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EFFECTS OF CONCESSIONAL DEBT ON ECONOMIC DEVELOPMENT: A MULTILATERAL AND BILATERAL PERSPECTIVE ON THE WEST AFRICAN MONETARY ZONE

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Abstract:
Studies on the contribution of concessional debt to economic development are sketchy. The paucity of empirical studies on this subject is even more glaring in the context of the English-speaking West African countries. Bilateral and multilateral aid donors have intensified the flow of official assistance to the developing countries of the world with the aim to bridge the developmental gap between the less developed countries and the industrialized countries of the world. The question that often arises is whether such aids have yielded the desired results among the recipient countries. Against this backdrop, we examined the effect of concessional debt on the economic development in the West African Monetary Zone (WAMZ) using cross-sectional data from 1975-2014. The panel cointegration and panel unit root tests were employed to test for long-run relationship and stationarity of the series respectively. Our model was analysed with both fixed and random effect panel regression while the Hausman test be used to determine the best and appropriate choice between the two. Our findings reveal that multilateral and bilateral concessional debts have significant positive effect on standard of living in the West African Monetary Zone. The panel cointegration test also indicates that there is no long-run relationship between concessional debt and per capita income. We conclude that inflow of concessional aid from multilateral and bilateral donors has had remarkable influence on the standard of living in the region. We recommend that concessional aid to the less developed countries be intensified. However, recipient countries should have a credible external borrowing guideline scribed in their legislation to check against excessive borrowing and also ensure that aid received is used for the intended (developmental) purposes. External institutions and aid agencies should also be involved

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in the entire aid administration with aim of ensuring that aid is extended based on need, not political ties.

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1. Introduction

In developing countries, an essential element of the development finance landscape is the concessional loans extended to developing countries by bilateral and multilateral donors. These account for significant chunk of the total external finances of the Highly Indebted Poor Countries (HIPCs). In recent time, economic effects of debt concessionality on the developing and low-income countries attract wider attention from the financial and political arena. Concessional debts incurred by less developed countries (LDC) and low-income countries (LIC) comprise mainly of Official Development Assistance (ODA) and official aid, which can be a grant or loan with at least 25 percent grant element for the promotion of economic development or basic human needs and welfare. The grant element of a loan is the grant equivalent expressed as a percentage of the amount committed, and is used as a measure of overall cost of borrowing. The loan portion is provided at a low interest rate and a long repayment period. Concessional debt has below market interest rates, whereas non-concessional debt has market-based rates (GAO, 2000). OECD (2014) argues that higher concessionality thresholds for such loans and aids are intended to soften the terms and conditions to countries most in need. In providing soft loans to developing countries, there is always a unique content which encompass provider efforts to advance sustainable economic development and self-reliance among the needy countries, as outlined by the Development Assistance Committee (DAC), and promoting debt reliefs and sustainability.

In their effort to engender economic transfer through concessional lending and debt relief, the International Monetary Fund (IMF) and the World Bank introduced the Heavily Indebted Poor Countries Initiative in 1996. The initiative is a vigorous and a comprehensive debt relief program aimed at reducing the external debt burden of eligible debtors to sustainable levels, while the recipient consents to carry out focused programs of macroeconomic adjustment and structural reforms that would promote growth and reduce poverty (Marcelino and Hakobyan, 2014).

The underlying notion in loan concessions is the acknowledgment that lending to poorer countries involves greater creditor effort and recipient benefit than lending to richer countries. Kitili (2006) contends that a provider's decision to lend at below market terms derives an element of transfer to the recipient comparable to a subsidy in production. Creditors have many reasons for lending at below market terms. Donor countries and agencies may lend at low or zero interest terms with the goal of providing a number of benefits or to spur some positive actions by the debtor. Claims extended

below market terms are broadly acknowledged to generate economic transfers to the recipient countries. For instance, claims extended or rescheduled by industrialized countries to developing countries are mostly below market interest rates and terms for development reasons.

Koeda (2004) stresses that optimal concessional lending is desirable so far as the perverse effects on concessional claims, which include over-borrowing and over-spending due to low concessional market terms and existence of the cutoff, are minimal. When the perverse rates are quite substantial, the country ultimately becomes permanently aid-dependent at the cutoff. The cutoff is the level of income above which countries lose their eligibility for concessional loans or aids. It is argued the motivation of recipient countries to remain at cutoff rate is predicated by optimal concessional lending. The severity of the country's claims position is however dependent on her total factor productivity level and initial conditions. Ideally, at low perverse rates, recipient countries would have positive effects of concessional loans and aids and would leap above the cutoff rate. The implication, arguably, is that such countries would have made good the concessional claims and meets basic goals of sustainable debt, growth and development, and poverty reduction. However, remaining on the cutoff may entail negative or stagnant effects of concessional claims on the debtor country. Granted, it is therefore timely that we have an empirically assess the effectiveness of concessional debt provided by multilateral and bilateral donors to the West African Monetary Zone (WAMZ) comprising Gambia, Ghana Guinea, Liberia, Nigeria and Sierra Leone.

The linkage between external debt and sustainable growth and development in the low-income countries remains an ongoing debate among researchers and development economists. Foreign debt is mainly composed of non-concessional loans, commercial loans, grants, and concessional loans – ODA and official aid (including grants) provided on concessional market terms. While official aid advocates and detractors take differing views regarding actual effectiveness of aid in achieving targeted outcomes, there is surprisingly few empirical evidence on the issue. The general position of theory is that external finances promote growth and development of debtor country. The argument in support of theory, or against it, is subject of continuous debate. Particularly, the portion of foreign debt that appear to be under-examined empirically are concessional loans. Even as debt concessionality is a subject of current debate among the financial and political circle, only few studies have attempted to examine the development effects of concessional claims on the LICs. Continued neglect of this aspect of external financing creates gaps in knowledge in understanding of non-commercial soft loans, and scarcely leaves us with evidence to justify the increasing volumes of concessional lending to the developing countries of the world. Most studies that have attempted to address this problem often carry out a country specific study rather than regional evaluation thereby creating lacuna in finding out the regional effects of concessional lending. Filling this particular knowledge gap will enable us to make a better country-by-country comparisons drawn from the regional empirical findings.

Against this backdrop, we carry out this study with the goal of determining the effects of concessional debt on the economic development of the West African Monetary zone. All the member countries of Zone are below the cutoff, meaning that they are eligible for concessional lending. The main objective of debt concessionality is to promote growth, reduce poverty and foster debt sustainability of recipients. The idea is that when these goals are achieved, the country must have attained sustained growth and development, and may have risen above the cutoff and therefore become ineligible for concessional lending. multilateral and bilateral aid agencies have continued to show strong commitment in helping less developed countries (LDCs) and LICs achieve sustainable economic development as reflected in the 2015 modernized debt concessionality which increased the grant element from 25 percent to 45 percent, and reduced discount rate from 10 percent to 5 percent (OECD, 2014). Arguments surrounding the merits, mechanisms, justification and macro-economic targets of loan concessions are yet a key motivation for this study.

2.1 Review of Related Literature

2.1.1 An Overview of Debt Concessionality

Concessional debt refers to loans provided with an original grant element of at least 25 percent and a long repayment period. The grant element of a loan is basically used to measure the overall cost of borrowing. Therefore, the grant equivalent of a claim is expressed as a percentage of the amount committed. The grant element is the commitment (or present value) of a loan less discounted value of its contractual debt services. Normally, future debt services payments are discounted at 10 percent. Principal repayments consist of amortization paid by debtor either in currency, goods, or services in the specified year. These loans are provided below market terms, akin to subsidy in production (Kitili, 2006).

Nelson (2015) explains that concessional lending windows of Multilateral Development Banks (MDBs) do not issue bonds; rather the fund is raised directly through financial contributions by their member countries. Most of the fund comes from the highly industrialized and prosperous countries. The borrowing countries are however mandated to make some contributions into claim committed. Contributions from borrowing countries have often been described as symbolic rather than substantive.

2.1.2 Multilateral Versus Bilateral Aid

The term "aid" as used in the study is based on Organization for Economic Cooperation and Development (OECD) definitions but which shall be interpreted to address the questions of relative effectiveness of aids in achieving targeted developmental outcomes. Bilateral aid (or bilateral ODA) is defined as funds flowing from an official bilateral donor directly to the recipient government of a developing country or to a multilateral agency normally with use restrictions. A bilateral donor can be a state or local government. Multilateral aid (or multilateral ODA) on the other hand is an intermediated

ODA, and can be defined as all official aid disbursed by a bilateral donor to the soft-lending windows of regional or multilateral organization with no use restrictions. By extension, all ODA flowing indirectly from multilateral agencies to recipient governments without restriction in use are not earmarked and is therefore reported by OECD as multilateral aid. Bilateral ODA include all aid solely provided by a bilateral donor, and such other aid disbursed to recipient governments through multilateral agencies. Funds disbursed through multilateral regional organizations with use restrictions are reported by OECD as bilateral aid (Biscaye, Harris, Reynolds and Anderson, 2015).

Gulrajani (2016) points that aid donors are faced with growing demands to explain and justify choice of disbursement channel between multilateral and bilateral aid conduits. The contention arises from the fact that aid allocation from multilateral agencies looks quite similar to that disbursed by bilateral donors, providing aid on similar terms, within same jurisdiction and to the same sector. (Annen and Knack, 2015) posits that some multilateral agencies stand out by how similar their aid provisions are when comparing such disbursements to the average bilateral donor. Findley, Milner and Nielson (2014), citing (Maizels and Nissanke 1984, Martens et al. 2002, Rodrik 1996), contend that multilateral aid appear to be less political, is associated with better outcomes, and likely better able to impose more effective conditions. Yanguas (2016) however argues that politics is not inimical to realizing aid objectives, rather his assertion is that aid is an instrument that promote political settlement, imbue institutional structures with actors, mechanisms, contestations and enhance public finance management.

2.1.3 Concept of Economic Development

Economic development involves sustained increase in the level of production in an economy accompanied with technological advancement and improvement in the standard of living. It entails overall qualitative and quantitative changes within an economy, and positive change in real national income. Economic development is long-term in nature and a continuous process - it is not measured in a certain period of time like economic growth. Economic development is a broad concept consists of poverty reduction or elimination, inequality and unemployment within a growing economy. Economic development is often conflated with economic growth. Economic growth simply entails increase in aggregate output within an economy whereas, according to Feldman, Hadjimichael, Kemeny and Lanahan (2015), economic development is about positioning the economy on a higher growth path and creation of enabling condition for long-run economic growth. Nekipelov (2011) emphasizes that some fundamental aspects of social well-being are not taken into account by the volume of "aggregate output" which explains growth. To this end, economic development generally addresses the basic settings necessary for the microeconomic functioning of the economy. Some of the indicators of economic development include GDP per capita, poverty index and Human Development Indexes like adult literacy and life expectancy. Bucknall (2013) puts it that

more information more information can be gotten with the development measures than a simple reliance on economic growth.

2.2 Theoretical Framework

There are theories in literature upon which growth trajectory and debt effectiveness are conceptualised. Largely, the line of divide among the various theories is a determinant of time, geography (or place), and ideology. Theoretically, the supporting structure of this study is founded on the dual gap theory. This theory suggests that economic development is a derivative of investment, but investment that is dependent only on domestic savings cannot be sufficient in driving development. The theory then highlights that for economic development to be sustainably advanced, domestic savings must be supplemented with external financing, by the way of borrowing. The theory also took cognizance of resource shortages, stressing domestic resources - excess of import over export must be supplemented from abroad. Under such a situation, investment is greater than domestic savings and akin to excess surplus of import over export (Hassan, Sule and Abu, 2015). Most economies of the world especially the developing countries struggle to plug the gap created by the gap between the level savings and investment and therefore find external borrowing as a means of bridging the gap. The very underpinning of dual analysis concept is based on the notion that economic growth is dependent on investment which is also a function of domestic savings. This goes go explain that increase in domestic savings and investment leads to economic growth. However, the domestic savings required to spur investment which would translate into growth is insufficient. The gap so created by scarce domestic savings is therefore bridged by external borrowings.

From the front of classical theories of economic development came the modernisation theory which has strong capitalist undertone. Modernisation theory is a theory that applies a systematic process in moving undeveloped countries to a more advanced level of development. The focal point of the theory is effecting transformation among institutional structures in less developed countries of the world through cultural changes. Modernisation theory emphasizes variations within or between nations due to differences in values, systems and ideologies of different nations. Modernisation theory buttresses that political development is indispensable in ensuring progress and conducive environment for a nation's economic status (Shareia, 2015). The theory acknowledges the important role politics in formulation and implementations of policies. The conceptualization of modernistion theory is therefore draws reason from the premises that policies appear to enhance the standard of living of the poor by encouraging information and knowledge dissemination about more efficient techniques of production (Matunhu, 2011). Modernization theory seeks to explain the process of social evolution by identifying social variables necessary for social progress and societal developments.

Moreover, on the heels of modernity came the dependency theory. The theory came as a critical response to the conservative development approaches that held sway in the aftermath of the Second World War. For instance, classical development theories like modernity has been criticized by the proponents of dependency theory for failing to address the development problems of the underdeveloped world, and also faulted for misleading the world by its notion the association of the poor regions of the world with the developed world is in the interest of the former since technological and ideological transfers emanating from such relationship ultimately leads to adoption of new thinking and modern practices of solving problems (Shareia, 2015). The conception of dependency theory believes otherwise. The opinion of the theory is that resources flow from a periphery of underdeveloped countries to a core industrialized states, enriching the latter at the expense of the former. The main contention of the dependency theory is that by integrating into the world system, the poor and underdeveloped states are impoverished will the developed states are enriched. Dependency theory therefore argues that not only is the poor states a primitive version of the developed states, but they have their own unique features and structures and, notably, are potential weaker members in a world market economy.

2.3 Empirical Review

The designation of Official Development Assistance (ODA) has for many years been the global standard for measuring donor efforts in supporting development objectives in poor developing countries. The evolution of ODA concept has equally provided the measure with which the volume and terms of concessional resources provided are documented. In addition, it has availed the yardstick for the evaluation of donor performance with regard to their aid pledges and which enables partner countries and other organisations to hold donors to account. For instance, partner countries and donors of the Paris Declaration agreed to hold each other accountable for making progress against agreed commitments and targets by monitoring their implementation (OECD, 2011). Barring the contention between political expediency and statistical reality, the underlying definition of ODA is actually founded on the principle developmental motivation, official character and a measure of concessionality. OEKB (2012) asserts that the OECD Consensus requires soft loans to have a concessionality level of at least 35 %, whereas concessional loans for Least Developed Countries (LDCs) in accordance with the UN-Classification must show a grant element of at least 50 %. While the very concept of ODA appears to be widely acknowledged, the correctness of the measures in assessing its developmental effects remains a subject of ongoing debate (Hynes and Scott, 2013). The findings of previous studies are mixed as buttressed in Ekanayake and Chatrna (2015) that analysed the effects of foreign aid on the economic growth of developing countries with annualised dataset on selected 85 developing countries from Asia, Africa, and Latin America and the Caribbean between the period 1980 and 2007. The findings show that foreign aid has mixed effects on economic growth in developing countries.

Girma (2015) employed the Autoregressive Distributed Lag (ARDL) approach to co-integration as he examined whether aid effectiveness is conditional on stable macroeconomic policy environment. The study used time series data for the period 1974 to 2011. The results showed that while separate foreign aid had negative impact on economic growth, aid policy index was found to have contributed positively to economic growth in Ethiopia if supplementation takes place under stable macroeconomic policy environment. This finding is in line with the results in Woldekidan (2015) which used the vector error correction model (VECM) and time series data spanning 1975 to 2010. Moreover, in the context of Papua New Guinea, Feeny (2003) added that level of inequality reduces the impact of growth on poverty. In a related study, Ijaiya and Ijaiya (2004) examined aid-poverty nexus in Sub-Saharan Africa (SSA) and finds that foreign aid does not impact significantly on poverty reduction in SSA. Azam et al, (2015) paint a more extreme picture as their results suggest that foreign aid and debt has significant negative effect on poverty reduction. The study employed the fully modified OLS (FMOLS) on 39 developing countries and covered the period 1990 to 2014.

Masud and Yontcheva (2005) assessed the effect of foreign aid in reducing poverty through its impact on human development indicators. A dataset of both bilateral aid and Non-governmental Organizations (NGOs) aid flows was used. Our results showed that NGO aid reduces infant mortality and did so more effectively than official bilateral aid, while aid impact on illiteracy was less significant. The were mixed evidence of a substitution effect as the study attempted to find out if foreign aid reduces government efforts in achieving developmental goals and find mixed evidence of a substitution effect.

Mencinger, Aristovnik, Verbic (2015) empirically explore the role of public external debt on economic growth using a panel dataset from 31 OECD member countries and 5 non-OECD EU member states. The results indicate, in line with theoretical assumption, that at low levels of debt the impact on economic growth is positive, whereas beyond a given threshold the effect is negative. In their sample, it was revealed that debt turning point is lower for the emerging economies than for the developed economies. The debt-to-GDP threshold is between 90% and 94% for developed countries and between 44% and 45% for emerging economies (sees Panizza, 2008; Afonso and Alves, 2014). Jafri and Habib (2016) take the perspective of investment effect of multilateral and bilateral loans in Pakistan and find they have substantial impact on investment as proxied by gross fixed capital formation. Based on the assumption derived from the debt overhang hypotheses, Knoll (2013) explores Heavily Indebted Poor Countries Initiative (HIPCI) and the Multilateral Debt Relief Initiative (MDRI) with a view to determining the removal of excessive debt burdens would help to boost investment and economic growth. The results reveal that while debt relief programmes have contributed to higher private-sector investment in recipient developing countries, they have not had any impact on public sector investment and growth. Nonetheless, the benefits that accrue to less developed countries as a result of debt relief seem to be in doubt.

Akram (2013) examined the implications of public external debt for economic growth and investment in four countries in South Asia, namely Bangladesh, India, Pakistan and Sri Lanka, for the period 1975-2011. The study reveals some worrisome evidences of debt overhang effect and the crowding out effect which reflected on the outcomes of the panel estimation. The results show that public external debt and debt servicing has significant negative impact on both economic growth and investment. The consequences of debt overhang and crowding out effects appear correct on the Nigerian case as explained in Abdullahi, Bakar and Hassan (2016). However, Al-Refai (2015) established in his study on Jordan that gross fixed capital formation and debt have positive and significant association with economic growth, but external debt have negative and non-significant impact on economic growth in Jordan. Akum (2011) posits that domestic institutions and major creditors play significant role to attain debt sustainability, thereby enabling developing countries to stimulate growth internally, without relying heavily on foreign debt, and boost consumption and fiscal revenue by converting foreign debt into capital formation (see also Bal, 2014; Shuaib and Dania, 2013;

Ibe and Osuagwu, 2016; Paniza, 2015, and Marcelino and Hakobyan, 2013).

Checherita and Rother (2010) assess non-linear relationship between the government debt ratio and per-capita GDP growth for the 12 pooled euro area countries. The results across all models show a highly statistically significant. The debt-to-GDP threshold of this concave relationship is roughly between 90 and 100% on average for the sample, across all models. This entails that, on average for the 12-euro area countries, government debt-to-GDP ratios higher than the turning point would have a negative effect on economic growth, but below it the effect on growth would be positive. Confidence intervals for the debt threshold show that the negative growth effect of high debt may set in already from levels of around 70-80% of GDP.

Similarly, Benayed, Gabsi and Belguith (2015) investigate the non-linear relationship between total public debt and domestic investment, across a panel of 10 African economies from 1981 to 2010. The study established a debt-to-GDP threshold of 47.31% and reveals that debt below this turning point is positively associated with domestic investment. However, once the debt in excess of 47.31% threshold, leads to an inverse relationship between public external debt and investment (see Panizza and Presbitero, 2013). In a related study, Mishra and Asfaw (2014) contends in the case of Ethiopia that while debt-to-GDP ratio has positively and significant effect on capital formation, its effect on real GDP is negative but non-significant. McGillivray (2006) assessed the macro level effectiveness of aid, paying special attention to economic growth and poverty reduction. The study reviewed trends in official development assistance (ODA) which experienced downturns in the 1990s. The results reveal strong evidence that aid increases growth and other poverty-relevant variables. The implication of the findings therefore infers that poverty would be higher in the absence of aid.

3.1 Data and Methodology

This study is essentially examining historical events and as a result relies absolutely on secondary data. Data is collated from the World Bank national account data, and the World Bank International Debt Statistics national accounts data files from the period 1975-2014. The type of data applicable in the study however is the panel data – having the combination of time-series and cross-sectional features. Individual characteristic of the variables will be analysed with descriptive statistics. The panel cointegration and panel unit root tests will be employed to test for long-run relationship and stationarity of the series respectively. Our model will be both analysed with both fixed and random effect panel regression while the Hausmans test be used to determine the best and appropriate choice between the two.

3.1.1 Model Specification

We adopted and modified the panel estimation model proposed by Masud and Yontcheva (2005) is a study that aimed to determine if foreign aid has been instrumental to poverty reduction with special emphasis on nongovernmental and bilateral aid. The question raise in the study was estimated with the variants of the following regression:

$$InHDI_{jit} = \beta_0 + \beta_1 InGEpc_{it} + \beta_2 InNGOAID_{it} + \beta_3 InBAID_{it} + \beta_4 InZ_{it} + \mu_i + \varepsilon_i \quad (1)$$

Where i denotes countries, t indexes time, *HDIj* = Human Development Indicator (proxied by Infant Mortality and literacy rate), *NGOAid* = per capita NGO aid, *BAid* = per capita bilateral aid, Z = vector of other exogenous variables that might have impact human development indicators, and *GE* = recipient government's effort in promoting human development (proxied by per capita education spending), The last is μ = the unobserved country specific effect, and ε = a time-varying error term.

Our variants estimation is patterned after the above model but modified to take into account our relative indicators and country specific effects. The panel regression model for this study is therefore represented thus:

$$In(GDP/cap)_{it} + \beta_0 + \beta_1 InMCD_{it} + \beta_2 InBCD_{it} + \beta_3 EDSR_{it} + \beta_4 PGRT_{it} + \varepsilon_t \quad (2)$$

Where *i* and *t* indexes countries and time respectively, *InGDP/cap* = natural logarithm of GDP per capita – dependent variable and proxy for standard of living, In*MCD* = natural logarithm of multilateral concessional debt, *InBCD* = natural logarithm of bilateral concessional debt, *EDSR* = ratio of total external debt services to gross national income (GNI), *PGRT* = population growth and conditioning variable, β_0= intercept, β_1 - β_3 are parameter estimates, and ε = error term.

4. Results and Discussion

4.1 Test for Stationarity

Our data series have time-series attribute which must be scrutinized before onward processing. Time-series data are ideally having to be found stationary before further estimation is applied otherwise the results the estimation could be spurious. To take care of this, we therefore subject our variables to multiple panel unit root test to ascertain the stationarity of the variable both at a common and individual level.

Table 1: Unit root Test

Group unit root test: Summary				
Series: D(GDPCAP), D(MCD),D(BCD), D(TDSR)				
Sample: 1975 2014				
Exogenous variables: Individual effects				
Automatic selection of maximum lags				
Automatic lag length selection based on SIC: 0 to 7				
Newey-West automatic bandwidth selection and Bartlett kernel				
Method	Statistic	Prob.**	Cross sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.12635	0.0012	5	130
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.17753	0.0007	5	130
ADF - Fisher Chi-square	55.3241	0.0000	5	130
PP - Fisher Chi-square	126.398	0.0000	5	141
** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.				

Results of the unit root test in table 1 indicate that at both common and individual unit root process, our series are stationary after first differencing. The four different criteria have p-values less than 5% critical value and we reject the null hypothesis that the series have unit root.

4.2 Test for Long-run Relationship

Given the evidence that our variables are stationary and integrated of the first order, we seek to determine if there is any cointegrating equation among them using the Pedroni panel cointegration test as presented below.

Table 2: Pedroni Cointegration Test

Pedroni Residual Cointegration Test				
Series: LOG(GDPCAP) LOG(MCD) LOG(BCD) TDSR				
Sample: 1975 2015				
Included observations: 41				
Cross-sections included: 5				
Null Hypothesis: No cointegration				
Trend assumption: No deterministic trend				
Automatic lag length selection based on SIC with a max lag of 6				
Newey-West automatic bandwidth selection and Bartlett kernel				
Alternative hypothesis: common AR coefs. (within-dimension)				
	Statistic	**Prob.**	**Weighted Statistic**	**Prob.**
Panel v-Statistic	0.843483	0.1995	0.843483	0.1995
Panel rho-Statistic	-1.017641	0.1544	-1.017641	0.1544
Panel PP-Statistic	-1.503631	0.0663	-1.503631	0.0663
Panel ADF-Statistic	-1.117182	0.1320	-1.117182	0.1320
Alternative hypothesis: individual AR coefs. (between-dimension)				
	Statistic	**Prob.**		
Group rho-Statistic	-0.131933	0.4475		
Group PP-Statistic	-1.154900	0.1241		
Group ADF-Statistic	-0.669483	0.2516		

Cointegration results above have seven methods for determining if our variables are cointegrated. For us to reject null hypothesis of no cointegration, all or majority of the eleven p-values produced by out seven criteria must be less than 5% critical value. The results in the table indicate that all the p-values are greater than 0.05 level of significance hence we cannot reject null hypothesis. In other words, there is no cointegrating equation among the series.

4.3 Panel Regression estimate

Table 3: Random Effect Panel Regression Result

Dependent Variable: LOG(GDPCAP)				
Method: Panel EGLS (Cross-section random effects)				
Sample: 1975 2014				
Periods included: 40				
Cross-sections included: 5				
Total panel (unbalanced) observations: 170				
Swamy and Arora estimator of component variances				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	3.977740	0.303685	13.09825	0.0000
LOG(MCD)	0.069644	0.018544	3.755685	0.0002
LOG(BCD)	0.087238	0.018123	4.813757	0.0000
TDSR	-0.075211	0.008435	-8.916888	0.0000

R-squared	0.735664		
Adjusted R-squared	0.685466		
F-statistic	42.71709	Durbin-Watson stat	1.928854
Prob(F-statistic)	0.000000		

The fixed effect result in table 3 reveals that multilateral and bilateral concessional debts have significant positive impact on the standard of living among the West African Monetary Zone member countries. Total debt services as a share of gross national income have negative and significant effect on the standard of living in the region. The entire regression is significant as explained by the F-statistic, which entails that the overall influence exerted by the regressors on the dependent variable have been very significant. The Durbin-Watson statistic value indicated that there is no serial correlation in our model. R^2 value showed that about 74 percent of the variation on per capita GDP is attributed to the explainable variables while the remaining 26 percent was caused by variables not included in the model.

4.4 The Hausman Test

This test was conducted to guide us in selecting the appropriate panel regression result – choosing between fixed effect model and the random effect model. The null hypothesis is that the random effect model is appropriate, while the alternative hypothesis is that fixed effect model is appropriate. Table 4 below presents the Hausman test results where the p-value is greater than 5 percent critical value. As a result, we cannot reject the null hypothesis rather we reject the alternate hypothesis. We therefore we base our findings on table 3 which is panel random effect regression result.

Table 4: Hausman Test Result

Correlated Random Effects - Hausman Test				
Equation: Untitled				
Test cross-section random effects				
Test Summary	**Chi-Sq. Statistic**		**Chi-Sq. d.f.**	**Prob.**
Cross-section random	7.626608		3	0.0744
Cross-section random effects test comparisons:				
Variable	**Fixed**	**Random**	**Var(Diff.)**	**Prob.**
MCD	0.000015	0.000014	0.000000	0.4391
BCD	-0.000000	-0.000000	0.000000	0.0363
TDSR	-45.859798	-45.562508	0.168138	0.4684

5. Conclusion

Studies on the contribution of concessional debt to economic development are sketchy. The paucity of empirical studies on this subject is even more glaring in the context of the English-speaking West African countries. Bilateral and multilateral aid donors have

intensified the flow of official assistance to the developing countries of the world with the aim to bridge the developmental gap between the less developed countries and the industrialized countries of the world. The question that often arises is whether such aids have yielded the desired results among the recipient countries. Looking at our region of interest, closer economic ties and autonomy of currencies in the WAMZ region compared to the Francophone West African nations, justified our reason to single out the region for the assessment since they have economic independence so to say as well as independence of policy frameworks. Our findings reveal that multilateral and concessional debts have significant positive effect on standard of living in the West African Monetary Zone. The panel cointegration test also indicates that there is no long-run relationship between concessional debt and per capita income. The findings suggest that inflow of concessional aid from multilateral and bilateral donors has had remarkable influence on the standard of living in the region. We recommend that concessional aid to the less developed countries be intensified. However, recipient countries should have a credible external borrowing guideline scribed in their legislation to check against excessive borrowing and also ensure that aid received is used for the intended (developmental) purposes. External institutions and aid agencies should also be involved in the entire aid administration with aim of ensuring that aid is extended based on need, not political ties.

Conflict of Interest Statement

The authors declare no conflicts of interests.

About the Author

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References

Abdullahi, M. M., Aznin, N., Abu, B., & Hassan, S. B. (2016). Debt Overhang versus Crowding Out Effects : Understanding the Impact of External Debts on Capital Formation in Theory. *International Journal of Economics and Financial Issues*, *6*(1), 271–278.

Abuzeid, B. F. (2009). Foreign Aid and the "Big Push" Theory: Lessons from Sub-Saharan Africa. *Stanford Journal of International Relations Foreign*, *XI*(1), 16–23.

Afonso, A., & Alves, J. (2014). The Role of Government Debt in Economic Growth. *LSEG Working Papers*, (16), 1–45.

Akram, N. (2013). Empirical Examination of Debt and Growth Nexus. *Asia-Pacific Development Journal*, *20*(2), 29–52.

Akum, G. J. (2011). The Impact of Foreign Debt on GDP growth (Cameroon). *A Thesis in Partial Fulfillment of an MBA in Comparative Institution Design for Transition Economy and Business Management, Ritsumeikan Asia Pacific University*, 1–102.

Al-Refai, M. F. (2015). Debt and Economic Growth in Developing Countries : Jordan as a Case Study. *International Journal of Economics and Finance*, *7*(3), 134–143. http://doi.org/10.5539/ijef.v7n3p134

Annen, K., & Knack, S. (2015). On the Delegation of Aid Implementation to Multilateral Agencies. *World Bank Group Policy Research Working Papers*, (7455), 1–37.

Bal, D. P. (2016). The effects of public debt on capital formation in India : Evidence from structural VAR analysis India: evidence from structural VAR analysis. *Int. J. Monetary Economics and Finance*, *7*(1), 66–80. http://doi.org/10.1504/IJMEF.2014.063838

Benayed, W., Gabsi, F. B., and Belguith, S. O. (2015). Threshold Effect of Public Debt on Domestic Investment : Evidence from Selected African Countries. *Theoretical and Applied Economics*, *XXII*(4), 189–198.

Biscaye, P., Harris, K. P., Reynolds, T., & Anderson, C. L. (2015). Relative Effectiveness of Bilateral and Multilateral Aid on Development and Social Outcomes. *University of Washington, Evans School Policy Analysis and Research (EPAR), Prepared for the Development Policy and Finance Team of the Bill & Melinda Gates Foundation*, (294), 1–37.

Checherita, C., & Rother, P. (2010). The Impact of High and Growing Government Debt on Economic Growth: An Empirical Investigation for the Euro Area. *European Central Bank Working Paper Series*, (1237), 2–42.

Ekanayake, E. M., & Chatrna, D. (2005). The Effect of Foreign Aid on Economic Growth in Developing Countries. *Journal of International Business and Cultural Studies*, 1–13.

Feeny, S. (2003). The Impact of Foreign Aid on Poverty and Human Well-Being in Papua New Guinea. *Asia-Pacific Development Journal*, *10*(2), 73–93.

Feldman, M., Hadjimichael, T., Kemeny, T., & Lanahan, L., (n.d.). Economic Development: A Definition and Model for Investment. https://www.eda.gov/tools/files/research-Reports/investment-Definition-Model.pdf Retrieved 2/10/2016, 1–26.

Girma, P. H. (2015). The impact of foreign aid on economic growth: Empirical evidence from Ethiopia (1974-2011) using ARDL approach. *Journal of Research in Economics and International Finance (JREIF)*, *4*(1), 1–12.

Gulrajani, N. (2016). Bilateral versus multilateral aid channels. *ODI Report, Shaping Policy for Development, Odi.org*, (March), 1–24.

Hassan, O. J, Sule, A., & Abu, J. (2015). Implications of External Debt on the Nigerian Economy : Analysis of the Dual Gap Theory. *Journal of Economics and Sustainable Development*, *6*(13), 238–249.

Hynes, W., & Scott. S. (2013). The Evolution of Official Development Assistance. *OECD Development Co-Operation Working Papers*, (12), 2–28.

Ibe, S. O., & Osuagwu, N. C. (2016). Impact of Capital Formation on the Economic Development of. *Fifth International Conference on Global Business, Economics, Finance and Social Sciences (GB16Chennai Conference)*, 1–9

Ijaiya, G. T., & Ijaiya, M. (2004). Foreign Aid and Poverty Reduction in Sub-Saharan Africa: A Cross-Country Investigation. SAJEMS, 7(3), 1-12.

Jafri, M. K., & Habib. H. (n.d.). Impact Of External Debt Service Payment on The Investment of P. *Proceedings of 2nd International Conference on Business Management*, 1–19.

Kassu, T., Mishra, D. K., & Asfaw, M. (2014). Public External Debt , Capital formation and Economic growth in. *Journal of Economics and Sustainable Development*, *5*(15), 222–233.

Kitili, A. (2006). Debt Concessionality. *SNA/M1.06/20, Fourth Meeting of the Advisory Expert Group on National Accounts 30 January – 8 February 2006, Frankfurt*, (43b), 1–13.

Knoll, M. (2013). The Heavily Indebted Poor Countries and the Multilateral Debt Relief Initiative A Test Case for the Validity of the Debt Overhang Hypothesis Martin Knoll School of Business & Economics Discussion Paper Economics. *Freie Universitat Berlin School of Business & Economics Discussion Paper Economics*, 1–34.

Koeda, J. (2004). Grants or Concessional Loans? Aid to Low-Income Countries with a Participation Constraint. *University of California, Los Angeles Job Market Paper*, 1–37.

Marcelino, S. R. & Hakobyan, I. (2013). Does Lower Debt Buy Higher Growth? The Impact of Debt Relief Initiatives on Growth. *IMF Working Paper*, *14*(230), 2-41.

Masud, N., & Yontcheva, B. (2005). Does Foreign Aid Reduce Poverty ? Empirical Evidence from Nongovernmental and Bilateral Aid. *IMF Working Paper*, *5*(100), 1–32.

Matunhu, J. (2011). A critique of modernization and dependency theories in Africa : Critical assessment. *African Journal of History and Culture*, *3*(5), 65–72.

Mcgillivray, M. I. (2004). Is Aid Effective ? *Draft Copy of Paper Presented at the Foundation for Development Co-Operation "Financing Development Colloquium", Held in Surfers Paradise, Australia, during August 2004.*, (August 2004), 1–17.

Mencinger, J., Aristovnik, A., & Verbic, M. (2015). Revisiting the Role of Public Debt in Economic Growth : the Case of OECD Countries. *Inzinerine Ekonomika-Engineering Economics*, *26*(1), 61–66.

Nekipelov, A. (2011). The Concepts of Economic Growth and Economic Development: Standard Macroeconomics and "Pure Economics" Approaches. *A Lecture Presented on January 31, 2011 at the International School for Students Organized by IASSA and Department of Computational Mathematics and Cybernetics, MSU Lomonosov*, *Russia*, 1-16.

Nelson, R. M. (2015). Multilateral Development Banks : Overview and Issues for Congress. *Congressional Research Service Report*, (R41170).

Odedokun, M. (2004). Multilateral and Bilateral Loans versus Grants : Issues and Evidence. *The World Economy*, *27*(2), 239–263. http://doi.org/10.1111/j.1467-9701.2004.00598.x

OECD. (2014). Modernising Official Development Assistance (ODA) Concessional loans before and after the HLM (Following the OECD-DAC High Level Meeting of 15-16 December 2014). *OECD*, (December 2014), 2014–2015.

OECD. (2015). Multilateral Aid 2015: Better Partnerships for a Post-2015 World Highlights. *OECD, Better Policies for Better Lives*, 1–24.

OEKB. (2012). Financing on Concessional Terms (soft loans). *Credit Department, Oesterreichische Kontrollbank AG*, 1-12.

Panizza, U. (2008). Domestic and external public debt in developing countries. *United Nations Conference on Trade and Development Discussion Papers*, (188), 1–26.

Panizza, U. (2015). Debt Sustainability in Low- Income Countries the Grants versus Loans Debate in a World without Crystal Balls. *Fondation Pour Les études et Recherches Sur Le Développement International, Development Policies Working Paper*, (120), 1–22.

Panizza, U., & Presbitero, A. F. (2013). Public Debt and Economic Growth in Advanced Economies: A Survey. *Money and Financial Research Group Working Paper*, (78), 1–24.

Shareia, B. F. (2015). Theories of Development Bubaker F. Shareia Department of Accounting University of Benghazi. *International Journal of Language and Linguistics*, *2*(1), 78–90.

Woldekidan, H. (2015). The role of foreign aid in reducing poverty : Time series evidence from Ethiopia. *Journal of Economics and International Finance*, *7*(3), 59–71. http://doi.org/10.5897/JEIF2015.0646

Yanguas, P. (2016). The role and responsibility of foreign aid in recipient political settlements. *ESID Working Paper*, (56), 1–25.