Fiscal Decentralization, Economic Growth and Human Resource Development in Nigeria: Autoregressive Distributed Lag (ARDL) Approach

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There is a widespread belief that fiscal decentralization is an effective tool for increasing the efficiency of public expenditures. Decentralization is expected to boost accountability and transparency in the provision of public goods for the well-being of the society. However, countervailing views maintain that little or no impact has been created at the periphery in terms of improving the welfare of the people in Nigeria. The main objective of this paper was to investigate how the decentralized system of expenditure impacted on human resource development in Nigeria. Using ARDL/Bounds Testing approach and data for the period 1980 to 2012, the study found that expenditure decentralization exerted negative effect on human resource development. The pattern and nature of expenditure decentralization in Nigeria, in the long-run, seemed to support inefficient application of resources with increased cost of governance rather than ensuring cost effectiveness in the provision of public services. The study recommends that transparency and accountability at all levels of government is required to make fiscal decentralization supportive of economic growth and human resource development.

Keywords: Fiscal decentralisation, inter-government fiscal relations, Nigeria, Human resource Development, Economic growth.

JEL Classification: H71, H72, H77

1.0   Introduction

Over the past few decades, decentralization of social and development responsibilities has become an important feature of political and economic reforms in many countries. Decentralization has been defined as the process by which a central government formally cedes powers to actors and institutions at lower levels in a political-administrative and territorial hierarchy (Mawhood, 1983; Smith, 1985). It refers to a politico-administrative arrangement in which the authority to plan, make decisions and manage public

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functions, are transferred from the central government to subordinate organisations, agencies or units of governments either geographically or structurally (Anyanwu, 1999). It has thus translated into a growing role for sub-national governments, not only financially but administratively and politically as well, in the national efforts to hasten progress towards economic and human development.

There are three functional areas of decentralization from central to subnational governments: i) fiscal powers; ii) policy responsibilities and iii) service delivery roles. These functions correspond to Musgrave's framework of three core government functions of: stabilization, distribution and allocation (Musgrave, 1964; Musgrave and Musgrave, 1989). First, stabilization involves using tax, spending and monetary policies to influence economic activity. Second, distribution involves policies on redistribution of national income and wealth for equitable development. Lastly, allocation involves assignment and use of public resources (spending) to produce public goods and services for the well-being of the masses (Eboh, 2009).

Specifically, fiscal decentralization is defined as the devolution of policy responsibilities from the central government towards sub-national governments with regards to spending and revenue collection (Neyapti, 2004, 2010). The increased interest in fiscal decentralization is based on the following: i) the widespread belief that fiscal decentralization is an effective tool for increasing the efficiency of public expenditures, even though it may carry some risks vis-a-vis other desirable objectives of government policy, such as horizontal fiscal imbalances across sub-national governments and macroeconomic stability;[4] ii) fiscal decentralization is expected to boost accountability and transparency in the provision of public goods (de Mello, 2000); iii) tax-payers are expected to better cooperate with local governments that are accountable than with large centralized bureaucracies (Wasylenko, 2001). Moreover, local jurisdictions are able to exploit their physical and functional closeness to the people in getting better understanding and perception of local needs for public services (Ekpo and Englama, 2008).

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[4] See, for example, Oates (1972), Bahl and Linn (1992), Guess *et al*. (1997), Spahn (1997), Burki *et al*. (1999) and Shah (1999).

The motivation for this study emanates from the overview of the empirical literature on the benefits of fiscal decentralization. Most recent empirical works have focused on the direct impact of fiscal decentralization on economic growth.[5] Fiscal decentralization enhances economic growth directly by increasing efficiency of public expenditures (Samuelson, 1954; Barro, 1990) and indirectly by enhancing economic efficiency, creating horizontal fiscal equality and by maintaining macroeconomic stability (Martinez-Vazquez and McNab, 2006, Iqbal and Nawaz, 2010). However, over the years, economists have become more concerned with the nature of economic growth. This is borne out of the observation, especially among developing countries in Africa, who, despite high growth rates of the GDP, have continued to suffer severe human deprivation and poverty. In this regard, Agu and Onodugo (2009) examine infrastructure decentralization in Nigerian states and their impact on poverty reduction. They argue that while immense social benefits may accrue from infrastructure decentralization in developing countries, practical experience shows that the service delivery challenge at the sub-national level may thwart the economic efficiency of such decentralization.

In similar manner, Binder and Georgiadis (2010, 2011) examined the role of institutions on human development using a dynamic panel modelling framework which can account for the crucial aspect of both the cross-sectional and inter-temporal features of the observed development process. Among other findings, their study shows that macroeconomic policies affect development with less delay than suggested by conventional econometric frameworks. In addition, they found that institutions and macroeconomic policies affect economic development with much more delay than they affect economic growth measured as gross domestic product (GDP). The variables used in this study as measures of institution and macroeconomic policies were trade openness, government consumption and investment in physical capital. This study differs from Binder and Georgiadis in two main dimensions: First, it is a country's case study and not panel. Secondly, instead of concentrating on macroeconomic policies as measures of institution, it focuses on fiscal decentralization.

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[5] The list of recent empirical investigations focusing on the direct relationship between fiscal decentralization and economic growth includes: Zhang and Zou (1996, 1998), Davoodi and Zou (1998), and Lin and Liu (2000).

The paper is organized as follows. Section 2 reviews the existing literature on the link between fiscal decentralization, economic growth and human resource development. Section 3 presents stylized facts and trends in fiscal decentralization, economic growth and human resource development. Section 4 sheds light on the methodology and data used for the empirical analysis. Section 5 reports the estimation results while section 6 provides some concluding remarks.

2.0   Literature Review

The conceptual and theoretical issues involved in fiscal decentralization and intergovernmental fiscal relations are fully discussed in a number of studies (Ekpo and Ndebbio, 1991; Aigbokhan, 1999; Ekpo and Ndebbio, 1998; Shah, 1991; Shah, 2006; Eboh, 2009). According to the decentralization thesis, the production of local outputs for local demands by local authorities rather than by central authorities constitutes the building blocks for maximizing national social welfare. Certain goods and services are best provided through public means at the lower levels. Indeed, where the consumption of a public good is dominated by spatial scope, there is economic merit for lower jurisdictions to assume responsibility.

On the revenue side, there are equally certain taxes, levies and rates that are better collected by the lower layers of governments. However, in most countries, the logic for central collection of revenue is usually in general stronger than that of centralizing expenditure responsibilities. According to Musgrave (1973), sub-national levels acting as central expenditure agents do not reflect expenditure decentralization in a meaningful sense. In the same vein, centrally collected but shared taxes do not imply proper revenue centralization. An important issue arising from the foregoing in recent times has been the need to resolve the mismatch between expenditure functions and revenue powers. In the Musgrave framework, "finance must follow function", that is, expenditure functions should be matched with revenue powers.

To escape this financial gap, federations often involve in re-distribution in the gamut of the central government assuming part of the responsibility for financing constituent units of government responsibilities. In Nigeria, this takes the form of sharing in federally collected taxes and different types of

transfers (both matching and non-matching) from the federal government. The justifications for these revenue sharing and transfers are well-documented in Boadway (1990), Shah (1983) and Anderson (2010). They include:

(i) The need to contribute to the general financial requirements of all sub-national units

(ii) The need to reduce disparities in the fiscal means of the sub-national units

(iii) The desire to promote central government's policy objectives with the other tiers of governments.

Tax sharing and transfers combined account for over 90 percent of sub-national finances in Nigeria, Mexico, and South Africa; and about 50 percent in Austria, Germany, India and Australia (Anderson, 2010).

In the context of the focus of this study, it would be interesting to find out how the pattern of fiscal assignments and transfers translate to economic growth and human resource development. A number of studies have shown that fiscal decentralization has positive impact on macroeconomic stability. King and Ma (2001), Neyapti (2004) and Neyapti (2010), for instance, find in cross–section of countries drawn from both developed and developing countries that revenue decentralization lowers inflation, reduces budget deficits and thereby leads to stable macroeconomic environment. According to these studies, the impact of fiscal decentralization in achieving macroeconomic stability is stronger if it is accompanied by central bank independence, local accountability and good governance.

On the contrary, Shah (2006) and Thornton (2007) in separate studies found a positive relationship between macroeconomic instability and fiscal decentralization. Treisman (2000) separated between developed and developing countries in a panel of 87 countries. The results showed that fiscal decentralization helped preserve central bank independence in OECD (or developed) countries while in non-OECD (developing) countries, it increased pressures on the government to overspend and get the central bank to monetize the deficit.

Feltenstein and Iwata (2005) gave an empirical investigation of the impact of fiscal and economic decentralization in China on the country's economic growth and inflation, using a vector autoregressive (VAR) model with latent variables. Their results showed that economic decentralization appeared to be positively related to growth in real output for the entire postwar period in

China. However, fiscal decentralization seemed to have adverse effect on price stability and positive on economic growth.

Marinez-Vazquez and McNab (2006) using panel data set for 52 developing and developed countries for the period 1972-1997, examined the direct and indirect relationship between fiscal decentralization and economic growth and macroeconomic stability. They found that decentralization might positively influence price stability in developed countries, though this impact is much less clear in developing and transitional countries. They also found some evidence suggesting that decentralization might directly and negatively affect economic growth in higher income countries but that this effect was reduced through the indirect positive impact of decentralization on growth through macroeconomic stability.

There are also a number of country-specific studies on the effects of fiscal decentralization on economic performance. Zhang and Zou (1996) for India and Lin and Liu (2000) for China, found a positive and significant influence on economic growth while Zhang and Zou (1998) for China and Davoodi and Zou (1998) for the United States, in contrast, found a generally opposite results that fiscal decentralization was associated with slower growth.

With respect to Nigeria, Aigbokhan (1999) found a negative influence of fiscal decentralization on the economic growth of Nigeria, using various measures of fiscal decentralization and a Barro-type endogenous growth model. In another study, Udah and Ndiyo (2011) investigated the impact of fiscal decentralization on macroeconomic stability, economic growth and external balance. Their results showed that both revenue and expenditure decentralization negatively influence economic growth. Amongst other factors, Aigbokhan (1999) and Udah and Ndiyo (2011) identified corruption as the main culprit behind the adverse effect of fiscal decentralization on economic growth. Other reasons for the negative impact of fiscal decentralization on economic performance include poor quality of local bureaucracy and limited capacity of sub-national governments to implement sound macroeconomic policy.

It would be wrong at this point to conclude that fiscal decentralization is altogether bad for the economy. While economic growth, as measured by

gross domestic product (GDP) may be a key macroeconomic objective, several studies have shown that economic growth may not be tantamount to human development. Studies have also shown that fiscal decentralization positively influences public service provision, especially in the low income countries. In low income countries, decentralization has higher coverage rates than centralization for critical public services like health and education. Khaleghian (2003) investigated the impact of decentralization on the provision of a basic public service, health. Using a time series data set of 140 low and middle income countries from 1980 to 1997, the author found that decentralization led to higher coverage rates than centralized ones, with an average difference of 8.5 percent for measles and DTP3 vaccines immunization. This implies that decentralization influences positively health service delivery in low income countries and therefore the development of human resource.

Although, there is a bulk literature on the determinants of human development, there is still scanty work on the impact of fiscal decentralization on human resource development, especially in developing countries like Nigeria. Hasan (2000) based on the annual human development report of UNDP, investigated the determinants of the level of human development for various economies. The results showed that the level of per capita real GDP, its rate of growth, expenditure on military and the state of income distribution were the main determinants of human development.

The study found an increasing function of the level of per capita income on human development. The relationship was stronger in non-linear specification of the relationship suggesting that countries with low incomes in earlier stages of development tend to pay increasing attention to human development up to a stage. However, they tend to increasingly relax in the effort with further improvement in per capita income.

In addition, the study found that military expenditure was unmistakably negatively related with human resource development in low income countries. Surprisingly, inequalities in the distribution of income tended to go with higher levels of human development. One possible reason for this could be that increase in disparities might compensate for the increased disadvantage of the poor by enabling the rich to add even more to their capabilities as they could use the resources better.

Human development, an imperative for poverty alleviation, is concerned with improvements in the quality of people as agents of production in developing economies. Theoretically, the provision of infrastructure has positive influence on human development. For instance, the provision of social infrastructure such as education and health unequivocally improves the quality of human resources and capabilities. Empirical literature has, however, shown that this could not be very true with respect to expenditure on infrastructure in most developing countries.

Bardhan and Mookherjee (1998, 2003) in their theoretical model compared the delivery of public goods under decentralized and centralized systems. Using this model, they demonstrated that the positive impact of decentralization on service delivery was conditional on the political context. First, they showed that the welfare consequences of decentralizing service delivery would depend on the method chosen for financing local governments. Leaning on the existing empirical literature, they argued that expenditure decentralization not accompanied by revenue decentralization limited the expansionary effect of decentralization on service levels. However, they cautioned that revenue decentralization might lead to the presence of local capture by local elites which might not be welfare enhancing. Though user fees mechanism offers some distinctive advantages over the traditional intergovernmental fiscal grants, they cautioned that it fails when the objective of government is redistribution across communities or when a significant proportion of intended beneficiaries do not afford to pay for the service.[6] Thus, the question: Does fiscal decentralization improves human well-being? Has only one answer, it depends.

Agu and Onodugo (2009) using data from selected states in Nigeria analysed the impact of infrastructure decentralization on poverty reduction. They argued that decentralization could be a blessing or curse depending on the quality of the local bureaucracy and capacity to formulate and execute development projects.

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[6] User fees mechanism provides flexibility in service delivery, ensures higher service delivery compared to intergovernmental grants, owing to the avoidance of asymmetric information, inter-community free-riding and bargaining distortions inherent in a system of intergovernmental fiscal grants.

From the foregoing literature review, this study is guided by the following specific objectives: to examine the long run relationship among fiscal decentralization, economic growth and human resource development in Nigeria as well as remedy the neglect of specific research on this topic. To achieve these objectives, the study uses the bounds testing cointegration procedure (Pesaran, *et al*. 2001) and the VAR Granger causality/Block exogeneity Wald tests.

3.0   Trend Analysis of Fiscal Decentralization, Economic Growth and Human Resource Development in Nigeria.

Federal, State and local governments' expenditures and internally generated revenues were obtained from the CBN Statistical Bulletin and Annual Reports. Except for a few states, like Lagos and Kano, internally generated revenues are generally low across the states. In other words, revenue decentralization is at its low ebb. The bulk of the revenue is centrally collected and shared among the states. In view of this, the study focused on expenditure decentralization. This is measured as the total expenditure of state governments and local governments over federal government.[7] The evolutions of federal and sub-national (state and local) governments' expenditures for the period 1980 to 2012 are summarized in Table 1.

Table 1: Index of Fiscal Decentralization in Nigeria, 1980-2012

Year	Fiscal Decentralization
1980-1984	1.61
1985-1989	1.04
1990-1994	0.92
1995-1999	0.57
2000-2004	3.30
2005-2008	3.94
2009-2012	3.38

Source: Authors' Computations using data from CBN Statistical Bulletin, 2012.

Several interesting patterns can be detected from these data. During this period, sub-national expenditure exceeded federal government spending in sixteen out of the 29 years. It was mostly during the mid-1980s and early 1990s that federal government expenditure was greater than the sub-national

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[7] Note that local government expenditure data were not available for most years. Data from 1980 to 1992 were interpolated on the basis of the available data from 1993 to 2009.

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total spending. This should not be surprising bearing in mind that during this period the military was in government and the country almost became a unitary state. With the return to democracy in 1999, sub-national total spending was consistently higher than federal expenditure, sometimes tripling the federal government spending (figure 1).

Figure 1: Trends in Subnational and Federal Expenditures, 1980-2012 (Nmillion)

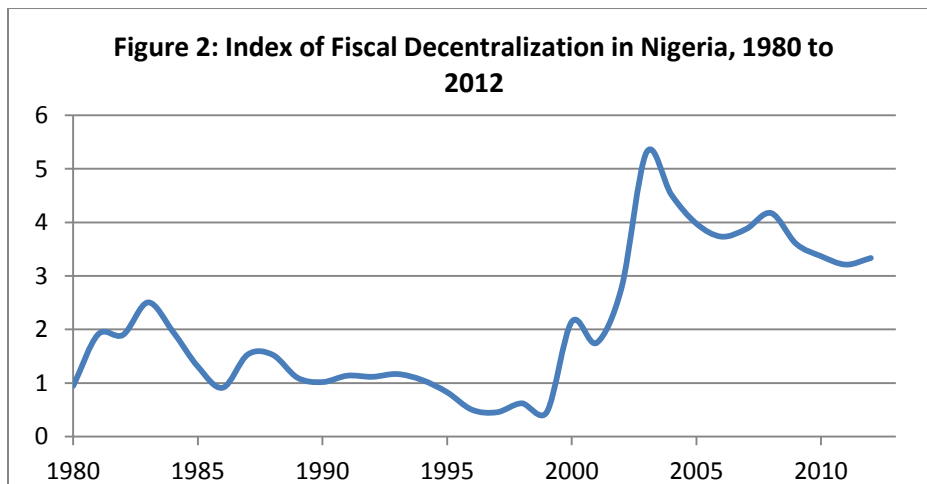Figure 2: Index of Fiscal Decentralization in Nigeria, 1980 to 2012
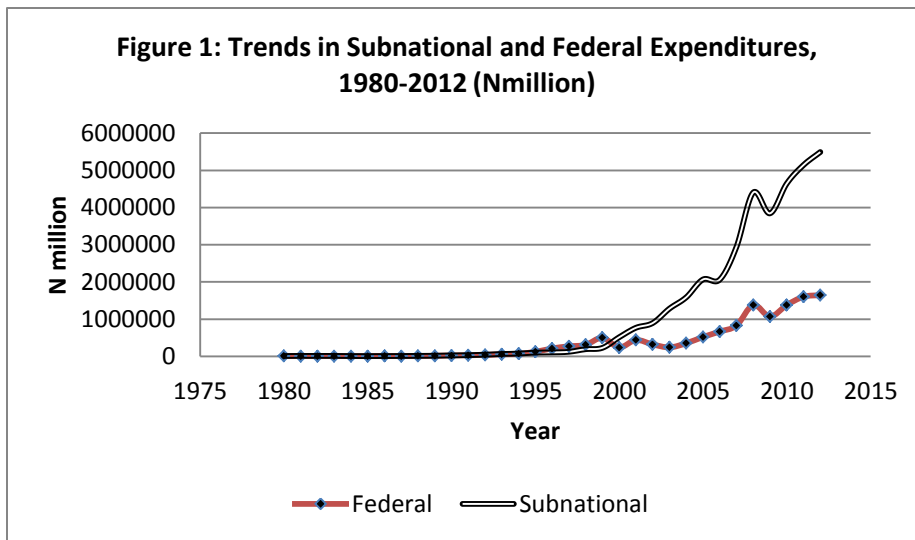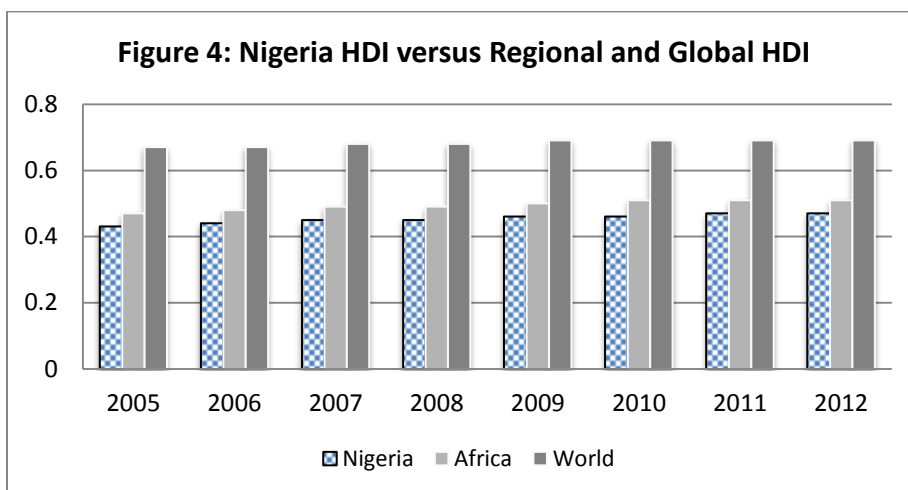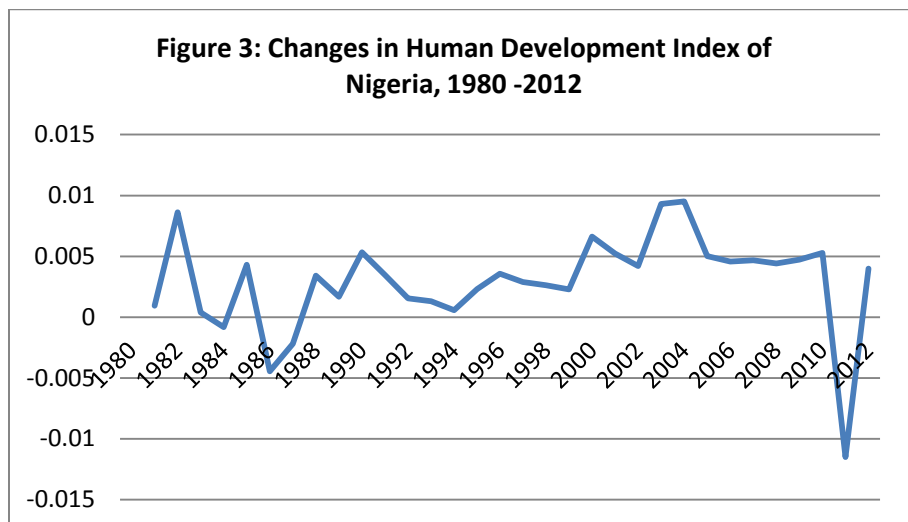
Figure 2 clearly shows that fiscal decentralization tends to increase during the democratic era. On the other hand, percentage changes in the index of human development adjusted for inequality in Nigeria was below one percent (figure 3). It was lowest during the military era and even recorded a negative

percentage in 1984, 1986 and 1987, the period of structural adjustment programme (SAP) as well as in 2011, perhaps due to the uncertainty surrounding the 2011 general election. Figure 4 shows that the level of human development in Nigeria falls below those of the continent (Africa) and global level.

Figure 3: Changes in Human Development Index of Nigeria, 1980 -2012

Figure 4: Nigeria HDI versus Regional and Global HDI

4.0   Data, scope and estimation procedure

4.1   Data definitions and sources

In order to examine the relationship between the variables, this study employs the Nigeria annual time series from 1980 to 2012. Inequality-adjusted Human Development Index (HDI) is adopted as a proxy for human resource development and is obtained from the World Bank Development Indicators

2014 and African Database 2013. Economic growth is defined as real GDP per capita growth rate and extracted from Central Bank of Nigeria Statistical Bulletin 2012.

There are different measures of fiscal decentralization, albeit there is a consensus that an operational measure of decentralization is the share of decentralized expenditures and revenues of state and local governments in the nation's total fiscal activities (Ubogu, 1982). However, these measures are not free of problems. Kessing *et al*. (2005) identified three key problems associated with these measures:

i. These data do not contain information about the distribution of power among the central and sub-national governments;
ii. The sources of the revenues, intergovernmental transfers and other grants are not taken into account; and
iii. They do not account for the extent to which the jurisdictions' tax bases overlap.

Nevertheless, these data are widely used in empirical studies on the impact of decentralization.[8]

4.2   Methodology

The study adopts the Autoregressive Distributed Lag (ARDL)/bounds testing cointegration procedure to estimate the long run and short run relationships and dynamic interaction among the variables of interest. Pesaran *et al*. (2001) proposed an ARDL/Bounds Testing approach to investigate the existence of cointegration relationship among variables. There are three specific advantages associated with this approach:

(i)   It circumvents the problem of the order of integration associated with the Johansen likelihood approach (Johansen and Juselius, 1990);
(ii)   Unlike most of the conventional multivariate cointegration procedures, which are valid for large sample size, the bounds test

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[8] See Dreher (2006) for detailed discussion of other measures of decentralization.

approach is suitable for small sample size study (Pesaran *et al.*, 2001); and

(iii)   It provides unbiased estimates of the long-run model and valid t-statistics even when some of the regressors are endogenous (Harris and Sollis, 2003).

The following ARDL model will be estimated in order to test the cointegration relationship between the variables: fiscal decentralization, economic growth, human resource development, labour and capital stocks.

$$\Delta \ln HD_t = c_0 + \delta_1 \ln HD_{t-1} + \delta_2 \ln FIS_{t-1} + \delta_3 \ln EG_{t-1} + \sum_{i=1}^{p} \phi_i \Delta \ln HD_{t-i}$$

$$+ \sum_{j=0}^{q1} \varphi_j \Delta \ln FIS_{t-j} + \sum_{l=0}^{q2} \gamma_l \Delta \ln EG_{t-l} + \varepsilon_t \tag{1}$$

Where δ_i are the long run multipliers, c_0 is the intercept and ε_t are white noise errors.

The first step in the ARDL bounds testing approach is to estimate equation (1) by Ordinary Least Squares (OLS) in order to test for the existence of a long-run relationship among the variables by conducting an F-test for the joint significance of the coefficients of the lagged levels of the variables, that is:

H_N ; $\delta_1 = \delta_2 = \delta_3 = 0$ against the alternative

H_A ; $\delta_1 \neq \delta_2 \neq \delta_3 \neq 0$

We denote the test which normalizes on HD by F_{HD} (HD|EG, FIS). Two asymptotic critical values bounds provide a test for cointegration when the independent variables are I(d) [where $0 \leq d \leq 1$]: a lower value assuming the regressors are I(0) and an upper value assuming purely I(1) regressors. If the F-statistic is above the upper critical value, the null hypothesis of no long run relationship can be rejected irrespective of the orders of integration for the time series. Conversely, if the test statistic falls below the lower critical value, the null hypothesis cannot be rejected. Finally, if the statistic falls between the lower and upper critical values, the result is inconclusive. The approximate critical values for the F-statistic test were obtained from Pesaran et al (2001).

Once cointegration is established the conditional ARDL (p, q_1, q_2) long-run model for HD_t can be estimated as:

$$\ln HD_t = c_0 + \sum_{i=1}^{p} \delta_1 \ln HD_{t-i} + \sum_{j=0}^{q1} \delta_2 \ln FIS_{t-j} + \sum_{l=0}^{q2} \delta_3 \ln EG_{t-l} + \varepsilon_t \tag{2}$$

This involves selecting the orders of the ARDL (P, q_1, q_2) model in the three variables using Akaike Information Criteria (AIC). The next step is to obtain the short-run dynamic parameters by estimating an error correction model associated with the long-run estimates. This is specified as:

$$\Delta \ln HD_t = \mu + \sum_{i=1}^{p} \phi_i \Delta \ln HD_{t-i} + \sum_{j=0}^{q1} \varphi_j \Delta \ln FIS_{t-j} +$$

$$\sum_{l=0}^{q2} \gamma_l \Delta \ln EG_{t-l} + \vartheta ecm_{t-1} + \varepsilon_t \tag{3}$$

Here φ, ϕ, and γ are the short-run dynamic coefficients of the model's convergence to equilibrium and ϑ is the speed of adjustment.

5.0   Empirical Results

5.1   Unit roots Tests

Before embarking on the ARDL bounds test, the variables were tested to determine their order of integration. This was done basically to ensure that the variables were not I(2) stationary or of a higher order than I(1). According to Outtara (2004), in the presence of I(2) variables the computed F-statistics provided by Pesaran *et al*. (2001) are not valid because the bounds test is based on the assumption that the variables are I(0) or I(1). Therefore, in order to avoid spurious results, the times series have to be tested to determine their data generation process.

Table 2: Dickey-Fuller GLS (Elliot-Rothenberg-Stock test) Unit root test

Variables	AIC lag	constant	Trend and constant
lnHD	0	1.4160	-1.8731
ΔlnHD	0	-3.3107	-3.9915
lnEG	0	-0.2471	-1.6127
ΔlnEG	0	-5.8257	-6.1491
lnFIS	0	-1.3443	-1.6998
ΔlnFIS	0	-6.8474	-5.6698
Asymptotic critical values: 1%		-2.5256	-3.7700
	5%	-1.9496	-3.1900

To implement the unit roots tests, Dickey-Fuller GLS unit root tests were employed (Elliot *et al*. 1996). The test regressions included both constant and trend for the log-level and first difference of the variables. The results presented in table 2 show that all the time series used in this study are stationary at first difference. In other words, the variables used in this study are integrated of order one, I(1).

The variables are expressed in their natural logarithms. Δ denotes first difference. **(*) denotes the rejection of the null hypothesis at 1(5)% significance level.

5.2   Cointegration test

Using AIC as a guide, a maximum lag order of 4 was chosen for the conditional ARDL VECM in equation (1). The F-statistic tests for the joint null hypothesis that the coefficients of the lagged level variables are zero (i.e. no long run relationship exists between them). Table 3 reports the results of the calculated F-statistics when each variable is considered as dependent variable in the ARDL OLS regressions.

Table 3: Results of Bounds Tests

Dependent Variable	Lag	F-statistic	Probability	Outcome
lnHD	4	11.9752	0.0012	Cointegration
lnFIS	4	3.1005	0.0673	No Cointegration
lnEG	4	3.8503	0.1519	Inconclusive

Notes: Asymptotic critical bounds are obtained from Table C2, Case III unrestricted intercept and no trend for k=3 (Pesaran et al, 2001). Lower bound I(0) =3.43 and upper bound I(1) =4.37 at 1% significance level.

When the regression is normalized on Human Resource Development (HD), the calculated F-statistic 11.9752 is higher than the upper bound critical value 4.37 at the 1 percent level. Thus, the null hypothesis of no cointegration is rejected, implying long-run cointegration relationships amongst the variables when the regressions are normalized on HD. With respect to FIS, the results from the table clearly show that the null of no cointegration could not be rejected as the calculated F-statistic 3.1005 lies below the lower bound critical value 3.43 at the 1% level. When the regression was normalized on Economic Growth (EG), the calculated F-statistic 3.8503 is higher than the lower bound critical value 3.43, but less than the upper bound of 4.37. Hence, no decision

could be made about the long run relationship amongst the variables when the regression is normalized on EG.

Following the establishment of a long-run cointegration relationship, equation (2) was estimated. The results obtained by normalizing on human resource development (HD) in the long run are reported in Table 4.

The estimated coefficients of the long run relationship show that economic growth has a very significant impact on human development. However, the coefficient of fiscal decentralization is negative and statistically significant. This result implies that the past trend of fiscal decentralization had adverse impact on current development of human resources. The reason for this is not far-fetched, often time, so much is spent on infrastructure provision yet the actual services when delivered at all is less than what private expenditure would have accomplished. So much was 'allocated' to administrative bureaucracy and nothing or very little was left for actual service. The consequence could be abandoned projects which constitute inefficient resource allocation and economic waste.

Table 4: Estimated Long run coefficients using the ARDL approach

Dependent Variable: LNHD				
Regressor	Coefficient	Standard Error	t-Statistic	Prob(tstatistic)
Constant	-0.8199	0.2455	-3.3398**	0.0028
LNHD(-1)	0.7607	0.0867	8.7740**	0.0000
LNFIS(-4)	-0.0037	0.0015	-2.4001*	0.0249
LNEG	0.0485	0.0133	3.6404**	0.0014
R-squared	0.9962	F-statistic		2035.63
Adjusted R-squared	0.9957	Prob(F-statistic)		0.0000
Durbin-Watson stat	2.1837			

  **(*) denotes 1%(5%) significance level.

This result is not surprising for a developing country. Decentralization tends to complicate the political games at the sub-national level and thereby increase the local veto power and number of rent-seekers in the polity. In other words, decentralization is tantamount to increased fragmentation of

political arenas. In Nigeria, where corruption in politics seems endemic, it is replicated at each level of governance, both central and sub-national, and this automatically drains public expenditure of the desired positive impact in terms of service delivery. According to Ebel (1998), Western countries mainly decentralize in order to provide public services in a more cost-effective way, whereas low income countries pursue decentralization for political and social reasons to overcome macroeconomic instability and ineffective governance. The costs of pursuing political and social objectives often overwhelm the economic efficiency goals. Thus, decentralization becomes a growth-limiting factor in low income countries.

The long-run results also reveal that previous states of human development significantly impacted on the current state. Indeed, a 10 percent improvement in the past human development is capable of improving current human development status by 7.6 percent.

The results of the short-run dynamic coefficients associated with the long run relationships obtained from the ECM equation (3) are given in Table 5. The signs of the short run dynamic impacts are maintained to the long run.

Table 5: Estimated Coefficients of the Short run Dynamic Error correction Model

Dependent Variable: D(LNHD)				
Regressor	Coefficient	Standard Error	t-Statistic	Prob (t-statistic)
Constant	-0.000275	0.001683	-0.163520	0.8718
Δ(LNHD(-1))	0.602573	0.162014	3.719266	0.0014
Δ(LNEG)	0.069250	0.019684	3.518019	0.0022
Δ(LNFIS)	0.001610	0.002194	0.733869	0.4715
Δ(LNFIS(-1))	0.003035	0.002125	1.428237	0.1687
ECM(-1)	-0.963877	0.261338	-3.688240	0.0015
R-squared	0.709989	Akaike info criterion		-7.927794
Adj. R-squared	0.637487	F-statistic		9.792601
Durbin-Watson stat	1.792761	Prob(F-statistic)		0.000075

Normality test: Jarque Bera 1.7424 (0.4184) Serial Correlation Test: Breusch Godfrey LM 3.0990 (0.0697) ARCH test 0.1025 (0.7517) Ramsey RESET 2.2476 (0.1345)

Both previous human development status and economic growth have positive and highly significant impact on current human development. However, the

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coefficients of fiscal decentralization are not significant at 5 percent level though with a positive sign.

The equilibrium error correction coefficient (ecm) estimate of -0.96 is highly significant, with the correct sign. This implies a high speed of adjustment to equilibrium after a shock. Approximately 96 percent of disequilibria from the previous year's shock converge back to the long run equilibrium in the current year. Other diagnostic tests for the residual of the regression and model specification performed well. The residuals are normally distributed and there is no higher order serial correlation in the model. The RAMSEY test for misspecification did not reject the null hypothesis of no misspecification. Thus, the functional form of the model is appropriate.

5.3   VAR Granger Causality/Block Exogeneity Tests

Cointegration and long run relationships do not define the direction of causality. Table 6 shows the results of the VEC Granger causality/Block Exogeneity tests.

Table 6: VEC Granger Causality/Block Exogeneity Wald Tests

Dependent variable: D(LNHD)			
Excluded	Chi-sq	Df	Prob.
D(LNFIS)	13.08965	3	0.0044
D(LNEG)	7.165608	3	0.0668
All	17.03766	6	0.0091
Dependent variable: D(LNFIS)			
Excluded	Chi-sq	Df	Prob.
D(LNHD)	7.233900	3	0.0648
D(LNEG)	5.086164	3	0.1656
All	8.996465	6	0.1738
Dependent variable: D(LNEG)			
Excluded	Chi-sq	Df	Prob.
D(LNHD)	0.595593	3	0.8974
D(LNFIS)	14.62614	3	0.0022
All	15.47404	6	0.0089

The essence of this test is to investigate the causal links amongst the variables; fiscal decentralization, economic growth and human resource development. This test is important in the sense that it informs us about the direction of causality amongst the variables. There are basically three possible outcomes: unidirectional, bidirectional or neutral relationships.

A chi-square statistic of 13.09 for fiscal decentralization when human development is dependent variable implies that FIS is exogenous in the human resource development regression. Similarly, economic growth has a moderate chi-square statistic of 7.17. Thus, human resource development is Granger caused by these two variables. In other words, HD is influenced by FIS and EG. The null of block exogeneity is refuted when HD is taken as the dependent variable. This suggests that HD is influenced by FIS and EG when they are taken together. The null hypothesis of block exogeneity is also refuted when EG is taken as the dependent variable (0.0089). However, HD does not Granger caused EG but FIS Granger causes EG given the high chi-square statistic of 14.62.

When FIS is taken as the dependent variable, the chi-square statistics of 7.23 and 5.09 for HD and EG, respectively, are not significant. Thus the null of block exogeneity is not refuted when FIS is taken as the dependent variable. In conclusion, the tests reveal that human resource development has a unidirectional relationship with FIS and EG, with these two variables acting as the determinants of HD.

5.4   Policy Implication

Various policy implications that can be drawn from this paper are:

A long-run unidirectional relationship exists amongst fiscal decentralisation, human resource development and economic growth. However, in the short-run, expenditure decentralisation has no impact on human resource development. This implies that short-run inefficiency in the application of resources would accumulate to long-term negative effect. Thus, policy should be targeted at efficient application or management of resources in the short-run to avoid long-run negative effects.

Human resource development in Nigeria is determined by such factors as expenditure decentralisation and economic growth. The result has shown a strong positive and significant relationship between economic growth and

human resource development. Thus, policy measures must be put in place to grow the economy. Also, efficient methods must be adopted to allocate resources at the sub-national level of government. What is important is that the various monetary and fiscal policy measures needed to ensure macroeconomic stability must be adopted to ensure the realisation of macroeconomic goals of economic growth, price stability, low unemployment and balance of payment.

For the negative impact of fiscal decentralisation, especially expenditure decentralisation, on human resource development, there should be adequate reform measures at the sub-national level of government to ensure transparency, accountability and efficient application of the available resources with the intent of reversing the negative relationship observed between expenditure decentralisation and human resource development. This is intended to achieve better and improved human resource development with its attendant positive consequences for the economy.

6.0   Summary and Conclusion

This paper analyzed the impact of fiscal decentralization, especially expenditure decentralization, on human resource development using Nigerian data from 1980 to 2012. The results show that expenditure decentralization in Nigeria influences human development. The theoretical expectation that decentralization would improve service delivery through proximity and regional competition is not found. This puts a big question mark on the quality of public expenditure in the federation. The pattern and nature of expenditure decentralization in Nigeria seem to support inefficient application of resources with increased cost of governance rather than ensuring cost effectiveness in the provision of public services. To this end, the study suggests that key reforms are required to improve transparency and accountability at all levels of governance in order to make fiscal decentralization supportive of economic growth and human resource development.

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