan & Hossain (1996); Gul (1999); Hartono (1999); Jaggi & Gul (1999); Jones & Sharma (2001b); Abbott (2001); Alnajjar & Riahi-belkaoui (2001); Kallapur & Trombley (1999); Adam & Goyal (2008a); Hikmah (2004 2008); Mira & Ho (2002); Heibatollah & Lam (1999); Skinner (1993); Smith & Watts (1992); Akhtaruddin & Hossian (2008); Subramaniam & Shaiban (2011); Khanqah, Vahid & Ahmadnia 2013; Rosdini 2011; & San Martín Reyna 2017). The researchers updated the use of the IOS proxy in this study by using 8 variables (novelty of research) such as MVABVA, MVEBVE, PER, CAPMVA, CAPBVA, Tobin's Q, PPEFVA, INS.

Collins & Kothari 1989; Abbott (2001); Adam & Goyal (2003); Alnajjar & Riahi-belkaoui (2001); Cahan & Hossain (1996); Chung & Charoenwong (1991); Collins & Kothari (1989); Smith & Watts 1992; Skinner 1993; Fama & French (1998); Gaver & Gaver (1993, 1995); Gul (1999); Gul, Leung & Srinidhi (2000); Hartono (1999); Jaggi and Gul 1999; Hikmah (2004, 2008); Jones & Sharma (2001); Kallapur & Trombley (1999); Khanqah, Vahid & Ahmadnia (2013); Mira & Ho (2002); Pagalung (2003); Sami Heibatollah & Lam (1999); Skinner (1993); Smith & Watts (1992), found that the investments generated from the dividend and leverage

policies have positive information about the company in the future, funds have a positive impact on company value. According to Chung & Charoenwong (1991); Gaver & Gaver (1993), the differences in the companies' investment decisions in dealing with the other competing companies which are willing to get into the market as well as the variations in the companies' strategy choices in order to gain competitive advantages result in a varied IOS cross-sectional among the companies.

Table 1: Variables Used by Previous Researchers to Form IOS Proxy

NO	RESEARCHERS	MVEBVE	MVABVA	PER	TOBINS'Q	CAPBVA	CAPMVA	PPEFVA	INS
1	(Collins & Kothari 1989)	v							
2	(Chung & Charoenwong 1991)	v		v	v				
3	(Smith & Watts 1992a)	v	v	v					
4	(Gaver & Gaver 1993, 1995b)	v		v					
5	(Skinner 1993)	v	v	v	v			v	
6	(Baker 1993)		v						
7	(Cahan & Hossain 1996)	v	v	v					
8	(Gul & Kealey 1999)	v	v	v					
9	(Hartono 1999)	v		v					v
10	(Kallapur & Trombley 1999)	v	v	v	v			v	v
11	(Sami, Heibatollah & Lam 1999)	v	v	v				v	
12	(Hossain Cahan & Adams 2000)			v					
13	(Abbott 2001)	v	v					v	
14	(Alnajjar & Riahi-belkaoui 2001)	v	v	v					
15	(Jones & Sharma 2001b)	v	v	v		v	V	v	
16	(Chen, Chung & Chung, 2001)		v						
17	(Mira & Ho 2002)	v	v						
18	(Adam & Goyal 2003)	v	v	v		v		v	
19	(Yusuf & Firdauz 2005)	v	v	v	v	v	v		v
20	(Akhtaruddin & Hossian 2008)	v	v	v					
21	(Rosdini 2011)	v	v	v					
22	(Subramaniam & Shaiban 2011)		v						
23	(Pratiwi & Dewi 2012)	v	v	v					
24	(Ardestani, Rasid, Basiruddin & Mehri 2013)				v				
25	(Khanqah, Vahid dan Ahmadnia, 2013)			v					
26	(Rahmiati & Huda 2015)	v							
27	(Fama & French 2015)		v						
28	(Bonacchi & Parthenope 2015)	v							
29	(Giriati 2016)		v						

30	(Putra & Subowo 2016)		v						
31	(Anagnostopoulou & Drakos 2016)	v							
32	(Anam, Arfan & Shabri 2016)		v						
33	(Novianti & Simu 2016)					v			
34	(Dewenter, Hess & Brogaard 2017)	v							
35	(Djalil, Saputra & Munandar 2017)		v						
36	(Murwaningsari & Rachmawati 2017)					v			
37	(Fazilla 2018)	v							
38	(Narayanan & Uzmanoglu 2018)				v				
39	(Prihatini, Rahmiat & Susanti 2018)	v							

Agency Theory Related to IOS

Kathleen Eisenhardt (1989) states that the agency theory uses three assumptions of human nature, namely: (1) humans are generally selfish, (2) humans have limited thinking about future perceptions, (3) humans always avoid risk. In the context of the company, the agency problems faced by investors refer to the investors' difficulties in ensuring that funds are not misused by the company management to fund the unfavorable activities (Wulandari & Aris 2018). This study uses a type 1 approach (Villalonga, Amit, Trujillo & Guzmán 2015; Villalonga et al. 2006) or type 1 agency costs (Bozec & Laurin 2008) where problems arise between shareholders and managers.

The Effect of Company's Multinationality on IOS

The multinational company is a collection of choices that have value and generate profits that can create the company's value (Tsetsekos 1991). The benefits of arbitration are obtained from a). Exploitation of various institutions; b). Choice of time; c). Technology choice; d). Choice of position (Baldwin 1986; Kogut 1983). Alnajjar & Riahi-belkaoui's research (2001) shows that Multinationality has a positive effect on IOS, so hypothesis 1 can be drawn as:

H1: Multinationallity companies have a positive effect on IOS

The Influence of Company's Size on IOS

The size of the company reflects that the company is large and can compete with its competitors because it has relatively large assets. Large companies can increase their investment value by making different investment decisions in facing the obstacles that can stop and delay the competitive factors in calculating the return on the investment projects with the concept of opportunity costs (Alnajjar & Riahi-belkaoui 2001).

Investors who don't like risk like investing in large companies because the risk is smaller. The company size is a scale to group companies with various measurements such as total assets,

log size, stock market value, and sales stability (Soebiantoro 2007). Large and established companies have an advantage over their peer companies or smaller companies in their ability to exploit the company growth opportunities (Gaver & Gaver 1993). It proves that large and profitable companies will occupy a dominant position in their industry (Mueller 1986).

Large companies are better in the ability to increase the value of investment by making various investments in creating the barriers to entry which hinder the competition factors that are able to drive the project's return on investment towards the opportunity cost of the company. Economies of scale, product differentiation, brand loyalty, or patent rights are some examples of these activities (Chung & Charoenwong 1991). There is an evidence that large companies will occupy dominant positions in the industry (Mueller 1986). Researches by Alnajjar & Riahi-belkaoui (2001); Pagalung (2003) shows that Size has a positive effect on IOS, then the second hypothesis can be drawn as :

H2: The size of the company has a positive effect on IOS

The Effect of Company's Profitability on IOS

Profitability is the company's ability to earn profits related to sales, total assets, and individual capital. Profitability shows an overview of company's earnings to finance investments. Profitability is the amount of investor's funds invested compared to the total amount of assets to generate profits. Companies that have high income for their investments will reduce their debt because the company can finance itself with the internal funds of the company (retained earnings) before deciding to have debt (Myers & Majluf 1984)

The profitability ratios can provide useful clues in operating the company effectively. Researches by Alnajjar and Riahi-belkaoui (2001); Pagalung (2003) shows that profitability has a positive effect on IOS. The profitability ratio is measured by Return on Assets. If ROA increases, the opportunity for companies to grow is greater (Brigham, C.Gapenski & Daves 2010), then the third hypothesis can be drawn as :

H3: Profitability has a positive effect on IOS.

The Influence Of company's Leverage on IOS

Myers & Turnbull (1977) argue that companies with growth opportunities are more at risk of debt. Companies grow tend to reduce the debt compared to companies that have no growth opportunities. Companies with high amounts of debt will experience poor financial conditions and are threatened with bankruptcy. Higher growth opportunities for companies will have low market leverage (Jones & Sharma 2001a). Researches show that leverage has a negative effect on IOS (Alnajjar & Riahi-belkaoui, 2001; Barclay et al. 2001; Gaver & Gaver 1993; Jones & Sharma 2001a; Smith & Watts 1992b), but Pagalung (2003) shows that its direction is positive. Then, the 4th hypothesis can be drawn as :

H4: company leverage has a negative effect on IOS.

The Influence of the Company's Systematic Risk on IOS

The influence of the company's growth opportunities with systematic risk depends on the definition of growth. The definition of growth as an expansion is negatively related to growth with systematic risk (Beaver et al. 1970; Breen & Lerner 1973; Eskew 1979; Pettit &

Westerfield 1972; Rosenberg & McKibben 1973; Thompson 1976). The definition of growth as a monopoly power in market factors or output results in greater economic strength and negative relations. The definition of growth as a real option is positively related between growth and systematic risk. (Christie 1989; Chung & Charoenwong 1991). Conine Jr. (1983); McMahon, Playforth & Booth (1981) argue that the relationship between growth and beta can be positive or negative depending on the relative value of the parameters in the model. Researches shows that systematic risk has a negative effect on IOS (Alnajjar & Riahi-belkaoui, 2001; Beaver et al. 1970; Breen & Lerner 1973; Eskew 1979; Pettit & Westerfield 1972; Rosenberg & McKibben 1973; Thompson 1976), while Pagalung (2003) shows its positive direction. Then the 5th hypothesis can be drawn as :

H5: companies' Systematic risk have a negative effect on IOS.

Research Conceptual Framework

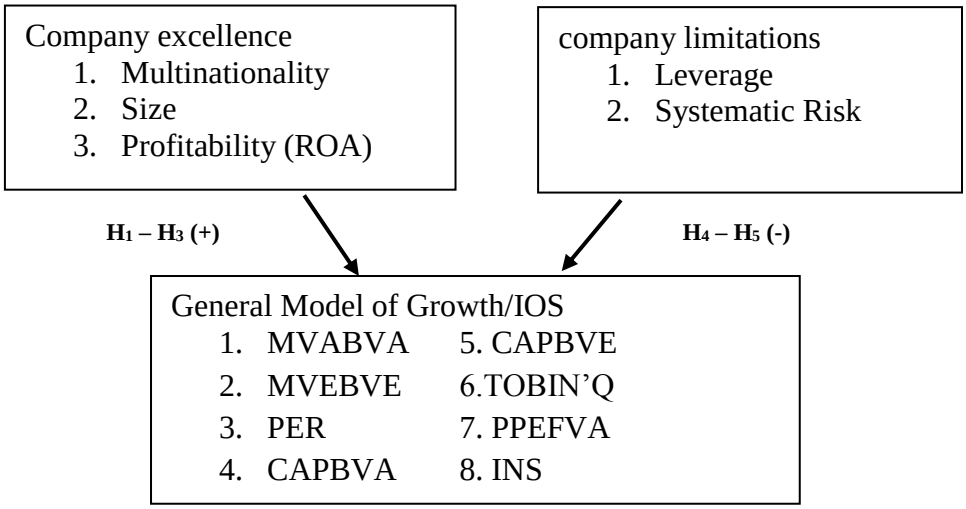

Figure 1: Conceptual Framework

METHODOLOGY

Population and sample

The object in this study is all go public companies listed on the Indonesia Stock Exchange (IDX) in 2008 to 2016. The sample selection is based on the purposive sampling method. The data used is sourced from annual financial reports published on the Indonesia Stock Exchange, obtained from the Indonesian Capital Market Directory and annual report for 2008-2016.

Operational definition

Variable advantages and limitations of the company:

a. Multinationality = foreign sales / total sales (FSTS)

b. Size = logarithm of total assets

c. Profitability is measured by Return on Assets (ROA) = EAT / Total Assets or net income / total assets

d. Leverage = total debt / total assets or LTD / total assets

e. Systematic Risk = E (Ri) - E (RF) = E [(Rm) - E (RF)] βi

E (RF) = risk free rate, E (Rm) = expected return on a market factor, βi = cov (Ri, Rm) / var (Rm)

Investment Opportunity Set (IOS) has several proxies in measuring it. There are 8 proxies used in this study, namely MVEBVE, MVABVA, Tobin'Q, PER, PPEFVA, CAPBVA, CAPMVA and INS. Here is a table of variables to form an IOS proxy:

Table 2. Variables to form IOS Proxy

No	Variable	Formulas	Previous Researchers
1	Market Value Equity to book value of equity (MVEBVE)	MVEBVE = [*Outstanding stock x Closing price*] / *Total Equity*	(Abbott 2001; Adam dan Goyal 2008b; Adam dan Goyal 2003; Alnajjar dan Riahi-belkaoui 2001; Anagnostopoulou dan Drakos 2016; Bonacchi dan Parthenope 2015; Cahan dan Hossain 1996; Chung dan Charoenwong 1991; Collins dan Kothari 1989; Dewenter, Hess, dan Brogaard 2017; Fazilla 2018; Gaver & Gaver 1993; Gul & Kealey 1999; Hartono 1999; Ho, Lam & Sami 2004; Hossain et al. 2000; Jones dan Sharma 2001b; Kallapur dan Trombley 1999; Mira, dan Ho 2002; Pratiwi dan Dewi 2012; Prihatini, Rahmiat dan Susanti 2018; Rahmiati dan Huda 2015; Rosdini 2011; Sami, Heibatollah dan Lam 1999; Skinner 1993; Smith dan Watts 1992; Yusuf dan Firdauz 2005; Akhtaruddin dan Hossian 2008; Subramaniam dan Shaiban 2011)
2	Market Value Asset to Book value of assets (MVABVA)	MVABVA = [*Tot. Aktiva – Tot. Equity + (Outstanding stock x Closing price)*] /*Total Aktiva*	(Abbott 2001; Adam dan Goyal 2003; Alnajjar dan Riahi-belkaoui 2001; Anam, Arfan, dan Shabri 2016; Baker 1993; Cahan dan Hossain 1996; Chen, Chung, dan Chung 2001; Djalil et al. 2017; Fama dan French 2015; Giriati 2016; Gul dan Kealey 1999; Ho et al. 2004; Jones dan Sharma 2001a;

			Kallapur dan Trombley 1999; Mira, dan Ho 2002; Pratiwi dan Dewi 2012; Putra dan Subowo 2016; Rosdini 2011; Sami, Heibatollah dan Lam 1999; Skinner 1993; Smith dan Watts 1992; Yusuf dan Firdauz 2005; Akhtaruddin dan Hossian (2008)
3	Tobin's Q (TOBIN'Q)	Tobin's Q = {[*Outstanding stock* x *Closing price*] + Total debt + inventories] – Total current asset} / total aktiva.	(Chung & Charoenwong 1991; Kallapur & Trombley 1999; Narayanan & Uzmanoglu 2018; Skinner 1993; Yusuf dan Firdauz 2005; Ardestani *et al*., 2013b)
4	Earnings to price ratios (PER)	PER = *Closing price per share / Earning per Share*	(Adam & Goyal 2003; Alnajjar & Riahi-belkaoui 2001; Cahan & Hossain 1996; Chung & Charoenwong 1991; Gaver & Gaver 1993; Gul & Kealey 1999; Hartono 1999; Hossain, Cahan & Adams 2000; Jones & Sharma 2001b; Kallapur & Trombley 1999; Pratiwi dan Dewi 2012; Rosdini 2011; Sami, Heibatollah & Lam 1999; Skinner 1993; Smith & Watts 1992; Yusuf dan Firdauz 2005; Akhtaruddin dan Hossian 2008; Khanqah Vahid, dan Ahmadnia 2013)
5	Ratio of property, plant, dan equipment to firm value of the assets (PPEFVA)	PPEFVA=[*Total Asset - Total Equity + (Outstanding stock x Closing Price)] / Fixed assets.*	(Adam dan Goyal 2003; Jones dan Sharma 2001b; Kallapur dan Trombley 1999; Sami, Heibatollah dan Lam 1999; Skinner 1993)
6	Ratio of capital expenditure to book value of assets (CAPBVA)	CAPBVA=[*Book value of Fixed* $assets_t$ *- Book value of Fixed* $assets_{t-1}$*] Total Aktiva*	(Jones dan Sharma 2001b; Adam dan Goyal 2003; Murwaningsari dan Rachmawati 2017; Novianti dan Simu 2016; Yusuf dan Firdauz 2005)
7	Rasio capital expenditure to market of assets (CAPMVA)	CAPMVA=*Book value of Fixed* $assets_t$ *- Book value of Fixed* $assets_{t-1}$*) / [Total Asset – Total Equity + (Outstanding stock x Closing Price)*]	(Jones dan Sharma 2001b; Yusuf dan Firdauz 2005)

8	Rasio Investment to Net Sales (INS)	INS = *Investment / Net Sales*	(Hartono 1999; Kallapur dan Trombley 1999; Yusuf dan Firdauz 2005)

Factor Analysis (Confirmatory Factor Analysis)

The purpose of factor analysis is to define the structure of a matrix of data and analyze the structure of mutual relations between a large number of variables by defining a set of similarities of variables or dimensions. The stages of factor analysis (Hair, Rolph Anderson & Black 1998): a. Kaiser-Meyer Olkin Measure of Sampling (KMO) and Bartlett's Test of Sphericity, b. Communalities, c. Extraction, d. Rotation

Hypothesis Testing

The hypothesis testing model in the study uses a regression model used by Keasey & McGuinness, (1992); Keasey & Short, (1997) as follows:

$$\mathbf{IOS_{it} = a + \beta_1 MULTY_{it} + \beta_2\, ROA_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 BETA_{it} + e_{it}}$$

where IOS = Investment Opportunity Set, a = Constant, MULTY = Multinationality, ROA = Return on Assets / Profitability, SIZE = Company Size, LEV = Leverage,

BETA = Systematic Risk, β1- β5 = Regression coefficient, e = standard error, i = Cross-Section (company), t = Time Series (year)

The advantages obtained by using the combined data are first, there are more numbers of observations held for the sake of population parameter estimation which has a positive effect with the greater degree of freedom and it decreases the possibility of collinearity between independent variables. Second, it is possible to estimate each individual characteristic and characteristic according to time separately (Hsiao, 2014). Thus, the analysis of the estimation results will be more comprehensive and include things that are closer to the reality the hypothesis testing and the testing criteria in the study are as follows: 1. F Test (F-test), 2. t-test, 3. Determinant Coefficient Test (R2).

Panel Data Regression Estimation Techniques

In the panel data regression model estimation technique, there are three techniques that can be used, namely the model with the PLS method (common), the Fixed Effect and Random Effect models. To choose which technique to use in panel data regression, there are three tests to determine the most appropriate technique for estimating panel data regression, namely: the F statistical test is used to choose between the PLS method (common) or the Fixed Effect technique. Second, Langrange Multiplier (LM) test is used to choose between PLS (common) techniques or Random Effect techniques. The last, Hausmann test is used to choose between the Fixed Effect or Random Effect technique (Gujarati 2012; Widarjono 2009).

RESULT

The study is adapted (Hair Rolph Anderson & Black 1998) four-step of factor analysis.

Table 3. Results of Factor Analysis

Analisis Faktor	Nilai
KMO MSA	0.501
BTS Chi Square	831.194
df	28
Sig	0.000
Variabel	**MSA**
MVEBVE	0.501
MVABVA	0.501
PER	0.520
CAPBVA	0.484
CAPMVA	0.501
PPEFVA	0.479
TOBIN'Q	0.500
INS	0.559

Based on table 3, the KMO value is 0.501, Bartlett's test is 831,194 and is significant at the 0,000 level, so the data meets the sample adequacy so that the variables and samples available can be analyzed further.

Table 4. Communalities

Initial	Extraction	Component
1,000	.807	.898
1,000	.805	.897
1,000	.001	-.038
1,000	.000	-.019
1,000	.001	.033
1,000	.002	-.045
1,000	.008	-.875
1,000	.014	-.118

The calculation of communalities value in table 4 shows that the MVEBVE variable is an IOS factor constructor variable with the highest value reaching 0.898 and the MVABVA variable of 0.897. Both of these variables are used to measure IOS because they have a dominant value.

Table 5. Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Square Loading		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.638	20.476	20.476	1.638	20.476	20.476
2	1.194	14.921	35.398			
3	1.082	13.530	48.927			
4	1.010	12.629	61.556			
5	.992	12.405	73.961			
6	.907	11.342	85.303			
7	.805	10.065	95.369			
8	.371	4.631	100.000			

Source: confirmatory factor analysis

Table 5 shows that the value of extraction factor produces 4 factors that can be used with a variance value of 61.556%.

The results of hypothesis testing are as follows:

Table 6. Results of Regression of Excellence in the Company

IOS	Metode	Multinationality	Size	Profitability
MVABVA	Common	-2.661***	3.996***	10.797***
		(0.008)	(0.000)	(0.000)
	Fixed	-5,545***	0.494	9.078***
		(0.000)	(0.620)	(0.000)
	Random	-0,157	2.866***	1.378
		(0.875)	(0.004)	(0.168)
	Uji Chow	25.712***	486.343***	24.776***
		(0.000)	(0.000)	(0.000)
	Uji Hausman	0.080	0.357	0.276
		(0.777)	(0.549)	(0.598)
MVEBVE	Common	-0.535	3.622***	6.582***
		(0.592)	(0,000)	(0.000)
	Fixed	0.228	0.374	3.298***
		(0.819)	(0.708)	(0.001)
	Random	1.423	2.056**	3.929***
		(0.155)	(0.039)	(0.000)
	Uji Chow	25.712***	816.322***	787.689***
		(0.000)	(0.000)	(0.000)
	Uji Hausman	0.459	0.471	7.275***
		(0.497)	(0.492)	(0.007)

Source: confirmatory factor analysis

Based on table 6, the chow test shows significant results, but the Hausman test shows insignificant results. It means that the fixed effect technique is the most appropriate technique. In the fixed effect technique, the effect of multinationality on IOS (MVABVA) has a count of -5,545 with a significance level of 0,000 which is smaller than $\alpha = 0.05$ while the effect of multinationality on IOS (MVEBVE) has no significant effect. In the random effect technique, the effect of multinationality on IOS (MVABVA) has a t count of 0.228 with a significance level of 0.819 greater than $\alpha = 0.05$. Thus, hypothesis 1 which states that the multinationality of the company has a positive effect on IOS is not supported.

In testing hypothesis 2, on the fixed effect technique, the effect of Size on IOS (MVABVA) has a t count of 0.494 with a significance level of 0.620 greater than $\alpha = 0.05$ and the effect of size on IOS (MVEBVE) has a t count of 0.374 with a significance level of 0.708 more greater than $\alpha = 0.05$. In the random effect technique, the effect of size on IOS (MVABVA) has a t count of 2,866 with a significance level of 0.004 smaller than $\alpha = 0.05$ while the effect of size on IOS (MVEBVE) has a t count of 2,056 with a significance level of 0.039 smaller than $\alpha = 0.05$. So, hypothesis 2 in the random effect technique, the company's size which has a positive effect on IOS is supported.

In testing hypothesis 3, on the fixed effect technique, the effect of ROA (profitability) on IOS (MVABVA) has a t count of 9,078 with a significance level of 0,000 smaller than $\alpha = 0.05$ while the effect of ROA (profitability) on IOS (MVEBVE) has a t count of 3,298 with a significance level of 0.001 smaller than $\alpha = 0.05$. In the random effect technique, the effect of ROA (profitability) on IOS (MVABVA) has a t count of 1.378 with a significance level of 0.168 greater than $\alpha = 0.05$ while the effect of ROA (profitability) on IOS (MVEBVE) has a t count of 3.298 with a significance level of 0.000 smaller than $\alpha = 0.05$. Thus, hypothesis 3 which states ROA (profitability) has a positive and significant effect on IOS is supported.

Table 7. Regression Results of the Company's Limitations

IOS	Metode	Leverage	Systematic Risk
MVABVA	Common	-3.525***	-0,505
		(0.000)	(0.613)
	Fixed	-3.250***	-3.770***
		(0.001)	(0.000)
	Random	0.949	-0.426
		(0,342)	(0.670)
	Uji Chow	22.893***	24.002***
		(0.000)	(0.000)
	Uji Hausman	0.546	0.027
		(0.459)	(0.869)
MVEBVE	Common	-0.758	3.667***
		(0.448)	(0,000)
	Fixed	0.178	0.416
		(0.858)	(0.677)
	Random	-0.179	1.538
		(0.657)	(0.124)
	Uji Chow	828.700***	822.368***
		(0.000)	(0.000)
	Uji Hausman	0.379	9.755***
		(0.537)	(0.001)

Source: confirmatory factor analysis

Based on table 7, the chow test shows significant results, but the Hausman test shows insignificant results. It means that the fixed effect technique is the most appropriate technique. The fixed effect technique of Leverage on MVABVA has a count of -3,250 with a significance level of 0.001 which is smaller than α (0.05). It shows that Leverage on IOS (MVABVA) has a negative and significant effect. The effect of leverage on MVEBVE has t count of 0.178 with a significance level of 0.858 which is greater than α (0.05). It shows that the IOS leverage projected with the MVEBVE variable does not show a significant effect. Thus, hypothesis 4 which states that company's leverage has a negative effect on IOS is supported (on IOS (MVABVA).

Based on table 7, the chow test shows significant results, but the Hausman test shows insignificant results. It means that the fixed effect technique is the most appropriate technique. In the fixed effect technique, the effect of systematic risk on MVABVA has a count of -3,770 with a significance level of 0,000 which is smaller than α (0,05). It shows that the systematic risk towards IOS (MVABVA) has a negative and significant effect. The effect of Systematic risk on MVEBVE on the chow test and hausman test show significant results. It means that random techniques are the most appropriate technique. In random techniques, the effect of Systematic risk on MVEBVE has a t count of 1.538 with a significance level of 0.124 greater than α (0.05). Whereas in the fixed effect technique, the effect of the systematic risk on MVEBVE has a t count of -3,770 with a significance level of 0,000 which is smaller than α (0.05). It shows that Systematic risk towards IOS (MVEBVE) shows a negative and significant effect. Thus, hypothesis 5 which states that the company's systematic risk has a negative effect on IOS supported on IOS (MVABVA).

ANALYSIS

The study results of hypothesis 1 show that the multinationality of the company has a negative and significant effect on IOS (MVABVA) but does not have a negative and significant effect on IOS (MVEBVE). Based on existing theories, the results of this study do not support the theory that multinational companies as a collection of choices and benefits of arbitration have a positive influence on the company's growth opportunities as measured by IOS. The results of this study also do not support the results of research conducted by Alnajjar & Riahi-belkaoui, (2001) where the results of the study showed positive and significant results at the 5% level, but the results of the study are relevant to the research conducted by Pagalung (2003) where the results of his research show that only the company's reputation variables have a significant effect on IOS. Hypothesis 1: the company's multinationality which has a positive effect on IOS not supported.

The study results of hypothesis 2 show that in the random effect technique, the company's effect which has a positive and significant effect on IOS is supported. Based on existing theories, the results of this study support the theory that the size of a company will affect the capital structure and the greater the company the greater the funds needed by the company to invest. The greater the size of a company, the tendency to use capital is also getting bigger, this is because large companies need large funds to support their operations. The results of this study support the research of Alnajjar & Riahi-belkaoui (2001) where the results of his research showed positive results and were significant at the 5% level. Hypothesis 2: Company size which has a positive effect on IOS is supported.

The results of hypothesis 3 show that the company's profitability which has a positive and significant effect on IOS is supported. Based on existing theories, the results of this study support the theory that profitability describes the income that the company has to finance investment. The profitability shows the ability of invested capital in the overall assets to generate profits for investors. Companies with high returns on investment use relatively small debt because the high rate of return allows the companies to finance most of their internal funding. The results of this study support the research of Alnajjar & Riahi-belkaoui (2001) but do not support the research conducted by Pagalung (2003). Hypothesis 3: profitability which has a positive effect on IOS is supported.

The results of hypothesis 4 show that the company's leverage which has a negative and significant effect on IOS is supported. Based on existing theories, the results of this study support the theory that the companies' growth tend to reduce the debt compared to companies that have no growth opportunities. Funding with own capital can reduce the problems caused by debt. The results of this study also support the results of research conducted by Alnajjar & Riahi-belkaoui, (2001) where the results of the study showed negative and significant results at the 5% level and the study of Pagalung, (2003), where the results of the study also showed significant results at the level 1% and 5%, however, the study of Pagalung, (2003) also shows that the leverage variable produces a positive relationship with IOS. Hypothesis 4: the company's leverage which has a negative effect on IOS is supported

The results of hypothesis 5 study show that the company's Systematic Risk which has a negative and significant effect on IOS is supported. Based on the existing theory, the results of this study support the theory where the influence of opportunities for the companies' growth with systematic risk depends on the definition of growth. The definition of growth as expansion is negatively related to growth with systematic risk (Beaver et al. 1970; Breen & Lerner 1973; Eskew 1979; Pettit & Westerfield 1972; Rosenberg & McKibben 1973; Thompson 1976). The definition of growth as a monopoly power in market factors or output produces greater economic power and also produces a negative relationship between growth and systematic risk. The results of this study also support the results of research conducted by Alnajjar & Riahi-belkaoui (2001) and the research of Pagalung, (2003) where the results of the study showed negative results and were significant at the 5% level. Hypothesis 5: the companies' Systematic risk which have a negative effect on IOS is supported.

DISCUSSION

The results of this study indicate that the variables of excellence (multinationality, size and profitabilty) confirmed by the research model conducted by Alnajjar & Riahi-belkaoui, (2001) show that only profitability variables have a positive influence on IOS and the results of this study do not support previous research. The profitability of a company that is proxied in the form of a company that has or earns a large profit will have a great opportunity to compete with the same type of company, so that it signals a company's future growth, where a portion of the profitability will be invested in the investment to increase the company's value (Yendrawati et al. 2013). Although the multinationality variable does not have a positive effect on IOS, this finding is relevant to the research conducted by (Pagalung 2003) with the same object of research, namely companies listed on the IDX. Thus, multinationality, the size and profitability can be used as the indicators of measuring the company's superiority. However,

the measurement of company excellence is still debated in terms of representative measurements.

The study results of the limitation variables (leverage and Systematic Risk) show results that are inconsistent with previous studies (Gaver & Gaver 1995a; Jaggi & Gul 1999; Smith & Watts 1992b). It happens because the possibility of the economic conditions in Indonesia has not recovered after the 2008 global economic crisis which was followed by another economic crisis, which hit almost all countries in the world. Because the researchers use some research data starting in 2009, so the structure of the companies' funding is not the same as the companies that do not face a crisis. The results of this study are interesting to be examined further : what factors cause the different condition and whether the cause of the difference is caused by differences in economic conditions which is used as samples of the research (previous researchers in the United States carried out before the economic crisis in which the research data used is in 1987 to 1993 while this study is held in Indonesia with a data taken after the global crisis because it uses data starting in 2009). It needs to be a study material for the subsequent research.

CONCLUSION

Based on the results of the research obtained, the conclusions that can be taken is that multinationality of the company does not have a positive and significant effect on IOS, but the size and profitability have positive effects on IOS so that the variables of the companies' excellence studied still need to be reviewed. Therefore, the measurement of the company's excellence is still debated in terms of representative measurements.

Other results concluded is that the company's Leverage and Systematic Risk had a negative and significant effect on IOS. It makes the company grow tends to reduce its debt and reduce the risk or problems that arise due to the possibilities of investment or growth that will be carried out by the company.

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SOVEREIGN DEBT THRESHOLD AND GROWTH IN THE SUB-SAHARAN AFRICA: A HISTORICAL DATA APPROACH

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ABSTRACT: *Scholars have argued that excessive sovereign debts at certain levels could impact negatively on the economic growth of a borrowing nation. Studies however suggest a contrary view of the phenomenon. This study examines trends in debt-to-GDP-ratios, viz-a-viz economic growth, with a view to ascertaining whether there is a particular debt threshold beyond which borrowing can pose a threat to economic prospects of a nation. By use of the descriptive analysis the study samples four sub-Saharan African countries and review trends in gross government debt-to-GDP-ratio, and economic growth, to establish whether shock variables other than debt are responsible for the unfavourable growth recorded among highly indebted countries. The study confirms that a country's level of indebtedness may not necessarily be responsible for poor growth prospects.*

KEYWORDS: Debt Management, Debt Service, Debt Distress, Debt Threshold, Debt Overhang

INTRODUCTION

There is yet to be determined a particular debt threshold for countries in the sub-Saharan Africa. This has been a major challenge for scholars especially after the debt crisis and debt relief periods of the 1990s and the early new millennium. After these two periods some sub-Saharan African countries that experienced some level respite tend to be facing similar threats with all the signs of impending distress. Hence the need for the query: Is there really a particular debt threshold beyond which lower income countries especially those in the sub-Saharan Africa cannot borrow? And if there is a particular at what level of borrowing does debt become harmful to the economy of a country?

Several scholarly works have however been accomplished in the area of the relationship between sovereign debt and economic growth. It has been established that many of the countries in the sub-Saharan Africa, had larger proportions of their economic crisis to be directly or indirectly linked to borrowing. Okosodo and Isedu (2008) study on Nigeria for instance, confirmed and supported the existence of what is referred to as the debt overhang hypothesis. The researchers argued that increases in resources outflow due to servicing of external debts tend to result in serious depression of domestic economic activities and could lead to substantial contraction of agricultural and manufacturing output in the country. But supporting a similar disposition on the negative impact of debt in the sub-Saharan Africa Adigbite, et al. (2008) noted that debt was actually the major factor militating against growth and development in a country like Nigeria. It was argued that due to excessive servicing requirements that tend to follow such huge external facilities chances of economic growth from investment in productive activities is severely impaired. When debt is accumulated

there is the tendency of reducing economic performance through overhang effect and other macroeconomic instability ranging from discouraged savings, thereby worsening fiscal deficit, exchange rate depreciation, and balance of payment disequilibrium among others. The work however did not specify the at which debt becomes a threat to growth. Fosu (1990) however drew the conclusion that the long-term impact of debt was "non-monotonic"; and that it was positive at low levels of investment and after a debt/GDP threshold of about 16 per cent, it becomes negative.

Taking a similar view, Deshpande (1997) explained using a sample of 13 countries that the claims of debt overhang effect is found to be valid and really exist. He confirmed the opinion that external debt is found to exercise a negative influence on the investment ratio of a country in debt. For the period under consideration, the investment ratio for the sample countries displayed first a rising tendency roughly up to the late seventies and then declines to the end the eighties. Contrary to this stand however Cohen (1993) observed that although debt levels had insignificant overall effect, it was seen to have a negative effect on growth particularly in the Latin American countries but not in African countries. Objecting to the notion of debt overhang further, Cordella, Ricci, and Ruiz-Arranz (2010), pointed out that investments in highly indebted countries were not really affected by debts. Instead, they explained that the real negative effect of debt on investment was actually significant among countries with lower indebtedness.

In particular the sub-Saharan Africa, a region so much hit by distress that led to a number of policies in debt relief and debt cancellations in the periods between the late nineties and early new millennium. Recently in it's the IMF (2018) warned that about 40 per cent of countries in the sub – Saharan Africa were in debt distress or at a high risk of distress. The Report specifically stated that African countries issued $7.5 billion sovereign bonds in 2017, a figure that is 10-fold higher than in 2016. It is a matter of necessity for African countries to invest massively in infrastructure, but in the same instance the countries in the region need to avoid the risk of being caught in a debt trap all over again. With the lowest revenue-to-debt ratio in the world (IMF, 2018) nations in Africa need to rely on more sustainable sources of financing and prioritising increased domestic revenue.

Pescatori, Andrea et al. (2014) in a recent work, employed a new comprehensive IMF database to argue against the long-held view that there is a level in sovereign debt that ultimately becomes harmful to a country's economic growth. This assertion is promoted in works by renowned economic researchers such as Reinhart and Rogoff (2010); and Reinhart and Rogoff (2012) study which further confirmed the existence of a debt threshold beyond which borrowing could become harmful to economic growth. According to these scholars, for advanced economies such as those in the OECD, the debt threshold should be a maximum of 90 per cent of the GDP; above which borrowing could turn out to impact negatively on growth. Prior to all this, but through the exploitation of a new multi – country historical data set on central government debt as well as more recent data on external debt (both public and private), to search for a systematic relationship between debt levels, growth and inflation, Carman, Reinhert, Kenneth and Rogoff (2010) reported that whereas the relationship between growth and debt seems relatively not very strong at normal debt levels, the median growth rates for countries with public debt over 90 per cent of GDP are about one per cent lower than if they had no debts at all; with the average (mean) growth rates several percentage points lower.

The issue of debt among lesser developed countries has equally been one of the foremost phenomena in public finance. For example, studies by Hansen (2001) where he examined a sample of about 54 developing countries but failed to find a conclusive evidence to support the assertion that debt (external) had a negative effect on economic growth. Also, in a much earlier analysis, Bert, Hofman et al. (1990) argued that debt overhang largely played a large part in explaining the slump in investment among debt distressed nations. The two researchers explained how the IMF hinged its support of the debt overhang proposition on two pieces of evidence: the savings ratio in the so-called Baker-15 countries fell sharply, rather than increased, when external finance dried up. The study indicated that the necessary squeeze in domestic demand relative to output was therefore more than fully reflected in lower investment. A comparison of the country group of problem debtors with a group of other heavily-indebted countries which did not experience debt-servicing problems showed that investment and savings ratios dropped in the former group but not in the latter. This evidence tends to confirm the debt overhang hypothesis which attributes disincentive effects to the fact that debt service becomes linked to economic performance in problem debtors, thus weakening the incentive to invest.

These analyses employing a significant number of developed countries was quite relevant in the study of debt and economic growth, but was however found to be entirely lacking in empirical evidences especially with respect to countries in the sub-Saharan Africa. But a study of debt in Africa would prove most relevant as Omotola and Saliu (2009) observed that it is a fact to assert that Africa has been over burdened by debt. They look at debt crisis as a situation in which indebted countries will be so much indebted to the extent that it will be just difficult to sustain the management of the debt a situation that most of the times results in severe economic distortions and internal instability.

Generally, however, the fact that debt servicing by the debtor nation will result in less available funds for investment is understandable and logically leads to illiquidity which gives rise to what is referred to as the Liquidity Constraint Hypothesis (LCH). This hypothesis argues that the more funds are expended in debt repayments then there is bound to be shortage of funds for investment purposes which in the long run equally affect both the debtor as well the creditor.

Richard Cooper and Jeffrey Sachs (1984) observed that solvent countries may borrow up to the point of the solvency constraint. They however noticed that borrowing limits could be reached far below the solvency limit, because creditors are averse to liquidity problems and probable incident of debt repudiation by the heavily indebted countries. According to the duo, liquidity constraint may occur where a country owes more in a given period than it can service in the absence of a new loan. In a nutshell such a country is said to be under liquidity constraint.

Liquidity constraint is by far not the only reason that could deny a country the option of raising funds in the international market. Such a country may lose its creditworthiness if it is facing short-run difficulties, even though its long-run prospects are bright. In this case, the lending is bound by a liquidity constraint. However, a country may be proven to have foreign exchange earnings sufficient to honour its obligations, may still be considered unfit to borrow if it shows signs indicating unwillingness to do so, because debt repayment is too onerous or because it is holding out for some sort of debt relief. Fear of default referred to as “repudiation risk” may pose a serious constraint on lending.

Apart from the liquidity or repudiation risks, creditors consider a country's long run capacity to service its debt. From their point of view creditors' long run solvency must not necessarily mean that the borrowing nation must have transformed itself into an industrialized nation in the long run with excessive favourable balance in its current account or foreign reserves. Instead a prospective borrowing nation should prove to its potential creditors that it has a guaranteed expected flow of future resources to service its debt, without having to recourse to further debts in order to make interest on loans payments. This ability is necessary such that a rise in the real interest rate above the growth rates of debtor and creditor countries can have a negative effect on the debtor's solvency constraint. A country's capacity to borrow is therefore most likely to reflect the creditors' concerns about solvency, liquidity, and repudiation risk. It is the interaction of these constraints that determines the dynamic budget constraint facing an economy (Richard C. and Jeffrey S., 1984)

Thus, when investment in a group of large debtor countries tumbled in the 1980s, many analysts blamed the poor performance on debt crisis. This was based on the theory that if there were to be a discount on the secondary debt market, the lenders might not expect to be paid in full; where repayments is hinged on the debtor's resources (Cohen, 1995); where debt was operating like a tax on a country's resources implying debt's adverse effect on domestic investments popularly called the debt over hang. The debt overhang phenomenon which tend to give creditors the incentive to lend at an expected loss ostensibly to secure their existing claims (Jeffrey Sachs, 1984; JD Sachs (1989)). But the position in the real world however is one of both repayment and new borrowings; where if countries future repayments were not in doubt they would have no difficulty borrowing (Krugman, 1988). Krugman (1988), further saw debt overhang as referring to a situation of an existing 'inherited' debt that was substantially large enough that creditors would not confidently expect to obtain repayments on their lending. Carmen M Reinhart, Rogoff, and Savastano (2003), however, differed especially while considering the case of emerging economies when they saw the entire phenomenon as a consequence of what they referred as the debt intolerance. Debt intolerance was associated with the pervasive of persistent debt default among many sovereign debtors. These debt-intolerant countries tend to have weak fiscal structures as well as weak financial systems. But whether governments' decision to borrow or reduce the amount of debt could have a positive impact on economic growth tend to depend on the existence of the so-called debt overhang. According to Pattillo, Poirson, and Ricci (2011) there existed some evidence for an empirical turning points or thresholds beyond which borrowing tend to impact negatively on economic growth. This result confirms the findings of Fosu (1996) working on a sample of sub-Saharan African countries where he found that debt negatively influenced GDP growth through a process of reduction in the marginal productivity of capital. The findings indicated that on the average, associated with a higher debt country is a fall in GDP growth of about 1 percentage point annually; which approximately constitute a third of the sample mean growth of GDP. The impact however tends to be positive at low levels of investment, i.e. and after a GDI/GDP threshold of up to 16 per cent it reverts to negative. The same negative conclusion was drawn by Cohen (1991); and many others. Sosin and Lin (2001) using cross-sectional estimates of the coefficient of foreign debt based on the total sample found that it had a negative sign, however without any statistical significance. According to them all available data from African countries indicate that foreign debt and growth rate per capita GDP were negatively related especially at high level of significance.

More studies however continued to show that higher levels of borrowings tend to negatively hamper economic growth. But a number of researchers went further to explain that the debt overhang phenomenon was more than just a drop in the investment level. For instance an implication of the debt overhang could lead to reduced government incentive to carryout difficult reforms in the areas of trade liberalisation or fiscal adjustments (Pattillo et al., 2011); because any activity that requires an expenditure in the expectation of an increased future output would be discouraged for fear of taxes by the creditors. But looking at the relationship between debt and growth in the light of specific features such as the quality of its policies and institutions, Ricci and Cordella (2010) discovered that the marginal effect of borrowing especially for non HIPC countries tend to be negative when the par value of debt was up to 20 per cent of the country's GDP. Alternatively, it could be where the net present value of such debt reaches up to 10 per cent of the GDP. It was however found that those countries with sound policies were relatively having higher debt overhang thresholds over and above those countries with bad policies which were found with lower thresholds. But good policies especially among the developing countries were usually as a result of outcomes of debt and debt renegotiations with the international financial institutions in the form of structural adjustments and conditionality. This is because at the centre of conditionality are the aspects of structural adjustment and trade liberalisation. According to Fafchamps (1996) however, conditionality helps the repayment of sovereign debt by providing a partial solution to a commitment problem. In certain situations, conditionality promotes good policies that lead to the elimination of debt overhang. This is especially where conditionality comes with concessionary lending of sufficient magnitude. But where it is anticipated by lenders, conditionality could get the IFIs and the debtor nation into a trap where the debt overhang is bound to persist; with conditionality continuing indefinitely. The issue of debt over hang however, tend to dwell on the threat of default to the creditors and a risk of strangulation of domestic investments as a result of high debt servicing, on the part of the debtor.

External Debt

A larger proportion of the debt owed by countries in the sub-Saharan Africa suffering from debt crises and distress had been sourced externally. The debt crises led many of the countries in the sub-region to be declared insolvent and thus had the phenomenon of debt overhang ensured. In order to ascertain the debt overhang as it impacts on economic growth certain trends in key variables were considered using data obtained from the World Bank economic indicators on the four countries sampled. A range of indicators depicting a country's extent of indebtedness e.g. values corresponding to external debt to GDP ratio, external debt to export ratio, interest on debt to export ratio, and total debt service to export ratio.

METHODOLOGY

The Historical Data Approach

This study adopts the new approach employed by Pestecori, Andrea et al. (2014) in the work, *No Magic Threshold* investigating further the relationship between high sovereign debt situations and economic growth. By focusing on 34 advanced economies, Pescotari, Andrea et al. (2014) uses new and comprehensive IMF database on gross government-debt-to-GDP-ratios, interest payments, and primary deficits. The work reviewed episodes where gross

public debt rose above a particular threshold to observe real GDP growth per capita over specified long-term periods. According to Pestecori, Andrea et al. (2014) the new methodology was different from the one in use by researchers such as Reinhart and Rogoff's 2010, because it focused on medium-to-long-term relationship existing stock of debt-to-GDP and any further GDP growth instead of mere short-term relationships explored by other studies. Observing longer term effects has the advantage of mitigating compounding caused by temporary recessions or sudden growth bursts that could impact on the short run relationship between debt and growth.

Unlike studies focusing mainly at advanced economies, this study focusses on selected samples of countries from the sub-Saharan Africa; and uses historical data to review individual country trends with respect to the relationship that exists between debt-to-GDP-ratio, and economic growth. Like in the work by Pestacori, Andrea et al. (2014) the methodology employed in this study differ from those adopted in earlier works in two other important aspects. One, the study proposes to review an array of debt thresholds not a fixated threshold of 90 per cent in the case of an advanced economy; and 15 per cent as suggested in the debt intolerance theory; for nations with past history of debt crisis e.g. those in the sub-Saharan Africa. Secondly the proposed methodology is focusing only on the period when debt thresholds are higher than particular levels, the growth performance of a country over a period of time regardless of the debt outcome are taken into cognisance (Pestacori, Andrea et al. 2014). The proposed methodology thus has an advantage of objectivity towards nations that found it difficult to reduce their levels of borrowing. There is always the danger of bias when debt analysis focuses mainly at situations where debt remains above a certain threshold.

Data for the study was sourced from the World Bank database economic indicators, and the IMF database world economic outlook, and government debt statistics. Analysis would be carried out by use of tabulations and Charts.

Government Gross Debt to GDP Ratio

In an attempt to assess the impact of government borrowing on economic growth, an attempt was made earlier in this work to link government indebtedness to economic growth. For instance, it was argued that there exists an optimal level of government debt, where it is assumed that at certain levels of government debt ratio, the impact might revert to become negatively related to growth. If there is a level above that which government tends to substantially affect economic growth, then it follows that reducing government debt to a certain scheduling should become a priority for debt mangers and management offices.

As further argued earlier in the write up, there was actually no preferred level for government debt. It was postulated that debt level might have been triggered by lower economic growth instead of the other way round. In order to look at this phenomenon there was a need to compare a country's annual growth to gross government debt as a ratio of GDP. The data below gives the annual GDP growth and gross government debt to GDP ratios for 12 years commencing 2000.

Table 1: Pattern of Debt: Nigeria

Year	GDP Growth (Annual %)	Gvdgdp
2000	5.32	84.22
2001	4.41	87.97
2002	3.78	68.78
2003	10.35	63.86
2004	33.74	52.66
2005	3.44	28.61
2006	8.21	11.81
2007	6.83	12.79
2008	6.27	11.58
2009	6.93	15.17
2010	7.84	15.46
2011	4.65	17.16
2012	6.75	18.39

Source: Government Debt Statistics

Table 1 shows the record of GDP annual growth and the gross government debt as a ratio of GDP. This trend tends to show that at lower economic growth rate relative higher debt ratio was recorded. But it is also evident that there is a lack of consistency in the pattern. For instance, in the 2000, growth rate was recorded at 5.32%, which corresponds to a debt ratio of 84.22% and when growth rate was 4.41%, the debt ratio was 87.97% respectively. From these two periods it would be safe to assert that at lower debt ratio, higher growth rates were recorded. This was, however, not a reliable assertion since in the year 2003 debt ratio was lower at 68.78%, while a corresponding growth rate was still lower at 3.78% when compared to 2001 and 2000 respectively. This makes the relationship between the two phenomena suddenly directly lacking in an established pattern with regards to any of the periods reported earlier. In 2003 however, a high growth ratio of 10.35% corresponds with a debt ratio of 63%, and in 2004 a growth of 33.74% corresponds to a debt ratio of 52.65%, conforming to the assertion that a higher debt ratio might have the tendency to impact negatively on the growth of a country.

The data presented here helps to portray the observable trend and possible relationship between debt and economic growth. Thus, in an effort to establish the relationship and before the proposed statistical analysis, a review of the trends and patterns of data would shed light on a probable outcome, which could assist us in a better understanding of the government debt phenomenon.

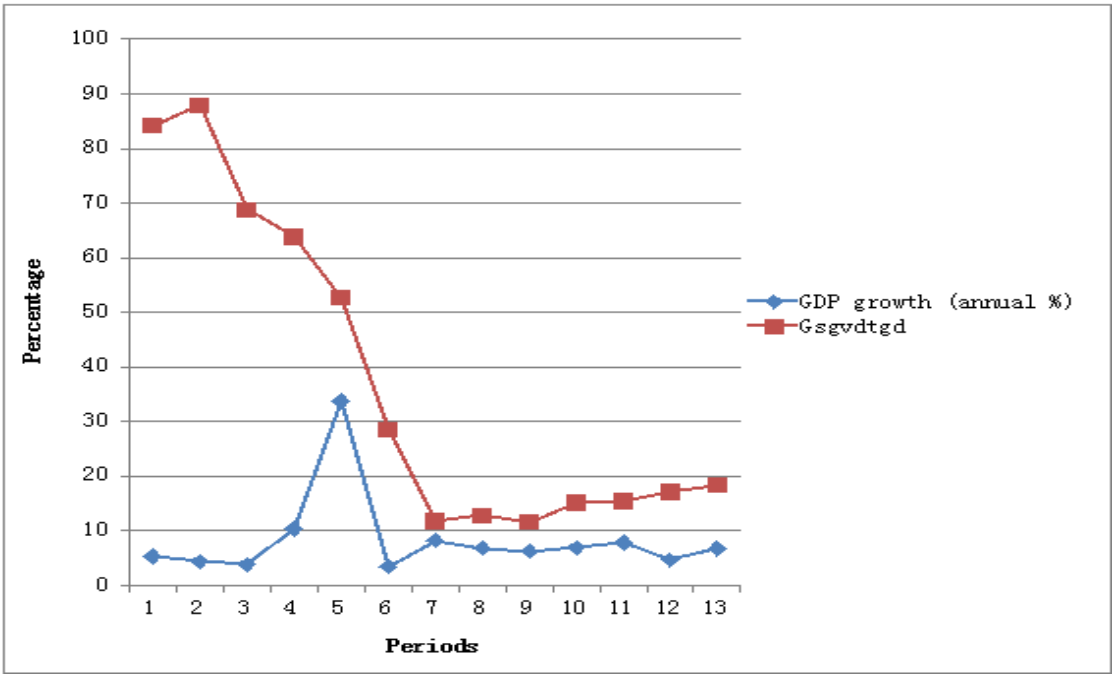

Figure 1: Graph Showing Pattern of Debt – Nigeria

Figure 1 portrays a pictorial representation of the gross government debt as a ratio of gross domestic product and the actual GDP growth rate in percentages as presented in table 1. The curves in the figure, with red being gross government debt and blue depicting GDP growth rate. From the beginning the trend tends to show an opposing relationship between the two indicators. Afterwards, the pattern is maintained, but with reversed movement directions up to period 5 or year 2004. Between period 7 and 8, which corresponds to 2006 to 2007, the relationship inverted i.e. GDP growth rate drop corresponded to a rise in gross government debt, from 8.21% to 6.82% against a rise from 11.81% to 12.79% respectively.

The next two periods between 2007 and 2008 and from 2008 to 2009, show a fluctuating trend with a decrease in growth rate from 6.83% to 6.27% and from 6.27% to 6.93% respectively. This was accompanied by a similar movement in gross government debt to GDP ratios, recording first a decrease from 12.79% to 11.58% and then a rise from 11.5%to 15.17% for the same periods respectively. The remaining three periods until the year 2012 revealed an inconsistent movement between the two variables with GDP growth rates fluctuating up, then down and later rising again to 6.75%, from 6.93% to 7.84%, then dropping to 4.65% and finally rising to 6.74% for the periods respectively.

Gross Government Debt to GDP Ratio against GDP Growth: Ghana

To further establish whether there is a peculiar trend or relationship that might have existed between government borrowing and economic growth, we next consider GDP growth against gross government debt as a ratio of GDP to observe the pattern over a period. Here we look at the period from 2001 to 2012, obtainable from the World Economic outlook of the IMF.

Table 2: Pattern of Debt: Ghana

Year	GDP Growth (Annual %)	Gvdgdp
2001	4	98.20
2002	4.5	84.59
2003	5.2	81.80
2004	5.6	54.04
2005	5.90	43.77
2006	6.4	21.92
2007	6.46	23.26
2008	8.43	30.10
2009	3.99	32.69
2010	8.01	43.03
2011	15.01	39.81
2012	7.91	49.10

Source: World Bank Debt Indicators and World Economic Outlook

Table 2 displays a trend of all the GDP annual growth ratios against the government gross debt to GDP ratios for the period 2001 to 2012. Except for the years 2009 and 2012, GDP growth had been positive for the whole the period since 2001. The GDP growth ratio started at 4% in 2001 and continued to record a persistent increase reaching a high ratio of 8.4% in 2008. This represented an increase of 4.43 percentage points or 110.75% change over the years from 2001. However, after this period, in 2009 the GDP growth rate tumbled significantly to a low 3.99% representing a drop of 4.44% points or 52.67%. The movement of the GDP growth ratio continued its movement with increases in 2010 and 2011 recording 8.01% and 15.01% respectively. In 2012 however the GDP dropped to 7.91%.

In comparison, the third column on the table portrays the gross debt to GDP ratios over the same period under review. The debt ratio continued to decline with an increase in GDP growth rate until the year 2007 when the decline of the debt ratio slowed down with a slight increase to 23.25% from 21.92% in 2006. The remaining period from 2008 to 2012 reveals an inconsistent pattern of movement in both GDP growth ratios and gross debt to GDP ratios. At higher growth ratios relatively, lower debt ratios were recorded and vice versa. For instance, in 2011 a GDP growth rate of 15.01% was recorded against a gross debt to GDP ratio of 39.81%. However, GDP growth rates dropped to 7.91% the following year in 2012, yet gross debt to GDP ratio rose to a high 49.09% for the same period. Thus, the trend tends to be only predictable at low levels of GDP growth, but inconsistent at higher levels of GDP growth rate.

This provides us with the ground to tentatively assert that at lower levels of GDP growth rate government borrowing tends to affect economic growth negatively. Or, growth tends to be more sensitive to growing government debt. At higher GDP growth rate there tends to be either reduced or no effect of borrowing on economic growth.

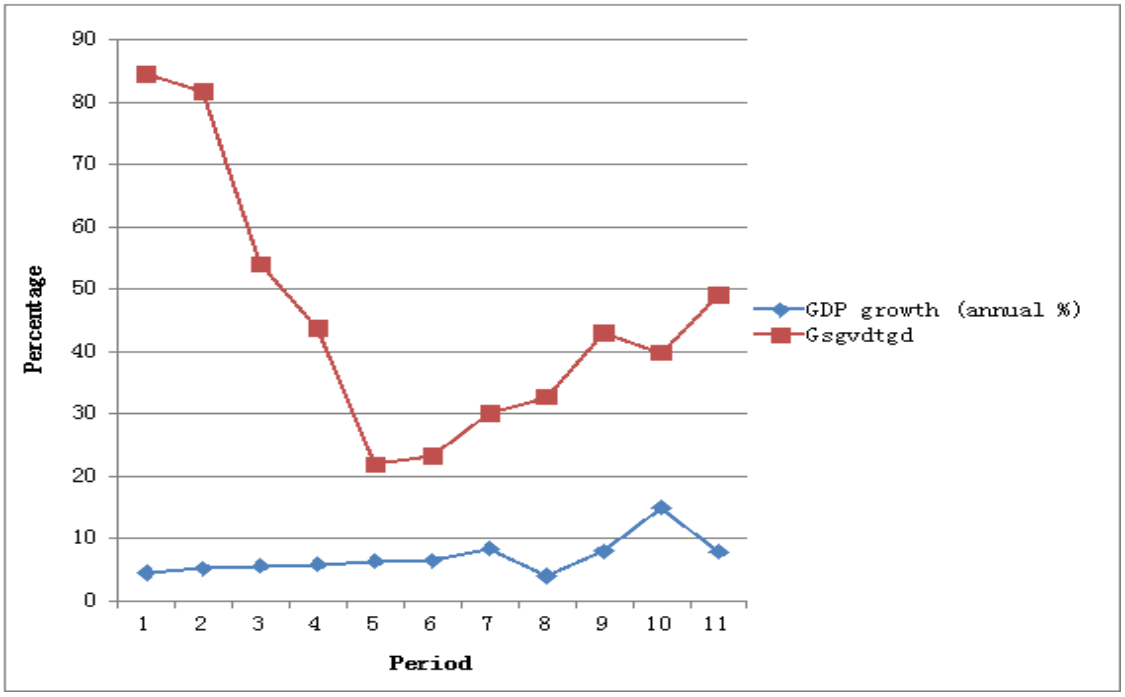

Figure 2: Graph Showing Trend in Debt and Economic Growth – Ghana

Figure 2 further depicts the relationship between GDP growth's curve and gross debt to GDP ratio. The blue curve shows the GDP growth and the red curve shows the gross government debt to GDP ratios. The trend is most obvious from period 1 to period 5. GDP growth climbs gradually and the gross government debt ratio declines at an accelerated rate. Between periods 5 and 6 we also observe a movement that is in a similar direction. After period 7 the pattern is seen as inconsistent and erratic. This is merely to buttress the observation made earlier, that at lower levels of GDP growth; government borrowing tends to have a significant effect on growth but tends to become irrelevant at higher growth rates.

Gross Government Debt to GDP Ratio to GDP Growth: Uganda

This section continues with the same data presentation as the previous section on gross government debt to GDP ratio and the annual GDP growth for Uganda, covering a period of 1997 to 2012. Here, the same traits were observed as noted under Nigeria and Ghana; all in an effort to study how the phenomenon of government borrowing could affect the economic growth of a country. Under Uganda, the data sourced from the IMF's Economic Outlook is more comprehensive. At least in this case, we are able to obtain three years' data, which is over and above what we had obtained in the case of Ghana and Nigeria.

Table 3: Debt Pattern: Uganda

Year	GDP Growth (Annual %)	Gvdgdp
1997	5.10	53.54
1998	4.91	52.55
1999	8.05	57.76
2000	3.14	61.73
2001	5.18	63.45
2002	8.73	69.11
2003	6.47	68.24
2004	6.81	62.40
2005	6.33	52.82
2006	10.78	35.49
2007	8.41	21.94
2008	8.71	21.43
2009	7.25	21.43
2010	5.86	26.84
2011	6.62	29.30
2012	3.41	31.10

Source: World Bank Debt Indicators and IMF World Economic Outlook

Table 3 reveals the trend of GDP growth ratio and gross government debt to GDP ratio over the years under review. The figures displayed in the second column representing GDP growth rate over the 15 years under review indicates that there was no particular observable pattern in the trend. GDP growth started from a moderate ratio of 5.10%, when then then fell to 4.91% in 1997 and 1998 respectively. By the year 1999, GDP growth ratio had jumped to 8.05%, representing a rise by 3.14%or 63.95% over the previous period. By the year 2000, the GDP growth ratio dips significantly to 3.14% representing a drop of 4.91% or 60.99%.

In the following years: 2001, 2002, 2003 and 2004, the growth ratios recorded were 5.18, 8.73, 6.47 and 6.81 respectively. These ratios as with the recorded earlier randomly fluctuated, showing no specific pattern in the trend. This trend continued, where it reached a peak in 2006 with 10.78% from 6.33% at the end of 2005. This represents an increase of 4.45 percentage points or 70.30% respectively. The ratios continue their inconsistent movement in the following years: 2007, 2008, 2009, 2010, 2011 and 2012, with 8.41, 8.71, 7.25, 5.86, 6.62 and 3.41 respectively.

So far, a study of the trend above helps to paint a particular picture of GDP growth ratios movement over time. It has been made clear that the rise and fall of GDP ratios had no relationship with figures shown in the next column of gross government debt to GDP ratios for the same period. For instance, when the lowest GDP growth rate was recorded in the year 2000 at 3.14%, the corresponding gross government debt ratio was recorded at a high 61.73%. On the other hand, the highest GDP growth ratio was recorded at 10.78% in the year 2006, against a corresponding debt ratio of 35.49%.

These two periods may tempt us with the assumption that the lower the GDP growth recorded, the more the tendency for higher government debt (and vice versa). In the same

vein, we could further postulate that at higher levels of GDP growth rates, lower levels of borrowing were embarked upon by government. This relationship was however, found not to be significant and feasible when we further study the entire trend. In particular, the year 2002 recorded a GDP growth ratio of 8.73 against a debt ratio of 69.11, 2003 recorded a growth ratio of 6.47%, against a debt ratio of 68.24% and in 2004 the GDP growth rate was 6.80, while a debt ratio of 62.40%. There was no precise conformity with the negative causal relationship between government debt and economic growth postulated above. In addition, there was no clear-cut direction of the relationship - if there existed such a relationship, it was difficult to establish whether GDP growth rate impacted on government rate of indebtedness, or the other way around.

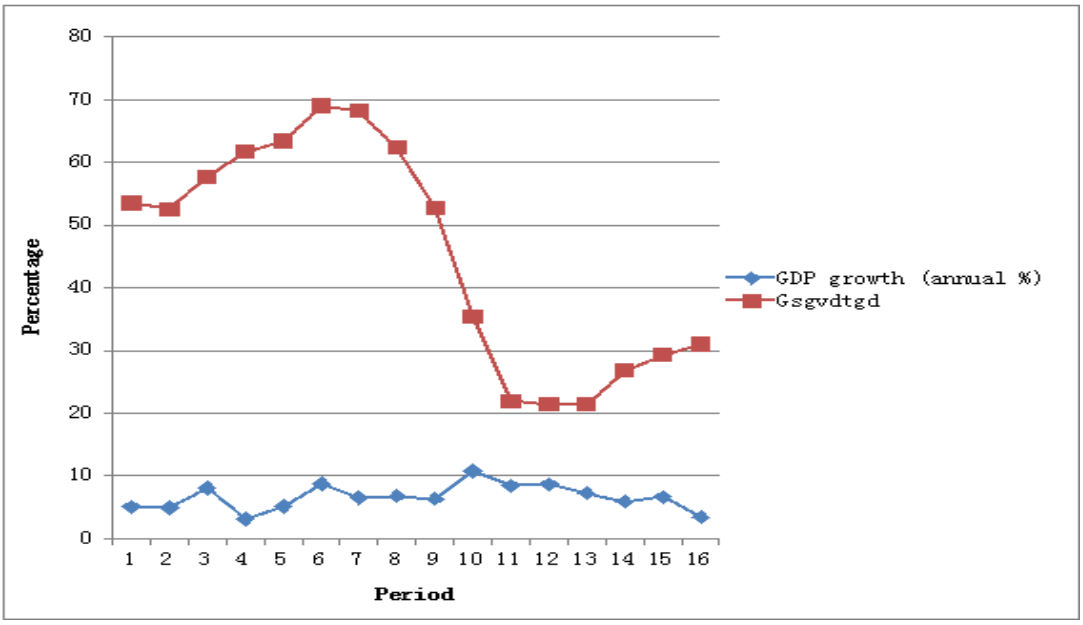

Figure 3: Trend in Debt and Growth – Uganda

Figure 3 depicts the trend considered earlier in this section. The relationship between GDP growth rate and debt ratio indicates no particular pattern over the period under review. For Uganda, the trend was not so different from the other two sub-Saharan African countries reviewed earlier in this work.

However, it is clear from the figure that during the earlier years there tended to exist an inverse relationship between GDP growth rate and debt ratio. Except for few fluctuations between period 3 and 4, the trend for the earlier periods up to period 6 or year 2002 was negative. While the debt ratio tended to flatten between periods 6 and 7, GDP growth rate on the other hand dipped to flatten in the next period. Debt ratio however, continued on an accelerated decline until period 11, which corresponded to the year 2007. And beyond that point to the next 2 periods (2008 and 2009), the debt ratio flattened to pick up from period 13, then rose until period 16 or 2009 to 2012.

Generally, the trend that has become evident is that during most of the periods the relationship that existed between debt and growth was negative and reversed though in several instances the relationship became indeterminate. In some instances, the two curves

either move in same direction or either of the curves flattens, with the other rising or sloping downwards.

Gross Government Debt to GDP Ratio to GDP Growth: South Africa

South Africa was an interesting country among the sampled sub-Saharan Africa economies. Unlike in the case of other sub-Saharan African countries, South Africa had little history of external debt and was among the few countries that had a developed domestic capital market. South Africa was not a HIPC and thus had not befitted from a substantial debt relief or debt cancellation during the IMF-World Bank Debt Relief Initiative. In this section, we review the gross government debt data for South Africa against the record of GDP growth rate over the years.

Table 4: Debt Pattern: South Africa

Year	GDP growth (annual %)	Gvdgdp
2000	4.15	43.32
2001	2.74	43.49
2002	3.67	36.95
2003	2.95	36.91
2004	4.55	35.88
2005	5.28	33.20
2006	5.60	30.97
2007	5.55	28.33
2008	3.62	27.23
2009	-1.53	31.58
2010	3.09	35.31
2011	3.46	38.82
2012	2.55	42.10

Source: World Bank Debt Indicators and IMF Economic Outlook

Table 4 displays a trend of the two economic indicators of GDP growth and government gross debt to GDP ratio. Column 2 which presents the GDP growth ratios shows an array of erratic rates over the years. Between year 2000 and 2001, GDP growth rates fell from 4.15 to 2.73% respectively. This corresponds with debt ratios shown in the next column of a high 43.32 and 43.49%, for the same periods respectively.

Here it is safe to assert that at lower GDP growth rates higher debt ratios are posted. Impliedly, high government debt is negatively related to growth - invariably high government borrowing tends to hinder growth. However, by studying the trend in the table it would not be hard to understand that such a relationship happened for just a moment among several others over the years under review. For instance, year 2002 told an entirely different story, although, not precisely unrelated to the first scenario. GDP growth rate jumped to 3.67% representing an increase of 0.93 percentage points or 33.94%. Debt ratios for the corresponding period declined from 43.49 to 36.95%, representing a fall of 6.54 percentage points or 15.04%. The same relationship turned out to be maintained, but it was relatively insignificant.

Further along the trend, the year 2003 saw to the decline of both GDP growth rate and debt ratios to 2.95 and 36.91% respectively. This movement disrupted the established relationship where both indicators travelled in the same direction. However, the following three periods witnessed a reversion to the initial relationship where in 2004, 2005 and 2006, the indicators of GDP growth rate and debt ratio related negatively with 4.55, 35.88, 5.28, 33.20, and 5.60, 30.97 respectively. The next two periods however, change the trend again with a relatively significant decrease in the values of the two indicators. In 2007 and 2008, the indicators of GDP growth and debt ratio recorded a decline to 5.55, 28.33, and 3.62, 27.23% from 5.60, 30.97% at the end of 2006 respectively.

An interesting development however, occurred in 2009 with a significant decrease in GDP growth ratio to – 1.53% from 3.62% at the end of 2008, representing a decline of 5.15 percentage points or 57.73%. This corresponds with an increase of the debt ratio for the same period from 27.23 at the end of 2008 to 31.58% at the end of 2009, representing a rise of 4.35 percentage points or 15.97%. The negative relationship between the two variables was once again stressed. The next two periods, 2010 and 2011 further distorted the trend, where the two indicators recorded increases to 3.09, 35.31 and 3.46, 38.82, respectively. The two indicators moved in the same direction with GDP growth and debt ratios increasing over the periods respectively.

By the year 2012 however, the negative relationship between GDP growth rate and government gross debt to GDP ratio (or extent of indebtedness) resumes. The year 2012 witnessed a GDP growth ratio that declined to 2.54 from 3.09% by the end of 2011, representing a decline of 0.55 percentage points or 17.80%. On the contrary, the corresponding period saw an increase in the recorded debt ratio from 38.82% at the end of 2011 to 42.09% at the end of 2012. This represents an increase in debt ratios by 3.27 percentage points or 8.42%.

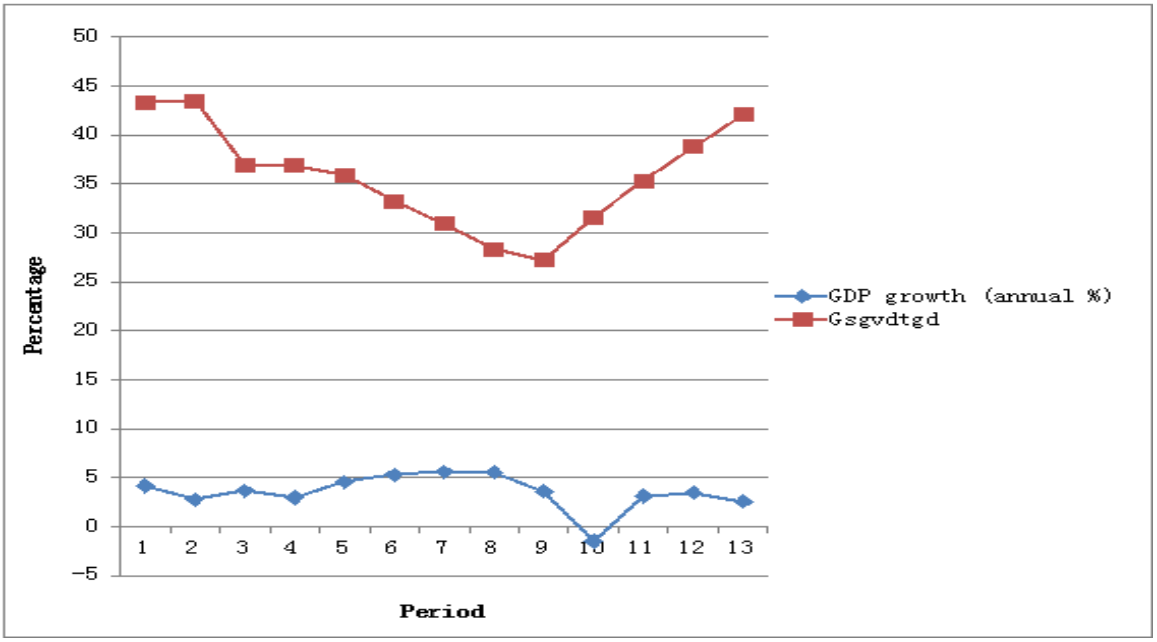

Figure 4: Trend in Debt and Growth – South Africa

Figure 4 presents a pictorial representation of the relationship that exists between GDP growth and gross government debt to GDP ratio. From the figure, we can see that debt ratio is depicted by the red curve and GDP growth is shown along the blue curve. The horizontal X axis shows the periods ranging from 1 to 13 (2000 to 2012) and the vertical or Y axis portrays the different ratios to 50. As discussed earlier in the section, in many instances (and for most levels of the curves) the relationship that exist between GDP growth and debt ratio tended to be negative. However, in several instances we also witness a flattening or reversal scenario, yet most occurrences depict a negative relation -at higher GDP growth ratios, debt ratios tended to be low and vice versa.

CONCLUSION

The relationship that exists between these two important variables however, might not be precisely determined by mere comparison between an array of figures and ratios. In any case the comparison was hardly consistent, especially when similar patterns were considered using similar variables under the same circumstances but for the other three sampled sub-Saharan African countries. While the work tried to establish a certain relationship that exists between government debt and economic growth, first with external debt data and later with gross government debt data, several explanations emerged. For example, at lower levels of debt, GDP growths tends to be high and the relationship tends to become indeterminate at higher levels of GDP growth ratios. This trend is consistent for the sampled country data.

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THE EFFICACY OF FINANCIAL ARRANGEMENTS FOR PEACE MISSIONS UNDER THE AFRICAN UNION PEACE AND SECURITY ARCHITECTURE (APSA)

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ABSTRACT: *The paper delves into the African Peace and Security Architecture (APSA) as established in 2003, within the framework of implementing the AU's plan for the management of crises and conflicts on the continent. It also analyses the efficacy of financial arrangements for peace missions under APSA. The paper depends on secondary methodology, which remains historical-descriptive in nature. Findings show that, language is one of the barriers to communication among the countries that offer their troops for peacekeeping missions and this can serve as an added funding cost in terms of both time and money in training and integrating military forces of various languages. On the deployment of African Mission in Burundi in 2003 (AMIB) for example, the estimated budget was US$110 million for the initial year. The actual expenditure at the end of the year turned out to be US $134 million. The AU in the absence of adequate funds in its Peace Fund expected to raise the money from donations and pledges. Only US $50 million could be raised. The paper concludes that a united and capable Africa is what regional and international players want. It is therefore essential for African states to demonstrate sufficient political will, capacity and buy-in, which will instill the confidence necessary to galvanize support for its operations and improve funding. The paper recommends a deliberate effort by African heads of states and governments in an improved collective quest for regional and continental security as opposed to the pursuit of wholly national agendas and interests.*

KEYWORDS: Efficacy, Financial Arrangements, Peace Mission, African Union

INTRODUCTION

The African Union (AU) transited from the ashes of the now defunct Organization of Africa Unity (OAU). Thirty-two independent African Nations had set out on May 25th, 1963 to collectively achieve independence for all other African nations from the clutches of colonialism and in the process promote African unity (AU Charter). When all 53 African nations had attained their independence the purpose and objective of the OAU had run its course by the year 2002 leading to the creation of the AU with South Sudan joining in 2011, bringing its membership to 54 countries (Williams, 2009).

Over the years, Africans have propounded an Afrocentric foreign policy, their often-echoed mantra being "African Solutions to African Problems" (ASAP) so it has behooved on the continent to back their words with action. In the course of operating the constitution of the OAU it was discovered that a primary shortcoming was the lack of provisions relating to the prevention of, or a more robust determination of conflicts, an irony for a continent riddled

with more than the world's fair share of wars and conflicts. The OAU had as one of its cardinal objectives safeguarding the territorial integrity and sovereignty of its member states. In recognizing the sovereignty of its member states it adopted the principle of non-interference in the domestic affairs of its members outlined in the OAU Charter, article 3 (1 – 4) (Kent and Malan, 2003).

During the operation of the OAU it was observed that it was necessary to amend the framework to stand up to armed non-state actors when the host government's security forces prove inadequate (Williams, 2014). In the execution of this new principle of "non-indifference" the AU has adopted a more robust approach to peacekeeping falling on the post-Westphalian philosophy propounded by Tony Blair's doctrine (Williams 2014) of the "international community" whereby there is a "responsibility to deal with human suffering wherever it occurs" the justification being that globalization had made this necessary. It was also the view of the AU that although Article 2 of the United Nations' Charter calls on member states to refrain in their international relations from resorting to the use of threats of force either against the territorial integrity or the independence of all States in any manner that is incompatible with the aims of the United Nations or from interfering in the internal affairs of other States they were "convinced that economic progress cannot be achieved unless conditions for the necessary security are ensured in all member states of the community" (Williams 2014). This was ensconced in Article 4 of the Constitutive Act of the African Union that gives the "right to intervene in a Member State pursuant to a decision of the Assembly in respect of grave circumstances, namely war crimes, genocide and crimes against humanity" (Williams, 2009).

LITERATURE REVIEW

The African Peace and Security Architecture (APSA) is the framework for the implementation of the AU's plan for the management of crises and conflicts on the continent. It came in force in 2003. It lays down the structures and responsibilities of the different sections that make up the APSA. APSA is composed of the Peace and Security Council, which is supported by the Commission, the Panel of the Wise, the Continental Early Warning System, the African Standby Force and the Peace Fund. The AU has found it necessary, based on chapter VIII of the UN Charter and especially under the provisions of article 53 that requires United Nations Security Council authorization to undertake regional peace missions (Cilliers, 2005).

The APSA was set up on the premise that "the security, stability and development of every African country are inseparably linked with those of other African countries. Consequently, instability in one African country reduces the stability of all other countries" especially in the regional economic community (RECs) where the conflict is taking place (Williams, 2009). It is important to note that the AU recognizes five regional organizations on the continent which play a key role in the maintenance of peacekeeping operations on the African continent namely the Economic Community of West Africa (ECOWAS), the Southern Africa Development Community (SADC), the Arab Maghreb Union (AMU), the Intergovernmental Authority on Development (IGAD) and the Economic Community of Central African States (ECCAS). These organizations make contributions to the AU from time to time as part of the

body for peacekeeping but there is usually a shortfall necessitating the need for support from the United Nations and voluntary contributions from other donor nations (Cilliers, 2005).

Several reports and academic research have highlighted the need for the strengthening and expansion of the role that regional organizations like the AU play in the prevention of conflict and in peace operations. This involves an examination of the capacity, constraints and the ability of these organizations to responsibly take on the role (Cilliers, 2005). While the AU seeks to play a greater role in ensuring peace and security on the continent a major incapacity has been financial constraints. The AU has no permanent budget. Only 2.3% of the AU's budget comes from AU member states (Williams, CFR Report 2011) through funding by the RECs. This seriously undermines the rhetoric as to the AU's desires to be masters of their own destinies.

As stated by Renwick (2013), "The lack of indigenous sources of finance also undermines the AU's credibility as a leading player in peace and security issues on the continent and reduces its ability to exercise ownership of particular initiatives". In an official report commissioned by the AU's Peace and Security Department (Jeng, 2012) the issue of sustainability featured prominently primarily on the account of the fact that the implementation of the APSA has been largely dependent on partner support. This approach raises questions as to the sustainability, predictability, flexibility" (Giorgis, 2010) of AU peace operations.

Funding of these missions, for instance, contributions to the African Standby Force (ASF) is borne by the parent member AU State with the AU handling mission subsistence, travel and other allowances (Kent and Malan, 2003). The argument has been raised that the decision to send forces on a peacekeeping operation is based on the politics of the dominant member states and this directly affects decisions made as the popular saying goes…'he who pays the piper dictates the tune'. Therefore, the independence of such international institutions from the influence of its dominant member states is still a hot debate among scholars (Kent and Malan, 2003). According to Bachmann (2011), "the French, United Kingdom and Belgian approaches are remnants of their colonial legacies; in the Japanese the country's economic interests; in Canadian the influences of the Commonwealth and Francophone countries; in German, a degree of guilt complex mixed with angst about potential African immigration". It is clear that the absence of a regular, central funding and reimbursement mechanism for peacekeeping operations would inhibit the ability of financially poorer states to participate meaningfully in the peacekeeping process.

The budget of the AU Commission increased to USD$138 million in 2005 broken down into USD$75 million for peace and security and USD$63 million for administrative costs. The source of funding at this time was projected to be from AU member states (contributing USD$63 million) and the balance USD$75 million from donors and discretionary payments from individual member AU states (Cilliers, 2005). The AU made a proposal to the European Union (EU) to establish a Peace Facility mandated with the task of funding peacekeeping operations and support in Africa, but under the control of the AU. Due to the fact that the contribution to this initiative would be from EU member states, the challenges this proposal faced was that ultimately the control of each individual peacekeeping operation or commitment would be decided by the EU Commission in Brussels and not the AU office in Addis Ababa. Thus, decision making for the initiative would lie with the EU although the Commission committed to follow the lead and advise of the AU in arriving at its decisions (Cilliers, 2005).

The Peace and Security Council is one of the organs of the African Union and utilizes the African Standby Force (ASF) for its missions in peacebuilding and peacekeeping (Kent and Malan, 2010). The ASF is tasked with the composition of contingents of civilian and military forces from various countries in the AU and are ready to deploy at a moment's notice (Felman, 2008).

According to Feldman (2008), language is one of the barriers to communication among the countries that offer their troops for peacekeeping missions and this can serve as an added funding cost in terms of both time and money in training and integrating military forces of various languages. On the deployment of African Mission in Burundi in 2003 (AMIB) the estimated budget was US$110 million for the initial year. The actual expenditure at the end of the year turned out to be US $134 million. The AU in the absence of adequate funds in its Peace Fund expected to raise the money from donations and pledges. Only US $50 million could be raised (Rodt, 2012).

FINDINGS AND DISCUSSION

Despite a decade of robust African economic growth, the AU still depends on external sources for more than 90 percent of its budget (Allen and Yuen, 2014). "Few African countries are capable of deploying a battalion or more for peace operations without significant assistance. In addition, most do not possess specialized units with sufficient equipment or expertise to provide such necessary services as engineering, communications, medical or movement control (Giorgis, 2010). Often, Memoranda of Understanding between the troop contributing countries requires them to be self-sustaining for at least 60 days after which the AU Commission is expected to reimburse them. Very few African countries have this capability.

The funding of the Peace Fund for conflict-related activities has come mainly from donors and members. This is against a backdrop of a litany of unpaid obligations and membership dues by members. However, the budget for some peacekeeping operations seems to be above the capacity of member states to fund. A good example is the United Nations Mission in the Sudan (UNMIS) with an annual budget of US$1 billion (Cillers, 2005).

Williams (2014) also states in the CFR report, that the US plays the role of the largest donor to the United nations and African Union peace keeping operations in Africa. This is achieved by both voluntary contributions to Au and also directly supporting nations partaking in peace operations. He suggests, establishing a new, predictable funding mechanism that supports the AU directly – an equivalent to the EU's African Peace Facility that provides financial support for the EU's joint strategy with the AU.

RECOMMENDATIONS

One of the initial attempts to address this funding gap was the establishment of a Peace Fund by the Organization of African Unity (now AU) in the early 1990's. The fund still exists today and is funded by deductions from the AU annual budget of 6 per cent and also supported by voluntary contributions from member states and donors. There have been

several recommendations made by the AU in order to boost its financial resources. These include;

i. A peace tax on African citizens. Some RECs such as ECOWAS have put in place their own resource mobilization strategy from its members. Namely, a Community Levy a percentage of which is dedicated to the ECOWAS Peace Fund.

ii. Initiating a pan – African visa wherein visitors to the continent are made to pay $10.00.

iii. The inclusion of a percentage of the profits of insurance firms and other blue chip companies, on concerts and entertainment initiatives and a first charge on death duties from a certain income bracket.

iv. Individual donations and fund raising activities for the Peace Fund. The AU should establish strong resource mobilization strategies for the Peace Fund. Such a structure would ensure that resource mobilization is undertaken on a more structured and consistent scale. (Kent and Malan, 2003).

v. Formalization of firm funding agreements with the UN and international community especially with a scheme for funding-with-reimbursements.

vi. Enhanced political will - Despite the knowledge that adequate and consistent contributions are necessary from AU member states to the Peace Fund only a few countries are faithful in making these contributions and they do not do so in full or regularly. Cilliers (2005) points out that in the AU Summit in Libya in 2005, South Africa, Nigeria, Egypt, Algeria, and Libya contributed 15 per cent of the of the annual budget of the AU, while the other 48 member states funded the outstanding 25%. African countries must stop playing lip-service to their commitment to peace and security on the continent by backing their words with action and this by way of their taking seriously their financial obligations to the AU.

vii. Total eradication of corruption - The main bane of the lack of prosperity on the African continent, which further translates to inability to meet legitimate financial obligations, is corruption. There is a need to plug all forms of income leakage by waging an all-out war on corruption. Most African countries, if not all, are plagued by leaders who are sit-tight, corrupt and undemocratic. The inability to institutionalize the necessary checks and balances in government result in a profligate lifestyle among the ruling class.

viii. Further restructure of APSA - Priority needs to be given to the prevention of conflicts and not the resolution of conflicts. This can be achieved by further restructuring of APSA in a manner that empowers it to trigger its Early Warning Mechanism in a timely manner; not wait for the escalation of conflict to the point of conflagration before wading in with a bid to resolution.

Burundi as a Case Study

It should be stressed that the cost of maintaining African peacekeeping operations on the continent far outweighs the contributions of member states and a lot of the funding is from the international donor community (Cilliers, 2005). A good case attesting to this fact can be

seen when considering the African Peacekeeping mission in Burundi in the 1990s. This was the initial forage of the AU into peace missions. The initial plan was to send in a 5,000-man strong peacekeeping force but this met with President Pierre Nkurunziza's opposition. Without his consent this action would have infringed on Burundi's sovereignty. The AU finally negotiated to send 100 human rights observers along with 100 military observers. Jeng (2012), states that AU's weaknesses especially regarding its member states' abilities was evident in the Burundi situation. Observers may play a useful role in preventing crises from going worse, but this particular case revealed the limitation of AU to respond to a crisis on its continent. A tough resolution on action towards Burundi would have set a clear precedent and a message that the African Union is committed to protect the population of nations if the state fails to protect its citizens, this would also have resulted in stronger support from the international bodies like the UN.

The operational costs of as few as 67 military observers in Burundi (OMIB) in the period 1993 – 1996 was about $7.2 million while in the same period the contributions of African countries to the Peace Fund was approximately $5 million with the international donor community making donations totaling about $6.5million. As a result of the enormous costs involved in funding peacekeeping on the continent, the extent of funding that the AU can afford is still limited severely to observer missions with much larger missions such as the United Nations Mission in Sudan (UNMIS) which is projected to cost USD$1 billion beyond the funding capacity of the commission (Allen and Yuen, 2014).

According to Cilliers (2005), the options left to fund peace operations could then be distilled down to measures based on practicality of the proposed solutions. Based on UN reports, full scale funding of regional peace operations could be undertaken upon approval of the UN Security Council. The regional organization to benefit would have to establish appropriate frameworks for necessary budgetary and financial accountability oversight functions and defend same before the UN Department of Peacekeeping Operations before funding is approved. Other measures may include the following:

i. Voluntary contributions from international organizations through various means not limited to mutual agreements for special trust funds for the purpose. ECOWAS has an arrangement currently in place in West Africa.

ii. Direct support from multilateral organizations like the EU to the AU or similar regional organizations. An example of this would be the Peace Fund as earlier mentioned.

iii. Some countries make bilateral arrangements allowing for contribution towards a particular mission. It is not uncommon for such donor countries to have particular interests in the countries they support in the peace initiatives. A good case in point here is the US contribution to the AU for the peace operation in Sudan, the African Union Mission in Sudan II (AMIS II) and the United Nations Multidimensional Integrated Stabilization Mission in Mali (MINUSMA).

iv. Member states of regional organizations can undertake the funding of specific regional missions. This option is however fraught with challenges as most African regional organizations are severely constrained in their ability to deploy anything

more than symbolic peace missions in Africa that at best have observer status due to their paltry financial resources.

v. A novel approach would be to require a percentage of remittances made by Africans in Diaspora (not more than 2%) to be garnered from each transaction.

CONCLUSION AND RECOMMENDATIONS

A united and capable Africa is what regional and international players want. It is essential for African states to demonstrate sufficient political will, capacity and buy-in, which will instill the confidence necessary to galvanize support for its operations and improve funding. This will require a deliberate effort by African heads of states and governments in an improved collective quest for regional and continental security as opposed to the pursuit of wholly national agendas and interests (Kent and Malan, 2003).

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ACCOUNTING FOR CURRENCY AND COMMODITY HEDGES

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ABSTRACT: *Multinational corporations conduct cross-border activities such as foreign direct investment and the sale of goods and services. The international integration of goods, services, technology, and equity or debt capital often leads to financial risks resulting from foreign currency and production materials exposure. Risky exposures can hinder investment and normal business activities, as companies strive to protect their financial position. The fear of increased currency volatility concerns many managers who are obliged to protect and preserve shareholder equity. Hedging is a strategy to help minimize potential losses by taking an offsetting position in a related derivative to hedge the volatility of the "underlying." Hedging is not intended to make extra money on the investment, but rather to protect one's company against uncertainty in the currency or the product market. This paper will address hedge accounting, touching key strategies such as a foreign currency forward exchange contract, designated as a fair value hedge, and a commodity futures contract designated as a cash flow hedge.*

KEYWORDS: Accounting, Currency, Commodity Hedges, Foreign Direct Investment

INTRODUCTION

Hedging

The purpose of a hedge is to avoid undesired volatility in an entity's profit and loss. This volatility is the result of a valuation or timing mismatch between the hedged item and the corresponding hedging instrument. An example of a hedge could be, for example, the purchase of a foreign currency option by an entity that has a liability in a foreign currency and wants to protect itself against the change in the foreign exchange rate.

Hedge Accounting

Hedge accounting seeks to reflect and report the results of hedging activities, in particular hedging using derivatives, by capturing the price effects of the derivative and the risk being hedged in the same period. Hedge accounting allows entities to override the normal accounting treatment for unlinked derivatives or frequent adjustments in the carrying value of assets and liabilities.

Types of Hedge Accounting

The three types of hedges that are qualified for hedge accounting.[1]

- ***Fair Value Hedges*** - The risk being hedged in a fair value hedge is a change in the fair value of an asset or liability. Changes in fair value may arise from changes in interest rates, foreign exchange rates, equity prices or commodity prices.
- ***Cash Flow Hedges*** - The risk addressed in a cash flow hedge is the exposure to variability in the cash flows that are associated with a particular risk that could affect the income statement. Volatility in future cash flows may arise from changes in interest rates, exchange rates, equity prices, business conditions or commodity prices.
- ***Hedging the Net Investment in a Foreign Operation*** – One example of a net investment hedge in foreign operations is a derivative that is used to hedge future changes in the currency exposure of a net investment in a foreign operation.

Mismatch in Income Statement Recognition

Under the accounting standards IAS 39 and IFRS 9[2], all derivatives are recorded at fair value in the income statement. However, these derivatives are often used to hedge recognized assets and liabilities, which are recorded at amortized cost or forecasted transactions that are not yet recognized on the balance sheet. The difference between the fair value measurement of the derivative and the amortized cost for the asset/liability leads to a mismatch in the timing of income statement recognition.

Hedge accounting seeks to correct this mismatch by changing the timing recognition in the income statement. Fair value hedge accounting treatment will accelerate the recognition of gains or losses on the hedged item into the profit and loss statement, whereas cash flow hedge accounting and net investment hedge accounting will defer the gains or losses on the hedging instrument.

The Hedging Relation

Consider for hedge accounting purposes that the hedged item and the hedging instrument are the two components of an identified hedge. A hedged item can be a recognized asset or liability, an unrecognized firm commitment, a highly probable forecasted transaction, or net investment in a foreign operation. A hedged item could be an asset such as bushels of wheat that may expose the company to the risk of changes in fair value or future cash flow. A hedge instrument is a derivative designated as a hedging instrument, whose fair value or related cash flows should offset changes in the fair value or cash flow of a designated hedged item. For example, a hedge instrument can be a call option on an asset (such as bushels of wheat) with a specified future price and delivery within a specified period.

[1] Rambo *et al* (2018) expand this characterization to four types, basing their work on FASB Accounting Standards Codification 815 https://www.iasplus.com/en-us/standards/fasb/broad-transactions/asc815 and Accounting Standards Update 2017-12: Targeted Improvements for Hedging Activities. Our work is a simpler and more graphic approach, oriented towards teaching this material in accounting and finance classes.
[2] https://www.iasplus.com/en/standards/ias/ias39 For the purposes of this paper, the difference is not important.

Hedge Accounting Criteria

Hedge accounting is distinct from the usual accounting principles in that, a hedging relationship for hedge accounting must meet the following conditions:

- There should be formal documentation of the hedge relationship at the time of designation;
- A cash flow hedge of a forecasted transaction must be probable and must offer specifically the exposure to what price will affect reporting income.
- At the inception of the hedge, the hedge relationship must be highly effective. In other words, show that the hedging match is working.
- The effectiveness of the hedge relationship must be tested periodically. Bounded effectiveness is allowed, provided that the hedge relationship achieves an effectiveness ratio between 80% and 125%. In each period an entity must recognize ineffectiveness in profit or loss accounting.

Hedge Effectiveness

Hedge effectiveness is the extent to which a hedge transaction results in offsetting changes in fair value or cash flow that the transaction was intended to provide, as identified by the hedging company. IAS 39/IFRS 9 requires two types of effectiveness tests:

- A prospective effectiveness test requires a forward-looking test to see whether a hedging relationship is expected to be highly effective in future periods.
- A retrospective effectiveness test is a backward-looking test of whether a hedging relationship has been highly effective in past periods.

Both tests need to be highly effective at the start of the hedge. A prospective test is highly effective if, at the inception of the hedge relation and during the period for which the hedge is designated the results of the retrospective effectiveness tests are within the range 80%-125%.

Hypothetical Example

We present scenarios of a hypothetical corporate entity, situated in Liberia, that purchases its raw materials from an American supplier. The Liberian company decided on two alternatives in the commodity market that endeavor to protect shareholders' equity.

SCENARIO ONE – FAIR VALUE HEDGE

Premier Milling Corporation (PMC), a flour manufacturer in Liberia is worried that the value of one of its raw materials (wheat) will change due to fluctuation in the market. With this uncertainty, PMC decides to commit to purchasing its wheat in advance with a value of $30,000 from its supplier in the United States on September 1, 2016. The supplier will make delivery on February 1, 2017, at which time, as the terms of the agreement require PMC to make payment for the wheat. Anticipating the situation on February 1, 2017, PMC has hedged the

US dollar-denominated payable as fair value hedge because the designated risk hedged is the risk of changes in the fair value due to changes in the foreign currency exchange rate.

Table 1: The Spreadsheet below Summarizes the Movement of Information on the Transaction and the Alternative Considered in Each Situation.

Date	Spot Rate	US$ Value	Change	Forward Rate	US$ Value	Fair Value of Contract	Change
09/01/2016	$1.00	$30,000.00	$0.00	$1.05	$31,500.00	$0.00	$0.00
12/31/2016	$1.06	$31,800.00	$1,800.00	$1.11	$33,300.00	($1,791.05)	($1,791.05)
02/01/2017	$1.13	$33,900.00	$2,100.00	$1.13	$33,900.00	($2,400.00)	($608.95)

Table 2: Fair Value Hedge Accounting Entries for a Forward Contract on Foreign Currency Rate

Date	Description	Debit	Credit	Explanation
09/01/2016	Inventory Accounts Payable	$30,000.00	 $30,000.00	To record purchase and A/P of Raw Materials
12/31/2016	Foreign Exchange Loss Accounts Payable	$1,800.00	 $1,800.00	To adjust value for spot rate of $1.06
	Forward Contract Gain on Forward cont	$1,791.05	 $1,791.05	To record forward contract at fair value
02/01/2017	Foreign Exchange Loss Accounts Payable	$2,100.00	 $2,100.00	To adjust value for Spot rate of $1.13
	Forward Contract Gain on Forward cont	$608.95	 $608.95	To adjust the forward contract to it Fair Value
	Foreign Currency Forward Contract Cash	$33,900.00	 $ 2,400.00 $31,500.00	To record the settlement of the forward contract
	Accounts Payable Foreign Currency	$33,900.00	 $33,900.00	To record the payment of the Accounts Payable

SCENARIO TWO – CASH FLOW HEDGE

Premier Milling Corporation (PMC) believes that prices of wheat may increase over the next few months. To protect itself against the unforeseen risk, PMC decides to enter the options market and purchase call options on wheat futures to hedge their forecasted inventory purchases. On September 1, 2016, Premier Milling Corporation opens a margin account and pays a premium of $1,250 as means to purchase a February 1, 2017 call on 1,000 bushels of wheat at $32.20 per bushel. Premier Milling Corporation designates the transaction as a cash flow hedge.

Table 3: The Spreadsheet Summarizes the Transaction Relating to the Purchase of 1,000 Bushels of Wheat.

Date	Spot Rate	US$ Value	Change	Future Rate	US$ Value	Fair Value of Contract	Change
09/01/2016	$31.40	$31,400.00	$0.00	$32.20	$32,200.00	$0.00	$0.00
12/31/2016	$35.80	$35,800.00	$4,400.00	$35.30	$35,300.00	($3,100.00)	($3,100.00)
02/01/2017	$34.50	$34,500.00	$1,300.00	$34.50	$34,500.00	$800.00	($2,300.00)

Tale 4: Cash Flow Hedge Accounting Entries for a Future Contract on Commodity Price

Date	Description	Debit	Credit	Explanation
09/01/2016	Futures Contract Cash	$1,250.00	 $1,250.00	To record purchase of the call option (margin)
12/31/2016	Futures Contract OCI	$3,100.00	 $3,100.00	To record the increase in intrinsic value of the call option
02/01/2017	OCI Futures Contract	$800.00	 $800.00	To record the change in time value of the call option
	Cash Futures Contract	$2,300.00	 $2,300.00	To record the settlement of the call option
	Inventory Cash	$34,500.00	 $34,500.00	To record the purchase of wheat

ANALYSIS

International Accounting Standards IAS 32[3] and 39 aid in the direction for the proper accounting of derivative financial instruments. IAS 32 describes a financial instrument as a contract that is a financial asset of one entity and a financial liability of another entity. Therefore, as illustrated above using the both forward contract and futures option contract in the two above examples, a financial asset is created for the supplier and a financial liability is created for Premier Milling Corporation. PMC is liable to pay on the contract, while the supplier receiving the contract payment holds an asset.

The analysis of the transactions indicates how in February 2017 the payable is consummated at **$31,500** ($30,000 x $1.05), equal to the forward rate ($1.05) of exchange that was specified in September 2016. Note that the exchange rate increased in both years, which led to an increase in the value of the forward contract. On December 31, 2016, the US$ nominal value is **$33,300.00** ($30,000.00 x $1.11) and the fair value of the contract can be derived as: $30,000 x ($1.11 - $1.05) x 1/1.005 = **$1,791.05** (discounted at an annual rate of 6% for one month until payment Feb. 1, 2017). In the fair value hedge report, adjustments are made directly to the assets, thus hedging the fair value risk of assets and liabilities reported on the balance sheet.

[3] https://www.iasplus.com/en/standards/ias/ias32

The second exercise (the call option on the futures contract) is considered a cash flow hedge, a hedge that is designed to eliminate the risk associated with cash transactions that can affect the amounts recorded in net income. A change in the future price of the call option, however, changes the value of the contract. In year one there was an increase of **$3,100** [1,000 x ($35.30 - $32.20)] in the intrinsic value of the call option, due to the increase in price, and a decrease in year two of $800 [1,000 x ($34.50 - $35.30)] resulting a net of **$2,300** ($3,100 - $800). The call option expired in year two on February 1, 2017, at which time PMC purchased the 1,000 bushels of wheat for **$32,200** ($34,500 - $2,300) equal to the future price ($32.20) established on September 1, 2016. The adjustments made to the *other comprehensive income (OCI) holding account*, reflects in net income the gain and loss on the position.

SUMMARY

Hedge accounting arises in corporate strategies that seek to reduce a company's risk exposure; it reflects and tracks the results of hedging activities initiated through derivative instruments. In the examples above, Premier Milling Corporation was a prudent hedger, as seen in the hedge accounting identifications of two designated transactions- a fair value hedge and a cash flow hedge. The company's positions in the product market and in the derivatives market avoided the volatility that could have arisen from a valuation or timing mismatch between the hedged item and the hedging instrument.

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