Savings, Investment and Growth Patterns in Developed and Developing Countries

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Preface

Prior to the spectacular growth of many East Asian economies, a variety of structural and non-structural factors were used to explain the differences in growth performances. Arising from their remarkable achievements, regional variations in growth performance have been explained in terms of differences in savings and investment. Although savings, investment and growth had long been acknowledged in the development literature, the linkages between them and the direction of causality were hardly given any considerable attention. Rather, emphasis was put on a unidirectional relationship, running from savings to investment and, hence, to economic growth.

This perception of the relationship between the three variables has been considered misleading because, in truth, the relationship could be intertwined. Therefore, the significance of these relationships can no longer be wished away as was previously the case. The transformation of an initial growth spurt into sustained expansion of output requires the accumulation of capital and its corresponding financing (i.e., savings). Output expansion, in turn, sets in motion a self-refinancing process through which the anticipation of growth encourages investment. Investment supports growth, and increased income raises savings.

This study, therefore, examines the linkages between savings, investment and growth in developing and developed countries. The obvious aim is to learn important lessons and articulate appropriate policies to set the pace for sustainable economic growth. In order to

clearly identity the linkages, the study divides the whole world into six regions: Africa, Latin America, the Middle East, developing countries in Europe, and Asia. Nigeria is used as a developing country case study. While the study generally finds support for bidirectional relationships between these variables (at both the theoretical and empirical levels), it, however, observes that the linkages are not automatic. Three important things are considered necessary for the linkages to hold. First, there must be an increase in the volume of real savings in order to make additional resources available to investment. Second, a means of collecting and channelling the savings to make them available to investors is crucially important. And third, there must be some effective means of transforming savings into productive capital. An important lesson emerging from the study is that the level of financial development and integration is also a crucial condition for savings, investment and growth correlations.

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Mike I.Obadan
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December 2000

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Introduction

Variations in growth performances across regions of the world have been of significant interest to development economists. Prior to the spectacular growth of many of the East Asian economies, a variety of structural and non-structural factors were employed to explain the differences in growth performances. Since that time, however, regional variation in growth achievement has been explained in terms of differences in savings and investment performances. It has been widely observed in the literature that some regions (e.g., Sub-Saharan Africa and Latin America) tend to save and invest a smaller proportion of their aggregate outputs than did their more dynamic counterparts (e.g., Asia and the Organization for Economic Cooperation and Development Countries (OECD)). Our interest in the linkage between savings, investment and economic growth is not new in the economic development literature. The works of Arthur Lewis in the 1950s, for example, portray the central task of economic development as that of raising the proportion of national income saved and invested from 4-5 per cent to 12-15 per cent (Lewis 1954). Recent theoretical perspectives, typified by endogenous growth models, suggest that high investment rates can result in a permanent increase in an economy's overall growth rates (Romer 1986; Lucas 1988). Both theoretical approaches identify investment as a fundamental factor in economic growth. In contrast to developed countries, where growth problems were viewed in the Keynesian sense of too much saving and too little spending, investment and, hence, economic growth in developing countries were constrained by the insufficiency of savings (James, *et al* 1987). In this context,

evidence from development experiences strongly suggests that the best performing countries (even among the developing ones), have achieved this status largely on the basis of their high rates of savings and investment (Oyejide 1998).

Although savings, capital formation and economic growth have been central to economic development analysis for several decades, the connection between them and the direction of causality is far from clear (Fry 1980; Schmidt-Hebbel, *et al* 1996). Accepting that the relationship is unidirectional (i.e., moving from saving to investment and, hence, to economic growth) may be misleading. The transformation of an initial growth spurt into sustained expansion of output requires the accumulation of capital and its corresponding financing. Expansion, in turn, sets in motion a self-reinforcing process by which the anticipation of growth encourages investment, investment supports growth, and increased income raises saving (Schmidt-Hebbel, *et al* 1996).

In view of the central role these issues have assumed in the assessment of relative national economic performance, it is important to understand the nature of interactions among them. This paper, therefore, examines the relationship between the three variables with a view to deducing the attendant policy implications for sustainable economic growth. To achieve this objective, the rest of the paper is organized as follows: section 2 examines the theoretical links between savings, investment and growth, while the trends of these variables are discussed in section 3. In order to provide an illuminating case study, trends of savings, investment and growth in Nigeria are examined in section 4. Correlations between savings, investment and growth, using graphical illustrations, are the central focus of section 5. Section 6 presents the empirical results from Granger causality tests while section 7 concludes the paper.

2

Theoretical Links between Savings, Investment and Growth

Economic development theories recognize the close interdependence between savings, investment and growth. The earlier of these theories gave prominence to the critical role that savings and investment play in the growth process, just as the converse relationship was also recognized. Rapid growth raises the saving rate which, in turn, releases resources that are necessary to sustain growth through higher investment. The interrelationship between these variables is examined below.

2.1 Savings and Growth

The theoretical underpinning of the link between saving and growth is as old as the theory of consumption. This link is often based on the life cycle hypothesis, which posits that individuals tend to save more during their years of high earnings and dissave during their years of low earnings, i.e., while they are too young to work or while living on retirement benefits (Modigliani 1980; Lehmussaari 1990; and Deaton 1990). By implication, when households have access to credit and when they take the future into account in making their saving and consumption decisions, most temporary income fluctuations will be reflected by changes in saving rather than by changes in consumption. The two leading models of consumption (the permanent income model and the life cycle model) predict a negative effect of growth on saving as individuals adjust current consumption upward in anticipation of higher future income (Schmidt-Hebbel, *et al* 1996).

The third theory of consumption (absolute income hypothesis), as propounded by Keynes, contrasts with the earlier proposition. This theory predicts a positive relationship between savings and income through the marginal propensity to consume. Keynes (1936:96) states in his general theory that:

> The fundamental psychological law is that men (women) are disposed, as a rule and on average, to increase their consumption as their income increases, but not as much as the increase in their income.

He thus proposes that, on average, the marginal propensity to consume will always be less than one, where the residual represents the marginal propensity to save. By implication, a positive relationship exists between savings and income growth.

Collins (1991) also presents another perspective on the theoretical link between savings and growth. His proposition addresses the concentration of growth in households with high savings rates, such as rich or middle-aged households. This higher saving rate may be induced by the desire to leave bequests to heirs. Thus, within a certain income range, higher income will be reflected primarily in higher savings leading to larger bequests, hence higher growth. Similarly, consumption habits that change slowly despite increased income may also contribute to higher saving rates in the face of rapid growth (Carroll, *et al* 1994). These theoretical propositions show that the relationship between saving and growth may be bidirectional. Empirical verification is thus needed in this respect to show which relationship really holds in both the developed and developing economies.

2.2 Savings and Investment

The literature copiously recognizes the need to have a clear understanding of the link between savings and investment. As argued by Schmidt-Hebbel, *et al* (1996), it may add more value to the correlation between saving and growth. Besides, if capital accumulation is indeed the engine of growth, understanding the link is crucial in

assessing the validity of the traditional belief that raising saving is the surest way to increase growth.

A number of contending theoretical issues surround the link between savings and investment. First, for an economic agent, savings plus borrowing must equal asset acquisition (this may be physical entities, e.g, land, office buildings and dwellings, and machinery, but excluding consumer durables and/or financial instruments). Either savings or borrowing can be negative and the relationship still holds. Within this framework (in a closed economy) national saving(s) and domestic investment (I) are considered to be always equal *ex post*. This can be expressed thus:

$$S = Y - C$$
$$I = Y - C$$
$$S = I$$

where Y = income
C = consumption

In this neoclassical analysis, a high rate of saving leads to a high rate of investment. Three steps are considered necessary for the saving-investment link to hold. First, there must be an increase in the volume of real saving so that additional resources become available for investment. Second, a means of collecting and channelling the savings to make them available to investors is necessary. Third, there must be some act of investment by which saving is transformed into productive capital (James, Naya and Meier 1987).

The mobilization of additional savings to increase investment and initiate higher economic growth can come from internal and external sources. Internally, savings can be mobilized through self-finance (ploughing back of profits or borrowing from relatives), government appropriation through additional taxes, and by financial intermediation (both formal and informal).

The first two options represent the neo-Keynesian formulation that emphasizes the importance of investment incentives in generating higher investment rates that, in turn, create their own saving in the form of retained earnings. Recent theoretical developments tend to

explain the prominence of corporate saving as a source of investment finance. By appealing to notions of market imperfections and market failure in financial markets, the Keynesian framework also gives prominence to government intervention (in terms of tax incentives or disincentives) to correct the ills of market forces as a way of mobilizing resources for investment projects. The intermediation approach to resource mobilization, on the other hand, represents the Mckinnon-Shaw hypothesis, which proposes that "saving supply creates its own investment demand". It was argued (Mckinnon 1973; Shaw 1973) that investment was constrained not by high interest rate but by lack of investible funds. Domestic savings in many developing countries were barely sufficient to maintain the existing capital stock and, hence, could not permit enough investment to sustain economic growth. Mckinnon and Shaw, therefore, proposed that liberalizing financial and credit markets can facilitate domestic savings mobilization as well as encourage efficient allocation of investment by eliminating distortions from the capital market.

The second issue concerning the link between savings and investment derives from the macroeconomic textbook approach that emphasizes different sets of determinants for savings and investment. While the former depends on income and wealth, the latter depends on profitability and risk. Thus, they both result from independent decisions and so in *ex ante* sense, they may not be equal. Planned savings may also not be equal to planned investment in that what an individual/society plans to save may not be the same as what he/it actually saves. Similarly, what a businessman plans to invest may be different from what he actually ends up investing due to unexpected increase or decrease in his sales and, therefore, in his inventories. But in contrast, *ex post* savings and investment are equal in the sense that when a society saves (with output greater than consumption), it adds to its stock of wealth; investment too being an addition to the society's stock of wealth. And since they both amount to the same thing, *ex post* savings must always be equal to *ex-post* investment.

Open economy framework provides the third approach for examining savings-investment linkage. Here, capital inflows introduce a distinction between *ex post* national saving and domestic investment.

In an open economy, national saving need not be used for domestic investment; it may be invested abroad if the international private rate of return is relatively attractive. Thus, an increase in national saving, rather than raise domestic investment, may be reflected in a larger current account surplus or reduced deficit. The theoretical framework often used to examine this relationship is the two-gap model. The model holds that in a world characterized by unfettered capital flows, countries with high level of investment need not rely on an equally high domestic saving (Feldstein and Horioka 1980). The gap between domestic saving and gross investment must equal the difference between imports and exports and is financed by external capital or foreign savings (Feldstein and Horioka 1980; Germany, Humphreys and O'Brien 1992). Nevertheless, empirical evidence from Feldstein and Horioka (1980) contrasted with the sign of the theoretical relationship. They found that, in the long run, gross national saving and domestic investment rate show a strong positive correlation for both developed and developing countries.

2.3 Investment and Growth

The theoretical relationship between investment and growth has been well articulated in the literature. The production function formulation and the Harrod-Domar model coupled with the works of early development economists such as Rosentein-Rodan, Ragnar Nurkse, Arthur Lewis, etc., accorded a crucial role to capital formation, especially infrastructure, in the growth process. They give primary importance to domestic capital formation. This critical role of investment in the growth process was, however, challenged by the neoclassical growth theorists of the 1960s and 1970s. Robert Solow's model indicates that capital accumulation affects growth only during the transition to the steady state and that long-term growth is determined only by the rate of technical change, which is assumed to be exogenous. The endogenous growth theory of Roemer (1986) and others further stress the insufficiency of capital accumulation to guarantee long-term growth. The new theorists argue that sustained growth depends not only on accumulation of physical capital, but on

two fundamental ingredients: human capital and technical knowledge.

The theoretical proposition of the neoclassical theorists was given a radically different interpretation by the non-neoclassical, especially the UNCTAD economists (e.g., see Akyuz and Gore 1994; Singh 1996). They brought about the resurgence of interest in the critical role of investment in the growth process. Their trenchant argument is that the relationship is inherently dynamic and transcends the simple productivity-capital intensity relationship that results from a "well behaved" production function. Investment does not just augment a factor of production but is the means by which new technologies are put into practice. In this framework, contrary to the neoclassical argument, there is no reason why eventual decreasing returns should set in with high rates of investment since technical change is regarded as being "embodied" in new capital goods. In other words, high rates of investment lead to faster technical progress, greater learning-by-doing, greater learning-by-using, improved workers' skills, increase in human capital through cumulative causation to a virtuous circle of greater competitiveness and faster economic growth (De Long and Summers 1993; Haque 1995; Singh 1996). While these represent the supply-side benefits, the demand-side is equally important. Given the intersectoral linkages, investment in one sector stimulates investments in the others and encourages technical progress.

The contrary argument to the above (i.e., correlation moving from growth to investment) has also been presented in the literature (e.g., Serven and Solimano 1993). The sensitivity of investment to cyclical variations in output (or other short-term factors) suggest that a short-term recession may have long-term effects by causing a deep investment slump that permanently traps the economy in a low-growth, low-investment equilibrium. By implication, it shows that the growth process may be path-dependent. Theoretically, therefore, the relationship between investment and growth is bidirectional.

3

Trends of Growth, Savings and Investment in Developed and Developing Countries

3.1 Economic Growth Performance

Variation in growth performances have been adjudged to be one of the most striking phenomena of economic development after World War II. Aggregate economic performance varied markedly among countries and even regions. Growth of economic activities improved consistently in Asia, particularly the High Performing East Asian Economies (HPAEs), namely, Singapore, Republic of Korea, Taiwan, Hong Kong, Indonesia, Malaysia, and Thailand. The growth rate of GDP consistently rose through the 1960s to the 1990s, ranging between 3.4 and 7.1 per cent. Evidence from Figures 1 and 2 shows that the East Asian region outperformed other regions in growth of economic activities between the 1960s and mid 1990s. Specifically, the performance of four HPAEs, namely, Indonesia, Malaysia, Thailand and Phillipines, was far above the regional average between 1965 and 1979 (see Table 1), while the performance of the four Tigers, namely, Singapore, Republic of Korea, Taiwan and Hong Kong was remarkably higher between 1980 and 1993 (World Bank 1993). The impressive performance of the four HPAEs between 1965 and 1996 is shown in Table 2 and Figure 3.

Evidence from the World Bank (1998: 24-25) further shows that the HPAEs performed exceedingly well between 1965 and 1996. For instance, the Republic of Korea and Singapore recorded an average growth rate of 8.9 and 8.3 per cent between 1965 and 1996. The long-term growth prospects also showed that Indonesia, Malaysia

and Thailand recorded 6.7, 6.8 and 7.3 per cent for the same period (Figure 4). Technological innovations, outward orientation and remarkable savings performances have been adduced for this tremendous growth in the region. Progress, however, slackened in most of these countries in the mid-1990s because of flagging exports and, more recently, the financial crisis that struck several of the economies.

Growth performance in other regions was irregular and, sometimes, disappointing. The growth performances in Africa and Latin America in the 1950s and early 1960s were quite impressive. The arithmetic average of the annual GDP growth rates in these regions then was more than four times faster than in Asia. But, by the end of the 1960s, the HPAEs had caught up with African and Latin American countries. Thus, by 1980, the Asian Tigers had an income per capita of 25 per cent higher than that of Latin America and over 30 per cent higher than those of African economies (World Bank 1993; Palma 1996) The weak performances of African, Middle East and Latin American economies between 1980 and 1993 significantly contributed to the low performance recorded for developing countries in this period. The three regions experienced serious dips between 1980 and 1984; 1985-89 was also bad for the Middle East just as Africa and Latin America also found 1990-93 to be quite strangulating (see Table 1). The industrial economies were not immuned from this recession, either. With the exception of 1965-69, the growth performance of Asia was consistently better than that of the industrial countries. Indeed, the industriai countries' performances were similar to what obtained in Africa and Latin America between 1980 and 1993 (see Table 1).

A closer examination of Table 2 shows that the growth performance of the four HPAEs was better than that of the selected OECD countries between 1990 and 1998. The second column of Table 3 also presents a clearer picture of the regional performances. Yet, during the past three decades, two issues have been very obvious on the performances of the OECD countries. First, there has been a clear convergence among these countries with less country-by-country variations than among all other regions put together (World Bank

Table 1. GDP Growth Rates (at Constant Prices) in Developed and Developing Countries

Regions	1965-69	1970-74	1975-79	1980-84	1985-89	1990-95	1996-97
Industrial Countries	4.4	3.6	3.9	1.9	3.8	2.6	2.9
Developing Countries	5.3	4.9	5.2	3.3	4.4	5.1	4.8
Africa	4.0	4.9	3.1	1.9	3.2	1.8	4.2
Asia	4.3	4.9	6.3	6.7	7.1	7.6	7.1
4 HPAEs	6.5	7.6	7.2	5.0	5.4	6.8	5.6
Middle East	8.4	9.3	6.3	–0.1	1.3	5.3	4.1
Latin America and Western Hemisphere	7.1	6.7	5.0	1.4	2.5	2.5	4.6

Note: * Indonesia, Malaysia, Thailand, Phillipines
Source: Computed from *IFS Yearbook*, 1995 and 1999.

1993). Japan, the only exception, had an increased output of 6.5 per cent a year between 1965 and 1980; but thereafter, she began to converge to the OECD averages. Critical among the factors that aided rapid growth in this country were rapid technological progress supported by a strong outward orientation, and a rise in savings rates, supported by moderate fiscal policies. The second issue (with fundamental implication for developing economies) is clearly evident in Figure 2. Periods of serious economic dips in the group of industrial countries coincided with the era of oil price hikes (e.g., 1973/74, late 1979-82 and 1989-91). This tends to suggest that oil exporting business is a kind of zero-sum game. What, therefore, has been the gains of oil exporting countries (mainly developing countries) represent the losses of the oil importing countries (mainly the advanced economies). By implication, therefore, oil price stickiness and price drops often experienced in recent times could be politically motivated. This, perhaps, explains the rather disappointing growth performances in most of the oil exporting developing economies.

Table 2. GDP Growth Rate (at Constant Prices) in Some HPAEs and OECD Countries

Countries	1965-69	1970-74	1975-79	1980-84	1985-89	1990-93	1994-98
4 HPAEs							
Indonesia	5.4	9.6	7.0	6.2	5.3	6.8	7.1*
Malaysia	—	0.1	7.2	6.9	4.7	8.6	8.8*
Philippines	5.2	5.7	6.5	1.3	2.7	1.2	5.0*
Thailand	8.9	6.8	8.0	5.5	9.0	9.1	5.6*
Average	6.5	7.6	7.2	5.0	5.4	6.4	6.6*
OECD							
USA	4.2	2.5	3.2	1.8	3.1	1.5	3.4
Japan	10.3	5.9	4.5	3.4	4.6	2.7	1.7*
France	5.2	4.7	2.7	1.5	3.1	0.8	2.2
Germany	4.2	3.4	2.8	1.0	2.6	1.9	2.0
U.K.	2.6	2.7	2.2	0.8	4.0	0.1	3.1

Note: *The figure excludes data for 1998
Sources: Computed by the authors from *IFS Yearbook*, 1995 and 1999.

This may not be far from the truth because most of the recessions in advanced economies tend to affect developing economies negatively (see Figure 2).

While there are significant variations in the regional performances, on the whole, developing economies have tended to lag behind the advanced economies since 1960. More than 70 per cent of them grew at a slower rate than the average for the economies of the OECD countries. More disturbingly, as the World Bank (1993) has pointed out, out of 118 economies surveyed for the periods 1960-70 and 1970-85, per capita income actually fell in 13 developing countries. On the other hand, 11 highest performing economies came from the northeastern part of Asia. Evidence from Figures 3, 4 and 5 clearly shows that the Sub-Saharan African countries are the worst hit, relative to the selected countries from OECD, Latin America and Asia (see Figure 5). This is a clear case of high-level lopsidedness in

Figure 1. Growth Rates of GDP in Africa, Latin America and Asia (1965-93)

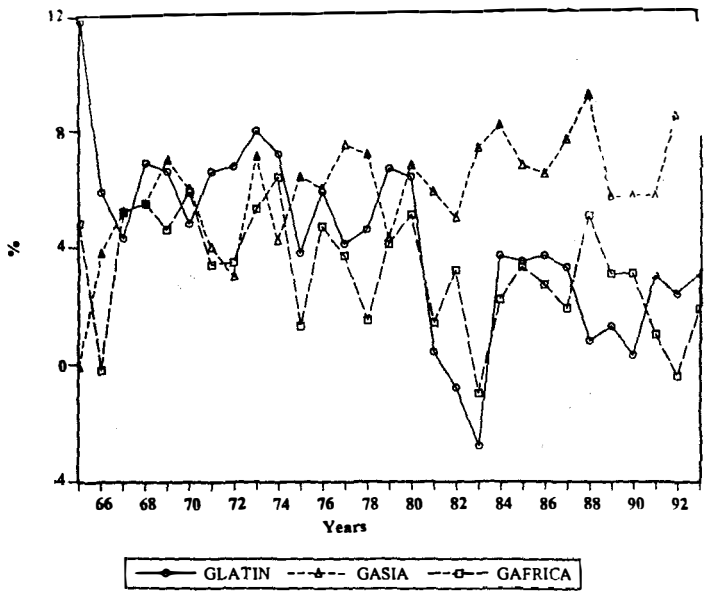


Figure 2. Growth Rates of GDP in Developing, Asian and Industrial Countries (1965-93)

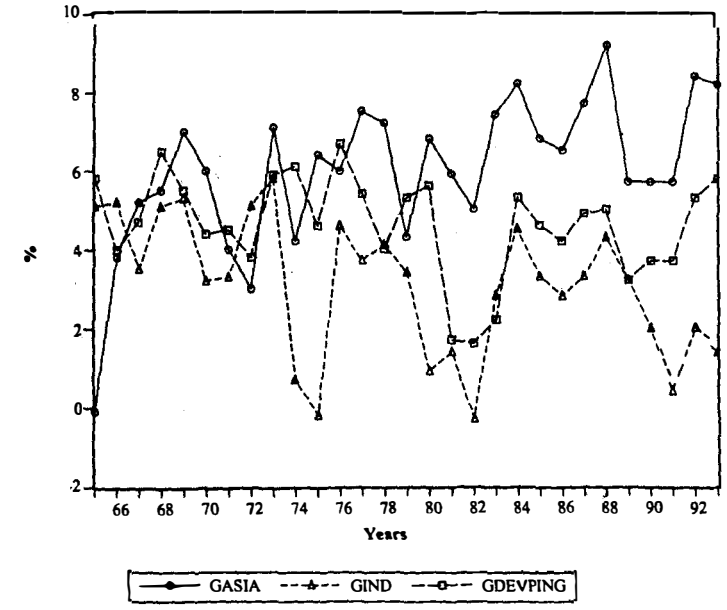


Figure 3. Regional Average Growth of GNP Per Capita (1965-1990)

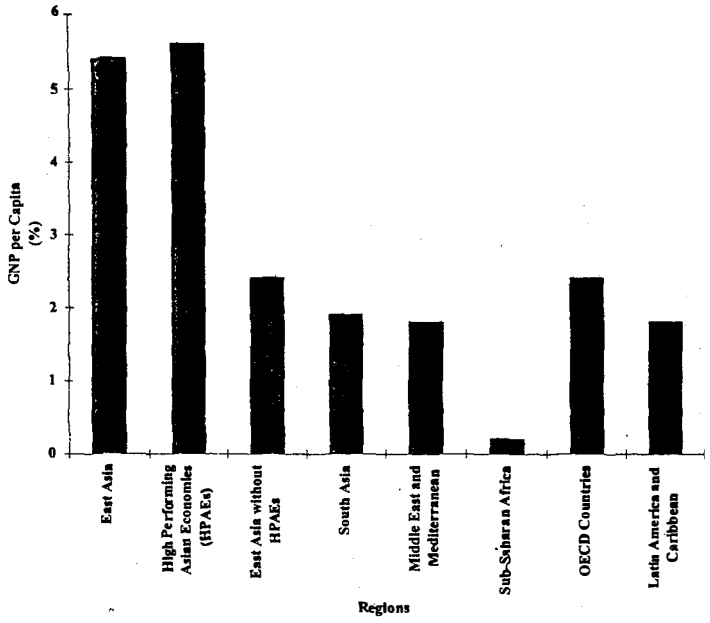
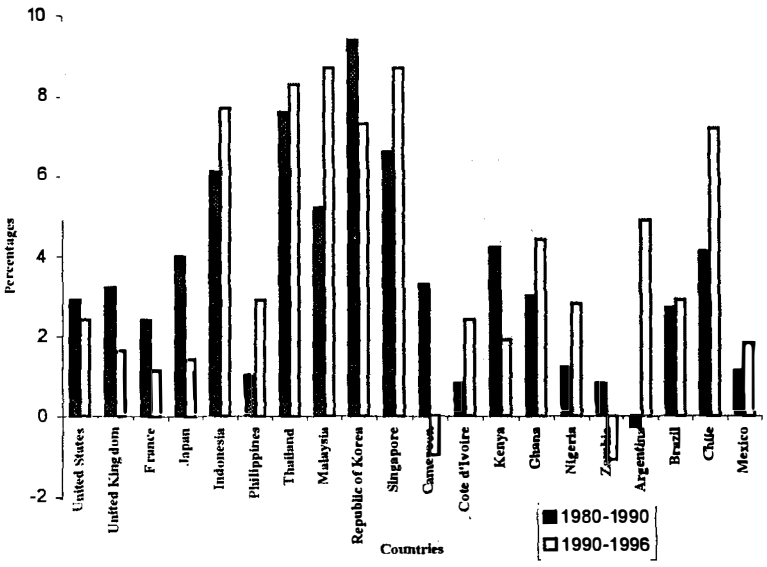


Figure 4. Growth Rate of GDP in some Selected Countries (1980-1996)



income distribution and endemic poverty, which was also lent credence to by World Bank (1993, 1998). Figure 5 also shows that while there was a total stagnation in living conditions in the selected African countries, those of OECD, Asia and Latin America recorded remarkable improvement.

Figure 4 presents a clearer picture of the growth performance between 1980 and 1996. The Asian countries could be regarded as the highest performing economies in the world between 1980 and 1996. In comparison, it is clearly evident from the selected OECD countries that they all recorded declining trend between 1980-1990 and 1990-1996. The selected countries from Latin America showed some remarkable improvements in growth performance between 1980-90 and 1990-96, with outstanding performance from Chile. Out of the six selected countries from Sub-Saharan Africa, Zambia and Cameroon recorded negative growths in 1990-96 while Ghana, Nigeria, Kenya and Cote d'Ivoire actually improved, with Ghana having an excellent growth performance, relative to others (Figure 4). The regional averages of per capita incomes for 1996 show that Sub-Saharan Africa, South Asia and East Asia and the Pacific (excluding the high performing economies) ranked worst in the world, which is a reflection of their growth performances over time. As reflected in Figure 6, Sub-Saharan Africa could be categorized as the core of the lowest income group of the world. In 1996, per capita income for South Asia was $377.6; that of Sub-Saharan Africa was $494.9. Latin America, the Middle East and North Africa, and developing Europe and Central Asia recorded some marginal performance. This performance is less than one-sixth of the records of the high income economies of the OECD and High Performing Asian Economies. Going by the classification in Figure 6, countries in the Middle East and North Africa as well as those in developing Europe and Central Asia could be categorized as lower middle income group, while those in Latin America and the Caribbean could be grouped under upper middle income category (also see Figure 5). Per capita incomes for those groups in 1996 were: $2,072.5 for the Middle East and North Africa; $2,196.6 for Developing Europe and Central Asia; and $3,711.9 for Latin America and the Caribbean.

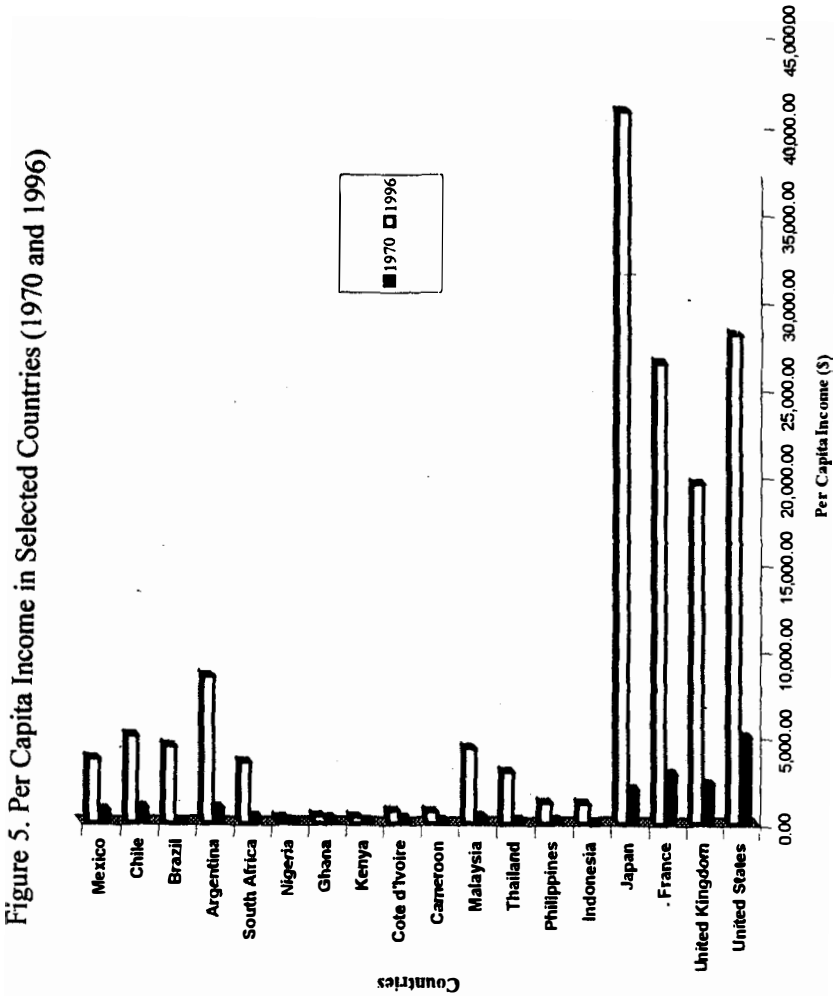
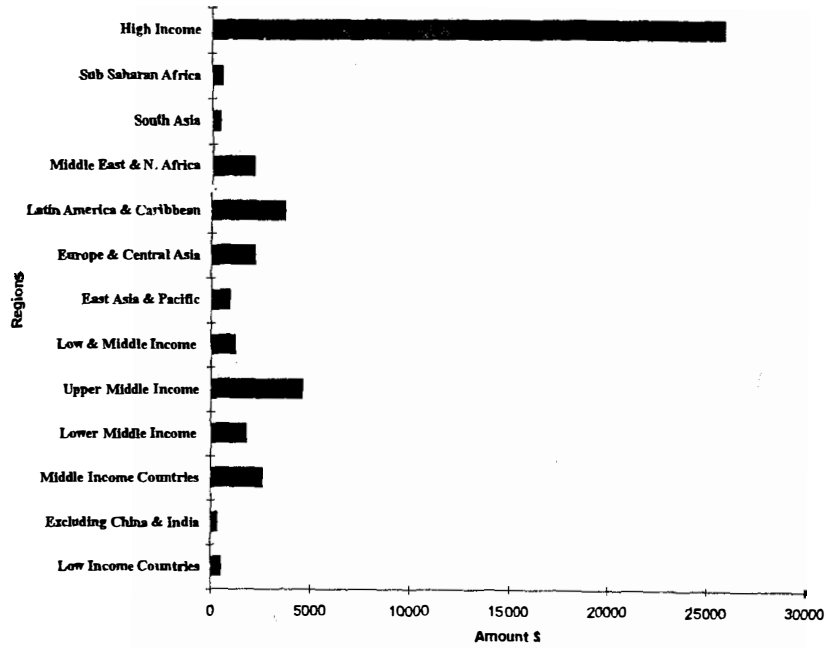


Figure 5. Per Capita Income in Selected Countries (1970 and 1996)

Figure 6. Per Capita Incomes of Some Regions (1996) ($)



The varying economic performances among the regions/countries can be traced to many different economic, political and institutional factors, but probably none more important than their respective national savings and investment rates.

3.2 Savings Performance

Most development economists now give prominent attention to savings in explaining differences in growth performance across regions. The recent miraculous performances of the Asian countries provided a basis for this. But then, generally, developing countries' savings and investment rates have been below what could propel meaningful economic growth. The increasing disparity of saving rates across regions, especially in the developing world has been recognized in the literature (Palma 1996; Agosin 1994; World Bank 1991 and 1993). From the early 1960s to the 1990s, gross domestic saving more than doubled in East Asia relative to gross domestic product. It rose from about 14 per cent of GDP in the early 1960s to

Table 3. Savings, Investment and Growth in Different Regions (1965 - 1997)

Regions	Growth Rate of GDP		Investment as % of GDP		Saving as % of GDP	
	1965-93	1993-97	1965-93	1993-97	1965-93	1993-97
Industrial Countries	5.1	2.4	22.3	19.9	22.1	20.5
Developing Countries	4.6	6.3	22.4	26.9	26.8	26.2
Africa	3.1	2.8	22.8	19.5	21.9	17.8
Asia	6.0	8.3	23.0	32.6	21.4	32.5
Europe	—	—	27.3	23.5	27.0	19.5
Middle East	5.2	3.6	23.5	21.5	25.7	23.1
Latin America	4.2	3.8	21.7	21.4	22.1	20.3

Source: Computed by the authors from *IFS Year Book*, 1995.

Table 4. Saving as a Percentage of GDP in Different Regions (1965-1993)

Regions	1965-69	1970-74	1975-79	1980-84	1985-89	1990-93	1994-97
Industrial Countries	22.9	24.2	22.6	21.3	20.9	30.4	20.8
Developing Countries	23.1	31.3	34.5	23.1	24.3	24.0	26.3
Africa	21.7	24.0	23.9	21.7	20.6	19.2	17.5
Asia	13.1	17.2	21.1	22.9	26.0	29.5	32.6
Europe*	18.0	29.7	28.5	27.9	32.1	24.9	19.5
Middle East	24.7	32.7	33.9	24.7	17.6	19.1	20.7
Latin America	20.2	22.8	22.7	22.0	23.8	20.6	20.6

Note: *The data cover 1965 – 92
Source Computed from *IFS Yearbook*, 1995 and 1999

more than 35 per cent in the 1990s (Schmidt-Hebbel, *et al* 1996). The performance of this subregion enhanced the Asian region's savings profile between the 1960s and 1990s. Excepting the fall from 14 per cent in 1965 to 9 per cent in 1966, Asia's savings rate has generally maintained a rising trend (see Figures 7 & 8). Evidence from these figures shows that this region ranked best among all regions of the world. As shown in Table 4, savings rate (total savings as a percentage of GDP) in Asia rose from 13.1 per cent in 1965-69 to 21.1 in 1975-79 and 29.5 per cent in 1990-93. And by 1994-97, it had reached 32.5 per cent.

Case studies of the HPAEs are quite revealing in this respect. Countries such as Singapore, Republic of Korea, Indonesia, Malaysia and Thailand have been consistent in their savings performance over time. As indicated in Table 5, these countries saved about 40 per cent of their incomes. Singapore's case was exceedingly spectacular among the Tigers. It consistently rose from 21 per cent in 1970 to 50 in 1996 and 51 per cent in 1998. The Malaysian experience was also a remarkable performance among the HPAEs, jumping from 22 per cent in 1970 to 48 per cent in 1998. Evidence has shown that these countries increased savings by avoiding inflation (World Bank 1993), thereby ensuring generally positive real interest rates on deposits relative to other countries outside the Asian region. For example, average real interest rates (between 1970 and 1990) were -44 per cent in Argentina, -15 per cent in Turkey and -28 per cent in Zambia. Besides, in the high performing economies, interest rates were highly stable with minimal deviations. For instance, an average standard deviation of 3.5 per cent was recorded for the subregion, a performance very close to the OECD record of 2.8 per cent. The average standard deviation was 40 per cent in Latin America and 14 per cent in Sub-Saharan Africa (World Bank 1993).

The high performing economies also created secure bank-based financial systems through strong financial regulation, good supervision and institutional reforms. Furthermore, policies were put in place to attract small savers, e.g., mobile and postal saving systems (Page 1994; James, *et al* 1987). Some governments also used a variety of more interventionist mechanisms to increase savings. For instance,

while Singapore and Malaysia guaranteed high minimum private savings rate through mandatory provident fund contributions. Korea and Taiwan imposed stiff taxes on conspicuous consumption. Credit rationing for consumption and mortgages were also imposed on most of these countries (Palma 1996). In addition to the *forced savings* imposed on them, the Republic of Korea also encouraged *voluntary savings* of the household sector by developing an attractive long-term savings scheme while increases in corporate savings also resulted from varied forms of incentives from the government (Wade 1990). Nevertheless, private sector failures caused by unsound banking practices and overinvested property sectors, which led to the serious liquidity problems in some of the economies of the HPAEs in 1997, may have some negative impacts on this excellent performance in the next few years. This is particularly evident in Indonesia's savings rate performance in 1998. It dropped from 33.0 per cent in 1996 to 24.0 per cent in 1998 (Table 5).

During the same period, saving rates in Latin America stagnated at about 20 per cent of their incomes (Table 4). This region's performance was lower than the average level for the developing countries. The recorded performance in 1990-93 was even worse than that of the early 1980s, and also worse than the 1970-74 performance. Evidence from individual countries also shows that only Chile and Mexico recorded savings rates that were more than the regional average between 1990 and 1996. Brazil and Argentina were two percentage points lower than the region's average. Apart from the explanations in the previous paragraph, this dismal performance has also been attributed to the collapse of household savings (Palma 1996). In addition, government savings, which showed a substantial improvement between 1988 and 1990, collapsed thereafter. Only corporate savings maintained a steady increase from 1989. Nevertheless, the marginal propensity of the corporate sector to save was still below expectation. Financial and trade liberalization policies of the adjustment period have been blamed for the collapse of household savings in Latin America. These policies generated some degree of household intertemporal substitution in consumption with disastrous effects on savings (Palma 1996). Trade liberalization

Figure 7. Savings Ratios in Africa, Asia and Latin America (1965-93)

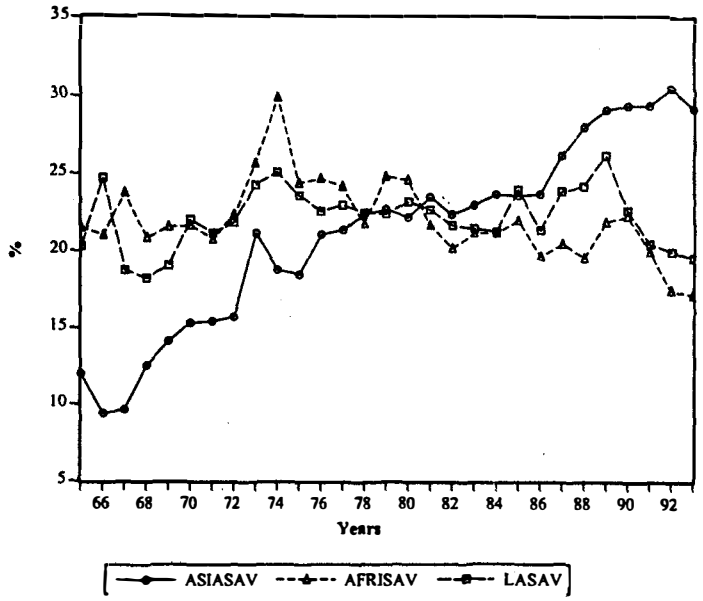


Figure 8. Savings Ratios in Asian, Industrial, Middle East and Developing European Countries

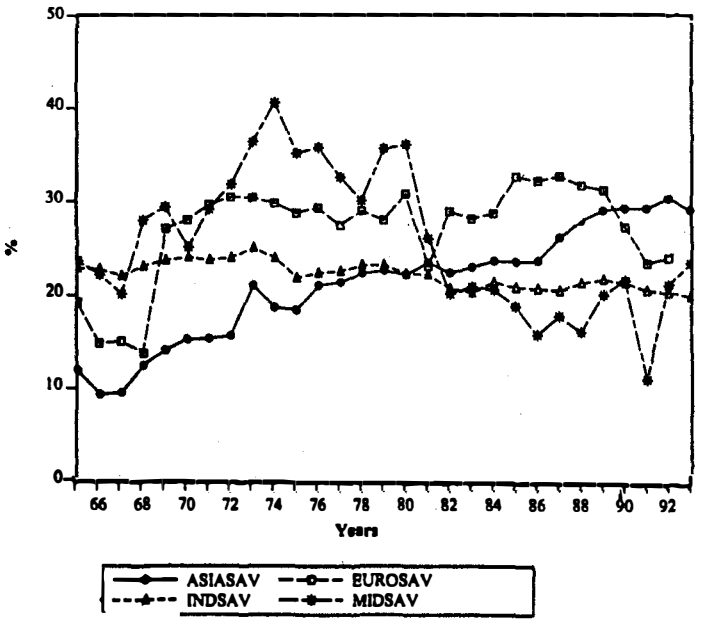


Table 5. Gross Domestic Savings (as Percentage of GDP) in Selected Countries

Country	1970	1980	1990	1993	1996	1998
OECD						
United States	17.8	19.4	15.7	16.3	15.0	17.0
United Kingdom	20.5	18.6	16.4	13.8	15.0	15.0
France	27.4	23.0	22.4	19.3	21.0	21.0
Japan	40.3	31.3	33.5	32.3	30.0	30.0
Some HPAEs						
Republic of Korea	15	23	38.6	34.4	34.0	34.0
Singapore	21	38	46.0	47.9	50.0	51.0
Indonesia	11	29	36.7	34.3	33.0	24.0
Malaysia	22	31	33.4	35.9	42.0	48.0
Philippines	20	25	18.7	13.8	14.0	16.0
Thailand	22	21	34.7	34.8	35.0	42.0
South Asia						
India	18	20	26.8	27.4	24.0	21.0
Nepal	2	11	7.3	11.7	9.0	10.0
Pakistan	9	7	13.5	14.8	14.0	13.0
Sri Lanka	19	12	14.3	16.0[a]	17.0	19.0
Sub-Saharan Africa						
Cameroon	19.1	17.3	17.0	NA	21.0	21.0
Cote d'Ivoire	25.0	20.4	11.3	10.5[b]	20.0	25.0
Kenya	20.2	18.6	19.1	21.0	17.0	7.0
Ghana	13.5	4.9	3.6	5.9	8.0	13.0
Nigeria	16.0	27.7	39.4	14.3	24.0	12.0
Zambia	43.2	19.3	17.8	9.5	8.0	5.0
Latin America						
Argentina	22.2	23.8	19.7	16.6	18.0	17.0
Brazil	24.3	21.5	24.4	22.6	18.0	19.0
Chile	17.1	17.7	29.7	26.5	26.0	25.0
Mexico	20.8	24.9	20.7	17.7	23.0	22.0
Middle East						
Iran	17.9	26.0	23.2	30.4	34.0	15.0
Israel	4.0	7.2	7.8	8.0	13.0	9.0
Saudi Arabia	46.7	62.2	29.6	26.9[c]	30.0	26.0
United Arab Emirate	72.7[d]	71.8	46.0	36.8[c]	27.0	—

Notes: a. The figure is for 1992; b. The figures is for 1991;
c. The figure is for 1992; d. The figures is for 1972.

Sources: Data for 1970 and 1980 were obtained from James, *et al* (1987:72) while others were obtained from *IFS Yearbook*, 1995. Figures for 1996 and 1998 were obtained from *World Development Indicators*, 1998 and 2000 (World Bank 1998 and 2000).

substantially increased the amount of luxury goods available in most of the economies of the region while financial liberalization lifted the borrowing constraints of households, thereby leading to a boom in household consumption and indebtedness.

Evidence from selected countries from Sub-Saharan Africa and Middle East further confirm the seriousness of savings collapse. For instance, Cameroon, Cote D'Ivoire, Zambia, Saudi Arabia and United Arab Emirate saved more before 1980 than in the 1990s (Table 5). Overall, the average savings rate between 1965-93 was better in the Middle East than in Africa (see Table 3). Most of these countries relied heavily on foreign savings, which became extremely difficult to get, after the debt crisis of the early 1980s. Consequently, savings rates declined very sharply in Africa and Middle East. But it was only in Africa that the savings rate declined consistently from 1970-74, and by 1990-93, it had fallen below the 1965-69 record (Table 4). A similar pattern is observable in the Middle East.

In most developing countries, especially in Sub-Saharan Africa, agriculture accounts for a significant part of household income. But then, agriculture as well as the income derived from it is subject to considerable uncertainty that can spread to other economic activities closely linked to it. At the same time, imperfections in financial markets may have prevented households from borrowing against future income, thereby making savings rate more responsive to changes in expectations about future income. Thus, the more uncertain the future, the larger will be the demand for savings as a buffer stock. Even where government was able to generate more revenue from tax or from commodity or oil boom, expenditure tends to rise faster than the revenue growth.

The gyration of savings rate in industrial countries and developing Europe was relatively marginal and predictable compared with other regions (excluding the high performing economies of Asia). Among these countries Japan was more disposed to higher savings rate. That country's savings rate oscillated between 30 and 40 per cent of her income. Contrary to expectation, however, the USA and U.K saved relatively little (15 per cent each in 1996). The attraction of substantial foreign savings as a result of these countries' developed

money and capital markets, might be responsible for the low savings rate. The propitious and stable economic and financial environment has a role to play in attracting foreign savings, which, theory says, may substitute domestic savings. The performance of savings relative to income was better in developing Europe than in the industrial countries. The decline in performance during 1990-93 was as a result of sharp decline in growth (more than 20 per cent in some countries) at the same time. This was particularly so in Eastern Europe and the Soviet Union.

3.3 Investment Performance

Like savings, the performance of investment (ratio of investment to GDP) differs markedly across regions. The ratio has been relatively stable in the developed countries within the range of 20.4 and 22.9 per cent (Table 6 and Figure 9). Figure 9 shows that the industrial region recorded the least gyration in investment ratio between 1965 and 1993, with the highest recorded figure during this period being about 25 per cent in 1973 and 1974, and the lowest, about 18 per cent in 1993. Though the performance was relatively stable, lower investment rates were recorded between 1980 and 1993 than in the previous subperiods. Japan had the best performance among the selected OECD countries (Table 7). One notable point about these countries' stable investment ratios in relation to the savings ratios is that the saving-investment gap was very minimal. When Tables 4 and 6 are compared, the domestic savings rate was even higher than the investment ratio in 1965-69, 1970-74, and 1990-93 by 0.1, 0.1 and 10.0 per cent. The relative stability of investment rates in these countries tends to confirm the endogenous growth theory: the fundamental determinant of growth is not physical capital accumulation but human capital and technological innovations. Thus, as the capacity of the economy expands, attention is focused on absorbing technology and upgrading workers' skills that may not be directly reflected in gross fixed capital formation.

The economies of Asia, especially the HPAEs, have performed exceedingly well for a long period of time. The investment rate in the Asian region grew steadily from 16.3 per cent in 1965-69 to 29.1 per

Figure 9. Investment Ratios in Africa, Asia and Latin America (1965-93)

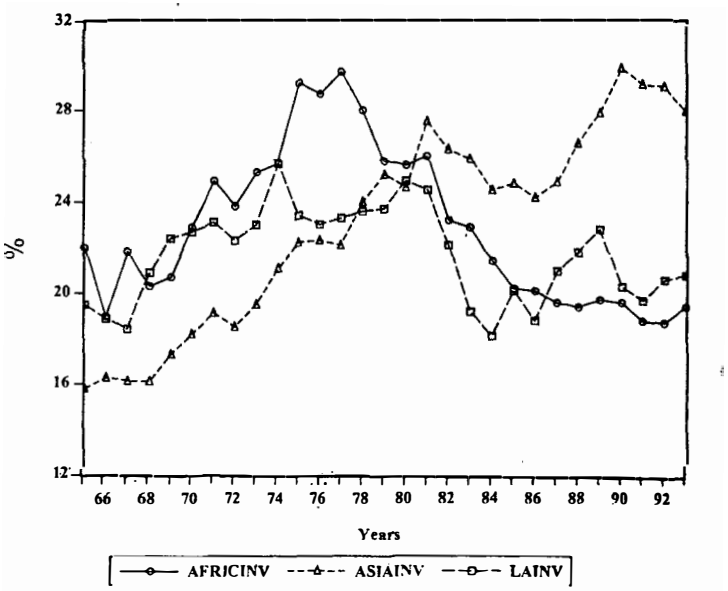


Figure 10. Investment Ratios in Asian, Industrial, Middle East and Developing Countries (1965-93)

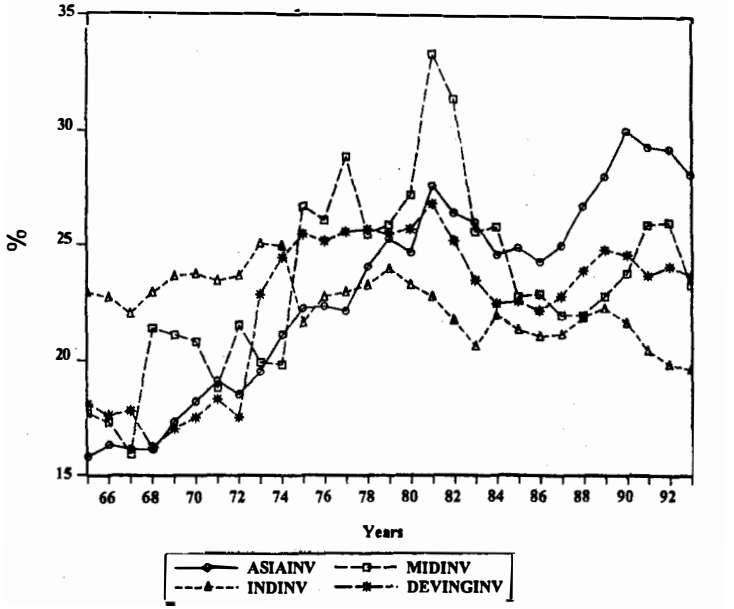


Table 6. Investment as a Percentage of GDP in Various Regions

Regions	1965-69	1970-74	1975-79	1980-84	1985-89	1990-93	1993-97
Industrial Countries	22.8	24.1	22.9	21.9	21.5	20.4	19.9
Developing Countries	17.3	20.1	25.4	24.6	23.1	23.9	26.9
Africa	20.8	24.5	28.3	23.8	19.8	19.1	19.5
Asia	16.3	19.3	23.1	25.8	25.7	29.1	32.6
4 HPAEs	16.8	21.6	25.5	29.4	26.0	33.3	32.1
Europe	22.2	30.9	33.2	27.3	26.8	22.7	23.5
Middle East	18.7	20.2	26.5	28.6	22.4	24.7	21.5
Latin America	20.0	23.4	23.4	21.8	20.9	20.4	21.4

Source: Computed from *IFS Yearbook*, 1995 and 1999

cent in 1990-93 and 32.6 per cent in 1993-97. This very impressive performance is better appreciated from Figures 9 and 10 where the trend of the investment ratios showed almost continuous upward movement between 1965 and 1997. The only serious dip experienced was between 1981 and 1984, the period of global economic recession, which significantly affected their external orientation strategy. The performances of the individual HPAEs were more remarkable. A cursory examination of Table 7 shows that representative countries in the region, such as Korea, Singapore, Malaysia and Thailand, performed creditably well. Investment rates ranged from 29.1 to 41.1 per cent between 1980 and 1996.

The evidence is more graphically portrayed in Figure 11. It is obvious from the figure that the Asian Tigers consistently improved upon their investment rates between 1970 and 1993. The crucial features among these high performing economies were high and rising levels of education and outward orientation. In addition, the East Asian economies encouraged investment by several means.

First, unlike other developing economies, they created infrastructure to complement private sector investment. Second, they created an investment-friendly environment through a combination of tax policies and measures that kept the relative prices of capital goods low, largely by maintaining low tariffs on imported capital goods. These fundamental policies had an important impact on private investment (World Bank 1991; page 1994). Third, because savings were not very responsive to changes in real interest rates (above zero). they kept deposit and lending rates below the market levels, a practice that runs contrary to the Mckinnon-Shaw hypothesis of financial liberalization. Besides, policies were also geared toward engendering macroeconomic stability such as stable prices and exchange rates.

Investment performance in Latin America has been less impressive. Although the investment rate rose from 20.0 per cent in 1965-69 to 23.4 per cent in 1970-74, it stagnated between 1970 and 1979 and thereafter collapsed (excepting some marginal improvements in 1993-97). The investment ratio took a serious dip during the debt crisis of the early 1980s. It fell from about 24 per cent in 1980 to about 17 per cent in 1984 (Figure 10). In 1990-93, the region achieved an investment rate that was similar to the one recorded three decades earlier (Table 6 and Figure 11). Moreover, the investment ratios of the selected countries, with the exception of Chile, were lower in the latter period than in the period immediately before the debt crisis. Three factors contributed immensely to the outstanding performance of Chile in the region. First, private investment constituted the largest chunk of the gross investment. Second, there was a consistent improvement in the investment in machinery and equipment over a long period of time in Chile. And third, the macroeconomic environment was relatively more stable than in any other country of the region. The environment in which investment decisions took place in the other countries of the region was highly unpredictable relative to future prices and demand conditions, which are irreversibly related to macroeconomic stability.

As indicated in Figure 10, investment ratios in Africa between 1966 and 1977 were quite impressive relative to other regions of the world. This was a result of the commodity booms recorded in the

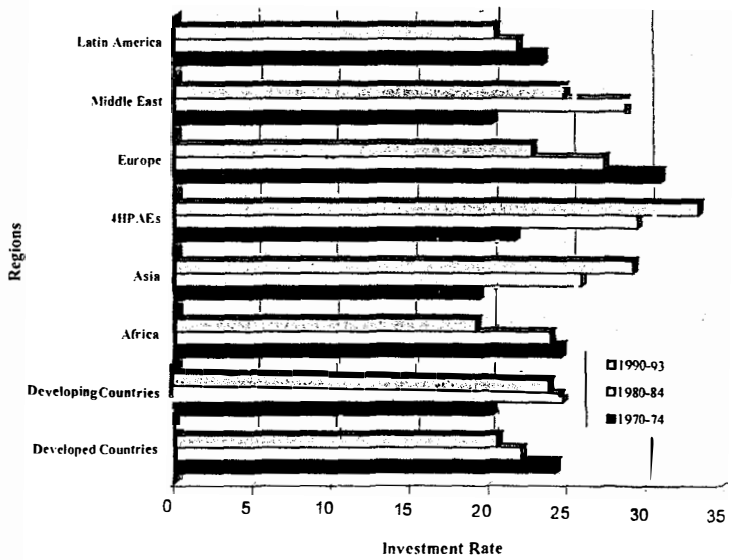
Table 7. Gross Domestic Investment (as a Percentage of GDP) in Selected Countries

Regions/Countries	1970	1980	1990	1993	1996	1998
OECD						
United States	17.7	20.0	16.9	16.6	18.0	19.0
United Kingdom	19.5	16.8	29.3	21.5	16.0	16.0
France	26.9	24.2	22.5	17.1	18.0	17.0
Japan	39.0	32.2	32.8	29.9	29.0	29.0
ASIA						
Republic of Korea	25.4	31.7	36.9	35.1	38.0	21.0
Singapore	38.7	46.3	39.5	43.8	35.0	34.0
Indonesia	13.6	20.9	36.1	33.2	32.0	14.0
Malaysia	20.3	30.4	31.3	35.0	41.0	27.0
Phillippines	21.2	29.1	24.2	24.5	24.0	21.0
Thailand	25.6	29.1	41.1	40.1[a]	41.0	25.0
Sub-Saharan Africa						
Cameroon	17.0	21.8	28.8	NA	16.0	18.0
Cote d'Ivoire	22.0	26.5	6.7	7.5[b]	14.0	18.0
Kenya	21.9	30.0	24.3	16.0	20.0	14.0
Ghana	14.2	5.6	12.3	22.0	19.0	23.0
Nigeria	15.7	22.8	11.9	10.7	19.0	20.0
Zambia	29.6	23.3	17.3	10.7	15.0	14.0
Latin America						
Argentina	22.2	25.3	14.0	18.4	19.0	20.0
Brazil	25.7	23.2	22.9	20.4	19.0	21.0
Chile	16.4	21.0	26.3	28.8	28.0	27.0
Mexico	22.7	29.6	21.9	22.0	21.0	24.0
Middle East						
Iran	34.6	29.6	28.6	29.2	29.0	16.0
Israel	28.4	22.4	18.7	24.0	24.0	20.0
Saudi Arabia	16.1	21.7	19.5	23.7[c]	20.0	21.0
United Arab Emirate	27.3[d]	28.3	20.6	24.5[c]	17.0	—

Notes: a. The figure is for 1992; b. The figure is for 1991; c. The figure is for 1992; d. The figure is for 1972.

Source: Data for 1970-93 were compiled from *IFS Yearbook*, 1995. Data for 1996 and 1998 were obtained from *World Development Indicators*, 1998 and 2000.

Figure 11. Investment Ratios in Different Regions (1970-93)



period. The increased revenues from these booms snowballed into government spending on capital projects. But, between 1978 and 1986, investment ratios seriously plummeted. The adoption of structural adjustment programmes by most of these countries produced a temporary relief for some of them up till 1989. The performance thereafter has not been quite encouraging. The declining investment performance is also shown in Table 6 and Figure 11. Specifically, the average gross domestic investment of Sub-Saharan African countries relative to their incomes has been lower than the corresponding average for all developing countries, and especially for the East Asian countries since the 1960s. SSA's investment rate rose to 14 per cent in 1965, against 22 per cent for East Asia and the 20 per cent average for developing countries. These later grew to 18.0, 26.0 and 23.0 per cent for SSA, East Asia and developing countries (Oyejide 1998). The performance in the early 1990s was marginally below the achievement of two decades ago. Very few of the African countries recovered from the investment collapse of the early 1980s and were by 1993 able to achieve an investment rate of

at least 25 per cent, e.g., Guinea Bissau and Mauritius (25.0 - 29.0 per cent) and Mozambique and Tanzania (over 35 per cent). As pointed out by Oyejide (1998), investment performance in these countries was a result of large foreign resource transfers. The performances of Cameroon, Cote d'Ivoire, Kenya, Ghana, Nigeria and Zambia between 1970 and 1996 are as shown in Table 7. Only Ghana recorded an average investment rate between 1990 and 1998 that was consistently higher than that of 1970.

The performances of developing Europe and Middle East were not significantly different from the experiences of other regions (see Tables 6 and 7, and Figures 9-11). Specifically, developing Europe recorded its ever lowest investment rate in 1990-93 as a result of the crises in Eastern Europe and Soviet Union. This development created an unconducive environment for investment in the region.

4

Trends of Savings, Investment and Growth in Nigeria

The various theoretical strands on the link between savings, investment and growth have already been explored. In spite of the contending theoretical propositions and among other factors, the role of savings and investment in the growth process cannot be discountenanced. These other factors include human capital formation, increased productivity and technological progress, as well as the discovery of new natural resources. But then the split between consumption and investment, as well as the nature and quality of the capital stock, is a major determinant of the rate at which an economy's capacity can be expanded. Thus, higher capacity growth requires policies that favour investment and saving. Although a considerable increase in output can be achieved in the short run through more efficient and fuller utilization of existing resources, economic growth, over the longer term, requires an increase in productive capacity. And this can be achieved through increasing the rate of investment and improving its quality.

4.1 Trend of Savings

Saving, which is income less consumption, should, other things being equal, give rise to investment. But then, evidence from Tables 8 and 9 shows that Nigeria's domestic savings have been low and inadequate to fund and sustain the level of investment that is consistent with the country's economic growth targets and potentials. The savings rate rose consistently from 17.3 per cent in 1970 to 35.7 per

cent in 1974 because of the good economic climate prevailing then, as reflected by the growth of economic activities. Thereafter, the performance of the savings rate has been very dismal (Table 8). In fact, between 1981 and 1984, it continuously decelerated, perhaps, due to the serious economic recession of the time. The same experience was recorded between 1992 and 1995 partly as a result of the interest rate policy revisions in 1991, 1994 and 1995; and partly because of other indices of macroeconomic instability in the system (e.g., inflation). This declining trend is clearly evident in Table 9. At an average of 14.3 per cent over the period 1987-90 and 10.7 per cent in 1991-98 (see Table 9), the ratio of gross national savings to gross domestic product is low compared to the over 30 per cent range for some other developing countries with growing economies. In 1996, for example, Nigeria's savings/GDP ratio was only 12.5 per cent compared to the figures for some other developing countries as follows: Malaysia (42 per cent); South Korea (34 per cent); Indonesia (33 per cent); Singapore (50 per cent); Thailand (35 per cent); Chile (26.0 per cent); Iran (34.0 per cent); Saudi Arabia (30.0 per cent), etc. (World Bank 1998). Some of the factors accounting for the low level of saving in Nigeria include high incidence of poverty and low nominal disposable income, underdeveloped savings channels, reflecting undeveloped capital markets, financial sector distress (in the last ten years), conspicuous consumption, and unfavourable economic environment characterized by high unemployment and inflation.

4.2 Trend of Investment

Reflecting the pattern of domestic savings, domestic investment has also performed dismally over the past two decades. Gross domestic investment performed much better before SAP than after. Available statistics show that the percentage share of gross domestic fixed capital formation (GDCF) in GDP declined for most of the years since the 1970s. As shown in Table 8, the investment ratio rose from 16.9 per cent in 1970 to a peak of 32.2 per cent (the highest ever recorded) in 1976. It later nosedived to 6.5 and 5.8 per cent in 1984 and 1995/1996 (though with some intermittent marginal improvements). Evidence from Table 8, however, shows some improvement in 1997

Table 8. Nigeria's Savings, Gross Domestic Investment, Consumption and Economic Growth Rate (1970-98)

	Real GDP Growth Rate (%)	GCF (% Share of GDP)	GCF (Growth Rate of % Share of GDP)	Gross Consumption Expenditure (% Share of GDP)	Gross National Savings (GNS) (% Share in GDP)	GNS (Growth of % Share of GDP)
1970	—	16.9	—	82.7	17.3	—
1971	21.3	19.4	14.8	79.0	21.0	21.4
1972	5.5	19.4	0.0	77.2	22.8	8.6
1973	6.4	23.8	22.7	69.7	30.3	32.9
1974	11.7	17.3	-27.3	64.3	35.7	17.8
1975	-3.0	26.3	52.0	72.9	27.1	32.5
1976	11.1	32.2	52.2	68.2	31.8	17.3
1977	8.2	28.9	-10.2	69.1	30.5	-4.1
1978	-7.4	28.6	-1.0	81.3	18.7	-38.7
1979	2.4	22.8	-20.4	75.5	24.5	31.0
1980	4.1	23.3	2.2	74.1	25.9	5.7
1981	-2.6	25.7	10.3	81.2	18.8	-27.4
1982	-0.3	22.0	-14.4	87.7	12.3	-35.1
1983	-5.4	12.1	-45.0	90.3	9.3	-24.4
1984	-5.1	6.5	-46.3	90.3	9.3	0.0
1985	5.9	7.3	12.3	89.0	11.0	18.3
1986	2.2	10.7	46.6	95.5	4.4	-60.0
1987	-0.3	9.0	-15.9	90.7	9.3	111.4
1988	7.0	6.6	-26.7	93.9	6.1	-34.4
1989	7.3	5.7	-13.6	88.3	11.7	91.8
1990	8.2	8.8	54.4	85.6	14.5	23.9
1991	4.8	11.0	25.0	77.7	22.3	53.8
1992	3.0	10.7	-2.7	86.7	13.4	-39.9
1993	2.1	11.6	8.4	91.2	8.8	-34.3
1994	1.3	9.3	-19.8	96.4	3.6	-59.1
1995	2.2	5.8	-37.6	96.4	3.6	0.0
1996	3.4	5.8	0.0	86.8	13.2	266.7
1997	3.2	10.0	72.4	88.9	11.1	-15.9
1998	2.4	9.9	-1.0	90.1	9.9	-10.8

Note: GCF – Gross Domestic Capital Formation
GNS – Gross National Savings
GDP – Gross Domestic Product

Sources: Compiled from: CBN *Annual Reports and Statement of Accounts*, 1993, 1996 and 1997; *Statistical Bulletin*, 1997 and 1998; and *Nigeria: Major Economic, Financial and Banking Indicators*, April 1997 and April 1999; and National Planning Commission's *Economic and Statistical Review*, 1998 and other issues.

Table 9. Nigeria's Gross National Savings, Gross Domestic Investment, Consumption and Economic Growth Rates for Different Subperiods

	Real GDP Growth Rate	Gross Domestic Investment (% Share of GDP)	Gross Consumption Expenditure (% Share of GDP)	Gross National Savings (% Share of GDP)
1970-80	5.8	25.9	71.4	28.6
1981-86	–0.9	14.1	89.1	10.9
1987-90	5.6	7.5	85.7	14.3
1991-98	2.8	9.3	89.3	10.7

Sources: Compiled from: CBN *Annual Reports and Statement of Accounts*, 1993, 1996 and 1997; *Statistical Bulletin*, 1997 and 1998; and *Nigeria: Major Economic, Financial and Banking Indicators*, April 1997 and April 1999; and National Planning Commission's *Economic and Statistical Review*, 1998 and other issues.

and 1998. The share of GDCF in GDP, which averaged 16.4 per cent over the 1970-96 period, was as high as 25.9 per cent over the 1970-80 subperiod. Thereafter, it declined to 14.1, 7.5 and 9.3 per cent in 1981-86, 1987-90 and 1991-98. Indeed, from 1987 to 1990, the share of GDCF in GDP averaged only 7.5 per cent compared to an average share of 85.7 per cent for private and public consumption. Thus, in comparison to modern growing economies where investment accounts for about 20 per cent or more of GDP, in Nigeria, the same accounted for only 5.8 per cent in 1996 (Table 8), and that was too insignificant to have stimulated any meaningful economic growth. In the developing countries of Asia, the performance was even better than the 20 per cent average – e.g., it was 38 per cent in Korea; 35 per cent in Singapore; 41 per cent in Malaysia; 41 per cent in Thailand; and 28 per cent in Chile (World Bank 1998).

The resultant savings-investment gap arising from the above analysis is shown in Table 10 and Figure 12. The oscillations in the savings-investment gap can be largely ascribed to monetary (interest rate) policies pursued during the period. Periods of substantial surplus gaps often coincided with the time of high interest rates while the converse holds for most periods of substantial negative gaps (see

Figure 12). Specifically, interest rates were deregulated to stimulate higher savings and mobilize funds for investment.

Table 10. Nigeria's Savings-Investment Gap (1970-98)

	Savings-Investment Gap (Current Market Prices) (Billion Naira)	Savings-Investment Gap as Proportion of GDP (%)
1970-74	4.43	9.18
1975	0.34	1.58
1976	0.11	0.40
1977	1.90	5.80
1978	-2.84	-7.87
1979	1.00	2.32
1980	2.03	4.1
1981	-3.42	-6.73
1982	-4.94	-9.55
1983	-1.53	-2.68
1984	1.82	2.86
1985	2.76	3.81
1986	-4.49	-6.14
1987	0.51	0.47
1988	-0.58	-0.39
1989	13.39	5.96
1990	14.49	5.56
1991	36.30	11.20
1992	14.53	2.64
1993	-19.90	-2.84
1994	-52.20	-5.71
1995	-186.1	-9.4
1996	-9.5	-0.3
1997	36.0	1.2
1998	-320.8	-11.3

Source: Compiled and Calculated from: National Planning Commission, *The Economic and Statistical Review* (various issues).

Nevertheless, while savings mobilization is vital for meaningful capital formation, there are also the concerns of low rate of investment resulting from high lending rates. For instance, between 1989 and 1991, when substantial surplus gaps were recorded, the prevailing lending rates ranged between 24.6 and 30.0 per cent. Even when the monetary authorities realized the negative implications of the existing interest rates profile for investment in 1990 and pegged them at a maximum of 21 per cent in 1991, the actual lending rate still remained at about 30 per cent. There were indications that lending rates for investment purposes were out of line with the prevailing rates of returns on investment in the real sector. Hence, the actual investment fell short of the savings mobilized within the system. In line with this realization, it becomes imperative to harmonize the rates of interest with the rates of return on investment. This, however, requires a delicate balance in order not to jeopardize the goal of savings mobilization.

4.3 Trend of Economic Growth

For a long time now, Nigeria's economic climate has not been favourable to both local and foreign investment. It is not that the country lacks investment opportunities; indeed, such opportunities abound in sectors such as oil and gas, agriculture, manufacturing, commerce, infrastructure, etc. Rather, the investment climate has been unattractive and characterized by macroeconomic instability, slow growth – even negative growth in the early 1980s, political instability, high production costs, financial sector distress, poor infrastructure and utility services, crisis in the educational system, problems created by insecurity and crime, pervasive corruption, and unsatisfactory institutional and regulatory framework, among other things (Obadan 2000). Perhaps, as a result of the low savings and investment profiles in the country, the relatively weak growth of the economy is hardly surprising. Although real economic growth rate averaged 5.8 per cent over the 1970-80 period, its performances in the early 1980s and the 1990s have been daunting. Growth was actually negative in the early 1980s as a result of the collapse of prices in the international crude oil market (see Tables 8 and 9 and Figure 13). Both savings and

Figure 12. Savings-Investment Gap (SIGAP) and Lending Rate in Nigeria (1970-95)

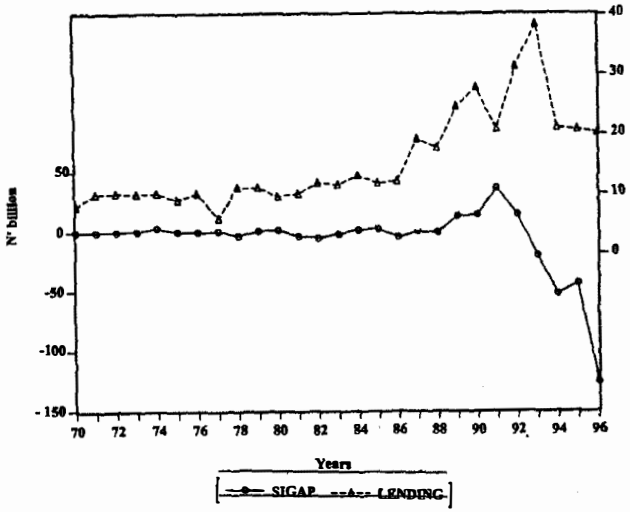


Figure 13. Growth Rates of GDP (GGDP), Saving (GGDS) and Investment (GGCF) in Nigeria (1970-96)

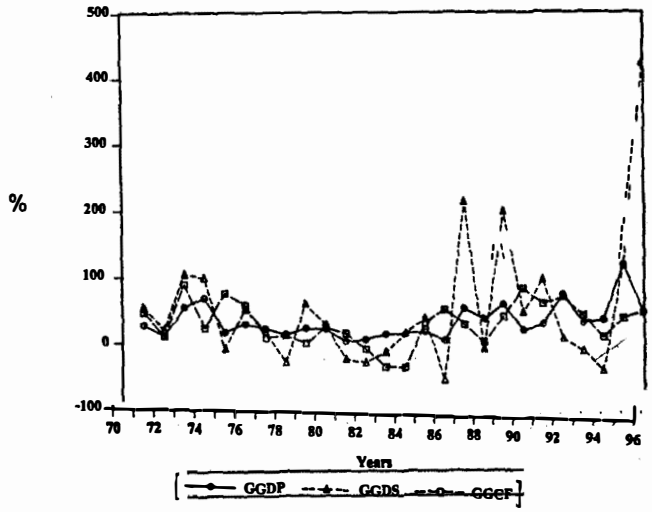


Table 11. Nigeria's GNP Per Capita (1970-97)

Years	GNP Per Capital (US$)	Growth of $ GNP Per Capital (%)
1970-74	128.5	35.8
1975-79	573.7	30.1
1980	1,281.4	26.4
1981	1,074.1	-16.2
1982	962.6	-10.4
1983	979.1	1.7
1984	997.4	1.9
1985	949.4	-4.8
1986	498.7	-47.5
1987	280.7	-43.7
1988	300.0	6.8
1989	280.0	-6.7
1990	274.0	-3.6
1991	250.0	-7.4
1992	240.0	-4.0
1993	361.0	50.0
1994	320.0	-11.4
1995	220.0	-31.3
1996	260.0	18.1
1997	270.0	3.8

Source: CBN, *Perspectives of Economic Policy Reforms in Nigeria.* A Study Report (CBN, Research Dept, 1993) for 1970 to 1987; and National Planning Commission and UNICEF, *Child Survival, Protection and Development in Nigeria – Key Social Statistics,* April 1998, for 1988-97 figures.

investment ratios declined significantly during that period. A similar pattern of dismal performance is exhibited by trends in per capita income level and its growth (Table 11). Per capita gross national product that was as high as $1,281.4 in 1980 declined continuously to its lowest level of $240.0 in 1992. As at 1997, it stood at $270.0, about the same figure as in 1972. With this level of per capita income Nigeria became one of the twenty poorest countries in the world. Apart from the factor of weak savings, investment and overall growth

performance, rapid population growth and macroeconomic policies, e.g., the massive devaluation of the national currency (the naira), also accounted for the observed low and declining level of per capita income in US dollars. For example, the naira depreciated by 98.8 per cent against the US dollar between 1985 and 1997 when the exchange rate moved from N0.9996 : $1.00 to ₦81.6494 : $1.00. On the other hand, the country's population steadily increased from 55.6 million in 1963 to 108 million in 1998.

The exact connection between savings, investment and growth has been contentious in the development literature. Preliminary evidence from Figure 8 shows some correlation between them. A casual analysis of the trend suggests that income growth tends to lead to savings and investment. Any temporary fluctuation in income, therefore, tends to generate a similar behaviour in savings and investment in Nigeria, thereby confirming the theoretical position.

5

Savings, Investment and Growth Correlations: Analysis with Graphs

As discussed in the last section, the interrelationship between savings, investment and growth has been contentious in the development literature. The debate has been quite intense – but not yet resolved – about what really propels growth. Proponents of the neoclassical synthesis hold the view that growth is often brought about by fundamentals and, in most recent times, also by some exogenous factors such as technological innovations and human capital development. The non-neoclassicals contend that the crucial role of savings and investment cannot be underrated. They strongly argue that the neoclassical concept of "exogenous factors" are embodied in physical capital accumulation. They also argue that savings, investment and growth are interlinked. The focus of this section, therefore, is to examine, in a descriptive way, the links between these variables in the developing and developed countries. A thorough understanding of the interrelationship is critical to policy design.

5.1 Savings-Growth Correlation

The fundamental psychological law, as proposed by Keynes, that men are disposed as a rule, and on average, to increase their consumption as their income increases, but not as much as income increases, shows that saving is directly related to income growth. In light of this, Germany, Humphreys and O'Brien (1992) assert that declining income leaves fewer resources for public and private consumption and savings. Carroll and Weil (1994), however, present a reverse

causation argument, that saving is automatically translated into capital accumulation and thereby growth, and that this translation is simply the mechanism underlying the positive correlation between savings and growth. What does the data show about this relationship?

Evidence from Figure 14 shows a linear relationship between growth of income and savings trend in Africa. A casual analysis of the trend tends to suggest that growth of income leads savings. Any temporary fluctuations in income tend to generate a similar behaviour in savings, thereby confirming the theoretical position. Figure 15 further shows some element of convergence between the savings rate and growth. With the exception of some war-ridden countries such as Republic of the Congo, Angola and Cameroon, all countries with savings rate of 20 per cent and above recorded a minimum growth rate of 2.4 per cent.

The same pattern of relationships was observed for Middle East countries. Savings also tend to lag behind growth performance (Figure 16). With the exception of Macedonia and, perhaps, Yemen Republic that recorded 2.8 per cent growth, having recorded a saving rate of 40 per cent, most other countries recorded savings rates that were commensurate with their growth performances (Figure 17).

Prior to 1967, growth and savings rates in Latin America tended to move in opposite directions (Figure 18). Thereafter, they tended to move in the same direction. It is, however, interesting to note that the rate of adjustment in savings tends to be gradual when there is any sharp perturbation in growth performance. Evidence from Figure 19 shows some pockets of correlation, but the prevalence of many exceptions suggests that the correlation might be weak.

Figure 20 suggests that in Asia savings rate has tracked income performance since 1967. This close tracking tends to be more obvious in Figure 21 where the emergence of convergence between growth and savings is clearly obvious. Evidence from industrial economies on growth-savings interactions tend to be contradictory. While the relationship tends to show a near perfect match in Figure 20, it shows evidence of insensitivity of savings to growth performance in Figure 22. Only Ireland and Austria's savings showed some evidence of linkage between the variables.

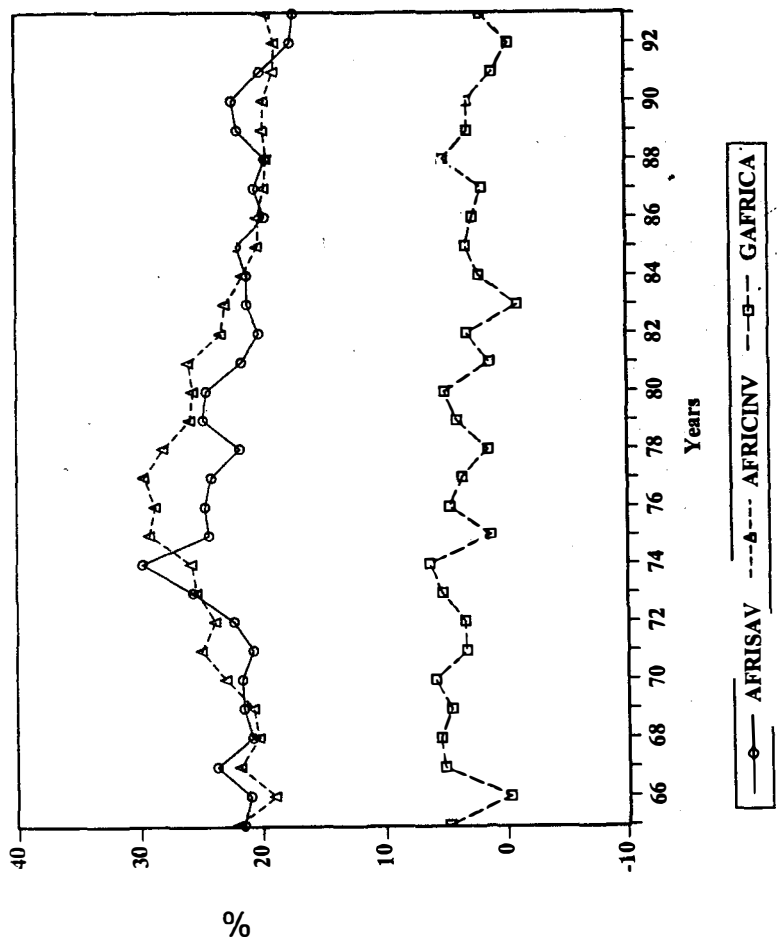
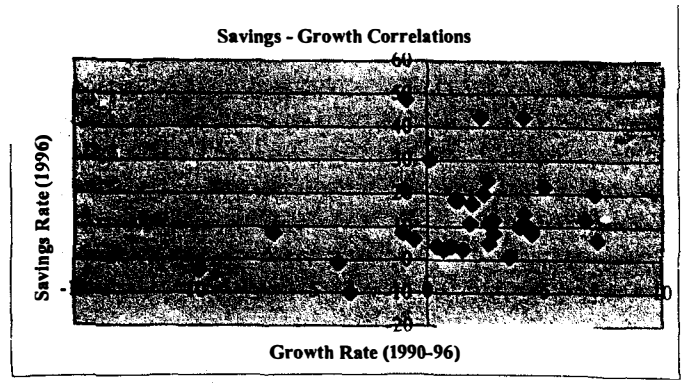
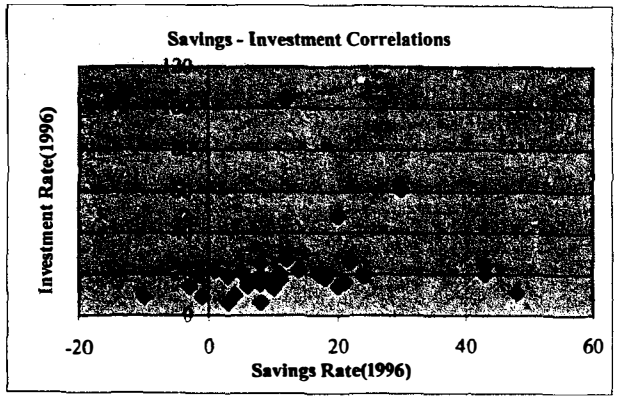
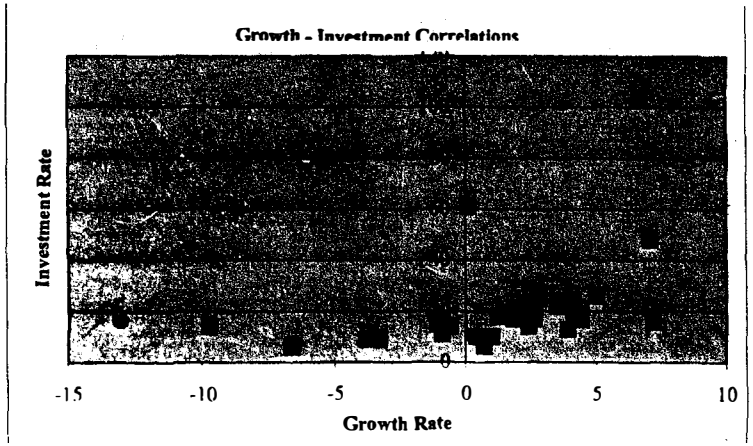


Figure 14. Savings, Investment and Growth in Africa (1965 - 93)

Figure 15. Sub-Saharan Africa: Savings, Investment and Growth Correlations







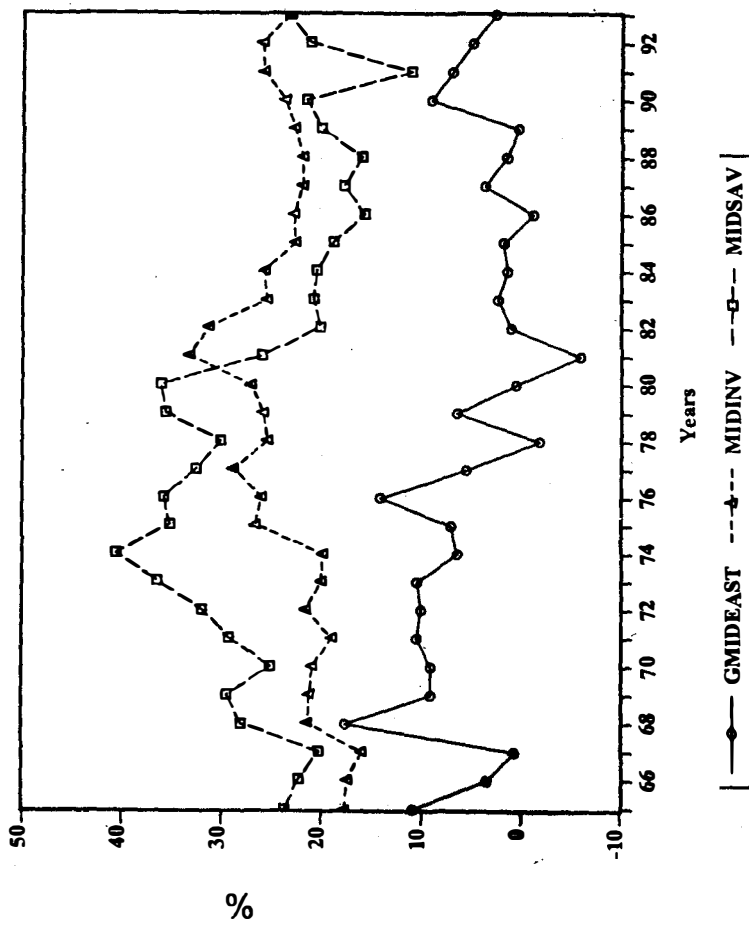
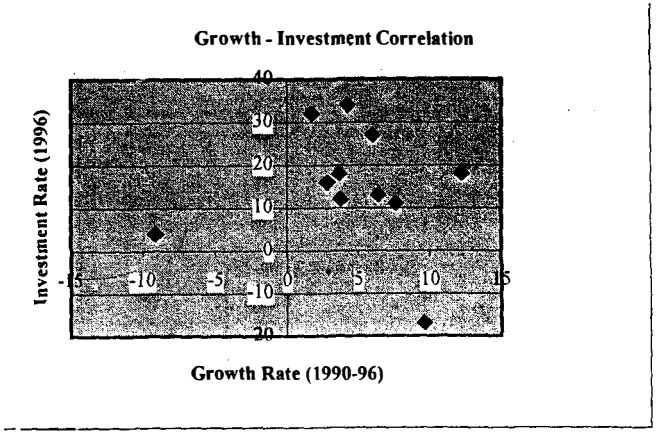
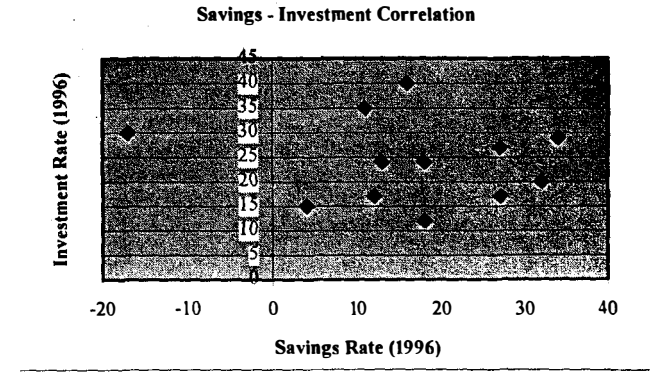
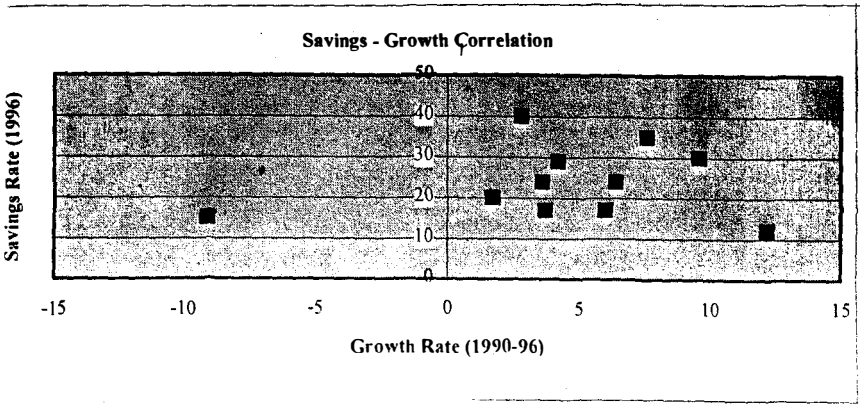


Figure 16. Savings, Investment and Growth in Middle East Countries (1965 - 93)

Figure 17. Middle-East Countries: Savings, Investment and Growth Correlations







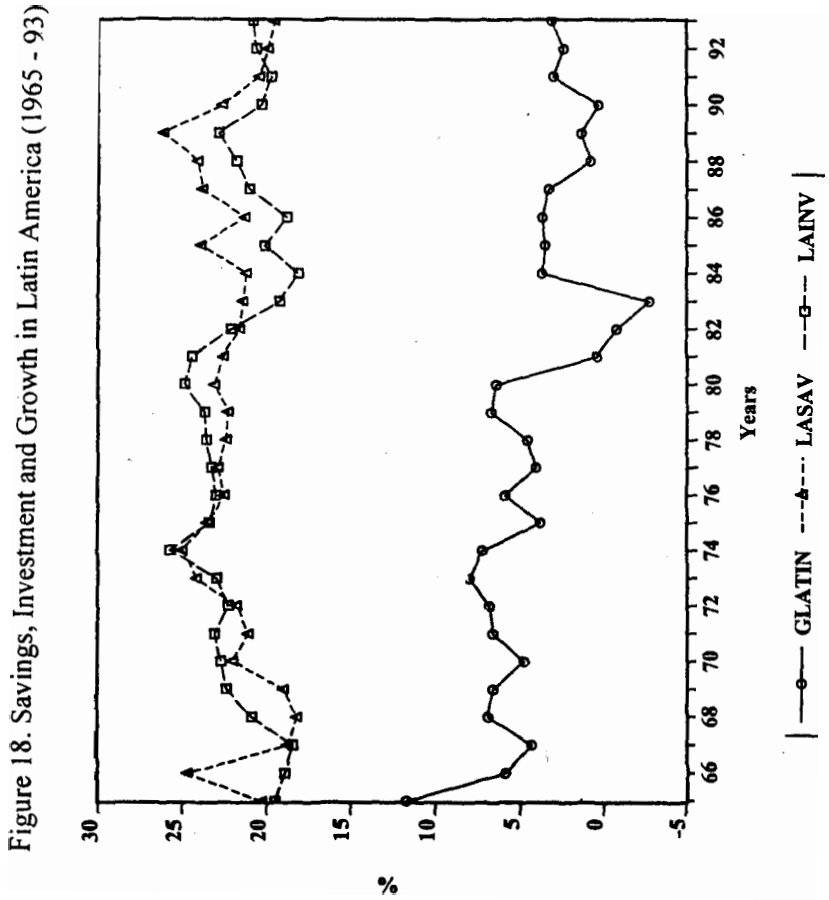
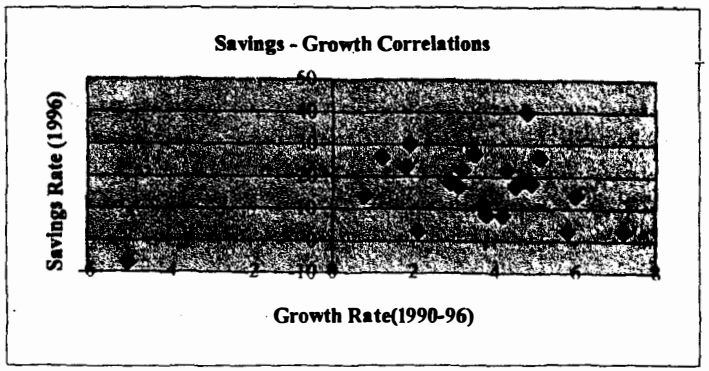
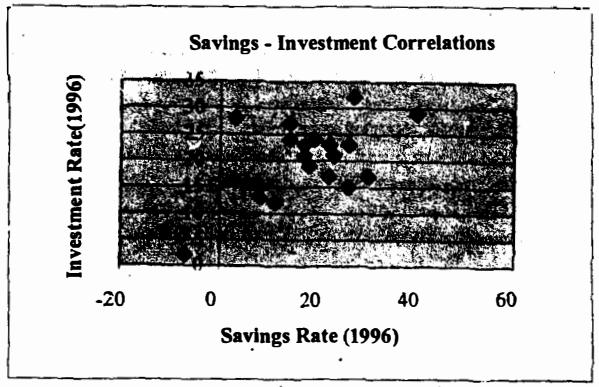


Figure 18. Savings, Investment and Growth in Latin America (1965 - 93)

Figure 19. Latin America: Savings, Investment & Growth Correlations





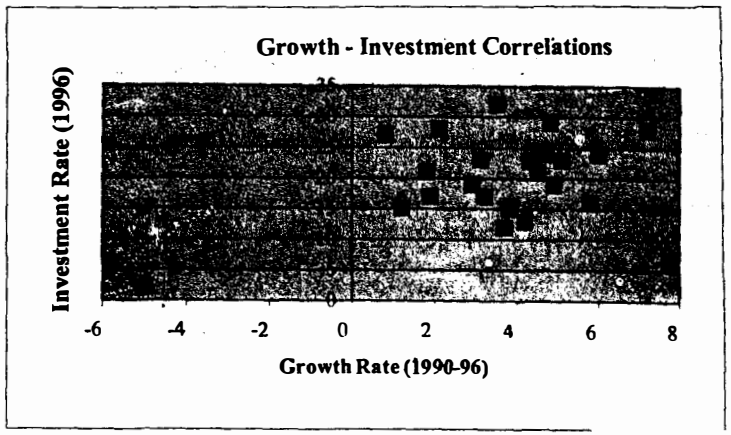
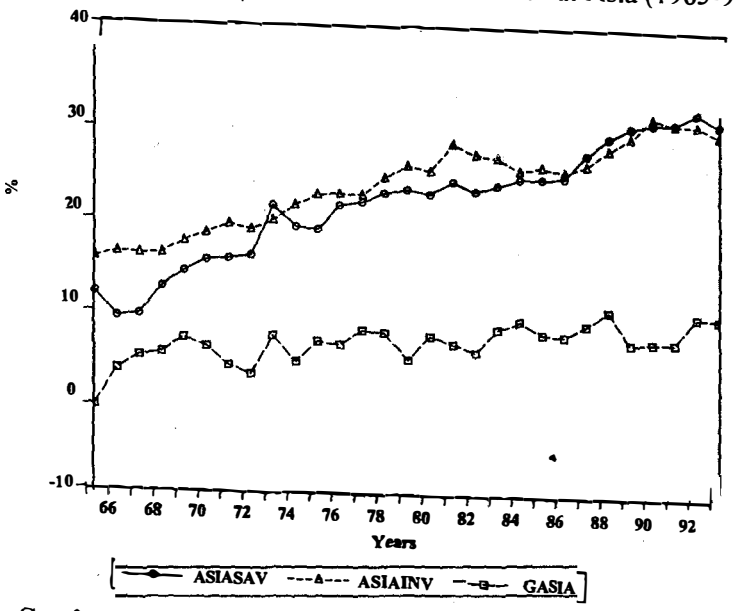


Figure 20. Savings, Investment and Growth in Asia (1965-93)



5.2 Savings-Investment Correlation

The link between savings and investment has long been predicted by early development economists like Arthur Lewis, Rosenstein-Rodan and Nurske. The recent development on financial repression synthesis of Mckinnon-Shaw and its refinements also emphasize the link between the two variables. From Figure 14, it is clearly shown that savings performance leads investment. Thus, the behaviour of African savings tends to predict the performance of investment. But the time lag could not be clearly determined through this approach. Figure 15 tends to show some element of convergence up to a savings rate of about 15 per cent of GDP. Countries such as Zimbabwe, South Africa, Kenya and Mauritius tended to have roughly an equiproportional relationship, between savings and investment performance; others such as Lesotho, Mozambique and Congo Republic appeared to rely more on foreign savings.

The relationship between savings and investment in the Middle East is mixed. Between 1965 and 1972, investment tracked savings, while the opposite was the case between 1973 and 1975. This coincided with the period of oil price shock of 1973/74. During this

period, savings tended to rise while investment fell. Between 1976 and 1990, savings led investment before it lost its bearing during the Gulf War of 1991/92. Evidence from Figure 16 shows that the war disturbed the savings and growth process of the region. At that time, investment exceeded savings unlike the period of oil price shock (1973/74) that recorded excess of savings over investment. This contrasting relationship accounts for the absence of convergence in Figure 17. The situation in Latin America was similar to what obtained in the Middle East with no unique pattern emerging between 1965 and 1975 and 1988-1993. Savings and investment tended to move in the same direction between 1976 and 1988. Thus, Figures 18 and 19 do not show any clear correlation between savings and investment.

Asia and the industrial countries recorded some similarities in the tracking between savings and investment (Figures 20 and 23). Investment closely tracked the trend of savings rate in the two regions. Could this relation be the result of a close link between savings and investment or the result of some exogenous factors that have unique influence on both of them? Well, some things have been common to the two regions: macroeconomic stability and an integrated financial market. These factors have been argued to greatly influence the integration between savings and investment (James, *et. al* 1987). Perhaps, countries with market fundamentals tend to suggest an integrated link between domestic savings and capital accumulation.

5.3 Growth-Investment Correlation

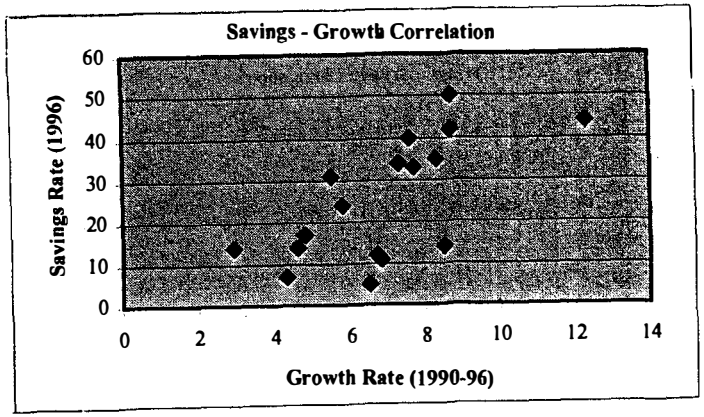
Although the emergence of neoclassical endogenous growth models has introduced some controversy into erstwhile sacrosanct perception that investment is the engine of growth, yet investment is still recognized as a crucial propellant of growth. Most development economists hold the view that the level of output of a country is proportionately linked to the reproducible inputs or capital. The resurgence of counter-neoclassical argument, mostly from the UNCTAD school, has logically shown that technological innovations and skill improvement are embodied in capital accumulation. The

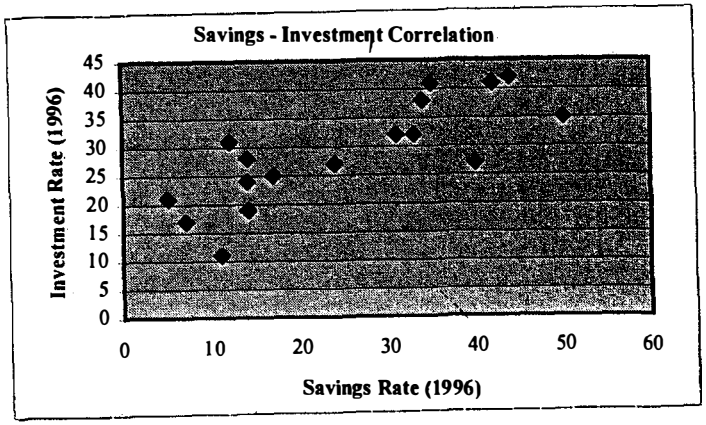
reverse causation argument has also been presented in the literature. What does the data say about this linkage?

African data (1965-93) tend to portray a close association between investment and growth. The existence of a close relationship between investment and growth does not help in identifying which one leads the other (Figure 17). Evidence from Figure 15 shows some elements of convergence between growth and investment. All countries with negative growth rates recorded investment rates of less than 20 per cent, e.g., Togo, Sierra Leone, Zambia, Rwanda, Congo Republic. Burundi, Chad and Angola. Some of these countries have been engaged in one or more tribal/ethnic conflicts. Invariably, such conflicts are not conducive for meaningful investment. Conversely, countries with high investment profile, e.g., Uganda and Lesotho experienced remarkable growth.

Evidence from the Middle East presents a mixed pattern. While there is an indication that investment leads growth (Figure 16), the same conclusion could not be drawn from Figure 17. The Latin American experience, on the other hand, shows a very close relationship. This close linkage makes any categorical direction of causation to be difficult (Figure 16). There is also evidence of partial convergence in Figure 19. Majority of countries with high investment profiles experienced appreciable growth. A cursory look at Figures 18 and 20 (for Asian and industrial countries) point to the fact that the two variables are linearly related. Figures 21 and 22 portray the close relationship in a more vivid manner. There is a positive association between investment and growth in Asia, with minimal exceptions. Evidence of convergence among countries of the industrialized nations tend to suggest a special correlation between investment and growth. Only Switzerland (-0.1 per cent) and Ireland (6.1 per cent) showed some signs of exceptional growth performance.

Figure 21. Asian Countries: Savings, Investment & Growth Correlations





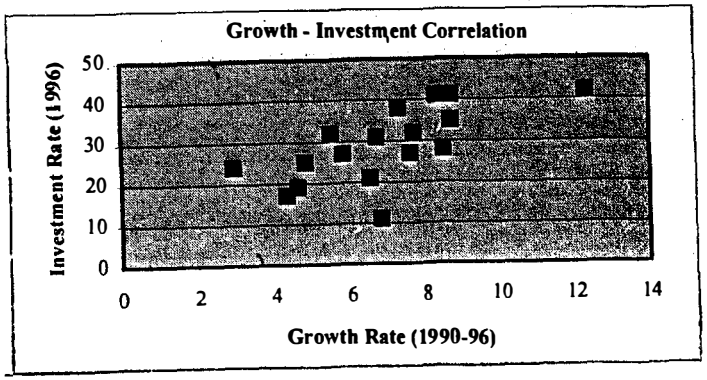
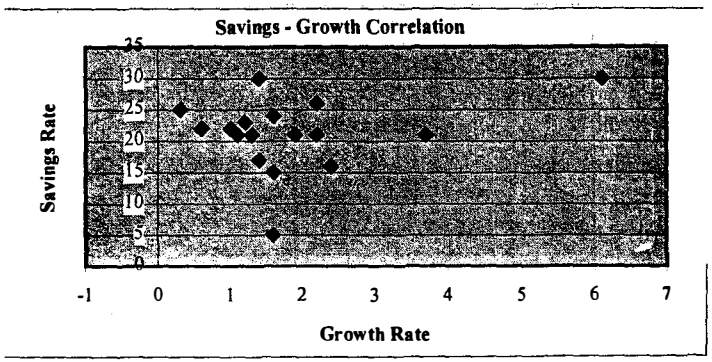
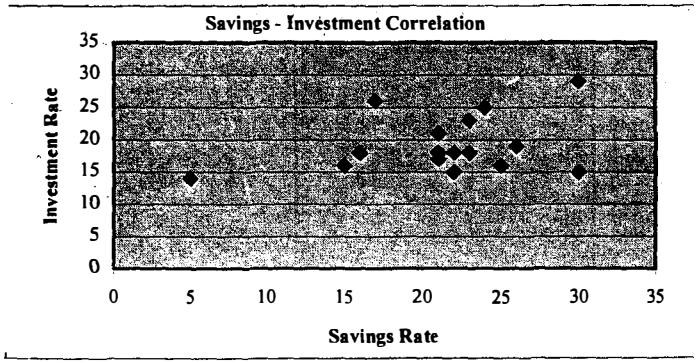


Figure 22. Industrial Countries: Savings, Investment & Growth Correlations





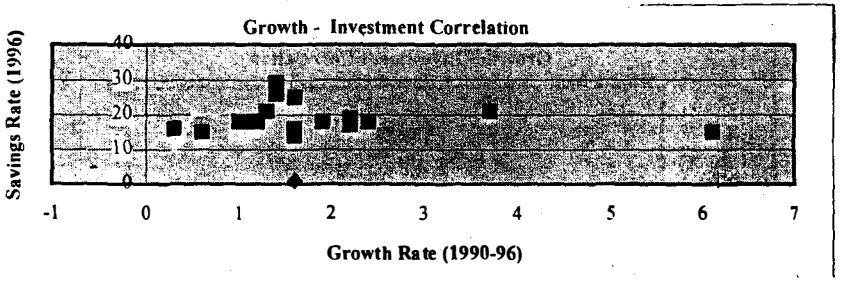
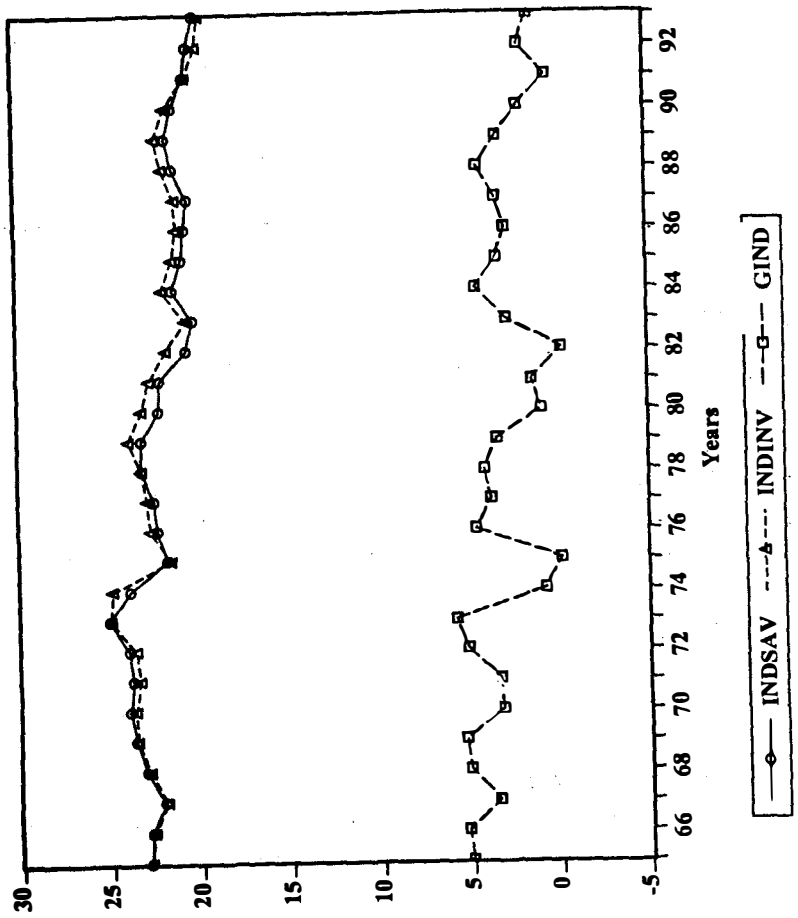


Figure 23. Savings, Investment and Growth in Industrial Countries (1965 - 93)



6

Savings, Investment and Growth Correlations: Evidence from Granger Causality Test

6.1 Model Specification

The existence of apparent correlations in the descriptive analysis given in the previous sections does not necessarily imply causality. Two variables may show correlation even when they are not directly related. It might be possible that they share the same trend from a third variable, i.e, an external factor may influence the two variables in the same way. Thus, the concept of causality is indispensable and fundamental to economic analysis. It is along this line that Wold (1954) argues that the use of causal hypothesis makes scientific analysis more determinate and the resulting conclusions more specific. Feige and Pearce (1979) also consider this approach to be the "bread" and "butter" of econometric analysis.

The commonly used causality tests in econometric modelling are Granger and Sims tests. The former uses the lagged values of a particular variable to explain the behaviour of another variable, the latter uses lead values. The loss of degrees of freedom often associated with the Sims approach makes its application restricted in econometric analysis. Hence, this study employs the Granger causality test.

The standard Granger causality test examines whether past changes in one variable, X, help to explain the current changes in another variable, Y, over and above the explanation provided by past changes in Y. If, otherwise, then one concludes that X does not

Granger cause Y. To determine whether causality runs in the other direction, from Y to X, one simply repeats the experiment, but with X and Y interchanged (Odusola and Akinlo 1995). The above scenario may be given in a Granger causality sense thus:

$$y_t = \sum_{i=1}^{k} \alpha y_{t-1} + \sum_{i=1}^{k} \beta x_{t-1} + \mu_t \qquad \ldots(1)$$

$$X_t = \sum_{i=1}^{k} \omega x_{t-1} + \sum_{i=1}^{k} \gamma y_{t-1} + \upsilon_t \qquad \ldots(2)$$

If $\beta_1 = \beta_2 = \ldots\ldots = \beta_k = 0$ then, x does not Granger cause y, hence, we accept the null hypothesis. The same applies to equation 2. The results of the Granger tests are contained in Table 12 and discussed as follows.

6.2 Savings and Growth

The theoretical proposition about the link between savings and growth of income could not be empirically established in most regions, e.g., Africa, Middle East and Asia (Table 12). By implication, savings tend to be forced; it is not voluntary. This tends to support the *forced savings* imposed in countries such as Singapore, Malaysia, Korea and Taiwan. Evidence from Latin America, on the other hand, shows that growth Granger causes savings. In this region, the savings rate is procyclical. This typically reflects the development in some Latin American countries, e.g., Venezuela and Chile, where governments tend to save more when income rises as opposed to what obtained in most African countries. The reverse causation could, however, not be established. The bicausal relationship between growth and savings was established for the industrial countries. A stronger causal relationship from growth to savings (1 per cent level of significance) exists while the one moving from savings to growth was established at the 5 per cent level of significance. Two policy issues readily come to mind here. In countries where the evidence of causality is absent, government should encourage voluntary savings

among private and corporate bodies. When this behaviour is entrenched for a long time, one can then use the behaviour of one of the variables to predict the performance of the other one. Second, where a bicausal relationship exists, such countries should try to explore the possibilities of encouraging savings from the three major sectors of the economy: private, corporate and public sectors.

6.3 Savings and Investment

Both early development economists and the proponents of the Mckinnon-Shaw formulation of financial repression vehemently argued that investment is constrained by inadequate and, in most cases, non-availability of investible funds (savings). The post-Keynesian formulations also hold the view that the surest way of increasing savings is by increasing the profits of the corporate bodies, since they save "more" and consume "less". Thus, savings and investment may be bicausally related.

Evidence from African data shows that causality runs from savings to investment, and not vice versa. This suggests that African investment activities have been seriously constrained by inadequate investible funds. Hence, the surest way of raising investment in Africa is by raising savings. One may infer from the absence of causality running from investment to savings that corporate bodies and rich men consume more of their earnings rather than ploughing them back into investments. A similar pattern of causal relationship between savings and investment was also obtained in Asia, with the existence of causality running from saving to investment. This was established at a higher level of significance.

Latin America and the Middle East show absence of any causal relationship between the variables. Expectedly, the relationship was established by data from the developed countries. The existence of savings Granger causing investment was established at 99 per cent confidence interval while the reverse causation was established at 90 per cent confidence interval.

Table 12. Granger Causality Tests for Regions of Developed and Developing Countries

Variables	F-statistics	Probability	Decision on Null Hypothesis
Africa			
Savings -> Investment	4.39	0.02	Reject
Investment -> Savings	1.98	0.16	Accept
Savings -> Growth	0.56	0.58	Accept
Growth -> Savings	0.17	0.85	Accept
Growth -> Investment	4.52	0.02	Reject
Investment -> Growth	0.22	0.80	Accept
Latin America			
Savings -> Investment	0.69	0.51	Accept
Investment -> Savings	1.28	0.29	Accept
Savings -> Growth	1.39	0.26	Accept
Growth -> Savings	2.59	0.09	Reject
Growth -> Investment	7.66	0.00	Reject
Investment -> Growth	2.93	0.07	Reject
Middle East			
Savings -> Investment	2.11	0.14	Accept
Investment -> Savings	1.34	0.28	Accept
Savings -> Growth	0.17	0.84	Accept
Growth -> Savings	0.90	0.42	Accept
Growth -> Investment	0.05	0.95	Accept
Investment -> Growth	3.49	0.04	Reject
Asia			
Savings -> Investment	6.24	0.00	Reject
Investment -> Savings	1.57	0.23	Accept
Savings -> Growth	1.92	0.17	Accept
Growth -> Savings	0.01	0.98	Accept
Growth -> Investment	1.36	0.23	Accept
Investment -> Growth	8.5	0.00	Reject
Industrial			
Savings -> Investment	6.53	0.00	Reject
Investment -> Savings	2.70	0.08	Reject
Savings -> Growth	4.28	0.03	Reject
Growth -> Savings	5.62	0.01	Reject
Growth -> Investment	19.25	0.00	Reject
Investment -> Growth	5.59	0.01	Reject

6.4 Investment and Growth

Several scholars and policy-makers have emphasized the crucial role of investment in the growth process. A predictable and stable economic environment has also been argued to be a *sine-qua-non* to progress in investment activities. Out of the five regions of the world sampled, only African data could not establish the crucial role of capital formation in the growth process. Causality running from investment to growth was established at 1 per cent level of significance in industrial and Asian countries; 5 per cent in the Middle East; and 10 per cent in Latin America. Could this be the result of the quality of investment in Africa, or is it a result of African countries not being able to incorporate the endogenous growth model into their investment activities through adequate innovations and continuous skill improvement that could increase total factor productivity? Since these are the major attributes of Industrial countries and Asian Tigers, and since African countries have been accused of not engaging in quality investment (World Bank 1989; 1991), one could infer that this was the missing link between investment and growth in Africa. Thus, attention may have to be given to qualitative investment, research and development to enhance technological innovations and improvements in human capital. This should, however, be taken with caution since it was not directly inferred from the study.

The reverse causation relationship between investment and growth was established in Africa, Latin America and industrial countries. It was established at 1 per cent for Latin America and industrial countries and at 5 per cent for Africa. The results show that investment is procyclical and that any perturbations in the growth process will be reflected in investment behaviours. The absence of this relationship in the Asian region could be partially traced to the close link of Asian economies to external orientation. Investment activities could have a direct linkage with the aggressive external orientation of the Asian investment decisions. In spite of this, however, more attention needs to be given to growth-inducing policies such as the one encouraging a stable macroeconomic environment. An unstable macroeconomic environment distorts

investment planning and, hence, earnings. Thus, an appropriate way of encouraging corporate investment is to enhance stable growth.

6.5 Evidence from Nigerian Data

The empirical evidence from the application of the Granger Causality Test on Nigerian data is shown in Table 13.

a. Savings and Growth

The table shows that growth of income does not Granger cause saving. This tends to suggest that saving is not income-induced in Nigeria. This probably reflects the government's behaviour to windfalls in foreign earnings. Experience has shown that windfalls in external earnings tended to generate higher levels of consumption that resulted mostly in overbloated budget deficits. The experience of people in 1973/74, the late 1970s and during the Gulf War windfalls from oil in 1991 as well as the corresponding fiscal deficits attest to this. Evidence on the reverse causation argument also shows that saving does not Granger cause income. The findings, therefore, do not show any direct relationship between savings and income growth.

b. Savings and Investment

The empirical evidence suggestes that investment is savings-constrained. The direction of causality is from savings to investment, thus confirming that in the Nigerian setting, savings mobilization is a veritable way to raise the level of investment. The reverse causation is, however, not supported by the evidence. The absence of causality running from investment to savings may be a reflection of the high propensity of corporate bodies to consume (i.e., preference for dividend declaration instead of additional capital reserves) and wealthy people's higher preference for conspicuous consumption.

c. Investment and Growth

The evidence in Table 13 shows that the relationship between investment and growth is unidirectional, running from investment to growth. This relationship was statistically established at 10.0 per cent

Table 13. Savings, Investment and Growth in Nigeria: Evidence from Granger Causality Test[1]

Variables			F-Statistics	Probability	Decision on Null Hypothesis
Growth	–	Savings	0.81	0.46	Accept
Savings	–	Growth	0.29	0.76	Accept
Savings	–	Investment	3.75	0.05	Reject
Investment	–	Savings	0.20	0.80	Accept
Investment	–	Growth	3.19	0.07	Reject
Growth	–	Investment	1.79	0.20	Accept

Note: The data for the test was compiled from: CBN' *Annual Reports and Statement of Accounts*, 1993, 1996 and 1997; *Statistical Bulletin*, 1997 and *Nigeria: Major Economic, Financial and Banking Indicators*, April 1997.

level of significance. Evidence from the finding gives credence to the crucial role of capital formation in the growth process. Although the absence of reverse causation, i.e., growth leading investment, was confirmed by the study, it is, however, important for government to recognize the role of a stable macroeconomic environment in investment planning. A stable macroeconomic environment is germane to sustainable investment planning and rapid capital accumulation.

d. Policy Implications of the Findings

The major implication of the foregoing analysis is the need to increase the rate of savings and investment in the Nigerian economy by implementing policies that favour public and private savings. As Onosode (1998) correctly observed, Nigeria, with its large population and earnings from petroleum oil, has the potential to mobilize substantial savings from its domestic sources. To him, it is high time the country invested as much energy and ingenuity on stimulating domestic savings. Enhancing domestic savings will ensure that we can kick-start the development process and thereby ensure that:

- the interest of foreign investors is re-enforced by our own demonstrated confidence in the economy;

- Nigerians are not reduced to onlookers in the development process; and
- the real potential of the economy is unlocked by the combination of domestic and foreign savings.

The raising of private saving and improvement in its allocation can be realized through a variety of measures aimed at removing distortions in financial markets, having appropriate interest rate policies, eliminating tax disincentives, and fostering a climate of confidence and stability. A stable environment can be maintained with monetary and fiscal policies aimed at keeping inflation under control and the exchange rate stable. Interest rate and financial reforms are indispensable measures for stimulating the mobilization of private domestic savings in developing countries. There is some evidence of a positive impact of the effect of interest rates on savings. Specifically, positive real interest rates are likely to lead to financial deepening as savers switch some of their savings from real to financial, and from foreign to domestic assets (Moustapha 1992: 87). Also, there is need to promote a well-functioning capital market to mobilize and allocate savings among competing uses. And a vibrant capital market cannot be built without the savings to sustain it. The current reforms of the Nigerian capital market are significant in this regard. Furthermore, there is the argument that a switch from income to consumption taxes may encourage private saving. But then, selective tax measures to promote savings may have more impact on the allocation than the total amount of savings. And for the public sector, raising savings will require steps to improve the fiscal position.

One of the quickest ways of altering the savings rate in an economy, as has been demonstrated in Chile, is the funded compulsory pension scheme. The scheme also helps in lengthening the maturity of investible funds in an economy given that the liabilities carried by such funds are largely long term. It is, therefore, desirable to fully fund both public sector and private sector pension schemes so that the savings can be used materially to support economic development and allocating them to users through an efficient and

transparent market. Besides, there is need for a better regulatory environment for pooled savings schemes, such as Mutual Funds and Unit Trusts, and by further reducing the multiple taxation to which such schemes are subjected. Finally, policies to enhance the recovery of real incomes will provide a basis for increased individual and institutional savings.

With respect to increasing the rate of investment, measures aimed at boosting domestic savings are likely to yield gains in terms of increased rate of domestic private capital formation, and therefore a higher rate of capacity output. Secondly, the investment climate must be improved upon to reflect confidence in the future of the economy and its management, macroeconomic stability and consistent policies, transparent rules and regulations, political stability, adequate infrastructure, security of life and property, improved education, public accountability, acceleration of anti-corruption measures, etc. An improved investment climate or investment-friendly environment can also be created through a combination of tax policies favouring investment and policies that keep the relative prices of capital goods low, largely by avoiding the effects of high tariffs on imported capital goods. Thirdly, the quality of investment is as important for growth as the quantity. The results of empirical studies generally show that less than half the growth in output is attributed to increases in labour and capital, with higher productivity accounting for the rest. Therefore, measures aimed at improving the quality of investment are vital, notably having positive real rates of interest. This, reflecting real rates of return, will ensure that productive private sector investments are selected, resulting in an increase in the average productivity of investment. Also, a more effective system of project evaluation will enhance the overall quality of investment and ensure that public investment programmes yield returns that are commensurate with the cost of borrowing, particularly foreign loans. Finally, the quality of investment may also be improved with measures that raise public investment in education and health (human capital), and in infrastructure. The latter can complement the expansion of private investment in the most efficient sectors.

7

Summary, Conclusions and Policy Recommendations

7.1 Summary and Conclusions

This paper has examined the linkages between savings, investment and growth in developing and developed countries, with a view to learning important lessons and articulating appropriate policies to set the pace for sustainable economic growth. In order to achieve the objective, the paper was divided into seven sections. After covering the background issues in the first section, we examined the theoretical link between savings, investment and growth in section 2. Arising from the review of the theoretical expositions, among these variables, three things are considered necessary for the theoretical linkage to hold. First, there must be an increase in the volume of real savings so as to make additional resources available for investment. Second, a means of collecting and channelling the savings to make them available to investors is crucially important. And third, there must be some effective means through which saving is transformed into productive capital.

In section 3, we examined the trends of these variables across regions. Evidence from the trend analysis shows that the Asian region, particularly the NICs and the Asian Tigers, outperformed other regions in the growth of economic activities, savings and investment. The factors that accounted for this remarkable performance were aggressive external orientation, technological innovations, adoption of market principles in macroeconomic policy management and avoidance of volatile macroeconomic environment.

For most of the periods considered, the variables in Africa, Latin America and the Middle East stagnated and, in some cases, plummeted. The industrial countries, on the other hand, recorded the least gyration in growth, savings and investment. These variables, though lower than those of Asia, were relatively more stable and predictable than in the other regions.

In section 4, we provided a developing country case study using Nigerian data. Here, we examined the trends of savings, investment and growth. Results from the trend analysis clearly show that Nigeria's domestic savings have been too low and inadequate to fund and sustain the level of investment that is consistent with the country's economic growth potentials. Arising from this development, there were serious oscillations in the savings-investment gap, thereby generating weak economic growth performance.

The graphical analysis of the correlations between savings, investment and growth were also presented in section 5. Evidence from the graphical illustrations tends to suggest that growth of income leads savings in Africa, the Middle East, Latin America and Asia (though with varying degree of tracking). It, however, produced a mixed result for the industrial economies. Also, investment appeared to closely track the trend of savings in Asia and industrial economies. The savings-investment tracking appeared to be relatively weak in Africa but with no unique pattern over the period under consideration in Latin America and the Middle East. These results have been ascribed to differences in the state of macroeconomic stability and the integration of financial market as well as exposures to external shocks. Evidence of linear relationship was also observable between growth of income and investment particularly in Latin America, Africa, and the industrial economies. While the use of graphical illustrations makes the linkages very obvious, however, it cannot be used for determining the direction of causation.

To address this limitation, on the direction of causation, Granger Causality tests were employed in section 6. Evidence from these tests tends to support the results from the graphical analysis presented in section 5. Notable among our findings are the following:

i. investment was Granger caused by savings in Africa (and specifically in Nigeria), Asia and the industrial countries. This tends to suggest that African investment activities (and that of Nigeria, in particular) have been seriously constrained by inadequate investible funds. The reverse causation was only established in the industrial countries;

ii. no direct linkage could be established between savings and growth in all regions except the developed region, where a bicausal relationship was established, and in Latin America where causation ran from growth to savings;

iii. causality ran from investment to growth in all regions except Africa. This result tends to underscore the quality of investment in Africa. In Nigeria, however, the direction of causality is from investment to growth. The reverse relationship of growth leading to investment was established in Africa and the industrial regions;

iv. one important lesson from our findings is that the level of financial development and integration is the prerequisite for savings, investment and growth correlations. Countries with relatively integrated financial markets tend to have strong correlations between savings and investment, on the one hand, and investment and growth, on the other. This presupposes the need to develop financial markets if developments in savings, for instance, are expected to mirror developments in investment and growth.

7.2 Policy Recommendations

Arising from these findings are some key policy issues. In countries where the evidence of bicausal relationship between savings and growth is absent, government should try to encourage voluntary savings by private and corporate bodies as obtained in Korea and Singapore. When such habits are entrenched for a long time, the behaviour of savings can then be used to track developments in growth. And where bicausal relationships exist, income-enhancing policies should be put in place for the marginal saving propensity of both the private and corporate bodies to be improved upon.

Evidence from the study also shows that investment activities have been seriously constrained by inadequate investible funds. Following the examples of the Asian Tigers, maintaining a relatively stable and positive real rate of interests on deposits would be very crucial to savings mobilization. They were able to maintain high levels of savings by avoiding inflation and any serious macroeconomic perturbations. Also, since saving is the surest way of raising investment in most of these countries, imposition of mandatory provident fund contributions that would raise private savings as obtained in Singapore and Malaysia as well as attractive long-term savings scheme should be entrenched. Besides, imposition of stiff taxes on conspicuous consumption is also very important for savings mobilization. An appropriate dividend policy should be put in place to enhance effective accumulation of reserved earnings without discouraging investors.

Increasing the total factor productivity is the surest way of linking investment with growth. This would, therefore, require increase in skill improvement and funding of research and development to encourage technological development. All these were germane to the success stories of the East Asian countries.

Since the results from the study confirm that countries with relatively developed financial systems tend to have high correlations between savings, investment and growth, attempts should be made to lay a solid foundation for an integrated financial system and well developed capital markets. Developing countries should, therefore, create well secured bank-based financial systems through strong financial regulation, good supervision, and regular and sustainable institutional reforms. The present wave of banking crisis should be seriously addressed with appropriate regulatory frameworks instituted to prevent its recurrence in the future.

In the specific case of Nigeria, where the empirical evidence strongly supports the crucial role of savings in promoting investment, and hence growth, policies that favour active public and private savings as well as the creation of a conducive environment for investment and growth, are indispensable. The raising of private saving and improving its allocation can be realized through measures aimed at

removing distortions in financial markets, having appropriate interest rate policies (positive real interest rates), eliminating tax disincentives, and fostering a climate of confidence and stability. Also important is the maintenance of fully funded pension schemes by both public and private sectors. Besides, policies to enhance the recovery of real incomes will provide a basis for increased individual and institutional savings.

The suggestion from the empirical analysis is that measures aimed at boosting domestic savings are likely to yield gains in terms of increased rate of domestic private capital formation and, therefore, a higher rate of capacity output. Specifically, there is a compelling need to improve the investment climate as indicated in subsection 6.5. Also, measures aimed at improving the quality of investment are vital, notably having positive real rates of interest/return, and raising public investment in education, health and infrastructure.

Bibliography

Agosin, M. R. 1994. "Saving and Investment in Latin America". *UNCTAD Discussion Papers* 90: October.

Akyuz, Y. and C. Gore. 1994. "The Investment-profits Nexus in East Asian Industrialization". *UNCTAD Discussion Papers* 91: October.

Carroll, C. D.; J. Overland and D. N. Weil. 1994. "Saving and Growth Habit Formation". *Finance and Economic Discussion Series.* Washington, D. C.: Federal Reserve Board.

Charemza, W. W. and D. F. Deadman. 1992. *New Directions in Econometric Practice.* Hampshire: Edward Elgar Publishing Limited.

Collins, S. M. 1991. "Savings Behaviour in Ten Developing Countries". In: B. Douglas Bernheim and J. B. Shoven, eds. *National Saving and Economic Performance.* University of Chicago Press.

Deaton, Angus. 1990. "Saving in Developing Countries: Theory and Practice". *Proceedings of the World Bank Annual Conference on Development Economics 1989.* Washington, D. C.: The World Bank.

De Long, J. B. and L. W. Summers. 1993. "How Strongly Do Developing Economies Benefit from Equipment Investment". *Journal of Monetary Economics* 32(3).

Feldstein, M. and C. Horioka. 1980. "Domestic Saving and International Capital Flows". *Economic Journal* 90(358).

Feige, E. C. and D. K. Pearce. 1979. "The Causal Relationship between Money and Income: Some Caveat for Time Series Analysis. *Review of Economics and Statistics* 61(4).

Fry, M. J. 1980. "Saving, Investment, Growth, and the Cost of Financial Repression". *World Development* 8(4).

Germany, M. C.; C. P. Humphreys and S. O'Brien. 1992. "Estimating the Cost of Financing African Development in the 1990s". In: Patel, I. G., ed. *Policies for African Development: From the 1980s to the 1990s*. Washington, D. C.: IMF.

Gore, Charles. 1994. "Development Strategy in East Asian Newly Industrializing Economies: The Experience of Post-War Japan, 1953-1973". *UNCTAD Discussion Papers* 92: November.

Haque, I. U. 1995. "The Macroeconomic Environment and Competitiveness". In: Haque, I. U., Martin Bell, C. Dahlman, Sanjaya Lall and Keith Pavitt, eds. *Trade, Technology and International Competitiveness*. Washington, D. C.: The World Bank.

James, W. E.; S. Naya and G. M. Meier. 1987. *Asian Development: Economic Success and Policy Lessons*. University of Wisconsin Press: International Centre for Economic Growth (ICEG).

Keynes, J. M. 1936. *The General Theory of Employment, Interest and Money*. London: Macmillan.

Lewis, W. A. 1954. "Economic Development with Unlimited Supplies of Labour". *Manchester School* 22.

Lehmussaari, 1990. "Deregulation and Consumption: Saving Dynamics in the Nordic Countries". *IMF Staff Papers* 37 (1): March.

Little, I.M.D.; R. N. Gooper; W. M. Corden and S. Rajapatirana. 1993. *Boom, Crisis and Adjustment: The Macroeconomic Experience of Developing Countries*. New York: Oxford University Press.

Lucas, R. 1988. "On the Mechanics of Economic Development". *Journal of Monetary Economics* 22.

McKinnon, R.I. 1973. *Money and Capital in Economic Development*. Washington, D.C.: Brookings Institutions.

Modigliani, Franco. 1980. "The Life-Cycle Hypothesis of Savings: Twenty Years Later". In: Andrew Abel, ed. *The Collected Papers of Franco Modigliani*. Cambridge, Massachusetts: MIT Press.

Moustapha, A. F. 1992. "Supply-Oriented Adjustment Policies?" In: IMF Institute, *Macroeconomic Adjustment: Policy Instruments and Issues*. Washington, D.C: IMF.

Obadan, M. I. 1998. Address at the 39th Annual Conference of the Nigerian Economic Society on Rekindling Investment for Growth and Development in Nigeria. NES *Newsletter* 39(1): October.

Obadan, M. I. and A. F. Odusola. 1999. "Savings, Investment and Growth Connections in Nigeria: Empirical Evidence and Policy Implications". *NCEMA Policy Analysis Series* 5 (2).

Obadan, M. I. Forthcoming. *Foreign Capital Flows and External Debt in Nigeria*. Ibadan: NCEMA.

Odusola, A. F. and A. E. Akinlo. 1995. "Trade, Growth and Causality in Nigeria: External Trade and Economic Development in Nigeria". *Proceedings of the 1995 Annual Conference of the Nigerian Economic Society*. Ibadan: NES.

Onosode, G. O. 1998. "The Capital Market and Nigeria's Economic Development". A Keynote Address Delivered at the One-day National Seminar of the Nigerian Economic Society on The Capital Market and Nigeria's Economic Development. Lagos. 21 January.

Oyejide, T. A. 1998. "Investment in Africa: Trends, Determinants and Policy Implications". Seminar Paper Presented at the Development Policy Centre (DPC), Ibadan, Thursday, 15 January.

Palma, Gabriel. 1996. "Whatever Happened to Latin America's Savings? Comparing Latin America and East Asian Savings Performances". *East Asian Development: Lessons for a New Global Environment*, UNCTAD Study 6.

Page, John. 1994. "The East Asian Miracle: Building a Basis for Growth". *Finance and Development*: March.

Romer, P. 1986. "Increasing Returns and Long-Run Growth". *Journal of Political Economy* 94.

Shaw, E.S. 1973. *Financial Deepening in Economic Development*. New York: Oxford University Press.

Singh, Ajit. 1996. "Saving, Investment and the Corporation in the East Asian Miracle". *East Asian Development: Lessons for a New Global Environment*, UNCTAD Study 6.

De Long, J. B. and L. W. Summers. 1993. "How Strongly Do Developing Economies Benefit from Equipment Investment". *Journal of Monetary Economics* 32(3).

Feldstein, M. and C. Horioka. 1980. "Domestic Saving and International Capital Flows". *Economic Journal* 90(358).

Feige, E. C. and D. K. Pearce. 1979. "The Causal Relationship between Money and Income: Some Caveat for Time Series Analysis. *Review of Economics and Statistics* 61(4).

Fry, M. J. 1980. "Saving, Investment, Growth, and the Cost of Financial Repression". *World Development* 8(4).

Germany, M. C.; C. P. Humphreys and S. O'Brien. 1992. "Estimating the Cost of Financing African Development in the 1990s". In: Patel, I. G., ed. *Policies for African Development: From the 1980s to the 1990s*. Washington, D. C.: IMF.

Gore, Charles. 1994. "Development Strategy in East Asian Newly Industrializing Economies: The Experience of Post-War Japan, 1953-1973". *UNCTAD Discussion Papers* 92: November.

Haque, I. U. 1995. "The Macroeconomic Environment and Competitiveness". In: Haque, I. U., Martin Bell, C. Dahlman, Sanjaya Lall and Keith Pavitt, eds. *Trade, Technology and International Competitiveness*. Washington, D. C.: The World Bank.

James, W. E.; S. Naya and G. M. Meier. 1987. *Asian Development: Economic Success and Policy Lessons*. University of Wisconsin Press: International Centre for Economic Growth (ICEG).

Keynes, J. M. 1936. *The General Theory of Employment, Interest and Money*. London: Macmillan.

Lewis, W. A. 1954. "Economic Development with Unlimited Supplies of Labour". *Manchester School* 22.

Lehmussaari, 1990. "Deregulation and Consumption: Saving Dynamics in the Nordic Countries". *IMF Staff Papers* 37 (1): March.

Little, I.M.D.; R. N. Gooper; W. M. Corden and S. Rajapatirana. 1993. *Boom, Crisis and Adjustment: The Macroeconomic Experience of Developing Countries*. New York: Oxford University Press.

Lucas, R. 1988. "On the Mechanics of Economic Development". *Journal of Monetary Economics* 22.

McKinnon, R.I. 1973. *Money and Capital in Economic Development*. Washington, D.C.: Brookings Institutions.

Modigliani, Franco. 1980. "The Life-Cycle Hypothesis of Savings: Twenty Years Later". In: Andrew Abel, ed. *The Collected Papers of Franco Modigliani*. Cambridge, Massachusetts: MIT Press.

Moustapha, A. F. 1992. "Supply-Oriented Adjustment Policies?" In: IMF Institute, *Macroeconomic Adjustment: Policy Instruments and Issues*. Washington, D.C: IMF.

Obadan, M. I. 1998. Address at the 39th Annual Conference of the Nigerian Economic Society on Rekindling Investment for Growth and Development in Nigeria. NES *Newsletter* 39(1): October.

Obadan, M. I. and A. F. Odusola. 1999. "Savings, Investment and Growth Connections in Nigeria: Empirical Evidence and Policy Implications". *NCEMA Policy Analysis Series* 5 (2).

Obadan, M. I. Forthcoming. *Foreign Capital Flows and External Debt in Nigeria*. Ibadan: NCEMA.

Odusola, A. F. and A. E. Akinlo. 1995. "Trade, Growth and Causality in Nigeria: External Trade and Economic Development in Nigeria". *Proceedings of the 1995 Annual Conference of the Nigerian Economic Society*. Ibadan: NES.

Onosode, G. O. 1998. "The Capital Market and Nigeria's Economic Development". A Keynote Address Delivered at the One-day National Seminar of the Nigerian Economic Society on The Capital Market and Nigeria's Economic Development. Lagos. 21 January.

Oyejide, T. A. 1998. "Investment in Africa: Trends, Determinants and Policy Implications". Seminar Paper Presented at the Development Policy Centre (DPC), Ibadan, Thursday, 15 January.

Palma, Gabriel. 1996. "Whatever Happened to Latin America's Savings? Comparing Latin America and East Asian Savings Performances". *East Asian Development: Lessons for a New Global Environment*. UNCTAD Study 6.

Page, John. 1994. "The East Asian Miracle: Building a Basis for Growth". *Finance and Development*: March.

Romer, P. 1986. "Increasing Returns and Long-Run Growth". *Journal of Political Economy* 94.

Shaw, E.S. 1973. *Financial Deepening in Economic Development*. New York: Oxford University Press.

Singh, Ajit. 1996. "Saving, Investment and the Corporation in the East Asian Miracle". *East Asian Development: Lessons for a New Global Environment*, UNCTAD Study 6.

———.1995. "How Did East Asia Grow so Fast? Slow Progress Towards an Analytical Consensus?" *UNCTAD Discussion Papers* 97: February.

Schmidt-Hebbel; K. Laus; L.Serven; and A. Solimano. 1996. "Saving and Investment Paradigms, Puzzles and Policies". *The World Bank Research Observer* 11 (1).

Serven, Luis and Andres Solimano. 1993. *Striving for Growth After Adjustment: The Role of Capital Formation.* Washington, D. C.: The World Bank.

Todaro, M. P. 1989. *Economic Development in the Third World.* New York: Longman Group Limited.

Wade, R. 1990. *Governing the Market.* Princeton: Princeton University Press.

Wold, H. O. A. 1954. "Causality and Econometrics". *Journal of Econometrics* 22.

World Bank. 1989. *Sub-Saharan Africa: From Crisis to Sustainable Growth.* Washington, D. C.: The World Bank.

———.1991. *World Development Report, 1991: The Challenge of Development.* Washington, D.C.: The World Bank.

———. 1993. *The East Asian Miracle: Economic Growth and Public Policy.* Washington, D. C.: The World Bank.

———. 1998. *Development Indicators.* Washington, D. C.: The World Bank.

———.2000. *World Development Indicators.* Washington, D.C.: The World Bank.