POPULATION GROWTH AND SAVINGS IN NIGERIA

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Abstract

This study examines the effect of population growth on savings in Nigeria. Theoretical models and empirical studies yield ambiguous predictions concerning the impact of population growth on saving. Recent researches in this field show that population growth could lead to increase in savings through the growth effect or a decrease in savings through the dependency effect. The analytical framework is based on econometric methodology encompassing the error correction model of regression analysis using data from 1980 to 2007.
Empirical results show that income and rapid population growth have positive and negative significant impact respectively on savings in Nigeria. Thus, policies should be concentrated towards enhancing the level of income and also reducing the nation's population growth to bolster savings.

Keywords: Population, Savings, Investment, Growth, Error Correction Model, Nigeria

I. Introduction

In the past few decades there has been a noticeable variance in saving rates and economic performance around the world, particularly within the developing countries. Saving rates have risen in East Asia, stagnated in Latin America, and fallen in Sub-Saharan Africa (Loayza, Schmidt-Hebbel and Serven, 1999). These savings gaps have corresponded with the varying growth experiences across these regions. Regions with higher savings have experienced higher growth than regions with lower or constant saving rate. This disparity in savings over time has raised an important question as to what could be the possible reasons for the wide gap in savings across these regions.The importance of savings to enhance investment and growth cannot be over-emphasized. This is because achieving a higher level of economic growth requires massive investment, and investment itself depends on the level of savings. The positive and strong correlation between savings and investment on one side and investment and growth on another side is an established fact in economics. One of the most important ways of achieving economic growth and development is by raising the rate of investments.

Investments, however, require financing that will be generated from domestic or foreign sources. Olofin (2006) acknowledged that the phenomenal growth witnessed by the South-East Asian nations, popularly known as the Asian Tigers in the last three decades was as a result of sound macroeconomic fundamentals, especially in the area of fiscal policies, high rate of domestic saving, moderate population growth, among others. Nigeria's economic performance has not been impressive over the past few decades. The trend of investment has shown performance below expectation; available data show the growth rate in fixed capital formation for 1991, 1993, 1994, 1995 were 0.16 percent, 0.38 percent, 0.05 percent and 0.35 percent respectively. The situation further worsened with negative growth rates - 0.06, - 0.08, -0.1 percent for 1998, 1999 and 2002 respectively. This may have largely been due to the unstable macro economic and political environment during these periods. The low rate of investment may also have been due to poor level of savings as the growth rates in savings over the same period (1998 and 1999) were negative, - 1.29 percent and – 5.16 percent respectively. A review of population indicators in Nigeria shows that Nigeria's population has more than doubled since 1960. Presently, based on the last census results (2006), Nigeria's population is over 140million, showing annual estimated growth rate of over 3 percent.

The reality of this situation might not necessarily be with the absolute size of the population but, with the ability of the economy to grow commensurably and sustainably. It is then a fact that the rate of population increase in Nigeria is clearly unsustainable and; directly and indirectly affects macroeconomic variables and performance. Despite that, very little effort has been made by researchers to investigate the link between population growth and macroeconomic performance in Nigeria. There is, therefore, need to undertake econometric analysis of the effect of population growth on savings using Nigeria data. The objective of this study is therefore to investigate empirically the effect of population growth on savings in Nigeria using time-series data from 1980 to 2007.

II. Literature Review

Savings is an important and indispensable ingredient of economic growth. This is because of its positive correlation with the level of investment and ultimately economic growth and development. Various factors have been identified in literature to influence savings; and one of these major factors is population and demographic features. (Loayza et al, 1999 and 2000; Mohsin et al, 2006; Leff, 1969; and Higgins, 1998) The effect of population dynamism on economic aggregates has been a subject of fierce debate among scholars and the postulation that a large and increasing population will increase consumption at the expense of savings enjoys a distinguished pedigree**.** It was, however, Leff (1969) that put this proposition on a sound empirical footing**.** He investigated the impact of population growth and dependency ratio on savings. His study is based on the life cycle hypothesis of Ando and Modigliani, which connects savings and demographic factors and also incorporates effects on the household and the aggregate. According to him, aggregate savings depends on savings of currently working population and dis-saving of dependents- currently retired and young population. He identified two effects of population growth on savings, the dependency and the growth effects.

The dependency effect indicates that an increase in the growth of the dependent population relative to that of the working population will lead to high dependency ratio and low saving. On the other hand, the growth effect indicates that when the working population outnumbers the dependent and dis-saving population, the growing population leads to an increase in aggregate saving and growth. He concluded that while the dependency effect has a negative relationship with savings, the growth effect implies a positive relationship. Subsequent research by Goldberger (1973)**,** however, disagrees with the dependency hypothesis of Leff (1969). According to Goldberger (1973) the empirical results on dependency rates and savings rates reported by Leff (1969) cannot be correct. He argued that the basic data constructed by Leff were internally inconsistent for all the countries investigated. He found that there are substantial discrepancies between per capita savings and the product of the savings ratio and per capita income. Thus**,** Deaton (1992, Pp51) offered the following judgment concerning the empirical literature on demography and saving:

> *"although there are some studies that find an influence of population growth or demographic effects**,** the results are typically not robust and there is no consensus on the direction of the effect on saving".*

More recent empirical studies provide further evidence that aggregate saving is influenced by demographic change (Mason, 1988; Fry and Mason, 1982; Higgins, 1994 and 1998; Blanchet, 1991). Fry and Mason (1982) argue that in countries undergoing rapid economic growth, the earnings of the young workers are higher than the earnings of retirees- who might be spending their savings. If this is true, concentration of earnings among the workers would generate a higher aggregate level of household and national saving. Mason (1988) developed what is called a 'variable rate-of-growth effect' model which tries to establish a link between youth dependency ratios and national saving rates. Drawing on cross-section data for seven Asian developing countries, he found solid empirical support for the model, showing a negative relationship between youth dependency, income growth and savings. This is in agreement with Coale and Hoover (1958) who argued that high youth dependency burdens would limit a countries' ability to generate sufficient savings for development. According to Deaton and Paxson (1997), analyses at the micro-level are less supportive of an important connection between population and saving. They argued that household saving rates vary with the demographic characteristics of the household, but the age-variation is sufficiently small that changes in age-structure have only a modest impact on aggregate saving or no impact at all. Weil (1993) showed that moving 1% of the population out of the working age group and into the elderly age group would reduce the national saving by 0.81%. Callen and Thimann (1997) found elderly dependency ratio to show a negative and significant relationship with savings while young dependency and overall dependency ratios shows no significant impact. The result of the overall dependency ratios contradicts the submission of Leff (1969).

In another related study, Kraay (2000) found household saving to be strong and stable in the countries with many elderly people. Higgins (1994) in an effort to examine the demographic determinants of savings, investment and international capital flow uses a simple overlapping generation's model. He went further to address the relationship between age distribution, national savings and international capital flow. His study shows evidence of strong demographic effect on national saving, investment and current account balance. It also shows that young dependency ratio has a stronger negative effect on national savings than adult dependency ratio (Higgins, 1998; Horioka and Wan, 2007). Following the work of Coale and Hoover (1958), Higgins (1998) addresses the relationship between age distributions, national savings and current account balance. He investigated a number of developed and developing countries including Nigeria for the period 1960-64 to 1985-89.

In the case of Nigeria, a 0.015 percent fall in savings as a share of GDP is induced by demographic pressure. The results show a significant and substantial effect of demography on savings rate. He noted that increase in young and old dependency ratios is associated with lower savings rates. Brander and Dowrick (1990) asserts that reduction in fertility will lead to immediate decline in number of children and the consumption expenditure associated with it and relatively raises the proportion of working population, aggregate savings and per capita GDP and facilitates sustainable development. Schmidt-Hebbel, Webb and Corsetti (1992) studied household saving behavior in ten less-developed countries.

The results showed that population and demographic variables were consistent with economic theory as they showed a negative significant relationship with savings. Cincotta and Engelman (1997) observed that in Industrial economies, the savings that households deposit in banks are a source of investments in the private sector. They argued that while the 1986 National Research Council review found little evidence to validate connection between fertility and national savings rates, later studies document proof that declining fertility does indeed encourage saving. According to them, a significant part of economic growth and development achieved among the Asia Tigers could be attributed to appropriate economic and population policies. Evidence that this contention is valid is confirmed by other studies. While Bloom and Williamson (1998) find that population dynamics accounted for 1.4 to 1.9% of East Asia's average annual per capita GDP growth during 1965–90, Williamson and Higgins (1997) argue that had the age structure in East and South-East Asia not changed between the early 1970s and early 1990s, saving rates would actually have declined.

However, study such as Deaton and Paxson (2000) disagree with the above conclusion. Using data for the Taiwan household saving, they find that changes in age composition accounted for only a modest increase of 4% in the gross saving rate. They assert that the increase in the aggregate saving rate was not mainly due to changes in the age composition of the population but rather to an increase in the saving rates of all age groups. Horioka (1990) claimed that demographic effect may exist when longer life expectancy can change life-cycle behavior, thus leading to a longer working life and possible higher saving. Loayza, Schmdit-Hebbel and Serven (1999) found urbanization rate, old and young dependency ratios to have a significantly negative impact on savings. Cook (2005) slightly differs in his own study. Unlike most other studies, he focused on the size and not the composition of population growth. He argued that population growth can have two conflicting effects on savings. It reduces savings if it leads to more dependent children, but if balanced, it can also increase the number entering the working population and hence the number of potential savers. His study shows high correlation coefficient between population growth rate and saving with a net elasticity effect of -0.8.

He conclude that reduction in saving and lack of sustainable development continue to be a cost of rapid population growth, but perhaps not quite as devastating as some might have alleged. Blanchet (1991) in his study of the relationship between population growth and economic growth in developing countries concluded that evidence that population growth facilitates economic growth up to the early 1970s is valid, but that over the recent 15-year period a negative relationship is emerging thereby emphasizing that high population growth is becoming an impediment to savings, economic growth and sustainable development. In an earlier study, Nwakeze (2000) investigated the interrelationship between population growth rate, household income and savings in Nigeria for the period 1980-1996. She observed that the size of a household could influence savings either positively or negatively. According to her, the larger the household size the larger the likelihood that savings would be small. She concluded that any policy aimed at encouraging savings should design programmes that will lower dependency burden.

Albatel (2005) asserts that increase in population will directly lead to an increase in the demand for basic services such as education, health, transportation and communication, essential public utilities as electricity, water and sewage in addition to increase in demand for housing and will put pressure on saving and investment.

Mohsin, Zeshan and Muhammad (2006) also confirmed the assertion above. Their results reveal that demographic variables (old and young dependency ratio) have exerted significant negative impact on the level of saving. Bosworth and Chodorow-Reich (2006) studied the global dimension of demographic and saving change. Their study shows that income growth, current and lagged have a significant positive impact on savings. They also argue that there is a very strong correlation of demographic structure with saving. Reduction in youth and aged dependency both raise the rate of saving; but changes in the aged dependency rate have much larger effects. Contrary to the expectations expressed by Bernanke (2005) that demographic change is currently exerting a positive effect on saving in the industrial countries, Bosworth and Chodorow-Reich (2006) found that population aging has gotten to a point where it consistently exert negative influence on savings. Horioka and Wan (2007) and Kraay (2000) identified the so-called 'one-child' policy in China as a way of population control as a vital factor in raising the level of household and aggregate saving in the country. They argue that the introduction of China's one child policy has contributed dramatically to the decline of the population numbers under the age of 14. As a result of these reforms, the dependency ratio pattern changed. Households can now save more than before and hence increase in their saving. Lueth (2008) predicts that countries with more young population like the USA will remain capital importers over the long run and countries with ageing population like China will likely remain major capital exporters in the long run.

III. Methodology and Data

The empirical aspects of the linkage between population and savings have been explored in several studies. The theoretical basis for this study is derived from the methodology employed by Higgins (1998). The basic postulate is that rates of saving and investment are explained by a set of country-specific economic factors that change over time (X), factors that are largely time-invariant but vary across countries (C), and the structure of the population (P):

$S = F(X\ C\ P) + u$

There are compelling evidences that many macro-economic time series data sets are non-stationary and as a result, the ordinary least square estimates using this data set may produce spurious result. As a result, this study employs the techniques of error correction model, co-integration and unit root test to estimate the effect of population growth on savings in Nigeria. Thus the estimation technique used in this study is based on test of stationarity using Augmented Dickey Fuller (ADF) test, Johansen's co-integration test for testing the existence of long run relationship between the dependent and independent variables, and error correction techniques (ECM) for establishing a long run adjustment between the variable of interest.

The data for this study are obtained from secondary sources. The secondary data comprises annual time series spanning 1980 through 2007. The variables of interest are: saving rates measured by the ratio of gross national savings to GDP, real per capita GDP, interest rate proxied by deposit rate, inflation rate, and financial depth measured by the ratio of money supply to GDP and population. All these data were sourced from the Central Bank of Nigeria Statistical Bulletin (2007) and CBN Annual Report (2008) except population which was obtained from the National Population Commission. Variables such as old and young dependency rates would have been added to the model but their unavailability throughout the time-scope of this informed their non-inclusion.

The saving function for the empirical analysis is specified as follows: SR = F (P, Y, INT, INF, FIN)

where: SR= savings rate, P= population, Y = real per capita income, INT = real interest rate, INF = inflation rate, FIN = financial depth

The econometric model can be mathematically written as;

$SR = \beta_0 - \beta_1 P + \beta_2 INT - \beta_3 INF + \beta_4 FIN + \beta_5 Y + \mu$

IV. Discussion of Results

The unit root test in Table 4.1 (See appendix) shows all variables are not stationary at level. This is because the ADF value of each variable at level is less than the McKinnon 1% critical values. However, all variables become stationary at first difference since the ADF value of each variable at first difference is greater than the McKinnon 1% critical values.

The result of Johansen co-integration test is shown in Table 4.2 (Appendix). The result shows that there exist four (4) co-integrating equations at 5% level of significance. This is because the likelihood ratio is greater than critical values at 5%. This shows that there exists a long run relationship between savings rate and all the explanatory variables. The result indicates that in the long run, the dependent variables can be efficiently predicted using the specified independent variables and, thus, error correction model can be estimated. The regression result shown in Table 4.3 (appendix) shows a significant negative relationship between population and saving rate. One percent increase in population, ceteris paribus, will lead to about 6.06 percent decrease in saving rate in Nigeria. This result supports the fact that increasing population size retards savings. Interest rate has an insignificant negative relationship with savings rate suggesting that its income effect outweighs its substitution effects. This is inconsistent with apriori expectation but in line with previous studies such as Loayza, Schmidt-Hebbel and Serven (1999, 2000); Nwachukwu and Egwaikhide (2007); and Uremadu (2007).

The implication of this result is that interest rate has a negative impact on savings rate. This result should, however, be taken with caution considering the strong negative relationship between inflation and real interest rates. Inflation rate has a negative correlation with savings in Nigeria. This is in line with expectation as more income is consumed than saved during periods of inflation. From the result, the coefficient of inflation rate is significantly negative (at 10 percent sig. level). The implication of this result is that inflation has constituted a barrier to the growth of savings in Nigeria. The result also shows that the coefficient of domestic income has a significant positive effect on saving rate in Nigeria. This is consistent with standard theories and economic expectation because the higher the income, ceteris paribus, the greater will be the capacity to save. The result shows that the coefficient of financial depth is positive but insignificant. This suggests that the development of the Nigerian financial system has an insignificant positive impact on savings in Nigeria. The implication of this result is that the Nigerian financial system has not been able to mobilize adequate savings and engender growth in the country due to its underdeveloped nature.

The coefficient of determinations R^2 of 0.63 indicates that about 63 percent of the total variations in savings rate are explained by the variations in the independent variables. This shows that our model explains large proportion of variations in savings rate in Nigeria and also represents a good measure of fit. The F-statistic shows overall significance of the model. The F-statistic is significant at 5% level. The probability of its value (0.0006) is less than the 0.05 critical levels. We, therefore, reject the null hypothesis that the model is not significant in explaining the variations in savings rate. Finally, the Durbin Watson test of autocorrelation shows an absence of serial autocorrelation. This is because the calculated value of DW (1.85) falls between lower critical level (D_U) and 2 at 1% significant level. Where D_U= 1.61. With this result we reject the hypothesis that there is presence of serial autocorrelation in our model. Therefore, parameter estimates from our model are stable and efficient.

V. Conclusion and Policy Implication

Population growth has significantly impaired the drive towards mobilization of adequate domestic savings in Nigeria. This situation could be attributable to the high level of dependency in Nigeria. Efforts should be geared towards slowing the rate of growth of Nigeria's population so as to mobilize adequate savings to facilitate sustainable growth and development. The monetary authorities should place high priority on price stability and on reduction of domestic inflation rate to arrest its negative impact on real rates. Government should build up policies that stimulate growth as it is an indirect and the most effective way to increase saving. A considerable portion of the savings should be directed into productive domestic investment so as to set in motion a virtuous cycle of saving, capital accumulation and growth. Lastly, the Nigerian financial sector should be adequately and appropriately reformed because of its crucial role in mobilizing saving for productive use.

REFERENCES

Albatel, H. Abdullah (2005). Population Growth and Economic Development in Saudi Arabia, *Scientific Journal of King Faisal University (Humanities and Management Sciences)*, Vol. 6, No. 2.

Bernanke, Ben S. (2005). The Global Saving Glut and the US Current Account Deficit, Speech Given at Sanridge Lecture, Virgina Association of Economists, Richmond, VA, March 10.

Blanchet, D. (1991). On Interpreting Observed Relationship between Population Growth and Economic Growth: A Graphical Exposition, *Population and Development Review*, (17), Pp 105-114.

Bloom, D. and Williamson, J. (1998). Demographic Transitions and Economic Miracles in Emerging Asia, World Bank Economic Review (12), 419-456.

Bosworth, Barry and Chodorow-Reich, Gabriel (2006). Saving and Demographic Change: The Global Dimension. Prepared for the 8th Annual Joint Conference of the Retirement Research Consortium "Pathways to a Secured Retirement". Washington, D.C. August 10-11, 2006.

Brander, James A. and Steve, Dowrick (1990). Role of Fertility and Population in Economic Growth: New Results from Aggregate Cross-National Data. *Centre for Economic Policy Research Discussion Paper*, No. 230 (April) Pp 43 Canberra, Australia.

Callen, Tim and Thimann, Christian (1997). Empirical Determinants of Household Saving: Evidence from OECD Countries. *IMF Working Paper*,Vol. 97 No. 181.

Cincotta, P. Richard and Engelman, Robert (1997). Economics and Rapid Change: The Influence of Population Growth. *Population Action International Occasional Paper*, (October).

Coale, A. and E. Hoover (1958). Population Growth and Economic Development in Low-income Countries, Princeton: Princeton University Press.

Cook, Christopher (2005). Population Growth and Savings Rate: Some new Cross-country Estimates. *International Review of Applied Economics*, Vol. 19 No. 3, (July) Pp 301-319.

Deaton, A. (1992). Understanding Consumption, Oxford: Clarendon Press.

Deaton, A. and Paxson, C. (1997). The Effects of Economic and Population Growth on National Saving and Inequality, *Demography* 34(1), (February) 97-114.

Deaton, A. and Paxson, C. (2000). Growth Demographic Structure and National Savings in Taiwan, *Population and Development Review* (26), 141-173.

Fry, M. and Mason, A. (1982). The Variable Rate of Growth Effect in the Life Cycle Model, *Economic Inquiry* (20), 426-442.

Goldberger, A. (1973). Dependency rates and Savings Rates: Further Comments, *American Economic Review* (63), 232-233.

Higgins, Mathew (1994). The Demographic Determinants of Savings, Investment and International Capital Flows, (Phd Dissertation Thesis), University of Harvard.

Higgins, Mathew (1998). Demographics, National Savings and International Capital Flows. *International Economic Review*, No. 39 Pp 343-369.

Horioka, C. Y. (1990). Why Japanese Household Saving is Rate so High? A Literature Survey, Journal of the Japanese and International Economies (4), Pp 49-92.

Horioka, Charles Yuji and Wan, Junmin (2007). How China Achieved World's Highest Savings Rate. *Journal of Money, Credit and Banking.*

Kraay, A. (2000). Household Saving in China, *World Bank Economic Review*, Vol. 14, No.3.

Leff, N. H. (1969). Dependency Rates and Savings Rates. *American Economic Review*, Vol. 59 No. 5 Pp 889-896. In Prskawetz Alexia, Fent Thomas, Barthel Werner et al (2007) Relationship between Demographic Change and Economic Growth in the EU. *Research Report*, No. 32 (July).

Loayza Norman, Schmidt-Hebbel Klaus, Serven Luis (1999). What Drives Private Savings across the World? *Central Bank of Chile Working Paper*, No. 47.

Loayza, N , K. Schimdt-Hebbel, and L. Serven (2000). What Drives Private Saving across the World? *Review of Economics and Statistics*, Vol. 82 No. 2 (May) Pp 165-181.

Lueth, Erik (2008). Capital Flows and Demographics- An Asian Perspective. *IMF Working Paper*, Vol. 8 No. 8.

Mason, A. (1988). Saving, Economic Growth, and Demographic Change. *Population and Development Review*, Vol. 14 No. 1, Pp 113-144. In Albatel, H. Abdullah (2005), Population Growth and Economic Development in Saudi Arabia, *Scientific Journal of King Faisal University (Humanities and Management Sciences)*, Vol. 6 No. 2.

Mohsin Hasnain, Zeshan Atiq, Muhammad Butt (2006). The Impact of Demography, Growth, and Public Policy on Household Saving (A case study of Pakistan). *Asia-Pacific Development Journal* Vol. 13 No 2.

Nwachukwu Tochukwu and Egwaikhide Festus (2007). An Error-correction Model of the Determinants of Private Savings in Nigeria. A Paper Presented at the Africa Economic Society (AES) Conference, Cape Town, South Africa.

Nwakeze, M. N. (2000). Population Growth Rates, Household Income and Savings in Nigeria: 1980-1996, First Bank of Nigeria Plc Bi-annual Review, Vol. 8, No. 16, June.

Olofin, S. O. (2006) Macroeconomic Fundamentals and NEEDS Implementation. In Akano, O. and Familoni, K. (eds.), The National Economic Empowerment and Development Strategy: Philosophy, Opportunities and Challenges, Lagos: University of Lagos Press.

Schmidt-Hebbel Klaus, Webb, B. Steven and Corsetti Giancarlo (1992). Household Saving in Developing Countries: First Cross-Country Evidence. *The World Bank Economic Review*, Vol. 6 No. 3, Pp 529-547.

Uremadu, Sebastian Ofumba (2007). Core Determinants of Financial Savings in Nigeria: Empirical Analysis for Monetary Policy Formulation. *International Review of Business Research Papers*, Vol. 3 No. 3, (August), Pp 356-367.

Weil, N. David (1993). Demographic Change, Consumption and Saving, *Ministry of Finance (Japan) Quarterly Review*, (June).

Williamson, J. and Higgins, M. (1997). The Accumulation and Demography Connection in East Asia, Conference on Population and the Asian Economic Miracle, East-West Centre, Honolulu, Hawaii, January 7-10.

APPENDIX

Table 4.1: Unit root test

Variable	ADF calculated value at Level	ADF calculated value at 1st Difference	McKinnon 1% Critical value	Order of Integration
SR	-2.982032	-5.053969	-3.7856	I(1)
POP	1.852016	-4.715928	-4.3738	I(1)
INT	-2.222515	-4.707648	-3.7204	I(1)
INF	-2.852204	-4.826187	-3.7204	I(1)
Y	-1.651994	-3.919075	-3.7204	I(1)
FIN	2.245377	-5.525778	-4.3552	I(1)

Table 4.2: Co-integration test

Series: SR POP INT INF Y FIN				
Lags interval: 1 to 1				
	Likelihood	5 Percent	1 Percent	Hypothesized
Eigenvalue	Ratio	Critical Value	Critical Value	No. of CE(s)
0.938043	189.8688	94.15	103.18	None **
0.897595	128.6799	68.52	76.07	At most 1 **
0.874437	78.54590	47.21	54.46	At most 2 **
0.635405	32.89697	29.68	35.65	At most 3 *
0.361248	10.69969	15.41	20.04	At most 4
0.037394	0.838444	3.76	6.65	At most 5

*(**) denotes rejection of the hypothesis at 5% (1%) significance level
L.R. test indicates 4 co-integrating equation(s) at 5% significance level

Table 4.3: Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	14.95464	19.11999	0.782147	0.4455
D(POP)	-6.062610	2.107602	-2.876544	0.0263
D(INT)	-0.691260	0.770300	-0.897390	0.3828
D(INF)	-0.323377	0.176824	-1.828815	0.0861
D(Y)	0.275513	0.087907	3.134141	0.0130
D(FIN)	0.014024	0.015201	0.922575	0.3699
ECM(-1)	-1.063822	0.233068	-4.564428	0.0003

R-squared	0.636089	Mean dependent var	0.196434
Adjusted R-squared	0.499623	S.D. dependent var	20.87915
S.E. of regression	14.76935	Akaike info criterion	8.468776
Sum squared resid	3490.140	Schwarz criterion	8.814361
Log likelihood	-90.39092	F-statistic	4.661142
Durbin-Watson stat	1.855107	Prob(F-statistic)	0.006353