WHAT DETERMINES SAVING IN THE ECONOMIC COMMUNITY OF WEST AFRICAN STATE (ECOWAS)?

Adeolu O. Adewuyi (Ph.D)\(^4\)
Abiodun S. Bankole (Ph.D)
And
Damilola F. Arawomo

Abstract
This study investigates the determinants of gross domestic saving in the Economic Community of West African States (ECOWAS). The methodology adopted involves the estimation of a saving function derived from standard life-cycle theory modified to cover the peculiar features of the West African economies. The saving model was estimated for aggregate ECOWAS using panel data covering 1980-2006. Both fixed and random effects models were estimated and the significance of individual and period effects was observed.

Empirical analysis reveals mixed results. Among the major findings is that growth rate of gross domestic income has a positive but insignificant effect on the gross domestic saving in ECOWAS. However, the gross domestic income per capita has a significant negative impact on the gross domestic saving. The negative impact of gross domestic income per capita on savings may largely be due to dissaving or low level of income as a result of high level of poverty in most of the countries of ECOWAS. Result shows that saving deposit rate has a significant negative impact on the gross domestic saving, while the undesirable impact of the underdevelopment of the financial sector in West Africa was also noticed. The result also shows a significant negative impact of inflation, high budget deficit and terms of trade on gross domestic saving in ECOWAS. Thus, there is need to maintain price and macroeconomic stability to promote saving, investment and growth in West Africa.

**JEL Classification:** E20, E21  
**Keywords:** Saving, Life-cycle theory, Panel data, ECOWAS

With the recent revival of interest and consequent expansion of the literature on economic growth, analysis of growth and rate of saving also received a great attention. The long debated relationship between rate of saving and growth rate of income has provided a strong stimulus for analyzing the factors that determine saving more thoroughly. A sufficiently strong saving performance is an important precondition for achieving economic growth, macroeconomic balance and financial and price stability.

\(^4\) Adewuyi, Bankole and Arawomo are lecturers at the Department of Economics, University of Ibadan, Nigeria. The views express in this papers are those of the authors and do not represent that of the University.
This relationship has become even more crucial with the studies confirming that despite the occasional importance of international flows of capital, the most important factor for a country’s investment and economic growth is indeed its own saving (Khan, 2008 and Culpeper, 2009). A relatively low level of domestic saving could limit growth and makes the country much more vulnerable than it would otherwise be to international capital shifts of the type that have been experienced by several economies during the 1990s.

Despite the above highlighted importance of high rate of domestic saving, the rate and growth of saving in ECOWAS has been low, while the rate and level of foreign capital has been inadequate for supplementing the low saving rate. All these have adversely affected economic growth in the sub-region. For instance, available data from the International Monetary Fund (IMF) data base shows that the rate of saving in ECOWAS is below 10 percent\(^5\). Of a serious concern is the rapid decline in the rate of saving in the ECOWAS countries over the years.

As a result of the abysmal low saving rate in ECOWAS, coupled with the low level of foreign capital inflows in the sub-region, the level of domestic investment has been very low and consequently, growth rate of GDP in ECOWAS countries has been low. It is against this background that it becomes necessary to analyse the factors that determine saving in ECOWAS. This study has been motivated by dearth of studies on saving in ECOWAS as a sub-region. Most studies are on developed regions of the world while some studies are also on the developing countries (including Africa) as a group (Collins, 1991; Loayza, Schmidt-Habbel and Serven, 2000; Elbadawi and Mwega, 2000; and Ozcan, 2000). Previous studies in West Africa have been country specific without any basis for generalization of the outcome of such studies for the entire ECOWAS. Besides, their findings are inconclusive. It is in the light of the above that this study seeks to examine the determinants of saving in ECOWAS.

Following the above section on the introduction and research issues is section 2 which contains an overview of the trends of saving rate and investment financing in ECOWAS in order to place the analysis in context. The review of previous studies is presented in Section 3. Theoretical framework/Methodology and the Empirical analysis are discussed in Sections 4 and 5 respectively. The paper raps up with Summary, Conclusion and Policy Lessons.

\(^5\) Although that of Africa is around 20 percent.
SAVINGS RATE AND INVESTMENT FINANCING IN THE ECOWAS

Available data from the IMF data base reveals that there is a considerable variation in the rate of saving across countries of the world. Studies have shown that East Asian countries save more than 30 percent of their GDP and that the saving rate in Europe and America is above 30 percent (Ozcan, 2006). Also, a comparative analysis among some selected countries of the world reveals that, none of the developed and middle income countries saved below 20 percent in the period 1980-1989 (Table 1). Also, in the period 1990-1999 only Brazil saved below 20 per cent, while Switzerland, Iran and Botswana had appreciable increase in their rates of saving. The developed and middle income countries experienced steady saving rate in the period 2000-2008.

Table 1: Gross saving of some Developed and Middle Income Economies (% of GDP).

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>JAPAN</td>
<td>29.85</td>
<td>29.7</td>
<td>29.74</td>
<td>32.2</td>
</tr>
<tr>
<td>FRANCE</td>
<td>20.6</td>
<td>20.2</td>
<td>20.9</td>
<td>22.6</td>
</tr>
<tr>
<td>GERMANY</td>
<td>22.7</td>
<td>22.8</td>
<td>23.1</td>
<td>25.0</td>
</tr>
<tr>
<td>SWITZERLAND</td>
<td>28.7</td>
<td>29.4</td>
<td>29.2</td>
<td>29.4</td>
</tr>
<tr>
<td>BRAZIL</td>
<td>21</td>
<td>18</td>
<td>19.2</td>
<td>21.7</td>
</tr>
<tr>
<td>IRAN</td>
<td>26</td>
<td>34</td>
<td>32</td>
<td>33.2</td>
</tr>
<tr>
<td>BOTSWANA</td>
<td>36</td>
<td>43</td>
<td>41</td>
<td>38.3</td>
</tr>
<tr>
<td>HUNGARY</td>
<td>29</td>
<td>26</td>
<td>25</td>
<td>25.6</td>
</tr>
<tr>
<td>ECOWAS</td>
<td>5.79</td>
<td>8.25</td>
<td>6.77</td>
<td>7.6</td>
</tr>
<tr>
<td>AFRICA</td>
<td>25</td>
<td>17.8</td>
<td>22.4</td>
<td>23.1</td>
</tr>
</tbody>
</table>

Source: IMF, International financial statistic various issues

A comparison of ECOWAS rate of saving with that of other regions of Africa shows that the region has performed poorly throughout the period of study. In the period 1980-1985, North Africa had the highest saving rate of 22.1 percent, followed by Middle Africa with a rate as low as 9.9 per cent (Table 2). ECOWAS saving rate stayed at a very disturbing low rate of 6.1 per cent. Although, the saving rate in ECOWAS increased
from 6.6 percent in 1980-85 to 7.8 per cent in the period 1985-1990, the region continued to trail behind all other regions except South Africa. The period of 1990-1995 and 1995-2000, still left ECOWAS trailing behind North and Middle Africa sub-regions. Even, in the recent period of 2000-2008 when most countries witnessed some growth, the rate of saving in ECOWAS was still below 10 per cent.

**Table 2: Annual Average Gross Domestic Saving by Region percent share of GDP (1980-2006)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>East Africa</td>
<td>5.8</td>
<td>9.0</td>
<td>5.6</td>
<td>4.8</td>
<td>2.8</td>
<td>2.6</td>
</tr>
<tr>
<td>South Africa</td>
<td>-3.0</td>
<td>6.7</td>
<td>10.9</td>
<td>4.1</td>
<td>17.9</td>
<td>16.7</td>
</tr>
<tr>
<td>Middle Africa</td>
<td>9.9</td>
<td>9.1</td>
<td>11.9</td>
<td>15.2</td>
<td>28.3</td>
<td>24.6</td>
</tr>
<tr>
<td>North Africa</td>
<td>22.1</td>
<td>22.6</td>
<td>13.8</td>
<td>14.3</td>
<td>19.2</td>
<td>20.6</td>
</tr>
<tr>
<td>ECOWAS</td>
<td>6.1</td>
<td>7.8</td>
<td>8.0</td>
<td>7.7</td>
<td>9.7</td>
<td>7.2</td>
</tr>
</tbody>
</table>

*Source: Author's computation from The World Bank, African Development Indicators. (Various issues)*

Saving rates among the ECOWAS countries have been low and unstable. For instance, Ghana had a very low saving rate of 14.75 percent in 1999 which declined to 11.13 percent in 2002 and to 6.38 percent in 2006. Also, in the case of Gambia, saving rate of 9.33 percent in 1999 reduced to 5.00 percent in 2006. In the same trend, Liberia had a rate of 6.02 percent in 1999, which reduced to 3.48 percent in 2006. The average rate of saving in the ECOWAS through the period of 1980 to 2006 was far below 10 per cent.

It could be expected that with low level of saving in ECOWAS, the level of investment will equally be low. However, since ECOWAS countries are open economies that can attract foreign funds, mobilisation of foreign investment becomes important for accelerated economic development in ECOWAS. A significant improvement in terms of trade, and policies/institutional environment in some of the countries in the sub-region

*6 Saving rate of South Africa improved significantly beginning from 2000s.*
has led to the revival of capital inflow. The flow of capital to the sub-region is increasing rapidly, particularly from export income, remittances from the Diaspora, and foreign investment. Available data from the World Bank data base indicates that the ratio of investment to GDP has been rising over the last three decades in Africa and ECOWAS in particular. During the period 1980-2006, the domestic investment rate ranged between 17.6 and 22.8 per cent in ECOWAS. However, since the highest saving rate reached by ECOWAS throughout the period of study was 9.7 per cent, it implies that domestic investment is being financed by a combination of domestic saving and inflow of foreign capital.

The saving-investment gap (resource balance), which shows the extent to which domestic investment is being financed by saving is shown in Table 3. Available data from the World Bank data base (WDI, 2008) shows that in 1980-2008 only three countries in ECOWAS generated sufficient domestic saving to finance their domestic investment. These countries are Guinea, Nigeria, and Cote d’Iviore. This implies that other countries sought foreign investment to supplement their internally generated saving to finance their domestic investment. On the aggregate level, the region could not finance investment with her saving throughout the period of study. This is because their saving-investment gap was negative.

Against the short fall in saving and investment, the only way out for ECOWAS is to attract foreign capital. The value of foreign direct investment (FDI) to ECOWAS countries has been so low that it is inadequate to finance the saving investment gap. It can be seen from Table 3 that after considering FDI, the gap that still remains to be filled overtime is high. In the period 1980-1985, FDI-GDP ratio was 0.9, which is a far cry to the saving-investment gap of 16.7. Although the ratio increased to 3.1 per cent in the period 2000-2006, it was still very small to finance the saving-investment gap of 9.3 per cent. Therefore, there is a need to design policies to promote domestic saving in the ECOWAS sub-region and to attract more foreign investment.

---

A. O. Adewuyi (Ph.D), A. S. Bankole (Ph.D) and D. F. Arawomo
### TABLE 3: SAVING AND INVESTMENT IN ECOWAS.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Saving Rate</td>
<td>6.1</td>
<td>7.8</td>
<td>8.0</td>
<td>7.7</td>
<td>9.7</td>
</tr>
<tr>
<td>(b) Investment Rate</td>
<td>22.8</td>
<td>17.7</td>
<td>17.6</td>
<td>19.2</td>
<td>18.5</td>
</tr>
<tr>
<td>(c) Saving-Investment Gap (a-b)</td>
<td>-16.7</td>
<td>-9.9</td>
<td>-9.6</td>
<td>-11.5</td>
<td>-9.3</td>
</tr>
<tr>
<td>(d) Foreign Direct Investment rate</td>
<td>0.9</td>
<td>1.3</td>
<td>1.8</td>
<td>2.6</td>
<td>3.1</td>
</tr>
<tr>
<td>(e) Saving-Investment Gap Net FDI (c-d)</td>
<td>-15.8</td>
<td>-8.6</td>
<td>-7.8</td>
<td>-8.9</td>
<td>-6.2</td>
</tr>
</tbody>
</table>

Source: Author’s computation from The World Bank, African Development Indicators. (Various issues)

Note: (a) saving rate = saving-GDP ratio (b) investment rate = investment-GDP ratio (b) foreign direct investment rate = foreign direct investment-GDP ratio. All are expressed in Percentages

### REVIEW OF PREVIOUS STUDIES ON THE DETERMINANTS OF SAVINGS

Collins (1991) examines saving behavior in nine Asian developing countries and Turkey since the early 1960s. Regression analysis was used to separate the determinants of saving overtime and across countries. He reported three key findings. First, the proportion of children in total proportion, the standard of living, and the real growth rate impact significantly on saving. Second, the results suggest structural difference in saving behavior between the low income and the middle income countries. Third, saving is been influenced by the explanatory variables through two separate channels. While, living standard and age distribution appear to have significant structural effects on household behavior, changes in these variables tilt the mean age of consumption relative to the mean age of earning in the economies.

---

7 Only data on saving were up to 2008. Recent editions of the sources of other variables were not accessible.
Schmidt-Hebbel, Webb and Corsetti (1992) opined that most studies have relied on domestic or private saving data; their study used household data available from the U.N system of National Account for a sample of 10 developing countries. They estimated household saving function using combined time-series and cross country observation to test household responses to income and growth, rates of return, monetary wealth, foreign saving, and demographic variables on a time trend, using five year overlapping data series. They reported that income and wealth variable affect saving strongly and in ways consistent with standard theories. According to them, inflation and interest rates do not reflect clear effect on saving, which is also consistent with their theoretical expectation. Foreign saving and monetary assets have strong negative effects on household saving, which suggest the importance of liquidity constraints and monetary wealth in developing countries.

Loayza, Schmidt-Hebbel, Serven (1998) investigated the factors behind the broad and considerable differences in saving across countries of the world and overtime. They used time series data set constructed for the World Bank saving project to assess the policy and non policy determinant of saving. They reported that the lagged private saving rate has a positive and significant coefficient which revealed a large degree of persistence. They reported further that both the (log) level and the growth rate of real per capita private disposable income have a positive and significant effect on the private saving rate. The real interest rate has a negative impact on private saving rate, which they interpreted to suggest that its income effect outweighs the sum of its substitution and human wealth effect. A rise in the public saving rate leads to a significant decline in the private saving rate. Also, all the three demographic variables under consideration: the urbanization ratios, young and old dependency ratio, have a significantly negative impact on private saving rate. They also found that a rise in inflation has a positive impact on saving.

Masson, Bayoumi and Samiei (1998) in an attempt to identify international evidence on the determinants of private savings, adopted the life cycle hypothesis and Ricardian equivalence. A number of possible determinants of private saving behaviour were examined using data from a large sample of industrial and developing countries. Both time-series and cross sectional estimates were obtained using panel data estimation techniques involving 21 industrial countries and over 40 developing countries covering 1971-1993. According to the authors results suggest that there was a partial effect of changes in public saving and (for developing countries) in foreign saving on private saving. They found that demographic and growth variables are important determinants of private saving rate. They also reported that interest rates and terms of trade produce positive but less significant effect on private saving. Increase in per capita gross domestic product appears to increase saving at low income level but decreases it at higher levels.
Ozcan (2000) examined empirical determinants of private saving for a sample of economies in the Middle East and North Africa (MENA), over a period of 1981 to 1994. Using lifecycles hypothesis and panel estimation techniques investigated the relationship between private saving rates and several macroeconomics policy and non policy variables. He reported that per capita income has a positive coefficient and was significant. It was also revealed by the author that the young dependency ratio, the old dependency ratio and urbanization turned out statistically insignificant. The result indicates a negative and significant impact of government saving while inflation rates and terms of trade showed a positive and significant impact. The effect of interest rate on saving was not found to be statistically significant. He concluded that the result clearly indicates the role of policies pursued by each countries and the complexity the relationship between saving and other variable that affect saving.

Loayza, Schmidt-Habel and Serven (2000) discuss the design of the research projects on saving in developing countries and its core database. Then summarized the main projects and place the results of the projects in the context of the literature on saving. The authors stated that the variable which are statistically significant include the terms of trade, foreign borrowing constraints, fiscal policy variables and pension system variables. They also stated that the influence of income is greater in developing than in industrial countries. They also found that GDP growth rate increases the private saving rate.

Elbadawi and Mwega (2000) analyzed the determinant of private saving in sub-Saharan Africa. The study attempts to explain the regions dismal performance and identifies policies that could help to reverse decline in saving in the region. Empirical analysis shows that in sub-Saharan Africa, causality runs from growth to investment, whereas a rise in the saving rate Granger- causes an increase in investment. The empirical analysis was done on sub-Saharan Africa over 1970- 1995. The result of the analysis revealed that Africa lags behind in its private saving than in other regions (most notably, the high performing Asian economies). This is because of the region’s low per capita income, high young-age dependency ratio, and high dependence on aid. The combined effects of these factors substantially outweigh Africa’s advantage from its public saving and higher government consumption.

Rodrik (2000) takes a systematic cross national approach to identify saving transitions (defined as sustained increases in the saving rate of five percentage points or more) and analyse saving determinants in order to reexamine the question of causality between growth and saving. The author stated that: focusing on saving performance does not seem to be a useful strategy for understanding successful economic performance. He opined that an increase in saving appears to be the outcome of economic growth, not a fundamental determinant of it. He explained that countries that undergo saving transition do not necessarily experience sustained increases in their growth rates. By contrast, countries that witness growth transitions (arising from improved terms of trade,
increased domestic investment, and other reasons) end up with permanently higher saving rates.

Gavin Hausmann and Talvi (1997) examined saving behavior in Latin America. They presented an alternative perspective on the relationship between saving and growth, saving and inflation stabilization, saving and structural reform, and saving and capital inflows. In this study, the authors drew experience from East Asian and Latin America in the last twenty-five years. A descriptive analysis was adopted and based on the evidence; the positions of this study differ with the prevailing views because saving was de-emphasizing as an intermediate policy target. The author argued that the focus of policy should be shifted away from saving to removing the impediments to growth. They also stated that the emphasis of policy should shift away from avoiding the inevitable outcome of inflation stabilization and many reform policies (that is, a transitory decline in saving and current account deficit).

Chete (1999) examined the macroeconomic determinant of private saving in Nigeria. He adopted the neoclassical life cycle saving hypothesis developed by Ando and Modigliani (1963) and estimated the function on data covering 1973 to 1993. The author reported a positive relationship between real interest rate and saving. He found a significant negative effect on personal saving of the ratio of broad money (M3) to GDP. His result also shows that growth rate of terms of trade exert a positive and significant impact on private saving. External debt accumulation was reported by the author to have a negative impact on private saving. He observed that per capita income impinges positively and significantly on saving. Also, domestic inflation was positive but significant. Chete (1999) concludes that the results in terms of the direction of impact of the hypothesized determinants turn out to be mixed. He cautioned the authorities to be wary of adopting and implementing policies that may turn out to produce counter-productive consequences’ on the economy. He said country peculiarities should be the supreme consideration.

Athukorala and Sen (2001) examined determinants of private saving in Indian during the period of 1954-1998. They estimated a saving function derived within the life cycle framework while taking cognizance of the structure of a developing economy. Their estimation result shows that saving rate rises with both the level and the rate of growth of disposable income and the magnitude of the impact of the former is smaller than that of the latter. Results also revealed that the real interest rate on banks deposits has a significant positive impact on saving rate.

Aryeetey and Udry (2000) examines Saving in Sub-Saharan Africa. They revealed that, Gross domestic saving in Africa averaged only 8 percent of GDP in the 1980s, compared to 23 percent for Southeast Asia and 35 percent in the Newly Industrialized Economies. Aside from being generally low, saving rates in most of Africa have shown consistent
decline over the last thirty years. Financial saving is predominantly directed to informal markets and institutions. The paper documents these trends and provides a simple model of portfolio allocation to guide future research. It is suggested that an array of transaction costs associated with formal financial markets, coupled with the risk management strategies and production activities of households in Africa account for the patterns of saving and portfolio allocation observed in the data.

Kelly and Mavrotas (2003) examined the impact of financial sector development on private saving using panel data of 17 African countries. An innovative econometric methodology was also employed related to a series of cointegration tests within a panel. The empirical results obtained vary considerably among countries in the panel, thus highlighting the importance of using different measures of financial sector development rather than a single indicator. They maintained that the evidence is rather inconclusive; although in most of the countries in the sample have positive relationship between financial sector development and private saving. They also reported that a change in government savings is offset by an opposite change in private savings in most of the countries in the panel, thus confirming the Ricardian equivalence hypothesis. Lastly they revealed that liquidity constraints do not seem to play a vital role in most of the African countries in the group, since the relevant coefficient is negative and significant in only a small group of countries.

It can be seen from the foregoing that little or no study has been done for ECOWAS as a group, while country specific studies are done for few West African countries.

THEORETICAL FRAMEWORK AND METHODOLOGY

Theoretical Framework

A review of the literatures on saving determinants revealed that Life Cycle Theory is the most appropriate theory to provide a theoretical basis for this study. Thus, most of the studies that have been done on saving determinants either on individual country basis or group adopted the Life Cycle Theory. These studies include: Collins (1991); Chete (1999); Elbadawi and Mwega (2000); Massion Boyoumi and Sameii (1998); Ozcan (2006). This is due to the fact that it is capable of explaining the variables that determine saving. Therefore, Life Cycle Theory is employed in this study with some modifications to reflect some peculiar characteristics of West African economies.

Since saving is a derivative of consumption, the modern advanced theoretical literature on saving begins with the theory of consumption under certainty termed the permanent-income theory (Romer, 2005). The assumption under this theory is that an individual who lives for a life time period (T) has a utility function of the following form;
\[ U = \sum_{t=1}^{T} u(C_t), \quad u'(\bullet) > 0, \quad u''(\bullet) < 0, \quad 1. \]

Where \( C_t \) is consumption in period \( t \) and \( u(\bullet) \) represents the instantaneous utility function. This individual has an initial endowment of wealth \( (A_o) \) and labour incomes over his or her lifetime-period \( T \) \((Y_1, Y_2, \ldots, Y_T)\), which are taken as given. It is assumed that the individual can save or borrow at an exogenous rate of interest, and any outstanding debt has to be repaid at the end of his or her lifetime. The budget constraint of the individual is of the following form;

\[ \sum_{t=1}^{T} C_t \leq A_o + \sum_{t=1}^{T} Y_t \quad 2. \]

Given that the marginal utility of consumption is always positive \((u'(\bullet) > 0)\), individual consumption expenditure corresponds to his or her budget constraint. Therefore the individual’s optimization problem can be written as follows;

\[ L = \sum_{t=1}^{T} u(C_t) + \lambda (A_o + \sum_{t=1}^{T} Y_t - \sum_{t=1}^{T} C_t) \quad 3. \]

The first-order condition for utility maximization can be expressed in the equation below

\[ u'(C_t) = \lambda \quad 4. \]

If equation 4 holds in every period, the marginal utility of consumption is constant over time. Since the level of consumption determines its marginal utility, therefore consumption is also constant over time. Factoring this idea into the budget constraint leads the following equation.

\[ C_t = \frac{1}{T} (A_o + \sum_{t=1}^{T} Y_t) \quad \text{For all } t. \quad 5. \]

The individual’s total lifetime resource (which is made up of initial wealth and lifetime labour income) is presented in the terms in the parenthesis in equation 5. Equation 5 shows that in each period of his or her lifetime the individual has an equal amount of resources for consumption. Equation 5 implies that the individual’s consumption in any particular period is not only a function of his or her current income but also income over his or her lifetime. This is what Friedman (1957) termed “permanent income”, while the
difference between this permanent income and current income is called “transitory income” (Romer, 2005). Deriving saving from the relationship between income and consumption we have;

\[ S_t = Y_t - C_t \]  

Substituting consumption equation 5 into 6a yields a saving equation expressed as follows;

\[ = (Y_t - \frac{1}{T} \sum_{\tau=1}^{T} Y_{\tau}) - \frac{1}{T} A_0 \]  

Equation 6b indicates that saving is high when current income is high relative to its average (when transitory income is high). Conversely, saving becomes negative when permanent income exceeds current income. According to Romer (2005), this is the basic idea of permanent-income hypothesis of Modigliani and Brumberg (1954) and Friedman (1957). In the permanent-income hypothesis, saving is regarded as future consumption. Therefore opportunity cost of postponing current consumption (saving) for a high level of future consumption is the interest rate. Based on this idea, the individual’s budget constraint in equation 2 can be modified as follows (assuming a constant interest rate and a lifetime of T periods);

\[ \sum_{t=1}^{T} \frac{1}{(1+r)^t} C_t \leq A_0 + \sum_{t=1}^{T} \frac{1}{(1+r)^t} Y_t, \]  

This implies that the present value of lifetime consumption corresponds to the sum of initial wealth and the present value of lifetime labour income. Incorporating this into the saving equation 7.6b above, gives

\[ S = \{(Y_t/1+r) - \frac{1}{T} \sum_{\tau=1}^{T} (Y_{\tau}/1+r)\} - \frac{1}{T} A_0 \]  

This shows that there is a tendency for saving to be high when the present value of current income is high relative to its average. However, this does not necessarily mean that saving will rise. This is because a change in the interest rate has both substitution and income effects. The overall effect is ambiguous depending on which effect overrides the other. Equation 8 shows that saving is a function of current income relative to its average, initial wealth and interest rate.

Subsequently, permanent income theory (PIT) was developed into the life cycle theory (LCT) by Ando and Modigliani (1963). In the LCT, the basic assumption just like the
previous model is that an individual seeks to maximize the present value of lifetime utility subject to the budget constraint. The budget constraint is equal to the current net worth plus the present value of expected income from work over an entire working life of the individual. The theory predicts that consumption in each period depends on expectations about life time income. Given that income fluctuates over the course of life of an individual, each stage in the life cycle is an important determinant of saving behaviour. Thus, an individual will smooth consumption over his lifetime, being a net saver in his youth and a net borrower in old age (Modigliani, 1986). The absence of a link between current saving and current income in the LCT of consumption is an implication that individuals are forward-looking, and therefore, base their saving decisions on lifetime income rather than current income.

For the above consideration, both growth rate and level of income are explanatory variables in the saving function. The life cycle theory thus predicts that an increase in the rate of growth of income will lead to an increase in saving rate. This is the basic hypothesis of the LCT. The role of some demographic characteristics of an economy was stressed in the LCT. Hence, some demographic variables are very important in the life cycle theory. The set of variables that make up “demographic variables” include the age distribution of the population, dependency ratio and life expectancy. These variables are sometimes termed “life cycle variables”, as they operate under the predictions of the life cycle theory. Ando and Modigliani (1963) show that demographic variables affect saving rate. The age structure of the population is an important factor for saving because people who seek to smooth out consumption over their lifetime save when they expect future income to be low and dissave when they anticipate it to be high.

Assuming that the bequest motive for saving is of little importance, the young and the old thus tend to have a low saving rate, while the highest saving rates are recorded by people who are at or around the peak of their earnings. This idea has been captured in the empirical work using the variables- dependency ratios; where a decline in saving would be expected in response to an increase in the variable. It is also this idea that has led to the projection of a downward trend in saving in the near future due to the ageing of the population, declining birth rates, declining labour participation rate and increasing life expectancy. Hence, life expectancy and labour participation rate are an important determinant of saving. Price movement has been identified as one of the factors that explain saving through its negative impact on income and value of wealth. If consumers attempt to maintain a target level of wealth or liquid assets relative to income, saving will rise with inflation. Therefore, inflation rate is used in this paper as a measure of price
movement. As stated earlier, Browning and Crossley (2001) and Attanasio (1999) supported the idea that the life cycle theory described above provides a general framework upon which modifications can be made to suit the specific circumstances of the economies of interest.

Thus, in addition to the variables captured by life cycle theory above, other factors are included in the saving model to account for the peculiar features of the African economies. For instance, a common characteristic of African countries is unstable and unfavourable terms of trade due to heavy reliance on primary products export (Prebish-Singer hypothesis). The term of trade (ratio of an export price index to an import price index) is a critical variable in an open economy for explaining the behaviour of income and saving. The traditional explanation of the relationship between the terms of trade and saving is rested on the Harberger-Laursen-Metzler hypothesis, according to which deterioration in the terms of trade reduces real income and hence, saving.

Deficit budget is another common feature of the African economies. Moreover, various fiscal actions of the government can have a bearing on saving. High government expenditure will tend to raise consumption and discourage saving by shifting the burden from present to future generations. Similarly, a decline in government saving or an increase in government deficit will cause a decline in national saving depending on its financing either by using past savings or borrowing from internal or external sources. It has also been argued under the “Ricardian equivalence hypothesis” that a change in government savings is offset by an opposite change in private savings. This suggests that government dissaving (through deficit) affected private saving. In this paper, government fiscal action is proxied with government budget position.

Against the background of the above LCT, equation 8 can be modified to cover demographic variables and variables that reflect the peculiar features of an economy or groups of economies (such as West African economies) as done in previous studies reviewed. Thus, saving equation that has been estimated in previous studies is expressed as follows;

\[ gds = b_0 + b_{grgdp} + b_{tot} + b_{gbp} + b_{brmo} + b_{gbppe} + b_{inf} + b_{int} + b_{depr} + b_{life} + b_{lap} + U \]

\[ 9 \]

that cannot include every variable affecting both consumption decisions and savings decisions
Where $gds$ is Gross Domestic Saving Rate (measured Gross domestic saving as a percentage of GDP), $grgdpg$ is Growth Rate of Gross Domestic Product, $tot$ is Terms of Trade, $gbp$ is Government Budget Position (Fiscal deficit or surplus as a percentage of GDP), $brmo$ is Degree of Financial Depth (measured as broad money as a percentage of GDP), $gdppc$ is Gross Domestic Product Per Capita (GDP as a ratio of population), $inf$ is Inflation Rate, $int$ is Interest Rate, $depr$ is Dependency Ratio, $life$ is Life Expectancy, $lfp$ is Labour Participation Rate.

**Determinants of savings in ECOWAS.**

Both theoretical and empirical works on saving have consistently outlined the major determinants of saving which can be broadly grouped as: government policy variables, financial variables, uncertainty variables and external variables. Based on data availability, the specific variables that are of focus in this paper are: inflation rate, interest rate, growth rate of GDP, per capita GDP, terms of trade, budget position, broad money as a ratio of GDP, dependency ratio, life expectancy, and labour force participation rate. The trends of the identified variables determining saving rate in ECOWAS are examined in what follows.

**Income (GDP) growth and per capita:** Given that one of the major determinants of saving is income, it becomes expedient to examine trends of income in ECOWAS (in terms of growth and per capita). The growth of output/income and per capita income in ECOWAS has been very low due to poor macroeconomic environment. This has been responsible for low saving and investment rates in ECOWAS. From the low level of 2.1 per cent in the period 1980-1985, average growth rate of GDP in ECOWAS increased to 3.7 per cent in the period 1985-1990 (Table 4). This was not sustained as it reduced to 2.6 per cent in the period 1990-1995. Again, ECOWAS GDP increased to 3.3 and 5.4 per cent in the period of 1995-2000 and 2000-2006 respectively. Per capita GDP in the sub-region was $422 in the period 1980-1985. This is very low compared to that of the middle income and developed economies. Despite the low level of GDP per capita in ECOWAS, it continued to decline throughout the period of study, and it stood at $379 in the period of 2000-2006.

**Inflation Rate:** High rate of inflation continues to be a source of serious problem in the ECOWAS countries. High inflation rate disrupts steady growth by distorting saving and investment. The prevailing high rate of inflation largely erodes people’s purchasing power and hence reduces their capacity to save. As could be seen in Table 4, ECOWAS witnessed a very high inflation rate in the period 1980-1985. The average inflation rate in the period was as high as 20.4 percent, although it reduced to 10.3 per cent in the period 2000-2006, but remained double digit throughout the period of the study.
Savings Interest Rate: Whereas, saving interest rate impact negatively on consumption expenditure, its influence on saving is expected to be positive. Average interest rate was below 10.0 percent in ECOWAS during the period 1980-1985. The interest rate increased to 14.2 per cent in the period 1990-1995, and subsequently reduced to 7.2 per cent in the period 2000-2006.

Financial Depth or Development (measured as Broad Money as a ratio of GDP): As shown in Table 4, broad money as a ratio of GDP in ECOWAS reduced from 27.4 percent in 1980-1985 to 21.1 percent 1990-1995. Broad money as percentage of GDP picked up and rose to 28.3 percent in 2000-2006.

TABLE 4: TRENDS OF SAVING DETERMINANTS IN ECOWAS.9

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DETERMINANTS OF SAVING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth Rate of GDP</td>
<td>2.1</td>
<td>3.7</td>
<td>2.6</td>
<td>3.3</td>
<td>5.4</td>
</tr>
<tr>
<td>GDP Per Capita</td>
<td>422</td>
<td>407</td>
<td>416</td>
<td>402</td>
<td>379</td>
</tr>
<tr>
<td>Inflation Rate</td>
<td>19.1</td>
<td>20.4</td>
<td>17.1</td>
<td>10.8</td>
<td>10.3</td>
</tr>
<tr>
<td>Saving Interest Rate</td>
<td>8.2</td>
<td>10.9</td>
<td>14.2</td>
<td>8.4</td>
<td>7.2</td>
</tr>
<tr>
<td>Broad Money/GDP</td>
<td>27.4</td>
<td>23.6</td>
<td>21.1</td>
<td>23.6</td>
<td>28.3</td>
</tr>
<tr>
<td>Budget Position (deficit as a % of GDP)</td>
<td>-5.8</td>
<td>-4.6</td>
<td>-6.2</td>
<td>-4.3</td>
<td>-4.6</td>
</tr>
<tr>
<td>Dependency Ratio</td>
<td>0.9</td>
<td>0.9</td>
<td>0.9</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Life Expectancy</td>
<td>47</td>
<td>49</td>
<td>50</td>
<td>51</td>
<td>51</td>
</tr>
<tr>
<td>Labour Participation</td>
<td>45</td>
<td>44</td>
<td>43</td>
<td>43</td>
<td>43</td>
</tr>
<tr>
<td>Terms of Trade</td>
<td>102.4</td>
<td>100</td>
<td>119</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Author’s computation from The World Bank, African Development Indicators. (Various issues)

Dependency Ratio: The dependency ratio is one of the major determinants of saving. High dependency ratios enlarge consumption expenditure and will not permit households to save. The dependency ratio in ECOWAS is abnormally high. Table 4 shows that the ratio is 90 per cent on the average throughout of the period of study.

9 Only data on saving were up to 2008. Recent editions of the sources of other variables were not accessible.
Life Expectancy: Life expectancy rate is also an important determinant of saving. This is based on the fact that, life expectancy rate has been so low over the years and the level of poverty has been high in Africa and ECOWAS in particular. Table 4 reveals that the life expectancy in ECOWAS was far below 50 years between 1980 and 1995. It increased to 51 per cent in the period 2000-2006.

Labour Participation Rate: Labour participation rate is another determinant of saving. Since saving is defined as the excess of income over expenditure on consumption, therefore, income has to be earned from provision of labour services before the leftover could be saved. A look at Table 4 shows that, the proportion of labour that participates in economic activities in ECOWAS was low. Throughout the period 1980-2006, the labour participation rate ranged between 43 and 45 per cent. This suggests that the rate of unemployment through the period of study is over 50 per cent.

Government Budget Position: The ECOWAS sub-region witnessed a high government deficit rate (budget position as a percentage of GDP) throughout the period of study. This implies that governments in the ECOWAS have been financing their budget through borrowing from various sources (including borrowing from IMF and the World Bank). In the period 1980-1985, the ECOWAS experienced a budget deficit size of 5.8 per cent. Budget deficit as a ratio of GDP grew worse in the ECOWAS at 6.2 per cent in the period 1990-1995. In sum, the sub-region witnessed budget deficit throughout the period of study. The mode of financing this deficit has implications on saving and investment.

Terms of Trade: The trend of terms of trade in ECOWAS was not stable throughout the period of study. It rose from 102.4 percent in 1980-85 to 119 percent in 1990-95.

METHODOLOGY

Model Specification

On the basis of the theoretical framework presented in the forgoing, saving function for the empirical analysis in this paper is specified in panel data model form to enable estimation to be carried out for the entire ECOWAS consisting of about 15 nations. Thus, for the purpose of estimation, five specifications (panel data models) are derived from equation (8) as follows:

Model 1: Pooled Estimation

\[ gds_{ik} = b_0 + b_1 grgdp_{ik} + b_2 tot_{ik} + b_3 ghp_{ik} + b_4 brma_{ik} + b_5 gdp_{ik} + b_6 inf_{ik} + b_7 int_{ik} + b_8 depr_{ik} + b_9 life_{ik} + b_{10} lap_{ik} + U_{ik} \]
Model 2: Panel Data Models capturing only country effect

a. Country Fixed Effect Regression

\[ g_{dsk} = \delta_0 + \delta_{grgd}_{sk} + \delta_{tot}_{sk} + \delta_{gbp}_{sk} + \delta_{brmo}_{sk} + \delta_{gdppc}_{sk} + \delta_{inf}_{sk} + \delta_{int}_{sk} + \delta_{depr}_{sk} + \delta_{life}_{sk} + \delta_{lap}_{sk} + \sum_{i=1}^{14} \delta_{iTDum} + U_{ik} \]

b. Country Random Effect Regression

\[ g_{dsk} = C + \theta_{grgd}_{sk} + \theta_{tot}_{sk} + \theta_{gbp}_{sk} + \theta_{brmo}_{sk} + \theta_{gdppc}_{sk} + \theta_{inf}_{sk} + \theta_{int}_{sk} + \theta_{depr}_{sk} + \theta_{life}_{sk} + \theta_{lap}_{sk} u_i + U_{ik} \]

Model 3: Panel Data Models capturing both country and Period effects

a. Country and Period Fixed Effect Regression

\[ g_{ds} = X_{grgd}_{sk} + X_{tot}_{sk} + X_{gbp}_{sk} + X_{brmo}_{sk} + X_{gdppc}_{sk} + X_{inf}_{sk} + X_{int}_{sk} + X_{depr}_{sk} + X_{life}_{sk} + X_{lap}_{sk} + \sum_{i=1}^{14} \delta_{iTDum} + \sum_{i=1}^{27} x_{iTDum} + U_{ik} \]

b. Country and Period Random Effect Regression

\[ g_{ds} = C + d_{grgd}_{sk} + d_{tot}_{sk} + d_{gbp}_{sk} + d_{brmo}_{sk} + d_{gdppc}_{sk} + d_{inf}_{sk} + d_{int}_{sk} + d_{depr}_{sk} + d_{life}_{sk} + d_{lap}_{sk} u_i + w_i + U_{ik} \]

Where \( tk_i \) is Time period t in country k, \( gds \) is Gross Domestic saving Rate, \( grgd \) is Growth Rate of Gross Domestic Product, \( tot \) is Terms of Trade, \( gbp \) is Government Budget Position, \( brmo \) is Degree of Financial Depth, \( gdppc \) is Gross Domestic Product Per Capita, \( inf \) is Inflation Rate, \( int \) is Interest Rate, \( depr \) is Dependency Ratio, \( life \) is Life Expectancy, \( l fp \) is Labour Force Participation Rate, \( C \) is the constant, \( \sum_{i=1}^{14} \delta_{iTDum} \) is the country dummy, \( \sum_{i=1}^{27} x_{iTDum} \) is the period dummy, \( U_{ik} \) the regression error term, \( u_i \) the country error term, \( w_i \) the period error term.
Estimation Techniques and Method of Analysis

Since the study is based on regional analysis of determinants of saving that involves the fifteen ECOWAS countries\textsuperscript{10}, estimation techniques for panel data model is used. Panel data entails a group of cross-sectional units observed over time. The use of panel data approach offers some basic advantages over the conventional cross sectional or time series data sets. Firstly, the use of panel data allows researchers to exploit the time series nature of the saving determinants in the ECOWAS countries. The panel approach therefore includes more information than the pure cross-country approach with positive ramifications on the precision of the coefficients. Secondly, in a pure cross-country instrumental variables regression, any unobserved country-specific effect becomes part of the error term, which may bias the coefficient estimates. Thirdly, the panel estimator controls for the potential endogeneity of all explanatory variables. Four, by combining time series of cross section observations, panel data give more variability, less colinearity among variables, more degrees of freedom and more efficiency over time series estimator. (Baltagi, 2005; Gujarati, 2005; Wansbeek, 2001; Hsiao, 2003; and Adewuyi and Akpokodje, 2007). Panel data estimators comprise of fixed effect and random effect estimator, which include least square and Generalised least squares (GLS). The significance of individual and period effects will also be tested.

The saving equations (10-14) are estimated for aggregate ECOWAS using the panel data covering 1980-2006 generated for fourteen countries out of the fifteen countries of ECOWAS (excluding Liberia) The countries are: Benin, Burkina Faso, Cape Verde, Cote d’Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo.

Sources of Data

The sets of data for this paper were gathered from a number of sources. Growth Rate of Gross Domestic Product, Gross Domestic Product per Capita, Inflation rate, Interest rate, Life Expectancy and Gross Domestic Saving rate were obtained from African Development Indicator (ADI) published in 2000 and 2007. Others such as labour participation rate, Government budget position and Terms of trade were obtained from African Development Bank selected statistics on African countries Vol. XXI and XXVI-published in 2002 and 2008). The Degree of Financial Depth was calculated based on

\textsuperscript{10} Fourteen countries data were estimated, the data of Liberia is not available.
data was obtained from International Financial Statistics (IFS) year book published in 1998 and 2007, while Dependency Ratio, was obtained from World Development Indicator (WDI-various Years).

EMPIRICAL ANALYSIS

The results of the saving function estimated based on a pool of ECOWAS data are presented in Table 5. On the ECOWAS saving function estimates, the Langrange multiplier (LM) test was used to test the hypothesis of whether to choose the panel estimations (Models 2 and 3) over classical pooled estimation (Model 1). Since the computed Language multiplier test statistics (18.34 and 18.30) are greater than the 95 percent critical value for chi-squared with one degree of freedom of 3.84, we therefore conclude that models (2) and (3) are superior to model (1).

Moreover, we need to choose between the fixed effect model and Random effect model. In order to do this the Hausaman specification test (HST) developed by Hausaman in 1978 was carried out. It is difficult to make this decision in model (2) because the HST statistics is very low (less than 0.1). However, the HST statistic for model (3) is 9.32, while the critical value from the chi-squared table with ten degree of freedom is 18.30 (which is far larger than the test value). Hence, the hypothesis that the individual effects are uncorrelated with the others regressors in the model cannot be rejected. Based on all these tests we conclude that of the two alternatives considered, the fixed effects model is preferred.

Analysis of Impact of Economic Variables on Savings

The growth rate of gross domestic income has a positive but insignificant effect on the gross domestic saving in ECOWAS. However, the gross domestic income per capita has a significant negative impact on the gross domestic saving. This result neither follows the a priori expectation nor consistent with the result of previous studies for developing countries (Collin, 1991; Schmidt-Hebbel, Webb and Corsetti, 1998 and Ozcan, 2000). This result implies that a unit increase in gross domestic income per capita leads to a negative decrease of 79 per cent in the saving rate in ECOWAS. The negative impact of gross domestic income per capita on saving may largely be due to dissaving or low level of income as a result of high level of poverty in most of the countries of ECOWAS.

Result shows that interest rate has a significant negative impact on the gross domestic saving, suggesting that income effect outweigh the sum of substitution and human-wealth effects. This result is supported by the findings of Schmidt-Hebbel, Webb and Corsetti (1992 and 1998) which reported negative effect of interest rate on saving rate for a sample of 10 Developing countries. In turn, our indicator of financial depth (broad money-GDP ratio) has significant negative impact on the gross domestic saving in
ECOWAS. This is not consistent with a priori expectation of positive relationship or impact but it is in line with the result obtained by Schmidt-Hebbel, Webb and Corsetti (1992 and 1998) for a sample of 10 Developing countries. The result in respect of impact of government budget position is consistent with the expectation that high government deficit hinders saving rate. This is also consistent with the findings of Kelly and Mavrotas (2003) who reported evidence of Ricardian equivalence hypothesis in their findings for 17 African countries. As in most recent growth literature our proxy for macroeconomic (in)stability and uncertainly are inflation rate and terms of trade respectively. The regression result shows a significant negative influence of inflation and terms of trade on gross domestic saving in ECOWAS. The direct implication of this result is that high rate of inflation hinders saving rate, while inflation stabilization at a relatively low level increases saving rate.

Table 4: Regression Results of the Determinants of Saving in ECOWAS

<table>
<thead>
<tr>
<th>Models (1) Pooled</th>
<th>Model (2) Country Effects</th>
<th>Model (3) Country and Time Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>OLS</td>
<td>Fixed Effects</td>
<td>Random Effects</td>
</tr>
<tr>
<td>Grdgp</td>
<td>-0.5686</td>
<td>0.1762</td>
</tr>
<tr>
<td></td>
<td>0.1405</td>
<td>-0.2412</td>
</tr>
<tr>
<td>Tot</td>
<td>-0.1107***</td>
<td>-0.7122**</td>
</tr>
<tr>
<td></td>
<td>-0.8838**</td>
<td>-0.6656*</td>
</tr>
<tr>
<td>M2/gdp</td>
<td>-0.4783***</td>
<td>-0.8838**</td>
</tr>
<tr>
<td></td>
<td>-0.38082**</td>
<td>-0.3091***</td>
</tr>
<tr>
<td>Gdpcc</td>
<td>0.1174***</td>
<td>-0.2081***</td>
</tr>
<tr>
<td></td>
<td>-0.9887**</td>
<td>-0.7921***</td>
</tr>
<tr>
<td>Inf</td>
<td>-0.1229***</td>
<td>-0.1125***</td>
</tr>
<tr>
<td></td>
<td>-0.1065**</td>
<td>-0.1042**</td>
</tr>
<tr>
<td>Int</td>
<td>-0.2158*</td>
<td>-0.5254**</td>
</tr>
<tr>
<td></td>
<td>-0.1044</td>
<td>-0.4037**</td>
</tr>
<tr>
<td>Depr</td>
<td>-0.3413</td>
<td>0.2319</td>
</tr>
<tr>
<td></td>
<td>0.1027</td>
<td>0.1562</td>
</tr>
<tr>
<td>Gbp</td>
<td>-0.2946***</td>
<td>-0.1479*</td>
</tr>
<tr>
<td></td>
<td>-0.1972**</td>
<td>-0.1365***</td>
</tr>
<tr>
<td>Life</td>
<td>0.1443</td>
<td>0.1479*</td>
</tr>
<tr>
<td></td>
<td>0.1972</td>
<td>0.2506*</td>
</tr>
<tr>
<td>Lfp</td>
<td>-0.4195</td>
<td>-0.1700</td>
</tr>
<tr>
<td></td>
<td>-0.2663</td>
<td>0.2506</td>
</tr>
<tr>
<td>Constant</td>
<td>31.8043***</td>
<td>27.1091***</td>
</tr>
<tr>
<td></td>
<td>27.0496**</td>
<td>27.2400***</td>
</tr>
<tr>
<td>R²</td>
<td>0.29</td>
<td>0.44</td>
</tr>
<tr>
<td></td>
<td>0.38</td>
<td>0.62</td>
</tr>
<tr>
<td>AIC</td>
<td>6.82</td>
<td>6.42</td>
</tr>
<tr>
<td></td>
<td>6.51</td>
<td>6.51</td>
</tr>
<tr>
<td>HAUSMAN</td>
<td>-</td>
<td>0.009</td>
</tr>
<tr>
<td></td>
<td>9.30</td>
<td>9.30</td>
</tr>
<tr>
<td>DW</td>
<td>1.03</td>
<td>1.80</td>
</tr>
<tr>
<td></td>
<td>1.83</td>
<td>1.83</td>
</tr>
<tr>
<td>LM</td>
<td>-</td>
<td>18.34</td>
</tr>
<tr>
<td></td>
<td>18.34</td>
<td>18.34</td>
</tr>
</tbody>
</table>

Model LR (x²) F-ratio
(2) Vs (1) 88.61 16.22
(3) Vs (2) 151.5 13.4
(3) Vs (1) 115.3 3.60

Note: White heteroscedasticity corrected covariance matrix used and *, **, *** indicates significance at the 10%, 5% and 1% respectively.

Source: Authors’ Computation
It should be recalled that the effect of inflation on saving is ambiguous. This is because inflation could affect saving through its negative impact on income and value of wealth. However, if consumers attempt to maintain a target level of wealth or liquid assets relative to income, saving could rise with inflation. This finding falls in line with the reports of Schmidt-Hebbel, Webb and Corsetti (1992 and 1998) but runs contrary to that of Ozcan (2000). The result in respect of terms of trade is consistent with the Prebish-Singer and Harberger-Laursen-Metzler hypotheses of adverse effect of terms of trade on income and saving. However, it is inconsistent with the findings of Ozcan (2000) for a sample of economies in the Middle East and North Africa (MENA).

**Analysis of Impact of Demographic variables on Saving**

Against the standard life-cycle hypothesis of consumption, the dependency ratio in ECOWAS has insignificant positive effect on gross domestic saving. This result could be so if a reasonable number of the dependent population earns some income. Labour force participation has insignificant negative effect on gross domestic saving. This is against the a priori expectation that it increases saving. Life expectancy has significant positive impact on gross domestic saving in ECOWAS. This is a manifestation of certain characteristic of African countries where the aged people continued to involve themselves in productive and income earning activities (especially farming) till their death. Although life expectancy is low in the cities, relatively aged people clustered around the villages where farming (the mainstay of African economy) takes place. Moreover, the syndrome of bequest that is very peculiar to the Africans is a possible reason. More explicitly, the aged in the region save a substantial portion of their incomes to be given to their children as inheritance.

**SUMMARY OF FINDINGS AND LESSONS FOR POLICY**

**Summary of Findings**

This paper which covers 1980 to 2008 examined the determinants of saving in the ECOWAS. It was observed that the growth rate of gross domestic saving has been low in ECOWAS countries since 1980. Although the saving rate rose from 4.4 percent in the period 1980-1984 to 11.9 percent in the period 2005-2006, it is low to finance investment in order to drive economic growth. An attempt is made to explain factors behind the decline or low level of saving in ECOWAS is made in this paper. Thus, combined with descriptive statistics, we employed panel data model to analyse both economic and demographic factors determining saving in the sub-region.

Empirical results reveal that apart from growth rate of gross domestic income and financial development variable which have insignificant (but positive and negative
respectively) effects on the gross domestic saving in ECOWAS, other economic variables have significant impact. It was found that the gross domestic income per capita has a significant negative impact on the gross domestic saving. The negative impact of gross domestic income per capita on savings may largely be due to dissaving or low level of income as a result of high level of poverty in most of the countries of ECOWAS.

Result shows that saving deposit rate has a significant negative impact on the gross domestic saving, suggesting that income effects outweigh the sum of its substitution and human-wealth effects. Similarly, the low level of financial depth or development in most West African economies hinders saving rate. The result also shows a significant negative influence of inflation, government budget deficit and terms of trade on gross domestic saving in ECOWAS. Thus, there is need to maintain price and macroeconomic stability to promote saving, investment and growth in West Africa.

Among the demographic factors only life expectancy has significant impact on gross domestic saving in ECOWAS. Besides, the impact is positive. Given that life expectancy is low in ECOWAS, this may be a manifestation of the participation of the aged in the productive and income earning activities for many purposes including the bequest syndrome in Africa.

**Lessons for Policy**

Since empirical results reveal that income variables did not promote saving, therefore there is the need to raise the level of income (both growth and per capita) so as to reduce the level of poverty in most of the countries of ECOWAS. Saving cannot be encouraged in the presence of high level of poverty. Macroeconomic environment for production (particularly adequate power supply and transportation network) needs to be improved, while productivity and output can be enhanced through human resource development. Low level of per capita income is as a result of high rate of population growth. Therefore, rapid population growth needs to be checked unless it can be matched with a corresponding rapid output growth. This coupled with provision of employment will reduce the dependency rate and promote saving.

The on-going financial sector reform in most West African countries needs to be intensified so that the sector can focus on its primary role of resource mobilization and allocation. In most West African economies, interest rate spread is very wide (saving rate is very low, while lending rate is very high). This can only be the case if there are many rent-seeking activities in the sector at the expense of the primary activities of resource mobilization and allocation. The effectiveness of the financial sector reform would promote financial development in most West African economies. There is the need to address the problem of persistence budget deficit and terms of trade instability in ECOWAS countries. This can be done through policy harmonization and coordination.
at the ECOWAS level. Promotion of industrialisation and export will make ECOWAS countries get out of the terms of trade instability due to their heavy reliance on primary product export.

The paradox of “life expectancy promoting saving” (as indicated by the empirical result) when in actual fact life expectancy is low in ECOWAS needs more examination. The argument that the participation of the aged in the productive and income earning activities promote saving is not reliable. Therefore policies and programmes have to be designed to increase life expectancy in ECOWAS states so as to stimulate saving.
REFERENCES


