

The Long Run Determinants of Private Domestic Savings in Ghana: A Cointegration Approach

DAVIS ADU LARBI

DEPARTMENT OF ECONOMICS, CENTRAL UNIVERSITY COLLEGE

P.O.BOX DS2310, ACCRA.

davislarbi80@yahoo.com

ABSTRACT

The paper has explored the determinants of private savings in Ghana using the Phillips and Ouliaris (1990) residual-based tests for cointegration to determine the long run relationship between private savings and its determinants.

Financial liberalization, per capita income and inflation were found to have a positive and significant relationship with private savings. The positive and significant coefficient of the fiscal deficit variable confirmed the Ricardian Equivalence hypothesis in Ghana. There is a strong willingness to save but the capacity to save is not very robust. Financial liberalization is recommended to be deepened to give financial institutions room for improved financial packages for increased savings. Growth should be pursued vigorously to improve incomes and hence people's capacity to save. In spite of the results for fiscal deficits, government must keep its spending within sustainable limits and invest appropriately.

1. INTRODUCTION AND PROBLEM

The central problem in the theory of economic development, wrote W. Arthur Lewis (1954, 155), "is to understand the process by which a country which was previously saving and investing four or five percent of national income converts itself into an economy where private saving is running at about twelve and fifteen percent of the national income or more". Nurkse (1953) and Myint (1967), among others have argued that in low income countries there is a vicious cycle of low income leading to low savings, low investment and back to low income. Failure to break the vicious cycle by raising the saving proportion of income results in perpetual stagnation and poverty. In any development pattern (capitalism or socialism), for a country to develop, it must exert a major effort to improve its savings ratio.

Indeed differences in saving rates are a clear distinguishing factor between thriving economies and stagnant ones (Dani Rodrik, 1998). Over the 1984-94 periods, there were 31 countries in which per capita GDP grew at an annual average rate of 2.5 percent or higher. In this set of successful countries, the median saving rate was 24 percent (Dani Rodrik 1998). By contrast, the median saving rate in the 59 countries in which per capita income grew at less than one percent per year stood at 16 percent. Assuming all domestic saving rates translates into domestic investment and that all long run incremental capital-output ratios is around 5, virtually all of the gap in growth between these two groups of countries can be accounted for by the differences in their saving performance.

As a matter of fact and accounting necessity investment has to be financed by saving from either domestic or foreign sources. In practice, there have been few cases of high investment countries, perhaps none at all where foreign saving has accounted for more than 20 percent of investment over long stretches of time. In an economy investing say 30 percent of its GDP, relying on foreign savings beyond this limit would be courting with disaster. Hence the critical importance of domestic saving in economic growth follows from a few straight forward facts of economic life. Although saving ratios for sub-Saharan African (SSA) countries have been low and deteriorating over the last two decades. Ghana's performance was far below the regional average. The regional average declined from more than 11 percent of disposable income in the 1970s to less than 8 percent in the 1980s and only partially

recovered to less than 9 percent in the 1990s (Elbadawi and Mwegu 2000).

Since independence, the average saving rates have fluctuated widely in Ghana. At 1975 constant prices it was about 14 percent in 1957, a high figure by the standard of developing countries at that time. It even increased to 22 percent in 1964, but since then savings rate has been generally declining, at times very rapidly. For 1971 and 1972 however the saving rates were unusually high at 17 and 20 percent respectively. This was however not surprising perhaps considering the big jump in export earnings in 1970 and 1972 which allowed higher imports of investment goods. In the 1974-79 periods, private saving ratio in Ghana was 14.14 declining in the 1980-85 period to 7.33. This showed an even worse decline in the 1986-93 period where private saving ratio in Ghana was a negative 0.15 (Economic Reforms in Ghana, Edited by Aryeetey and Harrigan, 2000). Prior to 1986, low interest rate policies were accountable for the low domestic saving mobilization in Ghana. There was no clear policy to mobilize savings because the wisdom then was that low interest rates would induce investment, which in turn would increase output and employment and consequently lead to higher saving. Interest rates were seen as the cost of investible resources and saving was regarded as being predominantly income-determined. According to the World Development Indicators, between 1980 and 2001, saving in Ghana averaged 6.4 percent compared to 37.4 percent in Botswana, 21.4 percent in Cameroon, 21.6 percent in Nigeria, 13.9 percent in Kenya (World Development Indicators, 2003). Currently, Ghana's saving rate is below the average for the ECOWAS region. In 2006, the savings rate was 6.1 percent, declining to 3.8 in 2007. Savings in the year 2008 when Ghana recorded its highest growth rate in decades stood at 2 percent of GDP. Average savings rate from 2000 to 2004 was 6.87 percent of GDP, well below the sub-regional average.

Serious questions are being raised about Ghana's debt sustainability despite the expected revenues from crude oil. The rising trends in foreign resource inflows to Ghana in the face of declining trends in private savings raise questions of doubt about the country's ability to attain the necessary growth rates associated with middle income status as evidenced by the experience of other countries. Indeed, the third world debt crises showed that Latin American and African countries that depended on external finance to promote economic development in the 1960s and 1970s had their growth disrupted. On the contrary, those Asian countries that relied on domestic resource mobilization were most successful. To finance investment required for economic growth, the economy needs to generate sufficient savings. Botswana and Malaysia with domestic saving rates of 30 and 36 percent respectively have been able to register high economic growth rates over the past decades. Thus, countries with high saving ratios generally enjoy high rates of growth (Shiimi and Kadhikwa, 1999). This paper therefore ascertains the determinants of private domestic savings in Ghana, looking mainly at macroeconomic determinants with a test of the hypothesis that the Ricardian equivalence hypothesis holds in Ghana. Section one of the paper deals with the problem and hypothesis, section two deals with literature, section three discusses the methodology and section four discusses the results and makes policy recommendations.

2.1 LITERATURE

In estimating private saving in Arab developing countries, specifically Turkey and Iran, Kivilcim Metin Ozcan (2000) estimated a linear model.

The estimation had an R-squared of 0.9216 and an adjusted R-squared of 0.90504 and a probability (F-statistic of 0.0000). Real per capita income was positive (0.08) and statistically significant. In addition, the real per capita growth rate was statistically significant with a coefficient of 0.15. None of the demographic variables (young and old dependency ratio) was statistically significant. Their sign were however negative as predicted by the life cycle hypothesis. A negative and statistically significant coefficient (-0.24) confirming the fact that government saving will crowd out private saving. The coefficient was however statistically different from -1 implying the crowding out is partial. Private credit coefficient was positive and statistically significant as suggested by Edwards (1996). The rate of inflation showed a positive sign of

0.09 and statistically significant at 5 percent confidence level. Real interest rate effect on private saving was however insignificant statistically.

Roger Kelly and George Mavrotas (2003) of the University of Manchester estimated a co-integrated model for savings and Financial Sector Development using a panel data for 17 African countries including Ghana. The long run equations using Johansen cointegration procedure shows that in the case of Ghana, the coefficient of RGPDI is 0.017 and statistically significant. This means that increases in disposable income generates a positive increases in private savings. This is in contrast with the findings of Quartey and Blankson(2000). Interestingly the coefficient of GOVSAV was positive 0.481 and statistically significant at 1 percent level. The implication of this is that government taxation or deficit financing generates increases in private savings. Thus the Ricardian Equivalence applies in the case of Ghana though not as robust as was proposed originally. PCRED was negative (-1.447) and statistically significant. FSDI was a positive (0.140) and statistically significant at 1 percent level, meaning that Ghana's financial sector reforms have increased private savings in Ghana.

In their study, Klaus Schmidt-Hebbel and Luis Serven (2000) reported a positive correlation between income and saving when empirical equations test income as a determinant of private saving in Chile. They estimated that doubling per capita income raises long term saving rates by 10 percent. Thus policies that foster income growth, foster saving. A related income distribution variable showed no significant effect on private savings.

Loayza, Schmidt-Hebbel and Serven (2000) again tested the impact of income growth on the level of private savings for Chile. Their results indicated that a one percent increase in the growth rate increases savings by a similar magnitude although the effect may be temporary.

In a study by Attanasio, Picci and Scorcu (2000), it was found that growth Granger causes saving although the effect was weak. The study suggested that increases in saving do not always precede increases in growth and that a negative relationship exists between lagged saving rates and the current level of income.

Empirical evidence shows that the offsetting effect caused by public saving on private saving is only partial although public saving is one of the powerful tools that can be used to influence private saving. The magnitude of the impact seems to differ widely both among estimations and also among countries. For example, while Loayza and Shankar (2000) estimated a compensation coefficient below 30 percent for India, Burnside (1998) finds figures above 80 percent for Mexico. Schmidt- Hebbel and Serven (2000) also pointed at liquidity constraints as the main explanation for the absence of full Ricardian Equivalence in their study Chile.

A study by Shiimi and Gerson Kadhikwa (1999) estimated the long run private savings function for Namibia as: The results of the regression suggested that real private saving is only significantly influenced by real gross national disposable income. The coefficients for both inflation and the real deposit rate were not significant whilst the coefficient of inflation had a positive sign contrary to expectations.

As regards private credit, Loayza, Schmidt-Hebbel and Serven (2000) find that a 1 percent increase in the flow of private credit relative to income reduces the long run saving rate by 0.74 percent. Koskela et al (1992) and Lehussari (1990) find similar result in some Scandinavian countries.

With respect to financial liberalization, Japelli and Pagano (1994) found financial liberalization to be significant in explaining changes in savings with a positive (2.6) points. Bandiera et al (2000) analyzed the experience of eight countries that underwent reforms namely Chile, Ghana, Indonesia, Korea, Malaysia, Mexico, Turkey and Zimbabwe. Their results presented the effect as significantly negative in Korea and Mexico, positive in Greece and Turkey and insignificant in the rest including Ghana. Bennett et al (2001) found a negative significant effect of one of the measures of financial liberalization on private saving. They observed that an increase in financial depth observed between 1977 and 1997 reduced private saving by 0.12.

George Hondroyiannis (2000) study of private saving behaviour for Greece and found that; Demographic variables exert a positive (0.03) impact on private saving behaviour and an old age dependency impact of 0.02 indicating

precautionary saving towards pension. The results of the model also reject the Ricardian Equivalence proposal given the coefficient of GB as negative (0.31). Thus private savings responds to government fiscal policy but far less than 1 in Greece. An increase in liquidity constraints lead to a decrease in private savings thus supporting the Jappelli and Pagano (1994) and Loayza et al (2000) results.

Research on the determinants of domestic savings across countries confirms the overwhelming importance of the level of per capita income, growth of income and financial deepening (Edwards (1996); Masson, Bayoumi and Samiei (1998) and Hussein and Thirlwal). The major conclusions highlighted by Edwards were: per capita income growth is an important determinant of private domestic saving; financial development is important as a determinant of private saving; higher government saving crowds out private saving. PCY is not highlighted as an important determinant of savings because its statistical significance is relatively low compared with other variables but Thirlwal(1999) attributes this to the fact that PCY was entered in linear form whereas in practice the relation between PCY and the savings ratio is non-linear especially when the sample includes high income countries.

The study by Masson et al (1995) used a quadratic specification on panel data for 21 developed countries (1971-93) and 40 less developed countries (1982-93) to explain differences in the ratio of private saving to GDP. Many of the variables were similar to that of Edwards (1996).

Hussein and Thirlwal (1999) also used panel data for 62 countries over the period 1967-95 and essentially distinguished between the capacity and willingness to save. Initially the variables that proved to be significant and robust were the level of per capita income which entered the equation non-linearly, the growth of per capita income (GPCY), the growth of population (POPG) as well as the rate of inflation which entered the equation as quadratic. Personal distribution of income within countries and the real rate of interest proved not to be statistically significant.

As far as PCY is concerned, its impact on the savings ratio was non-linear. Hence, for example, an increase of \$100 in PCY did result in a rise in (S/Y) by \$0.64. A one hundred percent increase in GPCY was associated with an increase of 22 percent of savings ratio. The same percentage change in quasi-liquid assets was associated with 43 percent increase in savings ratio.

Peter Quartey and Theresa Blankson ascertain the impact of policy changes on household savings behaviour in Ghana, using an estimated linear model

Their results indicate that the dependent population in Ghana saves more as their proportion of the total population increases. Interestingly, the results from their analysis indicated that children and the aged had higher savings balances as compared to the working population. This finding is contrary to the life cycle theory That of the female population was positively related to savings though not statistically significant.. Their study also confirmed the theory that households with higher average propensity to consume save less and the analysis revealed that average propensity to consume has increased over their study period and they indicate that it is a clear indication that the liberalization of the financial sector has not improved household savings habit over the two periods. The proportion of the population with basic education saves less as they increase in numbers while that of the population with tertiary education save more as their number increases. Increases in income come with low savings in Ghana according to their results. This is due to the increasing average propensity to consume.

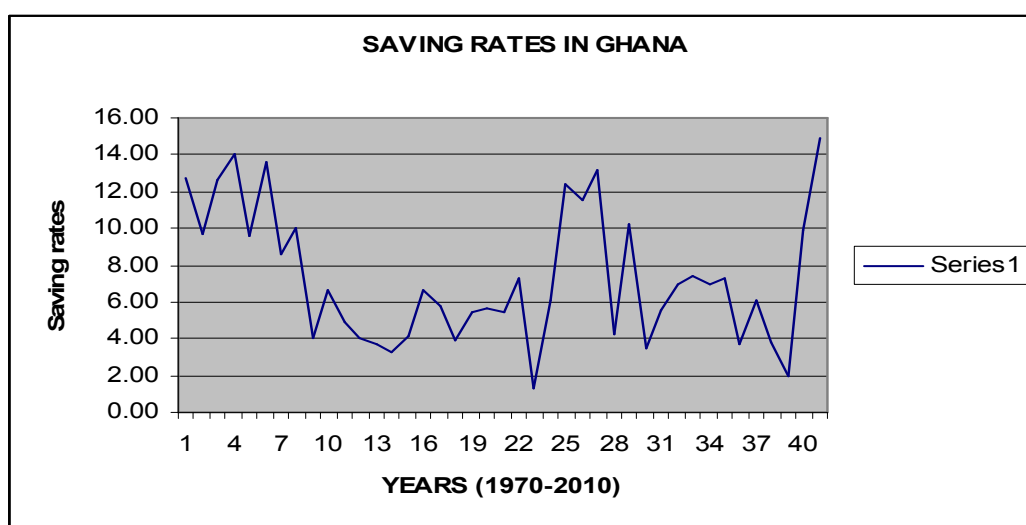
2.2 STYLIZED FACTS OF SAVINGS IN GHANA:

Savings in Ghana since the 1970s have rarely gone past the 15 percent mark as a percentage of Gross Domestic Product (GDP). From a high of 12.78 percent in 1970, private domestic savings declined to 9.64 percent in 1971 and rose above the 1970 rate to 14.08 percent in 1973. Over the 1970-1975 periods, private savings averaged 12.05 percent. Thus per Arthur Lewis (1954) estimations, Ghana was saving enough for its economic development. The period from 1976 up to the immediate pre-reform years (up to 1982) was no different. The average savings rate for the period 1976-1982 was 6.0 percent with the highest saving rate of 10.01 percent recorded in 1977 and lowest

rate of 3.73 percent in 1982.

The reform years 1983-1986 experienced an unimpressive savings rate for Ghana. Private domestic savings in 1983 was 3.32 percent and 4.15 percent, 6.64 percent and 5.8 percent for 1984, 1985 and 1986 respectively. The 1990s recorded an average savings rate of 7.52 with the highest rate of 13.22 in 1996. The most encouraging period over the 1990s as far as private domestic savings is concerned was the period from 1994 to 1996 where savings rates of 12.45, 11.59 and 13.22 were recorded for the years 1994, 1995 and 1996 respectively. The last decade up to the year 2010 has seen an unimpressive savings rate for Ghana. From 5.55% in 2000, 7.02 in 2001 and 7.44 in 2002, private savings dropped to as low as 3.80% in 2007. The year 2008 in which Ghana saw a record growth of over 8 percent also saw the lowest savings rate within the decade of 2.0 percent giving credence to the school of thought that the savings-growth causation is from the former to the latter. Figure one below shows the trend in annual savings rates from 1970 to 2010.

FIGURE 1: TRENDS IN ANNUAL PRIVATE SAVINGS RATES IN GHANA (1970-2010)



SOURCE: AUTHOR'S ESTIMATION USING DATA FROM WDI, IFS AND STATISTICAL SERVICE OF GHANA

Figure 1 above shows fluctuating trends in private saving ratios over the years with the country recording a somehow high rates of private savings in the 70s and the post reform years in the 90s. The nation has experienced poor private savings rates over the larger parts of the study period with recent savings rates far below the level in the 1970s. The average savings rate from 1983 to 1990 was 5.04 percent with the highest savings rate recorded in 1985. Over the period, the lowest rate of private savings was 3.32 percent recorded in 1983.

During the 1991-2000 decade, the year 1996 saw the highest savings rate of 13.22 percent. The previous years of 1994 and 1995 had slightly lower private savings rates of 12.45 percent and 11.59 percent respectively. Savings rate as at the year 2000 had however dropped significantly to 5.5 percent with the mean saving rate for that decade coming up to 7.5 percent.

The period from 2001 to 2010 has not been any better in terms of private savings in Ghana. Even in the year 2008 when Ghana recorded a growth rate of over 8 percent, private savings stood at 2 percent of GDP. The highest savings rate recorded over the period 2001-2010 was 14.93 percent in 2010. The average private savings rate for the period however stood at 7.47 percent.

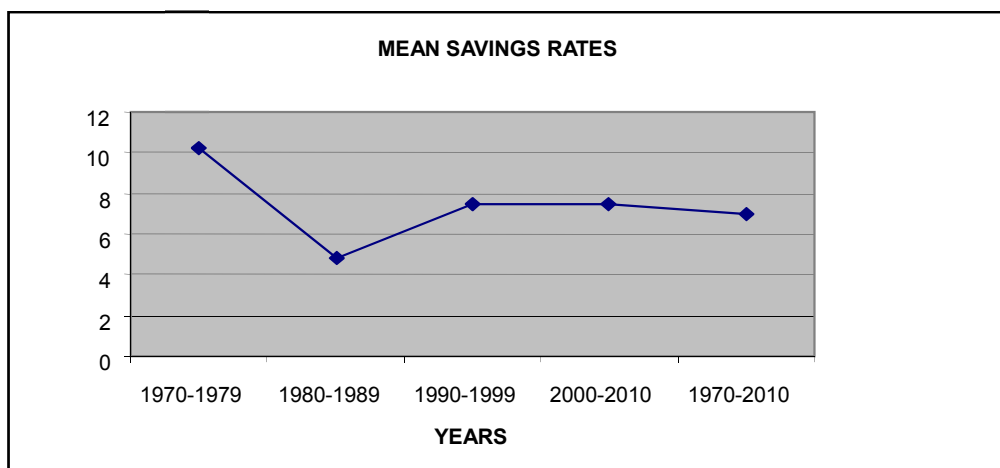
MEAN SAVING RATES IN GHANA

Taking the mean savings rates in Ghana by decade, the highest rate of private savings was recorded over the 1970-79 period with a savings rate of 10.15 percent.

The period between 1980 and 1989 recorded the lowest rate with a mean savings rate of 4.75% of gross domestic

product. The poor showing in private savings could highly be attributed to the unorthodox means adopted by the AFRC and PNDC in interventions in the financial sector which killed public confidence in the banks in particular and the financial sector in general. It also affected the ability of the banks to innovate and mobilize resources

FIGURE 2: MEAN SAVINGS RATES IN GHANA (1970-2008)



SOURCE: AUTHOR'S ESTIMATION

The 1990-1999 periods however saw an improved savings rate though not high enough. Average savings rate for the period came to 7.53 percent of GDP.

From 2000-2009, the mean savings rate was 5.4 percent of GDP with the average savings rate for the whole study period (1970-2008) coming to 7.03 percent of GDP, far lower than Lewis' recommended 15 percent savings rate for developing economies.

Given an average savings rate of 7 percent from 1970 to 2008, the 1970-1979 decade recorded a higher savings rate than that average. Between 1990 and 1999, the savings rate was slightly higher than the average from 1970 to 2008 with a 7.5 percent savings rate for Ghana. The general trend of private domestic savings from 1970 to 2008 has shown a fluctuating trend. Dropping from the over 10 percent rate in the 1970-1979 period to about 5 percent in the 1980-1989 decade. The period from 1990-1999 saw an increase over that of the previous decade to over 7 percent declining again in the next decade of between 2000-2009 to about 5.5 percent of GDP.

Juxtaposing the average saving rates with the corresponding growth rates show no clear trend in the two. While the 1970-1979 decade saw the highest rate of average private savings in Ghana, the lowest average growth rate of 1.4 percent was recorded over the same period. The next decade of 1980-1989 saw a decline in the average saving rate to 4.75 percent of GDP. Within the same period, the growth increased from 1.45 percent in the previous decade to 2.0 percent.

Over the 1990-1999 decade, the average savings rate increased from 4.75 percent in the 1980-1989 periods to 7.53 percent. Over the same period the growth rate was 4.3 percent, up from the 2.0 percent recorded in the previous decade. While the savings rate declined over the next decade (2000-2009) to 5.4 percent of GDP, the growth rate increased 5.5 percent. There has been no consistent trend in the relationship between savings rates and growth rates over the period at least given the growth and private savings data available.

3.0 METHODOLOGY

3.1 MODELLING

Following after similar studies on private savings such as Shiimi and Khadikwa (1999) for Namibia, Quartey and Blankson (2000) for Ghana, Sen and Chandra (2001) for Greece, linear private saving functions are specified. In this study however, five different linear function is specified for Ghana as:

$$\ln PS = f(\ln PCY^2, \ln FD, \ln RER, \ln INF, RIR, FsD, DepR)$$

Where PS is the private savings variable which represents the dependent variable in the models, PCY is the per capital income variable, INF is the year-on-year inflation variable, RIR represents the real interest rate, RER is the real exchange rate variable, FsD is the variable for fiscal deficit, DEPR is a variable representing the dependency ratio in Ghana, FD is the variable representing financial development.

3.2 LONG RUN COINTEGRATION MODEL SPECIFICATIONS

In estimating the long run model of the determinants of private savings in Ghana, five different models are specified based on the evidence of both theoretical and empirical literature on the subject. Thirlwall (1999) and Thirlwall and Hussein (1999) for instance argue strongly for the per capita income variable to be entered as non linear whiles other studies have mainly entered the variable as linear.

3.3 STATIONARITY (UNIT ROOT) AND COINTEGRATION TESTS

The first in analyzing this relationship is the test for stationarity by performing the unit root test using the Augmented Dickey-Fuller (ADF) test for unit root. Thus, the study tests for the time series properties of the variables that enter the private saving model to avoid the estimated coefficients being spurious by employing the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests proposed by Dickey and Fuller (1979; 1981) and Phillips Perron (1998) The null hypothesis is that there is a unit root in our observed time series against the alternative hypothesis that the process is stationary. Since the error term in the

The second step involves the test for cointegration using the Phillips and Ouliaris (1990) residual-based tests for cointegration. Phillips-Ouliaris residual-based tests for cointegration are simply a unit root test applied to the residuals obtained from a static OLS cointegrating regression. Under the assumption that the series are not cointegrated, the residuals are unit root nonstationary. Therefore, a test of the null hypothesis of no cointegration against the alternative of cointegration may be constructed by computing a unit root test of the null of residual nonstationarity against the alternative of residual stationarity. The third step involves the estimation of the fully modified OLS (FMOLS) proposed by Phillips and Hansen (1990). Phillips and Hansen (1990) propose an estimator which employs a semi-parametric correction to eliminate the problems caused by the long run correlation between the cointegrating equation and stochastic regressors innovations. The resulting Fully Modified OLS (FMOLS) estimator is asymptotically unbiased and has fully efficient mixture normal asymptotics allowing for standard Wald tests using asymptotic Chi-square statistical inference.

3.4 DATA SOURCES

The study employs mainly secondary sources of data for its analysis over the period 1970-2010. Data on dependency and budget deficits were drawn from the World Bank's World Development Indicators, 2010 (CD-ROM) and African Development Indicators (various issues). The rest of the data were drawn from the records of the research department of the Ministry of Finance and Economic Planning and The State of the Ghanaian Economy, ISSER, 1993-2002.

4.0 RESULTS AND ANALYSIS

TABLE 3: COINTEGRATION RESULTS

MODELS	Phillips-Ouliaris z- Statistic	Probability
Model 1	-40.96414	0.0297
Model 2	-39.66818	0.0113
Model 3	-40.06908	0.0099
Model 4	-41.95720	0.0111
Model 5	-40.98317	0.0295

Note: Models 1-5 are as appear in Table 4

Table 4: Estimated Long-run Savings Models

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Ln(PCY)	0.8380 (0.3978)** [2.1062]	1.2347 (0.1117)*** [11.0503]	1.3855 (0.0518)*** [26.7474]		
Ln(PCY) ²				0.0713 (0.0407)* [1.7526]	0.0654 (0.0295)** [2.2201]
Ln(FD)	-0.2159 (0.1724) [-1.2520]	0.1181 (0.0637)* [1.8528]	0.2762 (0.0304)*** [9.0967]	-0.2832 (0.2445) [-1.1584]	-0.1750 (0.1689) [-1.0365]
Ln(RER)	0.1144 (0.0624) [1.8348]	0.2759 (0.0219)*** [12.5742]			0.1161 (0.0614) [1.8927]
Ln(INFL)	0.8003 (0.1145)*** [6.9910]	0.4337 (0.0405)*** [10.6998]	0.5609 (0.0196)*** [28.5594]	0.7322 (0.1509)*** [4.8516]	0.8002 (0.1123)*** [7.1231]
RIR	-0.0167 (0.0028)*** [-5.9133]	-0.0088 (0.0011)*** [-8.3604]	-0.0152 (0.0004)*** [-35.4853]	-0.0169 (0.0032)*** [-5.2350]	-0.0168 (0.0028)*** [-6.0585]
FisD	0.0226 (0.0097)** [2.3199]		0.0215 (0.0018)*** [12.1168]	0.0117 (0.0139) [0.8405]	0.0220 (0.0096)** [2.2972]
DepR	-13.5322 (4.0456)*** [-3.3449]			-16.0545 (4.9675)*** [-3.2319]	-12.5548 (3.9647)*** [-3.1666]
C	8.9220 (6.1152) [1.4590]	-6.9540 (0.6612)*** [-10.5168]	-8.9212 (0.3049)*** [-29.2591]	14.1488 (6.3563)** [2.2260]	10.5059 (4.9096)** [2.1399]
@Trend	-0.1009 (0.0223)*** [-4.5313]	-0.0292 (0.0012)*** [-23.6726]	-0.0209 (0.0005)*** [-44.0664]	-0.1163 (0.0286)*** [-4.0737]	-0.0950 (0.0218)*** [-4.3579]
R ²	0.3645	0.3488	0.3025	0.3207	0.3677

LBQ-stat	0.7613(0.683)	1.3034(0.521)	0.0660(0.968)	0.1549(0.925)	0.8359(0.658)
JB	0.0908(0.956)	4.3534(0.113)	0.7887(0.6741)	0.0051(0.9975)	0.0516(0.9745)

Note: ***,** and * denotes significance at the 1%, 5% and 10% levels respectively. Values in () and [] are standard errors and t-statistics respectively. LB = Ljung-Box for autocorrelation at lag 2; JB =Jacque-Bera test for normality of residuals with probability values in parenthesis

Results from the four models as presented in table 3 above all indicate a capacity to save in Ghana. The per capita income variable either entered at the levels or as a square has a positive impact on the savings behaviour in Ghana. Contrary to the findings of Thirlwall (1999), the per capita income variable entered as linear had a rather higher level of statistical significance. PCY was significant at 5%, 1% and 1% for model 1, model 2 and model 3 respectively. Models four and five in which the PCY variable was entered as a square were positive and significant at 10% and 5% respectively.

Financial development showed a positive and significant relationship in two out of the five models. In models two and three where the PCY variable was entered as linear, the financial development variable was positive and significant at 10% and 1% respectively. Model one showed a negative but insignificant relationship between financial development and savings. The results make a strong case against financial repression in Ghana in favour of financial liberalization. Liberalization will give way for the removal of the distortions in the financial sector in order to increase the flow of funds to the formal financial sector and ensure the most productive allocation of resources leading to higher savings.

The real exchange rate which was included in three out of the five models gave two insignificant results though positive. In the second model where the PCY was entered as linear whiles the fiscal deficit and dependency variables were dropped, the real exchange rate had a positive 0.28 impact. This was also significant at 1%. In the context of a developing country, a large part of capital goods is imported. To the extent that real depreciation increases the profitability of the tradeable sector it could be expected to stimulate savings, hence the result in model two. However, to the extent that real depreciation raises the price of imports, it also raises the price of capital goods and therefore domestic savings and investments will be expected to fall, hence the insignificant results in model one and five.

Contrary to expectation, the rate of inflation had a positive and very significant result in all five models. The rate of inflation was positive and statistically significant at 1%. Inflation acts a tax on money balance holdings. The private sector wish to restore the real value of their money balance holdings in periods of rising inflation (real balance effect) causing savings to rise with a rise in inflation. The result also indicates precautionary savings due to the uncertainty it brings in future income streams especially for a developing country like Ghana where income prospects are much more uncertain. Additionally, inflation influences saving positively when the private sector maintains a target level of wealth or liquid assets relative to income.

The real interest rate had a negative and statistically significant signs in all the five models. The variable was statistically significant at 1% in all the models indicating that the income effect of a rise in interest rates dominates the substitution effect. A higher real interest rate on savings raises the income stream of future incomes and wealth and therefore raises current consumption. The results contradicts findings of Sen and Chandra (2001), Koskela and Viren (1982) and Balassa (1992).

The coefficient of the fiscal deficit variable showed positive signs in three of the four models in which it was included. Deficit was positive and statistically significant 5% in model one, 1% in model three and 5% in model five. While the variable was dropped in the second model, it showed a positive but statistically insignificant sign in the fourth model. The result however confirms the Ricardian equivalence hypothesis by Barro in Ghana though not as robust as was originally proposed. Deficit financing by government results in an increase in private saving

because the private sector saves in anticipation of a future increase in taxes to service the bonds. It also confirms the Keynesian view that an increase budget deficit would raise income through the multiplier and consequently saving. Moreover, when government resorts to deficit financing as a means of shifting funds from consumption to particular types of investment that the private sector is unlikely to undertake, the return to and the volume of private saving rise.

The dependency ration variable showed a negative and statistically significant relationship with savings in all the three models in which it was included. The variable was negative and significant at 1% in all three models thus confirming the Modigliani (1966, 1970) hypothesis.

5.0 CONCLUSION

The study sought to investigate the factors that determine the long run private savings behaviour in Ghana by looking at mainly macroeconomic factors.

The coefficients of the inflation and the financial development variables indicated sufficient willingness on the part of the private sector to save in Ghana. However the capacity to save even though positive is not very robust. Government must deepen its liberalization efforts to allow financial institutions the space to diversify their savings and investment packages for increased savings from the private sector. This should lead to capital accumulation to promote domestic investments.

In the efforts to boost domestic resource mobilization, government must continue to push for increases economic growth which will translate to increased incomes and savings. The willingness to save must be backed by a capacity to save and the growth of the economy is key to that.

The central government must keep its fiscal deficits in reasonable limits and choose its financing options for deficits carefully to avoid sending signals to the private sector that will make them withdraw their spending in critical investment areas of the economy. The relationship between fiscal deficit and savings is because of the fear of increased taxes in future to finance deficits. It is therefore important for government to invest borrowed moneys in ways that will generate future incomes and improve growth and encourage savings meant for private investments.

Whiles macroeconomic stabilization is required and commendable; there is the need to go beyond macroeconomic stability as a way of mobilizing sufficient domestic resources for the needed investments in critical areas of the economy. Education is key as it not only raise awareness of the need to save but also helps the people understand the need to maintain manageable family sizes that will enable them save more.

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