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Private Investment in Sub-Saharan Africa

An Exploratory Analysis

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The report is the result of a desk study and it draws on available studies on the subject and puts together data on private investment available from various sources in the Bank. The report was prepared by Rashid Faruqee (AFRCE) with contributions from Nam Pham, Nandita Tannan and Shams Rehman (Summer Intern). Nam Pham did the statistical work and Nandita Tannan was responsible for overall document production.

The paper benefitted from extensive comments received from Ishrat Husain, Ajay Chhibber and Ejaz Ghani on an earlier draft.

PREFACE

The overall purpose of this paper is to analyze the role of private investment in Sub-Saharan Africa, especially in those countries that have embarked on structural adjustment programs. Specifically, the paper has three objectives:

- to serve as a compendium of data on total investment, including private investment, in Sub-Saharan countries;

- to review the available literature on the factors that influence private investment and their relevance to Sub-Saharan countries; and

- to extend inter-country regression analysis, mainly done for non-SSA developing countries, to the SSA region.

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INTRODUCTION

Private domestic investment is a key determinant of economic growth. The promotion of private investment, both domestic and foreign, is therefore at the center of most low-income countries' development strategy.

Private investment in Sub-Saharan Africa (SSA) is currently low and has been suffering a decline in relative terms since 1980. Most developing countries suffered external shocks in the early 1980s, which lowered public and private disposable incomes, increased the cost of borrowing, and created a scarcity of foreign exchange in domestic economies. These shocks included higher oil prices, lower prices for major export commodities, higher real interest rates and a lack of capital flows from commercial sources. In an effort to establish a degree of macroeconomic stability -- including a sustainable economic growth rate, low predictable inflation, and external and internal balance -- some developing countries in SSA undertook adjustment programs in the early 1980s with the help of the World Bank and the International Monetary Fund (IMF). Other countries initiated similar programs a few years later. By 1991, twenty-nine SSA countries had instituted structural and sectoral adjustment programs.

The adjustment programs are designed to reduce financial imbalances and economic distortions in addition to several other objectives. First and foremost is the stimulation of growth in the economy. This depends on increasing efficiency in the utilization of resources and the productivity of new investments in the economy. It requires governments to liberalize regulations that impede private investment and divest themselves of many public enterprises. Private investment will then be allowed in areas where government had previously dominated.

Second, since the relative scarcity of foreign exchange is high, countries have to expand their exports and augment the output of their import-competing sectors. Finally, domestic savings would have to take on a more important role and need to be increased because borrowing abroad is much more expensive.

This paper examines and evaluates the trends in private investment in SSA, especially in the context of recent adjustment programs. Section 2 of this paper examines the trends in total investment, including private investment, in SSA. Section 3 presents the results of a survey of the literature on the determinants of private investment pertaining to all regions and assesses determinants in explaining the low and declining private investment in Sub-Saharan Africa. Section 4 deals with the impact of the structural adjustment programs on private investment and Section 5 presents the empirical results of an inter-country study of the determinants of private investment. Section 6 makes policy recommendations and suggests areas where further work should be undertaken.

CHAPTER 2.

STATUS AND TRENDS OF PRIVATE INVESTMENT IN SUB-SAHARAN AFRICA

This section looks at the macroeconomic situation of SSA and reviews the trends in domestic investment in the region in contrast to other regions. Also included is a box on the methodology used for obtaining public and private investment data for this report.

2.1. Overall Macroeconomic Situation in SSA and Comparison with Other Regions

SSA is below the average of developing countries of the world in the growth of GDP and domestic investment (See Table 1).1/ The average annual GDP growth rate during the 1980-90 period is half that of the 1965-80 period. Aggregate GDP growth has been on average less than population growth rates during the 1980s below the average of South Asia and East Asia. The per capita income in SSA in the mid-1980s was one fourth lower than in the mid-1970s. Export earnings, terms of trade and capacity to import have all declined precipitously in the 1980s — and agricultural growth has been weak.

Investment started declining sharply in the early 1980s with the onset of an economic crisis in many developing countries arising from terms of trade shocks and the debt problem. The decline in investment has been so severe that some countries are not even replacing their depreciating capital. In SSA, the estimated investment required to replace depreciating capital is 13 percent of GDP. In 1987, seven countries were below this level in SSA. 2/

1/ The subject of this paper is private investment, although parts of the paper deals with total investment, estimates on which are more readily available. The definition and estimate of investment are based on usual national accounts. Various problems and discrepancies exist in data, as noted in Box 2.1.

2/ W. Easterly, "Fiscal Adjustment and Deficit Financing during the Debt Crisis," in Dealing with the Debt Crisis," edited by I. Husain and I. Diwan. (Washington, D.C.: The World Bank, 1989).

Table 1: Growth of GDP and Investment of Low and Middle-Income Countries

Region	Average annual growth rate (Percent) of GDP (in real terms)		Average annual growth rate (Percent) of Gross Domestic Investment (in real terms)	
	1965-80	1980-90	1965-80	1980-90
Overall: Low and Middle Income Countries	5.9	3.2	8.3	2.3
Sub-Saharan Africa	4.2	2.1	8.7	-4.3
East Asia	7.3	7.8	11.1	10.6
South Asia	3.6	5.2	4.1	4.6
Middle East & North Africa	6.7	0.5	NA	NA
Latin America & Caribbean	6.0	1.6	8.2	-2.0

Source: WDR 1992, Table 2 and Table 8.

The deterioration of the macroeconomic conditions forced several SSA countries to initiate policy and institutional reforms in the early 1980s and many other countries in the region started adjustment programs in later years. Table 2 records the dates in which IDA supported adjustment programs started in SSA countries. In 1980 only three countries received IDA support for adjustment programs but, by 1991, 29 countries received such support.

Table 3 lists selected macroeconomic indicators for Sub-Saharan Africa for three periods: 1970-80, 1981-85 and 1986-90. These periods roughly reflect, respectively, the pre-adjustment period, the macroeconomic crisis period and the adjustment period. The table shows that several macroeconomic indicators – external and internal balance indicators,

external shock index, exchange rate investment and savings rates -- worsened during the crisis period. During the adjustment period, some of these indicators improved, but some continued to be depressed. The savings and investment rates remained particularly stagnant during the adjustment period. Investment to GDP ratio declined from 21 percent in 1970-80 to 16 percent in 1981-85 and recovered to only 17 percent during the adjustment period. Similarly, gross domestic savings (GDS) as a percentage of GDP declined from 18 percent during 1970-80 to 12 percent during 1981-85 in SSA. It started to recover slowly after that with the GDS share of the GDP increasing to 14 percent during 1986-90.

In terms of several indicators -- debt service, terms of trade, inflation and fiscal deficit to GDP -- there seems to be no improvement during the adjustment period. There is, however, clear progress in reducing exchange rate overvaluation and the external financing to the region increased significantly.

Table 4 presents comparative data on investment and its major source of financing (domestic saving) for the three time periods corresponding to pre-adjustment, crisis and adjustment periods.3/ The table shows that none of the other developing regions of the world have encountered a decrease in investment and saving rates as large as SSA's in 1981-85. The average gross investment to GDP rate declined by 5 percentage points. The average gross national savings (GNS) as a percentage of GNP in SSA was also 5 percentage points

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3/ In analyzing investment in SSA, another critical variable is the efficiency of investment, for which, however, no relevant data is available. One should note that a key objective of adjustment is to increase efficiency of existing stock of capital and investment. To the extent, a decline in investment is compensated for by increased efficiency of existing and new capital, the trend of declining investment should not be a matter of concern. However, it can be argued that after gains from increased efficiency of capital, further output growth will have to come from an increase in capital stock (investment), so the understanding of trends and the determinants of private investment remains a central issue of structural adjustment and economic growth.

lower in 1981-85 than the average for the period 1970-80. No other region registered such a decline and some regions even had an increase. During the adjustment period (1986-90), the investment and saving rates in SSA improved only marginally. The average GDS of SSA for the three periods show similar trend as GNS.

TABLE 2: IDA Countries in Africa
Receiving Adjustment Credits

(Fiscal year of credit approval)

Country	80	81	82	83	84	85	86	87	88	89	90	91
Sudan	x			x								
Kenya	x			x			x		x		x	xx
Senegal		x					x	x			x	
Tanzania		x						x	x	x	x	
Uganda	x	—	x		x				x		x	x
Malawi	—		—	x	x		x		x		x	
Togo				x		x			x			xx
Ghana				x	x	x	x	xx	x	x	x	x
Sierra Leone				—	x							
Guinea-Bissau					—	x		x		x		
Madagascar						x	x	x	x			
Zambia						x	xx					x
Burkina Faso						x						x
Mauritania						x		x			xx	
Guinea						—	x		x		x	
Niger							x	x				
Burundi							x		x	x		
Zaire							x	x				
Somalia							x			x		
Gambia							—	x		x		
C.A.R.								x	xx		x	
Sao Tome & Pr.								x			x	
Mozambique								—	x	x		
Mali									x	x	x	x
Benin									—	x		x
Chad										xx		
Nigeria										x	x	
Comoros										—	—	x
Rwanda												x
												—
Number of Countries	3	2	1	5	4	7	11	11	12	11	12	10
Cumulative Number of Countries	3	5	5	8	9	14	19	22	24	27	27	29

Note: x represents the number of adjustment operations

Table 3: Selected Macroeconomic Indicators for Sub-Saharan Africa

Indicator	1970-80	1981-85	1986-90
Investment to GDP Ratio	20.8	15.7	16.8
Domestic Savings to GDP Ratio	17.5	11.7	14.3
Resource Balance to GDP Ratio	-3.5	-4.4	-3.2
Debt Service to Exports Ratio [c/]	9.6	18.4	26.4
REER (1980 = 100) [a/]	95.5	113.5	89.4
Terms of Trade Index	106.3	91.6	80.8
Rate of Change of CPI (Inflation) [c/]	16.5	17.7	20.5
Black Market Exchange Rate Premium (%) [b/ c/]	128.9	221.9	90.9
Fiscal Deficit to GDP Ratio [c/]	5.3	7.4	7.8
External Shock index as % of GDP [c/ c/]	0.1	-5.3	-2.2
External Financing (Net Flows in 1980 US $m) [c/]			
Total [d/]	7830 (29%)	3839 (-28%)	4635 (25%)
Public	7136 (28%)	3357 (-30%)	4272 (31%)
Private	694 (55%)	482 (-13%)	363 (.03%)

Notes: a/ Index of the period average exchange rate of the currency to a weighted geometric average of exchange rates for the currencies of selected partner countries and adjusted for relative price movements in national price of the home country and its partners. An increase in the index reflects an appreciation.

b/ Includes only Ethiopia, Ghana, Kenya, Malawi, Sudan, Tanzania, Zaire and Zambia.

c/ The total effect of external shocks as % of GDP is computed as the sum of the real interest rate effect and the terms of trade effect.

d/ The periods used are 1970-1980, 1983-1985 and 1986-1989 respectively. The figures in parentheses refer to average annual growth rates.

e/ These figures represent 1973-81, 82-85, and 86-89, respectively.

Source: World Bank (BESD), OECD 1990 Report, Pick's Currency Yearbooks.

Table 4: Investment, Domestic and National Savings Ratios in Low and Middle Income Countries

Indicator/Region	1970-80	1981-85	1986-90
Gross Investment/GDP	Percent of GDP		
Total	24.7	24.1	25.3
SSA	20.8	15.7	16.8
South Asia	18.7	21.9	22.0
East Asia	28.4	30.3	34.5
Latin America & Caribbean	23.0	19.7	19.9
Middle East & North Africa	25.0	25.1	23.1
Gross Domestic Savings/GDP	Percent of GDP		
Total	23.1	23.3	24.8
SSA	17.5	11.7	14.3
South Asia	16.5	17.4	18.2
East Asia	28.3	29.8	35.6
Latin America & Caribbean	21.8	22.3	22.4
Middle East & North Africa	24.0	21.8	18.7
Gross National Saving/GNP	Percent of GNP		
Total	22.2	22.1	24.0
SSA	14.6	9.3	9.7
South Asia	17.2	19.8	19.5
East Asia	27.8	28.7	34.9
Latin America & Caribbean	20.2	18.5	19.4
Middle East & North Africa	23.3	22.4	18.4

Source: ANDREX database, World Bank.
Notes: The figures are GDP weighted averages. Classifications are based on WDR.

Table 4 also shows that savings in Sub-Saharan Africa are half the levels of developing countries of other regions. Investment levels in SSA were comparable to low-income countries of South Asia during 1970-80. Since then, the investment level steadily improved to approximately 22 percent, in contrast to a declining trend in SSA. The gap between domestic savings and investment rates is wider in SSA than in any other region of the world.

2.2 Trends

2.2.1. Levels and Trends of Investment Within the Region

The ratio of total investment to GDP in SSA differs widely among the countries in the region -- from 2 percent to 50 percent. Table 5 compares the average ratio of investment to GDP of the lowest-three investment ratio countries with the average ratio of the highest-three investment ratio countries in 1970. The former group contains Burundi, Gambia, and Rwanda, and the latter contains Botswana, Gabon, and Guinea-Bissau. The difference in investment to GDP ratio between these two groups during the different time periods ranges between six to ten times, illustrating the glaring differences between the countries in SSA.

The trends of investment to GDP ratio are also different among countries. For example, in the lowest-three investment ratio countries, the share of total investment in GDP doubled in the late 1970s (from 7 percent to 15 percent), continued rising in the early 1980s (18 percent), but marginally declined in the late 1980s (17 percent). On the other hand, the trend in the ratio of total investment to GDP for the highest-three investment ratio countries was the opposite. The ratio also increased modestly in the late 1970s (from 30 percent to 36

percent), but started falling in the early 1980s. In 1990, the ratio of total investment to GDP was even lower than in 1970.

Table 5 also presents the trends of total investment to GDP for two income groups in SSA in 1975. The classification of lower and higher income is based on the lowest and highest quartile, respectively, of per capita GDP (ATLAS method) of thirty-five SSA countries in 1975. The lower income group contains nine countries -- Burundi, Central Africa, Ethiopia, Burkina Faso, Mali, Malawi, Rwanda, Somalia, and Tanzania. The nine higher income countries are Cote d'Ivoire, Congo, Gabon, Mauritius, Sao Tome and Principe, Swaziland, Zaire, Zambia, and Zimbabwe. The investment ratio for the nine lower income countries dropped marginally in the early 1980 but has risen since to attain its peak for the last twenty years (about an average of 19 percent). In contrast, for the nine higher income countries in SSA (in 1975), the ratio started falling in the late 1970s (from an average of 23 percent). During 1986-90, the ratio of investment to GDP was even lower than the ratio in the early 1970s and the ratio was about the same as in the lower income group.

Several observations can be made from the figures in Table 5. First, per capita income levels made a difference in the investment rate during the pre-crisis period - the average investment rate of the comparatively higher income group had a 4 to 5 percentage point higher investment rate. Second, during the crisis period, the higher income group of countries experienced more decline than the lower income group. Third, the decline seemed to continue for the higher income group in contrast to some modest recovery of investment by the lower income group.

Table 5
Total Investment as Percentage of GDP

Years	Simple Average for lowest-three investment ratio countries in 1970	Simple Average for highest-three investment ratio countries in 1970	Simple Average for the lowest quartile of per capita GDP in 1975	Simple Average for the highest quartile of per capita GDP in 1975
1970-74	6.8 %	30.3 %	16.5 %	22.7 %
1975-80	15.6 %	36.3 %	18.8 %	23.2 %
1981-85	17.5 %	32.5 %	17.3 %	19.5 %
1986-90	17.3 %	26.5 %	18.6 %	17.3 %

Source: ANDREX Database

2.2.2. Private Investment

Private investment as a percentage of GDP in SSA during the 1980s is also widely different across countries. It varies from 1.1 percent (Burundi in 1980) to 57.1 percent (Lesotho in 1990). Table 6 presents statistics on the mean average of private investment as a percentage of GDP for different groups of countries in early and late 1980s. If weighted by GDP, the average private investment to GDP ratio for the 1980s was 10 percent, a simple average of private investment as a percentage to GDP has also been around 10 percent during the first half of 1980s, but increased marginally to 12 percent in the later half. The difference between the lowest three private investment ratio countries and the highest three countries is pronounced -- the rate of the latter group is almost three times that of the other group.4/ The ratio of private investment to GDP increased slightly for the lowest three private investment ratio countries during the adjustment period (1986-90) compared to the crisis

4/ The lowest-three private investment ratio countries (in 1980) are Burundi, Malawi, and Togo, and highest three countries are Cote d'Ivoire, Gabon and Zimbabwe.

period. The average private investment ratio for these three countries actually declined slightly in the late 1980s in contrast with the early part of the decade.

Table 6 clearly brings out the impact of income on the level of private investment. A simple average for the top 25% per capita GDP countries in 1980 (Cote d'Ivoire, Gabon, and Mauritius) had a 17% investment rate approximately in both the early and late 1980s, whereas, for the 25% lowest per capita GDP countries in 1980 (Burundi, Gambia and Malawi), the simple average has been between 4.6% (in the early 1980s) and 6.0% (in the late 1980s). Thus, the level of per capita income does make a big difference in the level of private investment in contrast to what was observed in the case of total investment (Table 5). In the case of total investment, the highest 25 percent income group had only a 2 percentage point higher investment ratio than the lowest income group during 1981-85 -- a difference that is lost during 1986-90. In the case of private investment, the difference remains pronounced during the entire period.

Table 6
Private Investment as Percentage of GDP

Years	Weighted Average of SSA a/	Simple Average of SSA	Simple Average for lowest-three investment ratio countries in 1980	Simple Average for highest-three investment ratio countries in 1980	Simple Average for the lowest quartile of per capita GDP in 1980	Simple Average for the highest quartile of per capita GDP in 80
1980-85	10.4 %	10.1 %	5.3 %	16.0 %	4.6 %	17.0 %
1986-90	10.2 %	12.2 %	5.8 %	15.0 %	6.0 %	17.5 %

a/ Figures for SSA are based on available data for 16 countries.

Source: ANDREX/DATABASE

Since private investment data is limited, inter-regional comparison is difficult. Data available from IFC sources on selected countries from different regions indicate that during 1980-85, the private investment to GDP ratio of few selected countries of SSA was comparable to South Asian countries, but lower than East Asia and Latin America regions. The ratio declined for those selected countries of SSA during 1986-90 and the rate was lowest among the 4 regions compared.5/

As for the share of private investment in total investment, a simple average for SSA countries is around 50 percent.6/The share has been marginally increasing because of a faster decline of total investment. If compared to other regions, the share of private investment in total investment in Sub-Saharan Africa is similar to private investment data for South Asia but significantly lower than Latin America (60 percent) and East Asia (65 percent)7/.

5/ The inter-regional comparison is based on available data from the following countries of different regions:

SSA: Cote d'Ivoire, Ghana, Guinea, Kenya, Malawi, Somalia, Tanzania, Zimbabwe

SA: Bangladesh, India, Nepal, Pakistan, Sri Lanka

EA: Fiji, Indonesia, Malaysia, Papua New Guinea, Philippines, Thailand

LA: Argentina, Belize, Bolivia, Chile, Columbia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Mexico, Paraguay, Peru, Uruguay, Venezuela.

Source: Pfeffermann, G., and A. Madarassy (1992), "Trends in Private Investment in Developing Countries." IFC Discussion Paper No. 14. Washington, D.C.: April.

6/ Figures for the whole region were calculated by using unweighted average of sixteen SSA countries that have available data for 1980-90. These countries are those included in the empirical study in section 5 of this paper. The GDP weighted average for these will be around 60 percent during the same period.

7/The figures correspond to the average for 1980-90.

To sum up, the total investment rate in SSA has been comparatively lower than most other regions and total investment has remained at depressed levels during the last decade. The picture about the private investment in SSA is also the same. The private investment share in total investment in SSA is comparable to South Asia, but lower than Latin American and East Asian averages. The aggregate level of savings in SSA is the lowest among all regions. Within the region, there is a wide variation among the countries. If disaggregated by the per capita income level, the total investment to GDP ratio was higher for the higher income group during 1970-80, but the difference between the two has narrowed since then. The average ratio of private investment to GDP for the higher income group, however, has been significantly higher than the lower income group, indicating predominant role of per capita income level in influencing the level of private investment.

Box 2.1 Methodology Used for Investment Trend Analysis

Obtaining public and private investment data for trend analysis in SSA has not been easy. National accounts only provide the aggregate investment figures. Private and public investment data, if available, are scattered among different sources. Data from 24 SSA countries are used for the analysis. The sources of the data used in this report include *ANDREX/RESD (World Bank Database), Trends in Private Investment in Developing Countries, 1992 edition* , Public Investment and Public Expenditure reviews, Country Economic Memoranda (CEMs), and various other World Bank reports and publications. Annex I provides graphs of investment trends in the countries used for the study.

Private investment data are less frequently available than public investment data. Even public investment data are also lacking in some countries and more data on public investment is available for the 1980s than for the 1970s. Besides availability, other problems inherent in the data include the following:

- It is often not clear from the data whether financial investment is included in public investment figures or not.
- For some countries, inventory changes are included in private investment, whereas for others they are not.
- It is often not clear whether investment contributions from state-run corporations and enterprises are included in the national accounts.

These problems introduce discrepancies between the gross domestic investment account and the sum of the private and public investment data. However, these problems make intercountry comparison difficult but would not impair the analysis of investment trends in SSA countries.

CHAPTER 3.

DETERMINANTS OF PRIVATE INVESTMENT AND EVIDENCE FROM SUB-SAHARAN AFRICA

The search for an explanation of the depressed levels of private investment must begin with a review of the determinants of private investment. There is a vast literature on private investment and several empirical studies -- such as Blejer and Khan (1984), Sundarajan and Thakur (1981), and Serven and Solimano (1991) -- have been carried out on the factors that influence of private investment. A survey of the literature reveals that several factors influence private investment: macroeconomic stability, fiscal deficits and debt overhang, exchange rates, interest rates, institutional setup and business environment, public investment, and output.8/ All these factors are found to affect private investment in various degrees. The following section reviews the likely impact of each of these factors and evidence, if available, from Sub-Saharan African countries.

3.1 Macroeconomic Stability

Uncertainty has a negative effect on private investment. Empirical results (Solimano 1989) for Chile, Dailami (1987) for Brazil) have shown that countries with higher real exchange rate instability and/or higher growth rate variability tend to have lower private investment ratios. Higher credibility helps to speed up the investment response to the reforms and reduce the costs of adjustment. The effect of uncertainty is completely independent of investors' risk preferences or of the extent to which this risk may be diversifiable. From a policy perspective, the stability and predictability of the incentive structure and the

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8/ A survey paper by Serven and Solimano was published in the World Bank Research Observer, January 1992. Although the first draft of this was done before the publication of the survey paper by Serven and Solimano, this version benefits from their comprehensive review.

macroeconomic policy environment may be as important as the level of the tax incentives or interest rates. The recent literature has emphasized the key role of uncertainty in investment decisions because it follows directly from the irreversible nature of investment expenditures. A high degree of economic stability — such as low and predictable inflation, external and internal balance — are of paramount importance to ensure a strong response of private investment to economic incentives. Argentina is a glaring case where protracted economic instability has been a deterrent to private investment. On the other hand, there has been significant private investment response to reforms in Chile, Mexico and Bolivia. Reforms in these countries were implemented by governments whose reputation in avoiding policy reversals has been strong. Indonesia was able to borrow abroad because of its stable and appropriate macroeconomic policies and foreign financing and this enabled the government to increase private investment while maintaining social spending and private consumption. In sum, the availability of foreign financing, coupled with a stable macroeconomic environment was a key aspect of the recovery in private investment in countries like Indonesia, Chile and Mexico.

In contrast, macroeconomic instability associated with external shocks, along with the resulting difficulties faced by African governments in managing and stabilizing the economy following through these shocks, has hampered private investment in these countries. Governments often find it politically convenient to avoid or postpone economic stabilization by using price controls, import controls and other ad hoc measures. The long run costs of these methods are high. Delay makes the final task of initiating a stabilization program much more difficult. Adjustment programs also require a sustained effort over several years. In Ghana, the government's persistence and determination on stabilization measures are only beginning to pay off in terms of investment growth. In fact, after having implemented the

recovery program for nearly five years and after having had five years of solid economic growth, Ghana's private investment growth still does not reflect strong confidence among private investors.

The initial downturn in economic activity associated with macroeconomic adjustment also affects private investment through its effect on investors' expectations. In practice, the investment response is weak and involves long delays. This was evident in the case of Bolivia. Wijnbergen (1985) has shown that when a trade reform is suspected to be temporary, it can lead to a delay in private investment. A study by Faini and de Melo (1990)9/ also suggests that if there is uncertainty about the sustainability of the stabilization effort, the microeconomic reforms (such as rationalization of public sector expenditures and reforms of public enterprises) that have been at the heart of many recent adjustment packages may not bear fruit. For this reason, sustained reforms are not only a prerequisite for successful adjustment but also for creating private investors' confidence about the economy. Table 7, reproduced from the Bank-wide review of adjustment loans, lists some leading and lagging Sub-Saharan African countries compared to counterfactual without adjustment countries. The table shows that deep, sustained programs help and reversals and incomplete reforms hurt investment and economic performance.

9/ Chhibber, Ajay, Mansoor Dailami and Nemat Shafik. Reviving Private Investment in Developing Countries. Chapter 9. Draft Manuscript, September 1991.

Table 7: African Countries Among Leading and Lagging Indicators (Compared to counterfactual without adjustment)

Adjustment Program Performance and Country	Performance Criterion			
	GDP Growth a/	Investment Rate b/	Saving Rate c/	Exports/ GDP d/
Comprehensive, Sustained Program				
Ghana	+			
Mauritius	+	+	+	+
Togo		+		+
Comprehensive, Recent Program				
Madagascar		+		-
Mauritania		+		+
Nigeria		+		+
Tanzania		-	-	-
Sustained Program, with Implementation Lags				
Kenya				-
Malawi	-	-	-	-
Senegal			-	
Incomplete Reforms, Implementation Reversals				
Côte d'Ivoire	-	-		
Zambia		-	-	-

Note: (+/-) indicates SSA countries that have high/low ranking among 25 intensive adjusting countries as classified in a recent Bank report. The ranking was done after controlling for initial conditions and external shocks.

a/ Change in annual average rate of GDP growth, 1985-88 compared with 70-80.
b/ Investment rate in constant prices, 1985-88 compared with 1970-80.
c/ Savings rate in current prices, 1985-88 compared with 70-80.
d/ Exports-to-GDP ratio in constant prices, 1985-88 compared with 70-80.

Source: World Bank, Adjustment Lending Policies for Sustainable Growth, Policy and Research Series No. 14, World Bank, 1990.

3.2 Fiscal Deficit and Debt Overhang

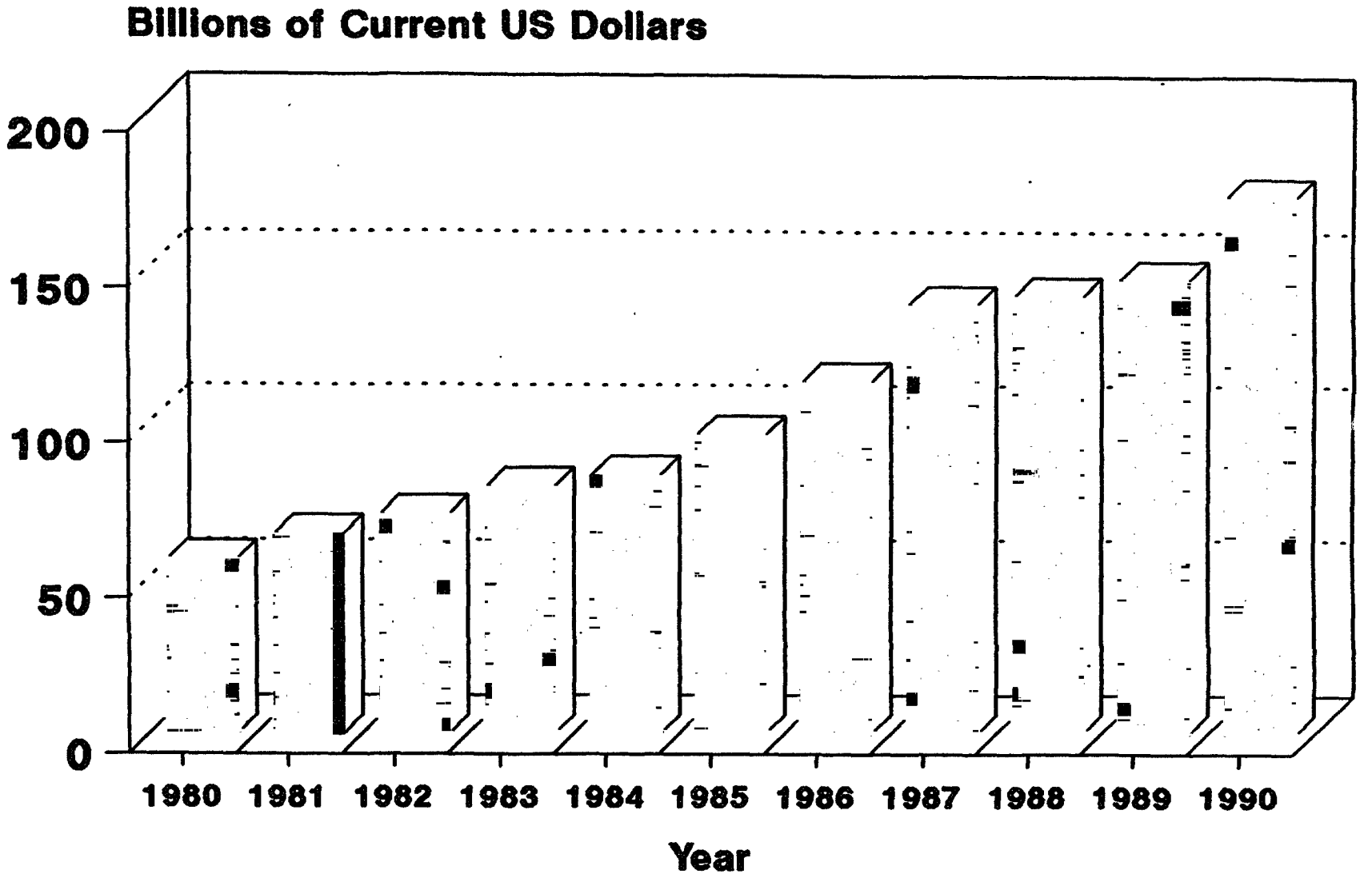
Empirical studies have found that fiscal deficits and foreign debt have a strong negative effect on private investment (for example, Wijnbergen (1982)). High fiscal deficits might require an increase in interest rates to maintain external balance and/or reduce the availability of credit to the private sector and thus crowd out private investment. A restrictive fiscal policy is needed, therefore, for achieving investment levels required for sustainable high growth rates. However, fiscal adjustment requires a recessionary adjustment period and usually results in reduced public investment. And to the extent that public and private investment complement each other, the tight fiscal policies reduce private investment by reducing public investment (see Blejer and Khan (1984), Musalem (1989)). Using cross-section data, Balassa (1988), however, reported that public and private investments are substitutes, implying that reduction in public investment will have a positive impact on private investment (see section 3.6 for further discussion of the relationship between private and public investment).

Debt overhang hurts private investment through its implied tax on future output and the ensuing credit constraints in the international capital markets. The foreign debt service acts like a tax on investment. A very indebted country is likely to face credit constraints in international capital markets and thus face higher real interest rates, i.e. higher costs of borrowing. High foreign debt increases uncertainty, about the future course of the economy and discourages investors from sinking resources into what ultimately are high-risk activities. As a result, the economy becomes trapped in an inefficient low-investment equilibrium.

The total external debt for the SSA region is given in Figure 1. By the end of 1990, SSA's total foreign debt stood at $173 billion (including $18 billion in long-term to

commercial banks). This came to approximately $350 per capita. Total external debt was 97 percent of the GNP in Sub-Saharan Africa during 1990. This is about twice as much as the average for the severely indebted low- and middle-income countries. Table 8 provides the data for the low- and middle-income regions of the world for the period 1980 through 1990. The data shows that total external debt for the SSA countries has almost quadrupled during the last decade. This increase is significantly larger than that experienced by any other region of the world.

Figure 1: Sub-Saharan Africa
Total External Debt



Source: African Economic and Financial Data
World Debt Tables, 1991-92

Table 8: Total External Debt as a Percentage of GNP
Low- and Middle-Income Countries

Region	1980	1989
Low- and Middle-Income	26.2	40.2
Sub-Saharan Africa	28.5	109.4
East Asia	16.8	26.9
South Asia	17.3	30.7
Europe	23.8	41.0
Middle East, and North Africa	31.1	52.6
Latin America and Caribbean	35.2	41.6
Severely Indebted	34.4	46.4

Source: World Development Report 1992
Note: Numbers are weighted by GNP in current dollars.

The size of the debt burden is also evident from the relative size of interest payments, which is, in one sense, a better indicator of actual burden to the economy because it is based on actual payments made by the country.10/ Sub-Saharan Africa's budget deficits, relative to the GDP, remain about a third larger than the average for the developing world and in SSA, the only category to take a progressively larger share of government spending is interest payments. The share of interest payments in government spending tripled during 1980-87 to 14 percent of total expenditures. During 1989, the principal and interest payments that SSA

10/ Many SSA countries have defaulted debt service payments. Therefore, actual payments are a better indicator. However, the relative size of debt, even not regularly serviced, can have a strong negative effect on the confidence of private investors in the economy.

paid on this debt amounted to 27 percent of the export earnings. In aggregate, commercial banks currently receive more in debt service from SSA than they give in new loans. 11/

High debt service ratios are a signal to both domestic and foreign investors of the likelihood of policy changes and, as already noted, private investors are very sensitive to signals sent by government policy -- if uncertainty is perceived, they tend to shy away from long-term irreversible investments because of their fear that policies will not be sustained. The relatively high debt burden in SSA countries created an expectation of policy changes and hence uncertainty about the future.

The positive impact of debt relief on private investment is evident from the experience of the Special Program for Assistance (SPA) for African countries, which was initiated by the World Bank and 18 other international and bilateral donors in 1987 12/ through a combination of debt service relief and low-interest loans and grants for balance of payments support. The effect of the SPA program on private investment is clear -- the average private

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11/ The World Bank External Affairs Unit Africa Region, "Debt: Reducing Africa's Debt Burden," Africa Update, 1990/91, p. 1.

12/ The countries had to meet certain conditions -- IDA eligible countries with an active adjustment program -- in order to participate in the SPA program. The program intends to increase the net amount of money available to these countries for development. The SPA core countries are: Benin, Burundi, Central African Republic, Chad, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Sao Tome and Principe, Senegal, Tanzania, Togo and Uganda. Somalia and Zaire became inactive. Zambia joined in late 1990.

investment rate for active SPA countries was 8.5 in 1988-90, compared to 4.1 for a few, poorly performing non-SPA countries during the same period 13/.

3.3 Exchange Rates

Exchange rates affect private investment through different channels. An overvalued exchange rate reduces the returns in local currency received by exporting farmers and manufacturers. It also has the effect of making imports cheaper, which undercut the producers of import substitutes, unless import restrictions are imposed. As a result, resources are diverted into the production of non-traded goods and services. Currency overvaluation may increase the profitability of investment temporarily through a reduction in the replacement cost of capital; however, such investment booms tend to be unsustainable and encourage a pattern of investment in sectors or goods in which the economy does not have a comparative advantage.

A real depreciation of the exchange rate raises the real cost of the imported component of investment goods. Buffie (1986), Branson (1986) and Serven and Solimano (1991) have characterized this effect as increasing the real cost of new capital goods in terms of domestic goods: As a result, investment in non-tradable activities tends to decrease. However, in traded goods the effect is reversed and investment rises. Thus, the overall effect on investment is difficult to ascertain. Several empirical studies (eg. Faini and de Melo (1990), Musalem (1989)) have concluded that in the short run a real depreciation has an adverse impact on investment. In the long-run, however, there should be a stimulative effect

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13/ SPA countries data from which are used for this estimate are: Burundi (88-90), Gambia (88-90), Kenya (88-90), Malawi (88-90), Togo (1988) and Tanzania (88-90). Non SPA countries from which data are available include: Ethiopia (88-89), Somalia (88-90) and Zaire (1988).

on private investment as the profitability of export-oriented industries improves and higher export demand increases the need for an expansion of productive capacity in the tradable sector. Solimano (1989) using a simultaneous equation model for Chile, also concludes that a real depreciation reduces investment in the short run, but it recovers in the medium term.

Devaluation of the exchange rate also affects investment through its impact on aggregate demand. The impact of a real devaluation on aggregate demand works mainly through aggregate income effects in the short run. And the income effect operates through the likely initial trade imbalance and the negative impact on consumption of real income redistribution from wages to profits. On the supply side, increased real costs (in terms of domestic goods) of imported inputs, rise of working capital costs (due to increased interest rates), and real wages contribute to output contraction. However, in the long run, investment may increase through a strong substitution effect such as an increase in exports, expanding real income, and stimulating investment spending.

The subject of how exchange rate movement has affected private investment is most relevant for SSA. During the late 1970s, the exchange rate situation in SSA generally deteriorated relative to other regions during the late 1970s. The IMF indices of real effective exchange rates (nominal exchange rates adjusted for relative rates of inflation) show that the weighted average index for all SSA appreciated by 75 percent between 1974 and 1984. This is in marked contrast with the index for Asia, which depreciated by about 26 percent over the same time period. 14/

14/ The IMF indices of real effective exchange rates (nominal exchange rates adjusted for relative rates of inflation) show that the weighted average index for all SSA appreciated by 75 percent between 1974 and 1984. This is in marked contrast with the index for Asia, which depreciated by about 26 percent over the same time period.See World Bank, Financing Adjustment with Growth in Sub-Saharan Africa, 1986-90, February 1986.

Many SSA countries recognized the costs of overvalued currencies and many of them adopted flexible exchange rate regimes which rely on supply and demand in the foreign exchange market to determine the exchange rate. The progress of SSA countries is evident in the substantial devaluations, averaging about 50 percent since 1980-82. 15/ The SPA countries achieved an average of 25 percent depreciation in their real effective exchange rates between 1985 and 1989. 16/ Such depreciation of the exchange rate has, of course, impacted negatively in the short-run on private investment. For example, the continued overvaluation in some SSA countries, especially in the CFA zone, has discouraged private investment in export and import substituting industries. The short-run negative effect of devaluation is expected to overcome in the medium-term through increased profitability of investment in sectors and goods which become profitable through relative price changes. If, however, this gain in profitability is not attained, because other non-price constraints (e.g. poor infrastructure) the depressing effect on private investment would tend to persist.

Lack of exchange rate adjustment can also have a depressing effect on private investment because of overvalued domestic currency can diminish the competitiveness of the goods produced.

3.4 Interest Rates

Real interest rates and private investment are expected to be negatively related. However, the structure of the financial markets in the developing countries is an important aspect that determines how monetary and credit policies in general and interest rate policy in

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15/ Charles Humphreys and William Jaeger, "Africa's Adjustment and Growth," in The Path to Reform: Issues and Experiences (Finance and Development, June 1989).

16/ The World Bank External Affairs Unit Africa Region, "Overview: A Global Coalition for Africa," Africa Update, 1990/91, p. 3.

particular would affect private investment. Stabilization packages usually include restrictive monetary and credit policies. These policies raise the real cost of bank credit and the opportunity costs of retained earnings — both important sources of private investment financing in developing countries. These higher costs imply higher relative prices of new capital goods, and thus discourage private investment.17/

High domestic real interest rates (along with a high level of public debt, which is generally associated with high interest rates) would eventually impose fiscal tightening which tends, as noted earlier, to crowd out public investment (which in turn would affect private investment, as discussed later). On the positive side, a high interest rate is expected to help private investment by mobilizing domestic savings. Empirically, however, this positive effect is not borne out.

The effect of real interest rates on private investment has come out differently in various empirical studies. For example, Matin and Wasow (1992) showed that the effect of real interest rates on private investment in Kenya is widely different depending on the definitions of private investment and real interest rates. On the other hand, Serven and Solimano (1991), using data for twelve countries, showed that there is no effect of real interest rates on private investment. This lack of effect is generally found in LDCs with repressed financial markets. In these markets, credit policy directly affects the investment level.

17/ Although tight monetary policy would show economic activity and may lead to a postponement of investment during a recession. However, this outcome can be avoided by minimizing and by creating incentives through adjustment programs. Chile, in the second half of the 1980s, provided a good example of how fiscal balance, moderate real interest rates, and competitive exchange rates provide a good framework for private investment to respond to the incentives generated by structural reforms.

No study for Sub-Sahara Africa has been carried out. But based on the outcome of an empirical survey of developing countries of other regions, Chhibber (1990) concluded that both the costs of credit as well as the quantity affect private investment in developing countries. Their relative importance would depend on the degree of financial liberalization in the economy. In repressed financial systems, the quantity of credit would be the key factor in influencing private investment, whereas the real interest rate would be the key variable in a deregulated financial market. In economies throughout the region, financial systems are repressed and undeveloped. Although there has been some progress in liberalizing financial markets and interest rates in Sub-Saharan countries (as for example, by 1988, about two-thirds of the sixteen SPA countries with comparable data had achieved positive real interest rates), most financial markets are repressed or undeveloped and negative real interest rates continue to prevail in many countries.

3.5 Institutions and Regulations

Most Sub-Saharan African countries lack an enabling investment environment. Indigenous entrepreneurs are frequently hampered by undeveloped capital markets and legal and bureaucratic impediments to investment. Foreign investors are hampered by similar regulations. African governments need to provide clear rules for taxation, property rights, and the regulation of production and trade. Excessive government regulations and distortions seriously discourage private investment and growth.

In SSA, the experiences of some low growth economies (in the past Ethiopia, Tanzania before 1986, Mali, Senegal and Sudan) and negative growth economies (such as Zambia, Zaire and Madagascar) point to the costs of excessive government intervention. The economic stagnation or decline of these two groups of countries during the late 1980s coincided with a massive extension of government control over domestic funds. The private sector's share of domestic credit fell from 89% and 68% in these two groups respectively in 1962 to 31% and 26% in 1982.18/ Foreign loans were often used to increase public investment and to cover the current deficits of public enterprises in the main economic sectors, not just in infrastructure. However, the loss of confidence among foreign creditors in the domestic policies of these countries restricted their access to overseas capital markets.

Many administrative controls over employment and pricing policies and inefficiencies in financial institutions have also constrained growth in the private sector. Many enterprises which should be in the private sector are still owned by the government, and these public enterprises are inefficient and expensive. Many SSA countries have a variety of policies that

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18/Keith Marsden and Therese Belot, "Private Enterprise in Africa: Creating a Better Environment," World Bank Discussion Paper, No. 17 (Washington D.C.: World Bank, July 1987), p. 61.

restrict private access and participation in the mining, manufacturing and public utilities sectors. These activities are specified in Investment Codes or other legislation governing industrial investment. The selective issuance of industrial licensing preserves state monopolies in sectors considered politically important or where the pursuit of social goals is made paramount. These barriers have deprived African countries of the benefits of private investment and the skills, know-how and initiative that would have accompanied such investment. For example, investments in Zimbabwe's corporate business sector have been sluggish since independence, especially by foreign controlled companies. The weakness in demand cannot be fully explained by conventional variables such as import constraints and interest rates. The problem lies in the overall environment for investment decision making and intangible perceptions of future risk heightened by unclear and conflicting signals about economic policy.

In some countries, the government exerts considerable influence over the prices of many commodities, and controls the allocation of foreign exchange and the investment decision-making process. Furthermore, foreign-controlled companies are often subjected to regulations and restrictions that slow the investment appraisal process and place strict limitations on the ability of the private sector to raise funds locally and repatriate their earnings.

Improvement of institutional infrastructure is also extremely important for promoting private investment. This includes establishing appropriate credit facilities to enable entrepreneurs to purchase and successfully manage those public enterprises marked for privatization. During the early stages of the stabilization program, it is not uncommon for things to get worse for private investment before they get better because in the short-run, the

reforms have not been either fully implemented or the Government's commitment is not fully displayed to the public. Improvement of physical infrastructure is another key factor influencing investment decisions. The problem of slow or no private investment growth is more severe in low income countries, where the infrastructure is poor and often cannot support the supply response without significant investments. The problem tends to be most serious in these countries because the initial inflow of essential imports is likely to be slow in these countries.

3.6 Public Investment

As noted briefly earlier, the impact of public investment on private investment depends on whether they are complementary or substitutes. Empirical studies have different conclusions. For example, Blejer and Khan (1984), Greene and Villanueva (1991) found them to complement each other, whereas Balassa (1988) found that they are substitutes. The composition of public investment is, therefore, the crucial factor in determining its impact on private investment. Public investments on infrastructure activities (i.e., public expenditure that improve the efficiency of power plants and roads) are more complementary than competitive with private sector profitability. Economies of scale in the provision of utilities, communications and social services exist and public sector investment in these areas are beneficial to private producers. Their non-availability, due to forced reductions in public investment, causes a shift in resources away from productive private investment.

Serven and Solimano (1990) have shown that for a group of specific countries, public investment has a positive impact on private investment after a one year lag. Public investment is necessary to ensure that the physical and social infrastructure are adequately

developed to support the stabilization and adjustment programs, especially through the early stages of these programs.

Public investment can, however, have a crowding out effect on private investment. Private firms' access to bank credit has been restricted in most African countries because governments and public enterprises have been given first claim on both domestic and foreign resources. In general, private investors are often reluctant to enter into those areas where public enterprises typically get preference not only in credit allocation, but also in raw material as well as in the location of distribution outlets. In general, it is the competitive environment rather than public or private ownership that determines the productive efficiency of firms, and empirical evidence over a large number of countries shows that public enterprise performance has been poor when the environment is not competitive. SSA governments have preferred to use a significant share of these funds for their own public investment programs and to cover their external and budgetary deficits from current account expenditures. Loans to central governments and central banks have accounted for three quarters of total foreign debt.19/ The excessive use of these funds has tended to crowd out private investment.20/

Several governments in SSA have started to take steps to remedy the situation of where public investment tends to crowd out private investment. Kenya and Senegal have begun to restrain the expansion of public sector employment and wages. Ivory Coast is

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19/ Keith Marsden and Therese Belot, "Private Investment in Africa: Creating a Better Environment," World Bank Discussion Paper, no. 17 (Washington,D.C.: World Bank, July 1987), p. 31.

20/ The crowding out effect would be most pronounced and detrimental if the expected positive effect of public investment is negligible. In some SSA countries, this tends to be the case because a major part of public investment is unproductive or highly inefficient.

reducing recurrent expenditure by cost savings in such fields as education and housing. Togo and Senegal have reduced losses of, and subsidies to, public enterprises by restructuring and monitoring more clearly their performance and divestiture. Several countries like Kenya, Malawi, Cote d'Ivoire, Senegal and Togo have also subjected public investment programs to more rigorous scrutiny in order to ensure its economic justifications as well as its complementarity with private sector investment.

3.7 Output

According to the accelerator theory of investment, investment would increase in linear proportion to changes in output. Given an incremental capital-output ratio, it should be possible to compute investment requirements arising from a given target for output growth. Another view, associated with Tobin (1989), is Tobin's Q approach. According to this approach, if the existing market value of capital stock exceeds its replacement cost (that is if Tobin's Q ratio exceeds one), a firm will attempt to increase its capital stock.

Empirical studies show a strong response of private investment to changes in output. As surveyed by Serven and Solimano (1991) , output-related variability of investment implies that usual demand-reducing monetary and fiscal policies introduced as part of the adjustment package are likely to have a negative impact in the short-run on private investment through its impact on output. Solimano (1989) shows that this is quite apparent in the context of the Q approach.21/ Further, the current output growth is also expected to influence investment through expectations.

21/ Luis Serven and Andres Solimano, "Adjustment Policies and Investment Performance in Developing Countries: Theory, Country Experiences, and Policy Implications," World Bank Staff Working Paper, no. 606 (Washington, D.C.: World Bank, March 1991), p. 34. Also see Serven and Solimano (1992).

CHAPTER 4.

THE IMPACT OF ADJUSTMENT PROGRAMS ON PRIVATE INVESTMENT

World Bank experience with adjustment programs has revealed that private investment recovery constitutes an essential ingredient of successful adjustment. Usually, as noted in the previous section, during the early phase of stabilization, investment suffers due to a reduction in aggregate demand. This is caused by the required contractionary fiscal and monetary policies to restore internal and external financial viability. After the initial phase, as the adjustment program progresses on structural reforms, private investment recovery is expected to restore overall capital formation and growth. This section summarizes the experience so far of how adjustment programs have actually affected private investment.

A good number of developing countries have been unable to achieve accelerated growth in spite of strong adjustment efforts. The latest Bank-wide review of adjustment loans indicates that the growth benefit of adjustment to low-income countries is not as strong as in the middle-income countries in spite of the adjustment efforts that have been taken in these countries. There actually has been a fall in the share of investment in GDP in developing countries and there often has been no increase in the efficiency of investment. Lower investment reduces future productive capacity and lowers prospects for growth. The low investment rate in developing countries in recent years may have been the result of the extreme economic and financial distress due to the short-run effects of austerity and demand management that adjustment programs require. A real exchange rate depreciation is expected to promote investment by increasing the availability of foreign exchange. But this may not happen in the short run, as noted earlier, since a real exchange rate devaluation may substantially raise the real cost of capital goods. The slump in investment is also attributable to the cut in public expenditures (that includes public investment programs) required by

stabilization programs and by the public sector management reform components of structural adjustment programs.22/

Analysis by Faini and de Melo23/ on investment for a sample of 32 countries highlights four realities faced by developing countries: (i) an increase in the share of public investment during the period of ample liquidity in the world capital markets following the first oil price rise; (ii) a sharp downward shift in the share of private investment in GDP after the crisis, especially for primary exporting countries; (iii) a steady increase in the real cost of capital along with a rise in the relative price of investment goods; and (iv) a sharp improvement in the Incremental Capital/Output Ratio (ICOR) for manufacturing exporters, whereas the ICOR for primary exporters remains stable. The last two facts reflect the impact of adjustment on investment. With a sharp depreciation of exchange rates, a core element of adjustment programs, cost of capital is high and creates disincentives for investment. However, with capital becoming more costly, efficiency in the use of capital is expected to be higher -- a result partly borne out by the movement of the ICOR at least in the manufacturers sector. Two other important lessons emerge from Faini and de Melo's analysis: (i) an increase in the debt-export ratio is associated with a lower propensity to invest, possibly because of a higher risk premium; (ii) a credible macroeconomic environment is a prerequisite for a sustainable recovery.

22/ To the extent public investment program includes unproductive or inefficient projects, cuts will have no harmful effects. However, one could argue that some cuts are bound to fall on some good investment projects and in any case some of the white elephants or Government's pet projects are the hardest to cut.

23/See Chapter 9 in Chhibber, Ajay, Mansoor, Dailami, and Nemat, Shafik. Reviving Private Investment in Developing Countries. Draft manuscript, September 1991.

The third review of adjustment lending (RAL III) completed by the Bank in 1992 addresses the issue of the effect of adjustment lending on private investment. Its major findings on this issue can be summed up as follows:

1) The response of private investment to adjustment programs has taken longer than initially anticipated. There is therefore supporting evidence to the findings of earlier reviews of adjustment lending (RAL I and RAL II) that the private investment response has been slow in many adjusting countries. However, additional evidence of RAL III now shows that private investment has begun to recover in some adjusting countries, especially middle-income countries.

2) In fact, the pattern of investment response to an adjustment program seems to have two phases. In the first phase, there is an initial contraction and then stagnation of the share of private investment in GDP. This is the phase of "investment pause" caused by necessary stabilization measures. Reducing aggregate demand through fiscal and monetary contraction reduces the demand for firms' output and their readiness to invest. Phase two is the sustained increase in the share of private investment to GDP. Once the distortions were removed and stabilization attained, the private investment ratio begins to rise in response to economic incentives that leads to export expansion and output growth.

3) Although some sort of "investment pause" in response to adjustment is most common, the length and intensity of the pause differs among countries. The difference is due to the fluctuating intensity in adjustment efforts, varied initial conditions from which adjustment programs started, and a changed business environment. In most middle-income countries, the investment pause (phase I) lasted 3-5 years. In low income adjusting countries, export and output growth have been weaker, and private investment has not yet recovered.

4) Efficiency of investment allocation improved after adjustment programs even during the period of the "investment pause". Adjustment programs generally succeeded in

bringing price more into line with economic costs, and exposure to increased international competition also resulted in stronger cost discipline, a greater technological capability, and increased productivity. These gains in efficiency from adjustment programs helped to generate greater output growth from existing levels of investment.

5) As noted, the varying nature of investment response to adjustment programs depends on economic predictability, the legal and regulatory framework, physical infrastructure, and the functioning of factor markets. Investor confidence about the stability of the macroeconomic environment and the permanence of structural reforms seems most crucial. Strong investment recoveries, in middle income countries after a pause is explained by sustained adjustment efforts, good regulatory and financial policies, adequate and well maintained infrastructure, and a supportive legal and administrative framework. A lack or weakness of these conditions explains the poor investment response to adjustment programs in developing countries.

6) Adjustment programs have generally succeeded in reducing distortionary trade and financial and exchange rate policies, but have had limited success, especially in low-income SSA countries, in taking the effective measures needed to improve the business environment. The major element of an appropriate business environment would include, as outlined earlier, economic certainty, good regulatory and financial policies, efficient factor markets, adequate and well maintained infrastructure, and a supportive legal framework. Where implementation of adjustment programs has been tentative, economic uncertainty has played a major role in causing private investors to defer investment decisions. Even after adjustment programs started, continuing barriers to the entry and exit of firms and uncertainty regarding the legal and regulatory framework for private investment continues to constrain private investors in many SSA countries.

To sum up, adjustment programs in the short-run may have a negative effect on private investment because of reduction in aggregate demand and contractionary fiscal and monetary policies. However, as structural reforms are carried out, private investment is expected to recover in response to a new set of incentives. However, this later recovery and growth of private investment would depend on a congenial business environment that would include economic predictability, good regulatory and financial policies, efficient factor markets, an adequate and well-maintained infrastructure, and a supportive legal framework.

CHAPTER 5.

EMPIRICAL RESULTS OF INTERCOUNTRY STUDY

The previous sections discussed possible determinants of private investment based on a survey of the relevant literature on the subject and examined how adjustment has affected private investment. This section will examine available empirical evidence for SSA countries and assess the determinants of private investment in 1980s in those countries. .

5.1 Data

As noted in Section 2, data for private and public investment and most other variables using for this paper were extracted from BESD/ANDREX (the World Bank database). Real effective exchange rates, estimated by IMF, were used. As mentioned earlier, private and public investment data are hard to obtain and are not quite reliable. The countries and the time periods included in our sample, therefore, were mostly dictated by data availability. Our sample contains data for sixteen SSA countries. Nine countries (Burundi, Cote d'Ivoire, Gabon, Gambia, Kenya, Mauritius, Malawi, Senegal, and Zimbabwe) have complete data for the years 1980-90; data for other seven countries are included for the available period indicated in parenthesis: Ethiopia (1985-89), Burkina Faso (1982-90), Lesotho (1985-90), Togo (1981-89), Tanzania (1980-88), Uganda (1984-90), and Zaire (1980-88). 24/

5.2 The Model

Private investment, following Serven and Solimano (1991), is postulated as a function of real growth, public investment, real exchange rates, debt overhang, and a one-year lagged dependent variable. The paper also follows other research, e.g. Matin and Wasow (1992), to

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24/ Data for private and public investment are provided in Appendix 1.

express the variables in ratio instead of level to avoid spurious correlation. The private investment function, therefore, is formulated as:

$$PRV/GDP = F (GR, PUB/GDP, REER, DOD/GDP, (PRV/GDP)\_1) \quad (1)$$

25/

where

PRV/GDP is the ratio of private investment to GDP at market prices;

GR is the real growth rate of GDP; 26/

PUB/GDP is the ratio of public investment to GDP at market prices;

REER is the real effective exchange rate; and,

DOD/GDP is the external long-term, short-term, or both to GDP at market prices (all figures are expressed in US dollars).

According to the previous survey, we would expect real output growth, a proxy of expected aggregate demand, to exert a positive effect on the private investment. The sign of public investment on the private investment can be positive or negative, depending on whether public investment is a complement or a substitute to private investment. The real exchange

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25/ The specification is similar to the one used by Serven and Solimano (1991). Ideally, such a reduced form equation should be derived from a structural model constructed on the basis of theoretical knowledge of the determinants. Although the regression model is based on the work of Serven and Solimano, it does represent likely determinants reviewed in Chapter 3.

26/ Here following Serven and Solimano (1991), the current GDP growth rate is used rather than a lagged growth rate. The theoretical basis for choosing contemporaneous growth rate is well explained in Serven and Solimano (1991) as well as in the earlier section of this paper. The theoretical reasons for expecting this relationship include sensitivity of investment to output changes, Tobin's Q approach to investment and the role of expectations for investment decisions.

rate also has an ambiguous effect on private investment because the effects through different channels -- such as the demand of the export section (positive) and cost of imported tradable investment goods and imports (negative) -- can be different. The burden of the external debt, which functions as a proxy of the macroeconomic instability or an anticipated foreign tax on current and future income, should have an adverse effect on the private investment. Since investment can only be adjusted partially toward its desired level, a lagged dependent variable is introduced as an additional explanatory factor to allow for the dynamic adjustment of investment.27/

To estimate the private investment equation, the fixed-effects method was used (see, for example, Judge et al. (1985), Hsiao (1986)).28/ The private investment function was alternatively estimated by linear and logarithmic functions.29/ The explanatory variables were also alternated by different types of measurement, and also by its one-year lag values.

27/ Lagged dependent variable was also used in the study by Serven and Solimano (1991).

28/ Fixed-effect method is applied to correct heteroscedasticity in the panel data. The method computes the means of time series observations separately for each cross-sectional unit, transforms the observed variables by subtracting out the appropriate time series means and then applies the least squares method (with no intercept) to the transformed data. (See Hsiao (1986)).

29/After experimenting with equations with both linear and logarithmic specifications, we adopted the latter in view of their superior performance in terms of explanatory power and overall significance.

5.3 Results

First, the paper used Serven and Solimano's (1991) specification to examine whether SSA countries follow the same pattern as other developing countries in their study.30/ The results, as provided in Table 9, equation 1, show that there is a strong positive impact of GDP growth rate (in real term) on the private investment.31/ Depreciation of real effective exchange rates indicates an expansionary effect on the private investment but the effect is insignificant even after allowing for a one-year lag. Lagged public investment is insignificant as an explanatory variable and is essentially a complement to private investment. Total external debt shows a positive effect on the private investment, but statistically at an insignificant level. The statistical result of the external debt effect in this specification contradicts the theoretical argument, as well as empirical results, from other developing countries in Serven and Solimano's study (e.g. that the external debt will have a significant adverse effect on the private investment). Finally, a positive and statistically significant effect of the lagged dependent variable, as in the case of non-SSA developing countries, suggests a strong inertia in private investment, implying that the adjustment toward a desired stock of capital in a year is only partial.

30/ The study also used one year lagged-GDP growth rate instead of current GDP growth rate in the specifications. But the lagged variable did not show any impact on private investment, and the results in regard to magnitude and level of significance of other exogenous variables did not change.

31/ Countries included in Serven and Solimano's study are: Argentina, Bolivia, Brazil, Chile, Columbia, Kenya, Korea, Mexico, Singapore, Thailand, Turkey, and Uruguay. Data for the years 1972-87 were used. The effect of real effective exchange rate on private investment is insignificant even allowing for a one year lag.

We then disaggregated total external debt into long-term and short-term debt. 32/ The results for the external long-term debt specification do not change much in terms of magnitude and level of significance (see Table 9, equation 2). For the external short-term debt specification, however, the results (see Table 9, equation 3) show that short-term debt has a substantial negative effect on the private investment, statistically significant at the 5 percent level. One reason for this result is that most African economies have to service short-term debt and, from this point of view, the size of the debt would have a negative effect on private investment. Depreciation of real effective exchange rates explains the increase of private investment at only 10 percent level of significance. The level of significance of real growth rate drops from 5 percent to 10 percent. Lagged dependent variable remains significant and there is also no change in the status of lagged public investment. 33/ The three regression equations for SSA countries have low R^2 values implying that a good part of the variation of the dependent variable is not captured by the specification. While this suggests a need for further research on other explanators, the relevant thing is for analysis is the value of the t-statistic, which gives the significance of a variable in explaining variation of the dependent variable.

For comparison purposes (between SSA countries and other developing countries), the results of Serven and Solimano (1991) for other developing countries are also included in Table 9. These results have two implications: (1) unlike other developing countries, real

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32/ External long-term debt is defined as all external obligations of both public and private debtors with maturity of more than one year. It comprises both publicly guaranteed and non-guaranteed debt; whereas the maturity of external short-term debt is not more than a year. Total external debt is the sum of the long-term and short-term debt (World Tables, 1991).

33/ Durbin-Watson (d) test was performed in all specifications and the d-statistic supports the hypothesis that there is no serial correlation in the errors terms at the level of 5 percent of significance.

effective exchange rates seem to be playing an important role on private investment in SSA countries, and (2) in contrast to other developing countries, only short-term debt has an adverse effect on the private investment. Long-term external debt appears to have no impact on private investment in SSA countries.

Determinant of Private Investment (1980-90)

Table 9

Dependent : log (PRI/ GDP) (a)
Variable

	(b) GR	(c) REEX (lag)	(d) PUB/ GDP (lag)	(e) DOD/ GDP	(f) LDOD/ GDP	(g) SDOD/ GDP	(h) PRI/ GDP (lag)	
Serven and Solimano	3.532 (3.85) **	.002 (i) (.03)	.058 (1.17)	-.104 (-2.63) **			.584 (9.85) **	R2=.584 N=180
Equ. 1	1.163 (2.14) **	-.142 (k) (-1.13)	.064 (.83)	.059 (.80)			.331 (4.16) **	R2=.182 N=137 DW=2.17
Equ. 2	1.169 (2.15) **	-.134 (k) (-1.06)	.066 (.87)		.065 (.94)		.331 (4.16) **	R2=.183 N=137 DW=2.18
Equ. 3	.978 (1.82) *	-.200 (k) (-1.75) *	.023 (.32)			-.104 (-2.05) **	.303 (3.79) **	R2=.203 N=137 DW=2.21

(a) All dependent and independent variables are expressed in natural log and deviations form from its country's means.
(b) log of GDP(t) - log of GDP(t-1)
(c) log of real effective exchange rate
(d) log of the ratio of public investment to GDP
(e) log of total external debt to GDP
(f) log of long-term external debt to GDP
(g) log of short-term external debt to GDP
(h) log of lagged one year of the dependent variable
(i) Increase means depreciation
(k) Increase means appreciation

( ) Numbers inside parenthesis indicate t-ratio
** Coefficient significant at the 5 percent level
* Coefficient significant at the 10 percent level
R2 = R-square
N = Number of observations
DW = Durbin-Watson (d) test

5.4. Extensions of the Model

5.4.1. Current Values of REER and Public Institutions

The study modified the two earlier specifications (equation 3 of Table 9) by alternately using the current values instead of lagged values of two explanatory variables for private investment (i.e. real effective exchange rates and public investment). Use of current values instead of lagged values of real effective exchange rates presents the hypothesis that the reactions of private firms to the changes in exchange markets are immediate (and not lagged). By using the current value of public investment as an explanatory variable it is possible to see how current public investment affects current private investment.

First, the study used current values of real effective exchange rate in the two earlier specifications (equations 3 and 4), the results of which are reported in equations 6 and 7 of Table 10. The real effective exchange rate becomes a significant explanatory variable for private investment when short-term debt instead of long-term debt is included in the equation (equation 7). Public investment remains insignificant in equations 6 and 7. The significance of short-term and long-term debt as explanatory variables does not change from what was obtained in equations 3 and 4 of Table 9 (i.e. short-term debt is significant at 5 percent level and long-term debt is insignificant). The effect of the lagged dependent variable is still significant and positively correlated with private investment in both specifications. But the real GDP growth rate is no longer a significant explanatory variable.

Secondly, the study used current values (instead of lagged values) for both real effective exchange rate and public investment. Equations 4 and 5 of Table 10 report the results. Lagged private investment also continues to be a strong significant explanatory variable. Real effective exchange rates stay significant at the level of 5 percent. Short-term debt is also significant at the level of 5 percent but long-term debt is insignificant at this threshold. Real GDP growth rate does not show a strong effect on private investment,

significant only at the 15 percent level. Public investment remains insignificant. However, the sign of the coefficient of public investment changes from positive to negative.

Finally, the study used a specification with the current values of public investment and lagged values of real effective exchange rates. Equations 8 and 9 of Table 10 report the results. Short-term debt and long-term debt results do not change (i.e. they remain significant and insignificant, respectively). The lagged of real effective exchange rate is significant at 5 percent level in the short-term debt specification and is insignificant at the 5 percent level in the short-term debt specification and is insignificant in the long-term debt specification. Public investment still has a negative, but insignificant, effect on private investment.

The results of the above three extensions of the model lead to several conclusions: (1) Short-term debt has strongly negative impact on the private investment, whereas (2), devaluations of the real effective exchange rate expand private investment significantly. The significance of real effective exchange rates in both specifications (current and lagged values) implies that, unlike other developing countries, private firms in Sub-Saharan Africa countries do change their decisions about investment accordingly to the movement of the real effective exchange rate. (4) Public investment appears to be an insignificant factor in explaining for private investment. However, the observed sign of the public investment variable suggests that public and private investment are competitive at the time of that a project is implemented (that is when current values of private and public investment are used). If lagged value of public investment is used, its effect on private investment becomes positive. This implies that once the Government investment project is completed, it becomes a complement to later private investments. (5) Real growth rate is significant only at 10 percent level. 34/

34/ The whole exercises were repeated by removing the insignificant variables out of the model but the results did not change substantially.

Determinant of Private Investment (1980-90)

Table 10

Dependent : log (PRI/ GDP) (a)
Variable

	(b) GR	(c) REEX	(c) REEX (lag)	(d) PUB/ GDP	(d) PUB/ GDP (lag)	(f) LDOD/ GDP	(g) SDOD/ GDP	(h) PRI/ GDP (lag)	
Equ. 4	.831 (1.60)	-.234 (k) (-1.65) *		-.087 (-1.06)		-.026 (-.311)		.328 (4.03) **	R2=.188 N=137 DW=2.16
Equ. 5	.706 (1.39)	-.276 (k) (-2.59) **		-.087 (-1.19)			-.135 (-2.65) **	.278 (3.42) **	R2=.228 N=137 DW=2.23
Equ. 6	1.058 (1.89) *	-.163 (k) (-1.19)			.063 (.83)	.031 (.38)		.032 (3.97) **	R2=.185 N=137 DW=2.17
Equ. 7	.811 (1.51)	-.263 (k) (-2.47) **			.029 (.41)		-.128 (-2.50) **	.269 (3.31) **	R2=.221 N=137 DW=2.22
Equ. 8	.984 (1.92) *		-.184 (k) (-1.43)	-.073 (-.91)		.025 (.36)		.340 (4.21) **	R2=.184 N=137 DW=2.17
Equ. 9	.894 (1.77) *		-.222 (k) (-1.95) **	-.089 (-1.20)			-.109 (-2.18) **	.313 (3.92) **	R2=.211 N=137 DW=2.22

(a) All variable's definitions and notations are similar to Table 9.

5.4.2. Inflation:

If the nominal interest rate remains unchanged with inflation, the real interest rate is lower, which helps attract investment. Thus, inflation could have a positive effect on private investment. The implicit GDP deflator and consumer price index (CPI) were alternately used as proxy of expected inflation. The results for both indices -- the implicit GDP deflator and CPI -- consistently show a positive correlation between inflation and private investment but the level of significance is low in all specifications.

5.4.3. Interest Rate:

The real interest rate was added into the model with and without the inflation factor. Since the real interest rate is part of investment costs, the real interest rate was expected to have a negative impact on private investment.

Due to the problem of data availability and the limitation of the model, the study used lending interest rate and alternately used an implicit GDP deflator and consumer price index as a proxy of inflation to construct a real interest rate variable. The real interest rate in all different specifications gives a negative but insignificant impact on private investment.35/ This finding about the insignificant effect of a real interest rate on private investment, is similar to Serven and Solimano's findings for other developing countries.

35/ For example, with and without lag, linear and logarithmic form, level and deviations values.

5.5 Summary

Overall, the empirical findings of this paper suggest that determinants of private investment in SSA countries do not have the same pattern as in other regions, especially in regard to two variables – real effective exchange rate and debt overhang. Serven and Solimano found that, for developing countries, real exchange rates do not affect private investment whereas this study finds that for SSA countries there is a significant relationship between real exchange rates and private investment. This outcome is consistent with an interpretation that a real depreciation of a local currency expands exports, raises real incomes, and consequently stimulates aggregate investment expenditures. The most significant findings of this paper show that short-term debt has an adverse effect on private investment, whereas long-term debt does not have any statistically significant effect on private investment in Sub-Saharan African countries. The results of Serven and Solimano (1991), related to developing countries of other regions, indicate no effect of external debt in private investment.

The power of the real growth rate of GDP to explain the expansion of private investment in SSA countries is not as strong as found in the case of other developing countries in Latin America and Asia. In this study, the growth rate is only significant at a 10 percent level in explaining variation in private investment. For Kenya, Matin and Wasow (1992) also found that the positive correlation between growth and private investment is insignificant.

As in Serven and Solimano's study for other developing countries, real interest rates, does not have any significant negative effect on private investment. Inflation has a positive effect on private investment but the effect is statistically insignificant. As in other studies (e.g. Sundarajan and Thakur 1980, Shafik 1991), public investment seems to have no statistically significant effect. The negative sign indicates that there is no complementarity

between public and private investment. However, the extended model suggests that the lagged public investment variable seems to have a positive impact, although it is statistically insignificant, on the private investment.

To sum up, the regression results lend some support to the expected roles of the determinants of private investment based on a literature survey. The results also shows that there are similarities, as well as a strong dissimilarity, between what is found to be statistically significant determinants in SSA and in other developing countries. The regression results, however, generally support or discard some hypothesis as specified in the model used. For example, the regression model in the paper does not establish any effect of interest rates on investment. From a given model such as here, one cannot say which one is true: (a) there is no role of interest rate or (b) that the interest rate estimates do not actually capture the cost of capital. The intercountry regression analysis has to be, therefore, supplemented with more country based studies that can analyze at length what factors influence private investment.

CHAPTER 6.

RECOMMENDATIONS FOR POLICIES AND FURTHER WORK

The survey of the relevant literature and the empirical results of this paper indicate the following policy conclusions for achieving a sustained recovery in private investment in SSA countries the 1990s:

a) The perceived risks of investment will have to be reduced by maintaining macroeconomic stability. Fiscal adjustment and reduction of debt burden will be necessary elements for such stability.

b) Adjustment programs will have to incorporate components that will contribute to an enabling business environment for private investors. These components include:

- maintaining a competitive exchange rate
- liberalizing trade and tariffs, which along with competitive exchange rates would improve domestic incentives for private producers
- dismantling barriers to entry/exit
- streamlining/reforming legal/regulatory framework
- making the tax system efficient, equitable and nondistortionary
- increasing efficiency of public sector investment and institutions, in order to make them complement, not compete with private investment
- privatizing previously held government enterprises in commercial activities

c) Ownership will have to be broadened by encouraging investment by those with a long-term interest at the same time allowing disinvestment at a discount. In support of policy reforms to help promote private investment, adjustment programs have to include the following financial sector components:

- improvement of financial institutions
- liberalization of interest rates
- capital market development
- promotion of competition and private sector participation in the financial sector.

d) A good and well maintained infrastructure is crucial to the profitability of private investment and adjustment programs needed to ensure higher and more efficient public expenditures on infrastructure.

e) Debt overhang in SSA countries needs to be eased for creating private investor confidence.

As for further work, in view of the poor quality of investment data, country specific studies will be useful in the future. Such studies will not only give greater attention to the consistency and quality of investment estimates, but also can probe the perception of private businessmen about their attitudes to the questions of investment. The intercountry analysis has to be supplemented by country specific studies, either individually or in analytical groups, to throw light on the determinants of private investment. For example, it would be particularly useful if country specific surveys could find out the perception of private investors regarding efforts and outcomes of adjustment programs and their confidence in the sustainability of reforms.

In order to obtain meaningful empirical results it will be essential to disaggregate investment data. A distinction between traded and non-trade capital goods will be particularly important. This should be made because the impact of adjustment programs aimed at trade liberalization (e.g., devaluation of the exchange rate) has been to remove the implicit subsidy on imported capital goods. This means that investors will want to reduce the portion of traded capital in their overall capital stock, and that the level of non-traded capital goods produced in the economy will increase. The growth in production of capital goods could be constrained by a number of factors (e.g., the lack of legally titled and registered land) which could provide one explanation of why private investment has stagnated in SSA. Capital goods

originating in the non-tradeable sector can be captured by the value of gross output in the construction sector and are available from national accounts statistics. Data on capital goods from the traded sector from the United Nations' trade statistics. Also, it will be important to disaggregate investment by sector of destination. Following adjustment programs, the demand for investment in the export sectors is expected to rise. However, savings may not be channelled into these sectors because of the lack of functioning financial intermediaries (even in industrialized countries a large portion of investment comes from retained earnings). Also, supply response in export sectors could be impeded because of ill-defined property rights on land. Finally, it will be important to collect data on inventories in order to understand inventory holding behavior by entrepreneurs in SSA. This is especially necessary for countries where major reforms have taken place. This is because in times of uncertainty, especially when reforms are being introduced, inventories tend to be maintained at very high levels, while as reform begin to work and confidence grows, entrepreneurs tend to hold less inventories. Given these needs for disaggregation, further work is needed on a disaggregation plan, determination of what data sources to be used and what country-specific statistical institutions to work with.

More understanding is also needed about each country's policy framework -- how secure are property rights, how enforceable are business contracts and how efficient and fair is the administration of justice. These factors affect transaction costs and we need to know how these factors can be improved to make private investment attractive. Labor market issues and their role in implementing private investors decisions will also be important topics for further study.

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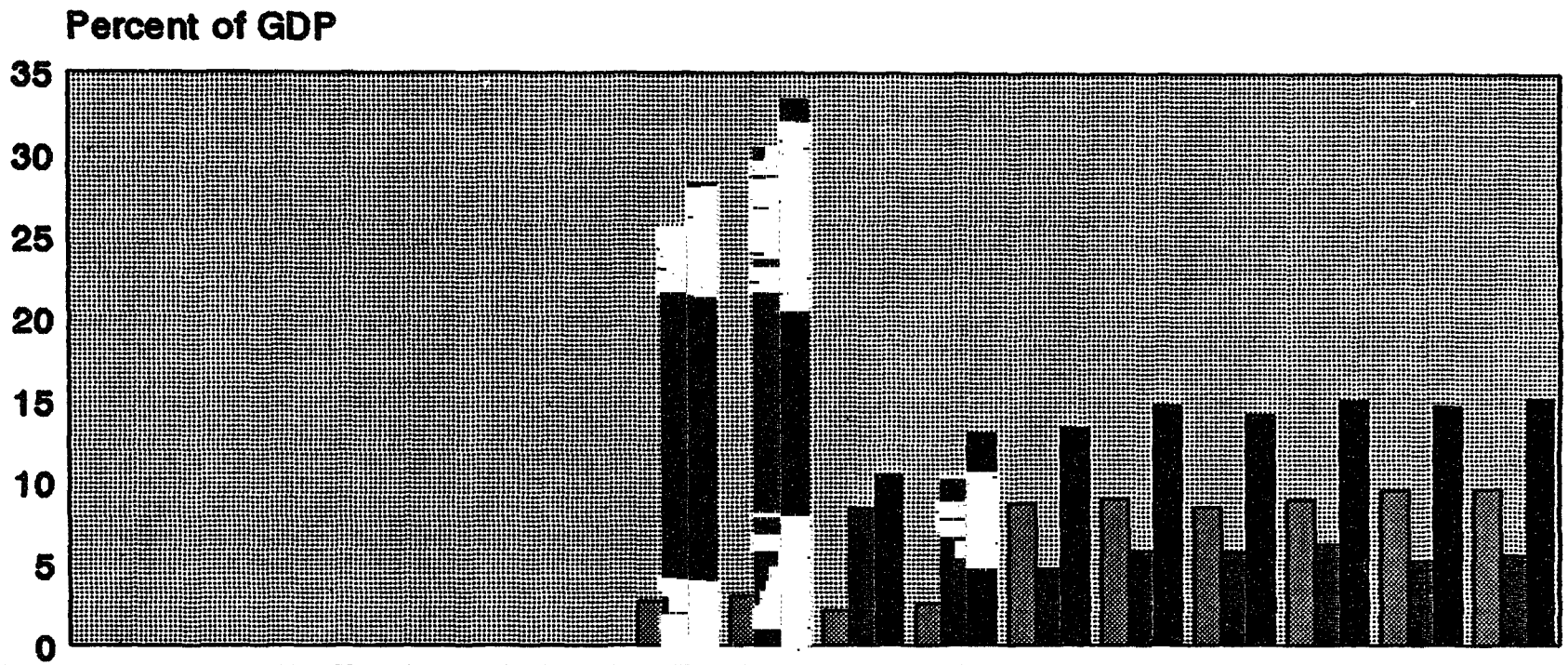
ANNEX I

BENIN
Investment

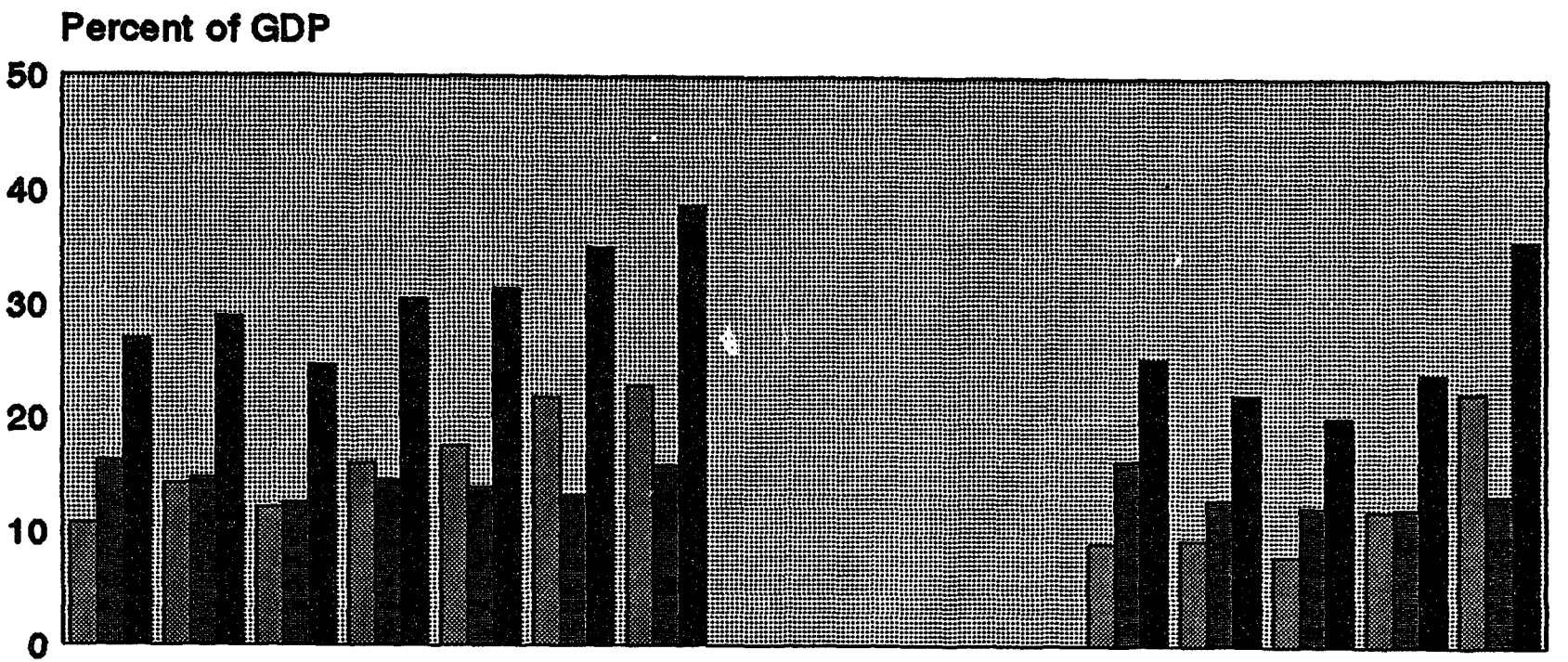


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP							2.7	3	2.1	2.6	8.7	9	8.5	8.9	9.5	9.6
PUB/GDP							25.6	30.4	8.4	10.4	4.7	5.8	5.7	6.2	5.2	5.6
GDI/GDP							28.3	33.4	10.5	13	13.4	14.8	14.2	15.1	14.7	15.2

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX (85-90)
Country Economist (81-84)

BOTSWANA
Investment

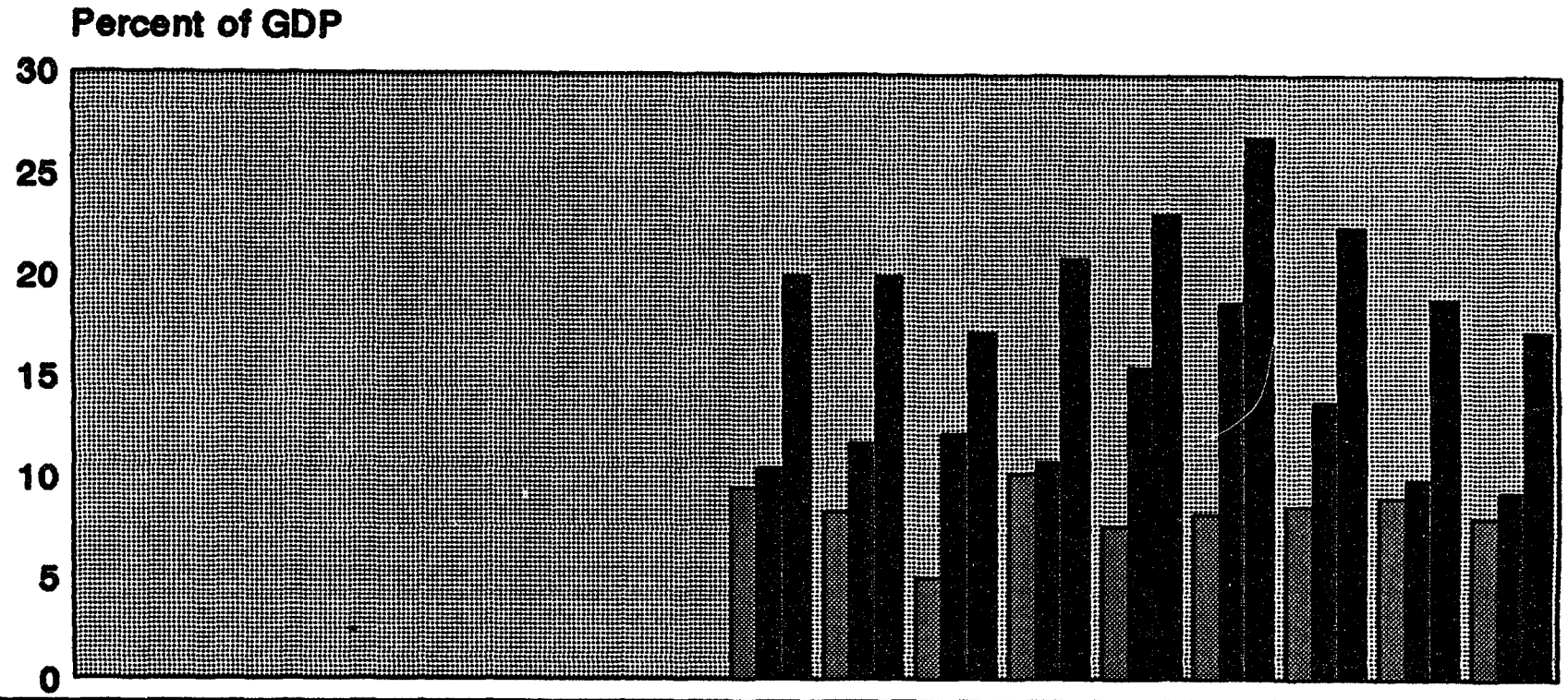


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP	10.8	14.2	12.1	16	17.6	21.8	22.9					9	9.3	8	11.9	22.4
PUB/GDP	16.2	14.7	12.6	14.5	13.9	13.3	15.9					16.3	12.9	12.2	12.1	13.4
GDI/GDP	27	28.9	24.7	30.5	31.5	35.1	38.8					25.3	22.2	20.2	24	35.8

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX (75-81)
Country Economist (86-90)

BURKINA FASO
Investment

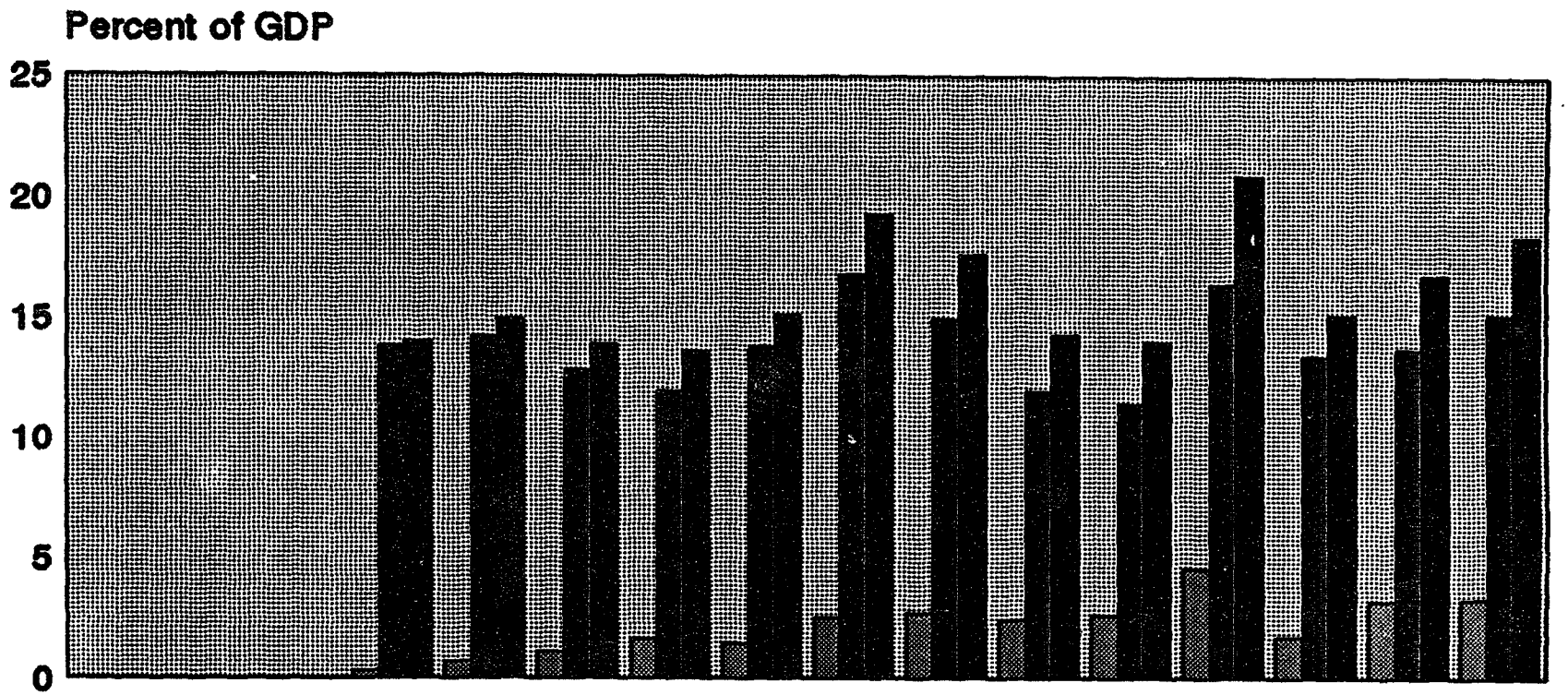


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP								9.5	8.3	5	10.2	7.6	8.2	8.6	9	8
PUB/GDP								10.5	11.7	12.2	10.8	15.5	18.7	13.8	9.9	9.3
GDI/GDP								20	20	17.2	20.9	23.1	26.9	22.5	18.9	17.3

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX

BURUNDI
Investment

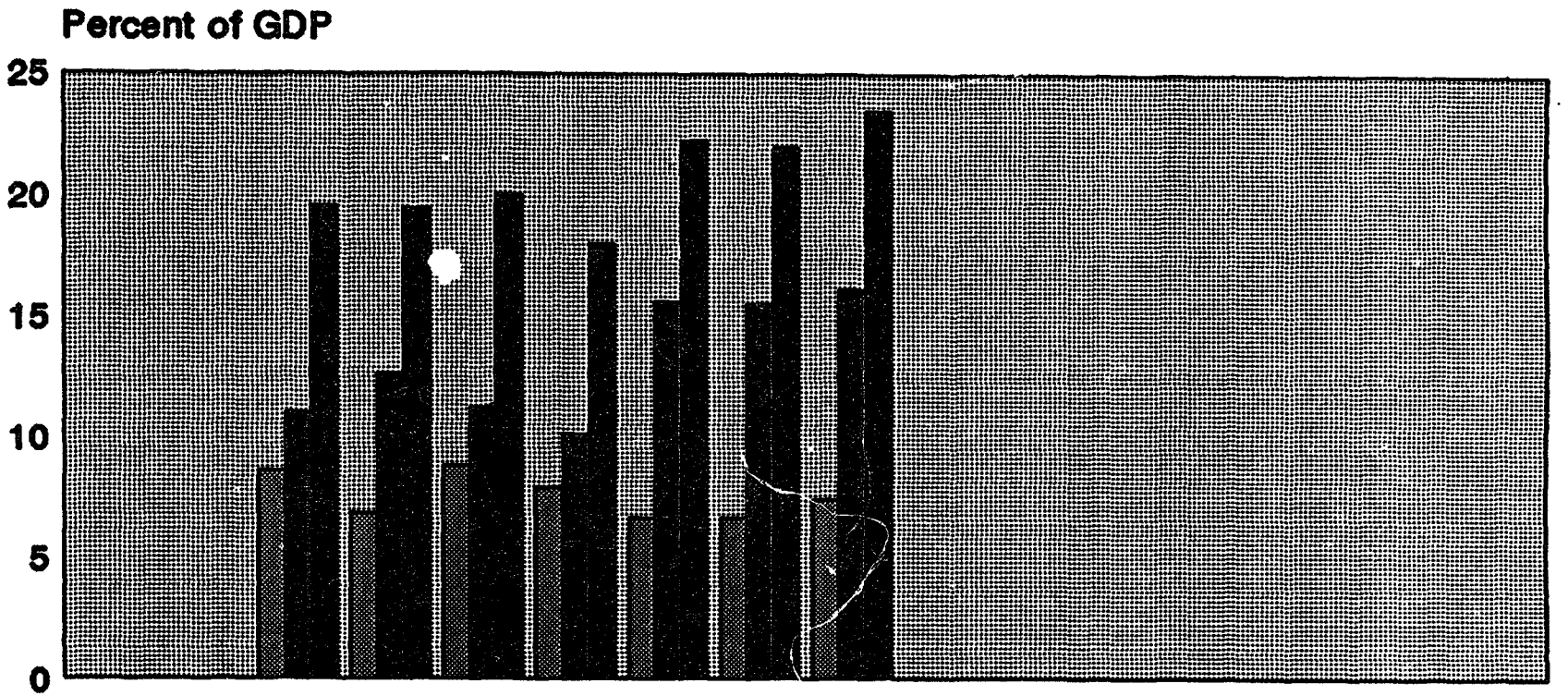


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP				0.3	0.7	1.1	1.6	1.4	2.5	2.7	2.4	2.6	4.5	1.7	3.2	3.3
PUB/GDP				13.8	14.2	12.8	11.9	13.8	16.8	14.9	11.9	11.4	16.4	13.4	13.7	15.1
GDI/GDP				14	14.9	13.9	13.6	15.1	19.3	17.6	14.3	14	20.9	15.1	16.8	18.4

PRI/GDP PUB/GDP GDI/GDP

Source: RESD/ANDREY

CAMEROON
Investment



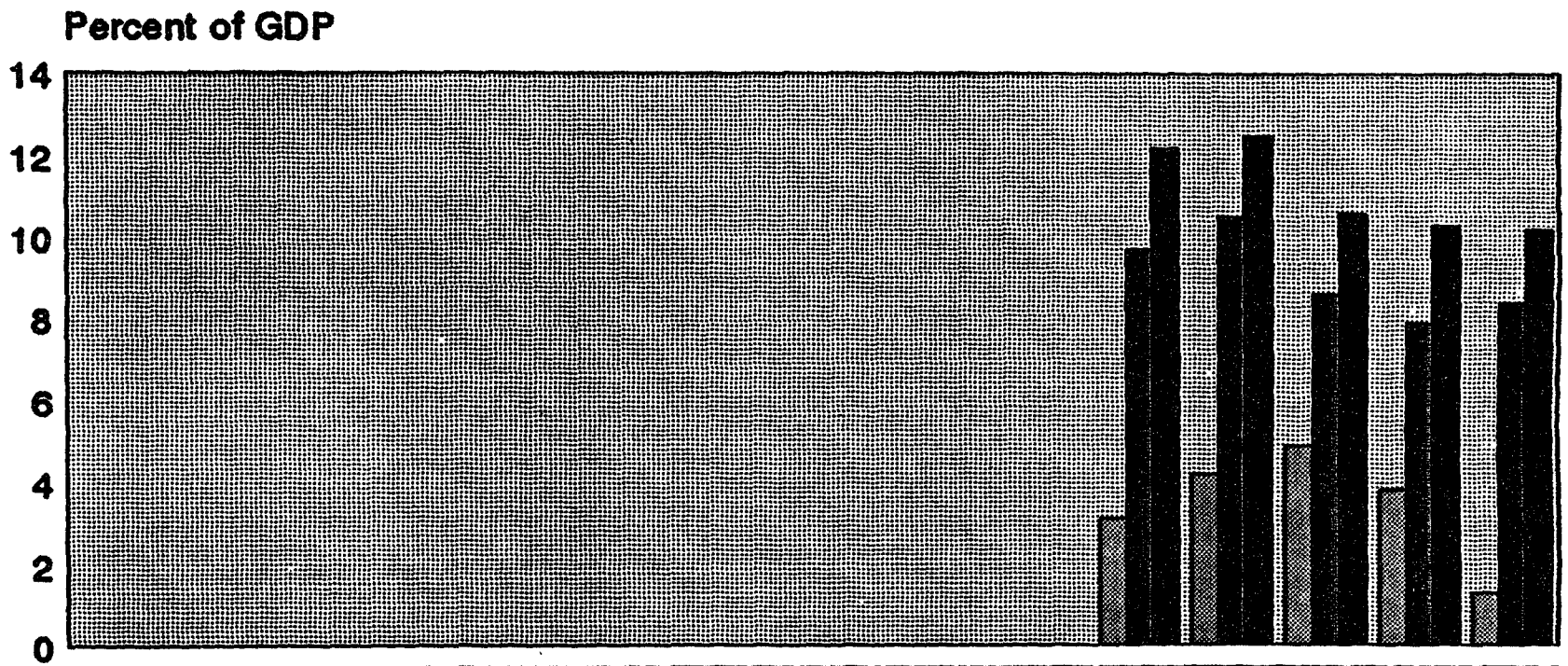
Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP			8.6	6.8	8.8	7.9	6.6	6.6	7.4							
PUB/GDP			11	12.6	11.2	10.1	15.6	15.5	16.1							
GDI/GDP			19.6	19.5	20	18	22.3	22	23.5							

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX

CENTRAL AFRICAN REPUBLIC

Investment

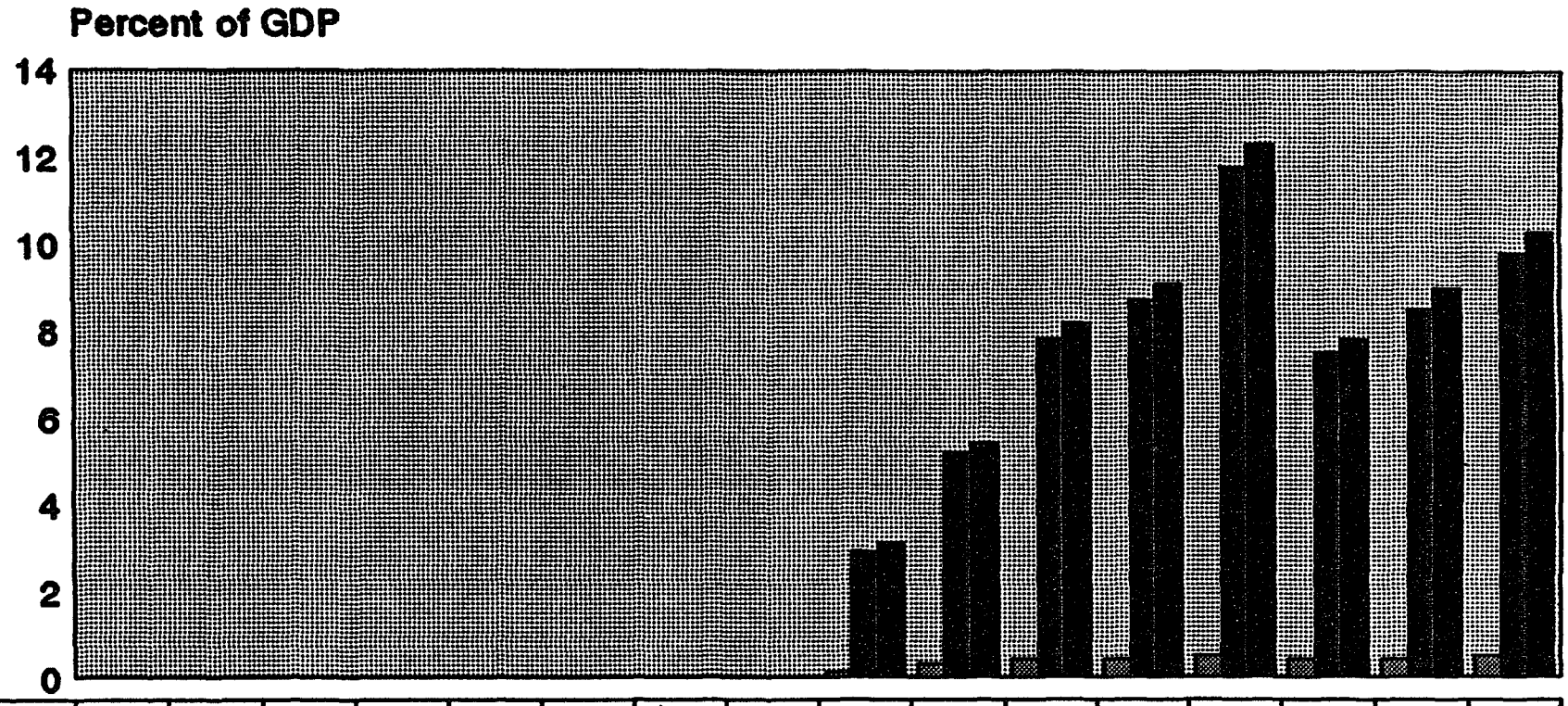


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP												3.1	4.2	4.9	3.8	1.3
PUB/GDP												9.7	10.5	8.6	7.9	8.4
GDI/GDP												12.2	12.5	10.6	10.3	10.2

PRI/GDP PUB/GDP GDI/GDP

Source: WP Rpt. No. P-5502-CA, 05/08/91
July 1991

CHAD
Investment

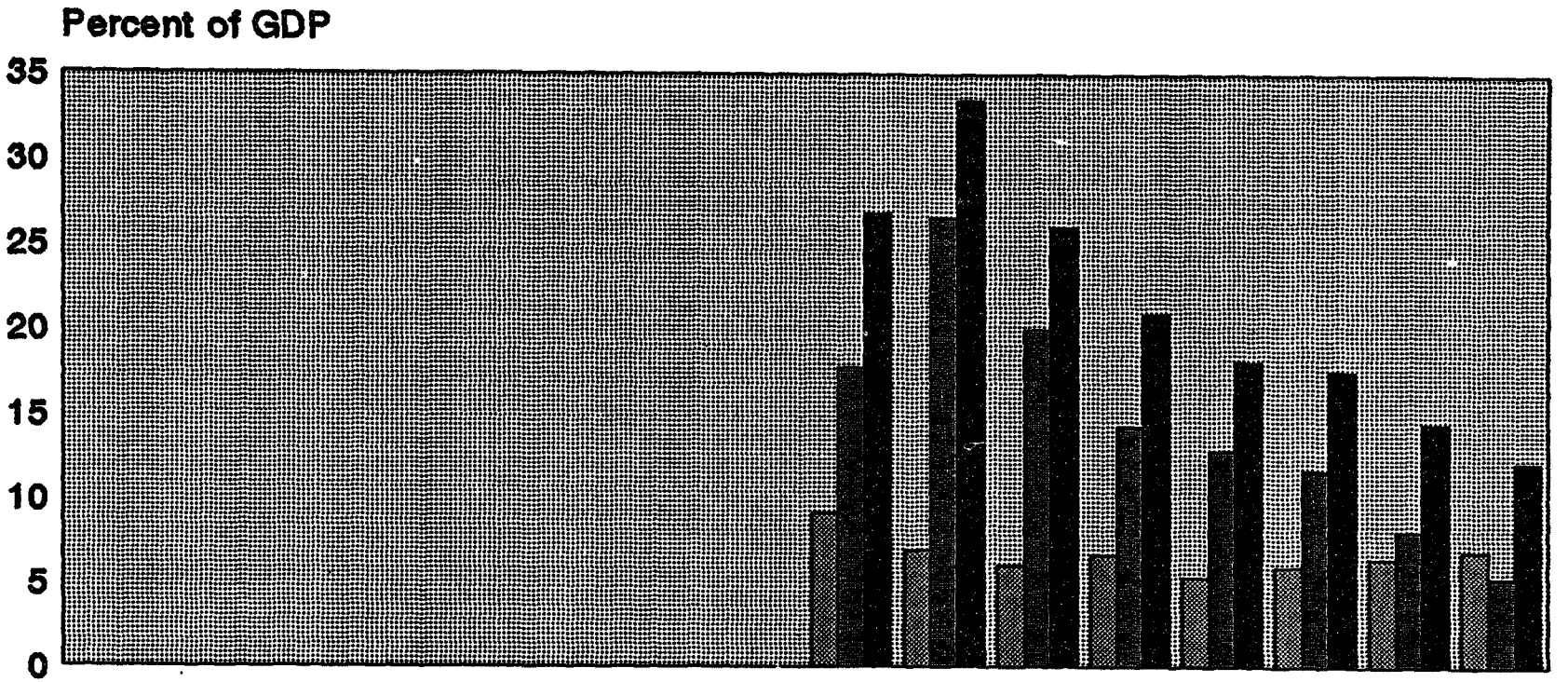


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP									0.1	0.3	0.4	0.4	0.5	0.4	0.4	0.5
PUB/GDP									2.9	5.2	7.8	8.7	11.8	7.5	8.5	9.8
GDI/GDP									3.1	5.4	8.2	9.1	12.3	7.8	9	10.3

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX

COMOROS
Investment

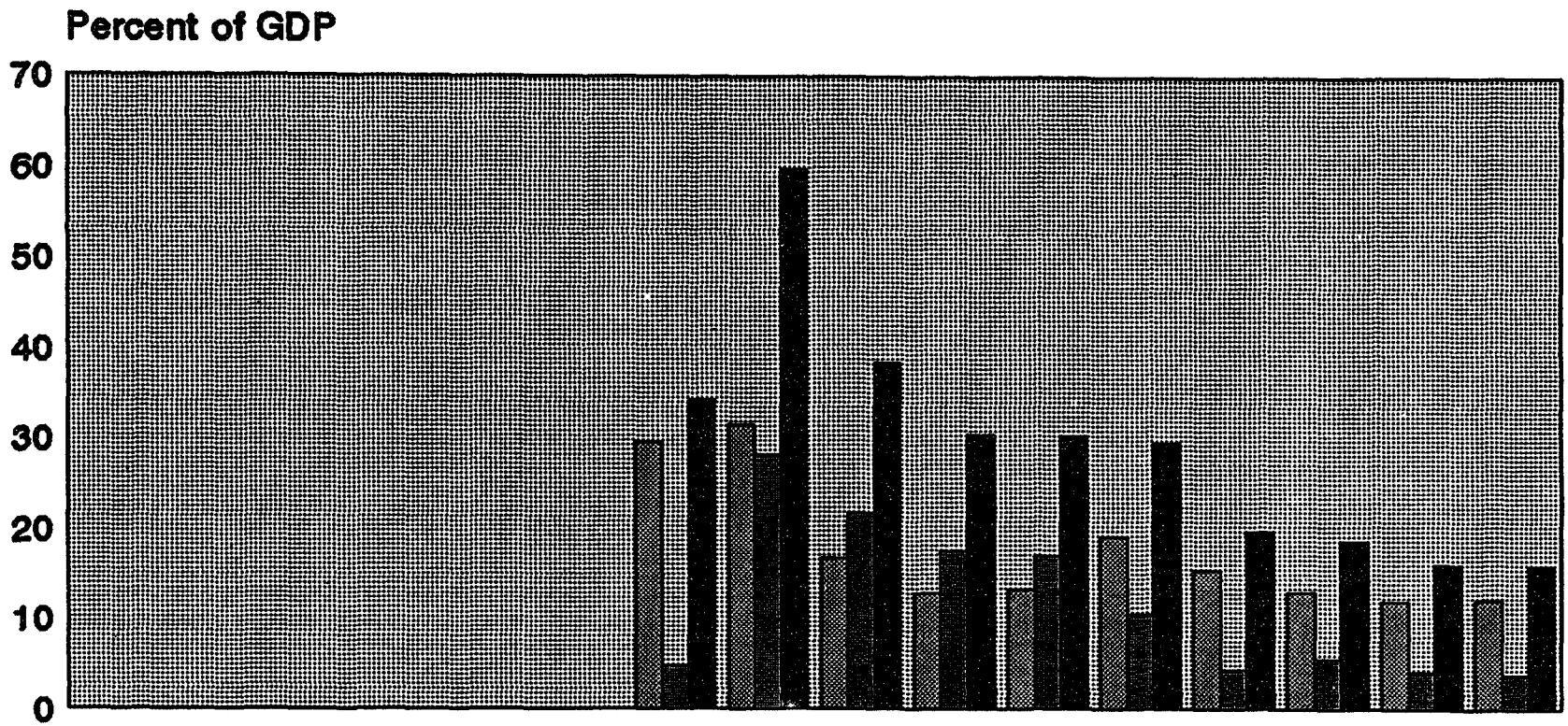


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP									9.1	6.9	6	6.6	5.3	5.9	6.4	6.8
PUB/GDP									17.7	26.6	20	14.3	12.8	11.6	8	5.3
GDI/GDP									26.8	33.5	26	20.9	18.1	17.5	14.4	12.1

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX (83-86)

CONGO
Investment

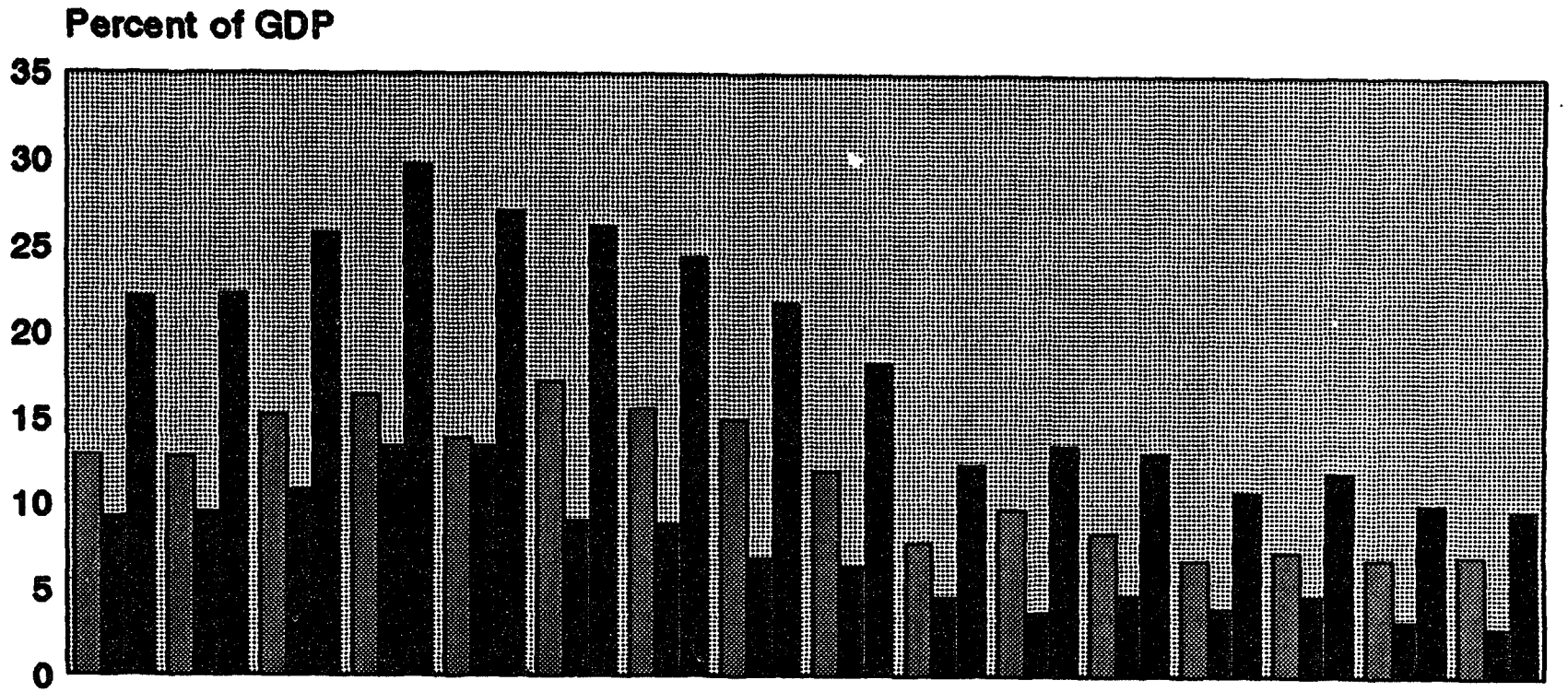


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP							29.5	31.5	16.7	12.9	13.3	19.1	15.3	13	11.9	12.1
PUB/GDP							4.8	28.2	21.7	17.5	17	10.4	4.4	5.6	4.1	3.8
GDI/GDP							34.3	59.7	38.4	30.4	30.3	29.5	19.7	18.6	16	15.9

PRI/GDP PUB/GDP GDI/GDP

Source: Country Economist

COTE D'IVOIRE
Investment

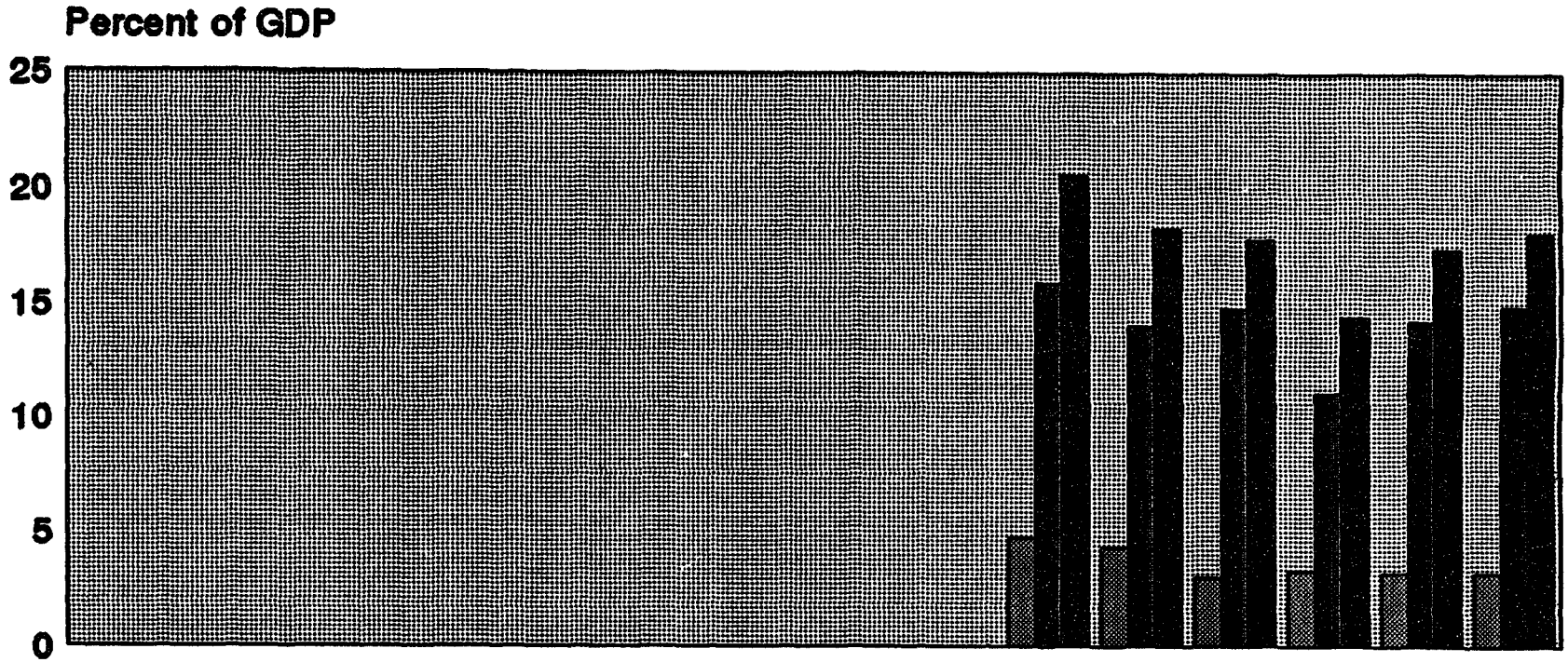


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP	12.8	12.7	15.1	16.3	13.8	17.1	15.5	14.9	11.9	7.7	9.7	8.3	6.7	7.2	6.8	7
PUB/GDP	9.2	9.5	10.8	13.3	13.3	9	8.8	6.8	6.3	4.6	3.7	4.7	3.9	4.7	3.2	2.8
GDI/GDP	22	22.2	25.8	29.7	27.1	26.2	24.4	21.7	18.2	12.3	13.4	13	10.7	11.9	10	9.7

PRI/GDP PUB/GDP GDI/GDP

Source: RESD/ANDREY

DJIBOUTI
Investment



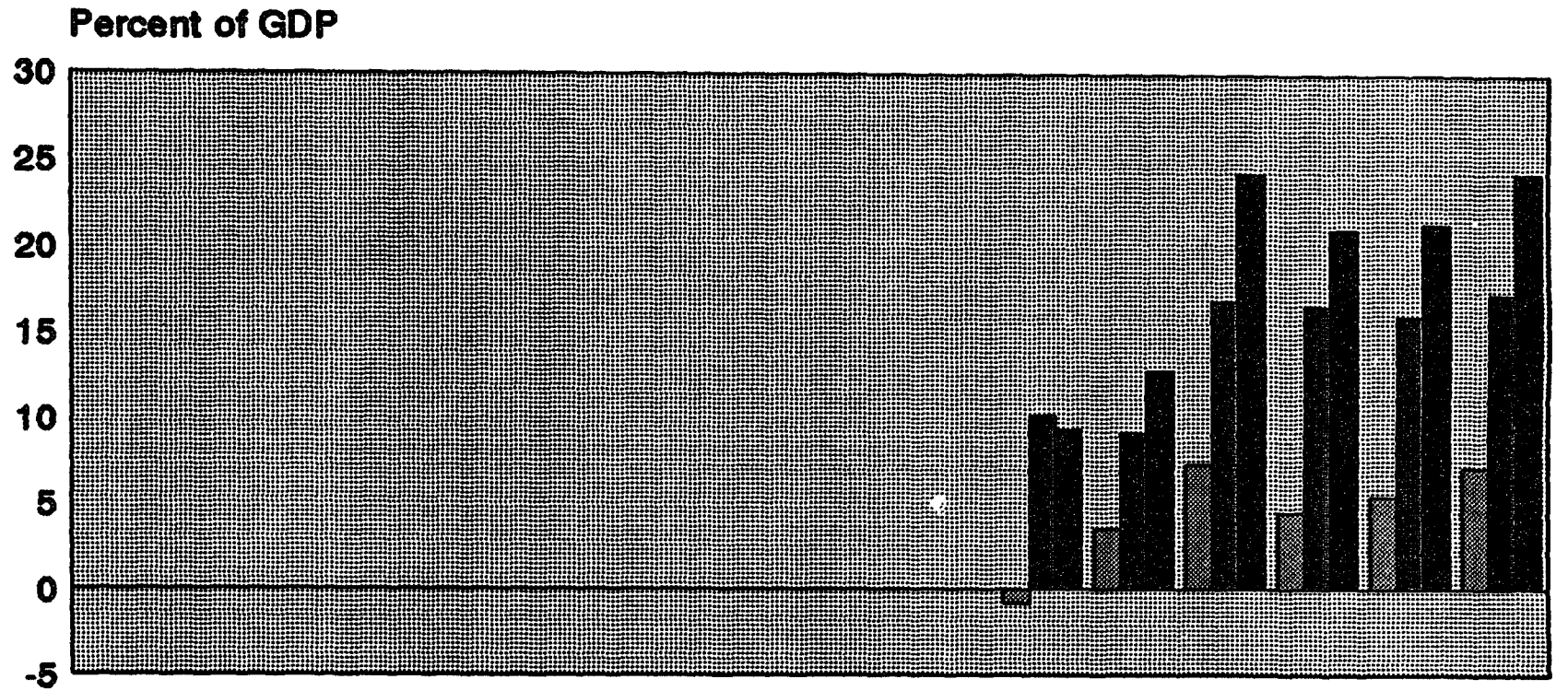
Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP											4.7	4.3	3	3.3	3.2	3.2
PUB/GDP											15.9	14	14.8	11.1	14.2	14.9
GDI/GDP											20.6	18.3	17.8	14.4	17.4	18.1

PRI/GDP PUB/GDP GDI/GDP

Source: WB Rpt. No. 8111-DJI, 05/31/91
July 1991

EQUATORIAL GUINEA

Investment

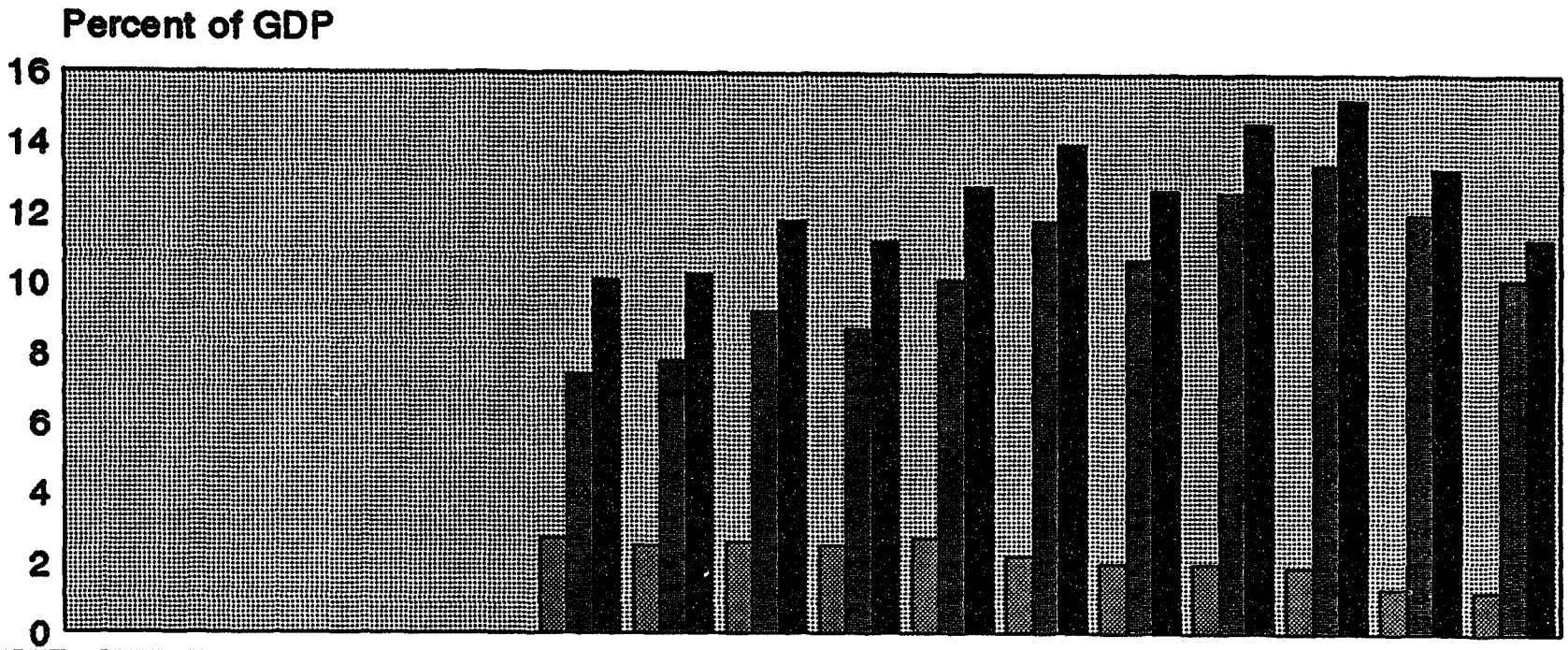


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP											-0.8	3.5	7.3	4.5	5.4	7.1
PUB/GDP											10.1	9.1	16.8	16.5	15.9	17.2
GDI/GDP											9.3	12.7	24.2	21	21.3	24.3

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX

ETHIOPIA
Investment

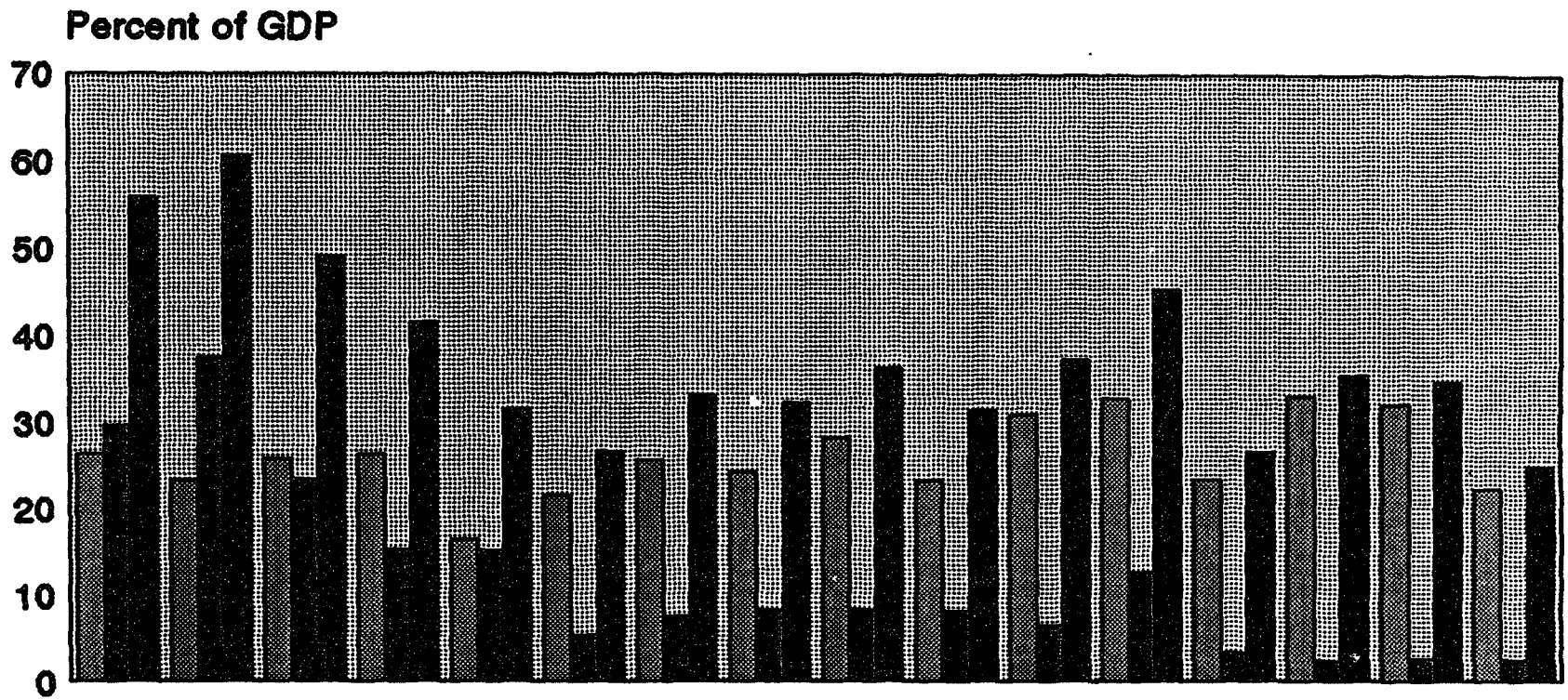


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP						2.7	2.5	2.6	2.5	2.7	2.2	2	2	1.9	1.3	1.2
PUB/GDP						7.4	7.8	9.2	8.7	10.1	11.8	10.7	12.6	13.4	12	10.1
GDI/GDP						10.1	10.3	11.8	11.2	12.8	14	12.7	14.6	15.3	13.3	11.3

PRI/GDP PUB/GDP GDI/GDP

Sources: For 1980-84: Report No. 8062-ET, March 14, 1990 World Bank; For 1985-89: BESD/ANDREX; For 1990: African Development Indicators

GABON
Investment

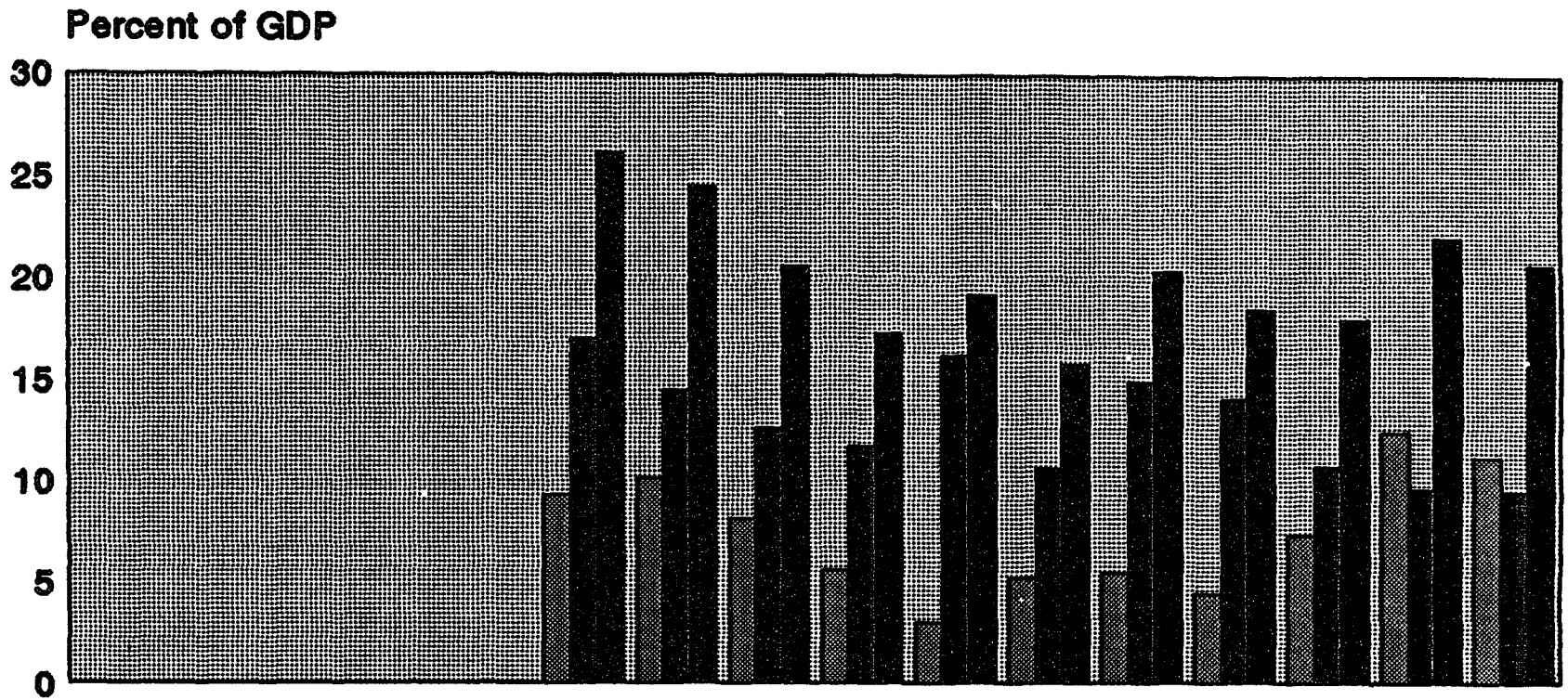


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP	26.3	23.2	25.7	26.3	16.4	21.4	25.6	24.2	28.1	23.2	30.8	32.7	23.4	33	32	22.3
PUB/GDP	29.5	37.4	23.3	15.3	15.1	5.3	7.5	8.2	8.2	8.1	6.5	12.6	3.3	2.3	2.6	2.5
GDI/GDP	55.8	60.6	49	41.5	31.5	26.7	33.1	32.3	36.3	31.3	37.3	45.3	26.7	35.4	34.6	24.8

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX

THE GAMBIA
Investment

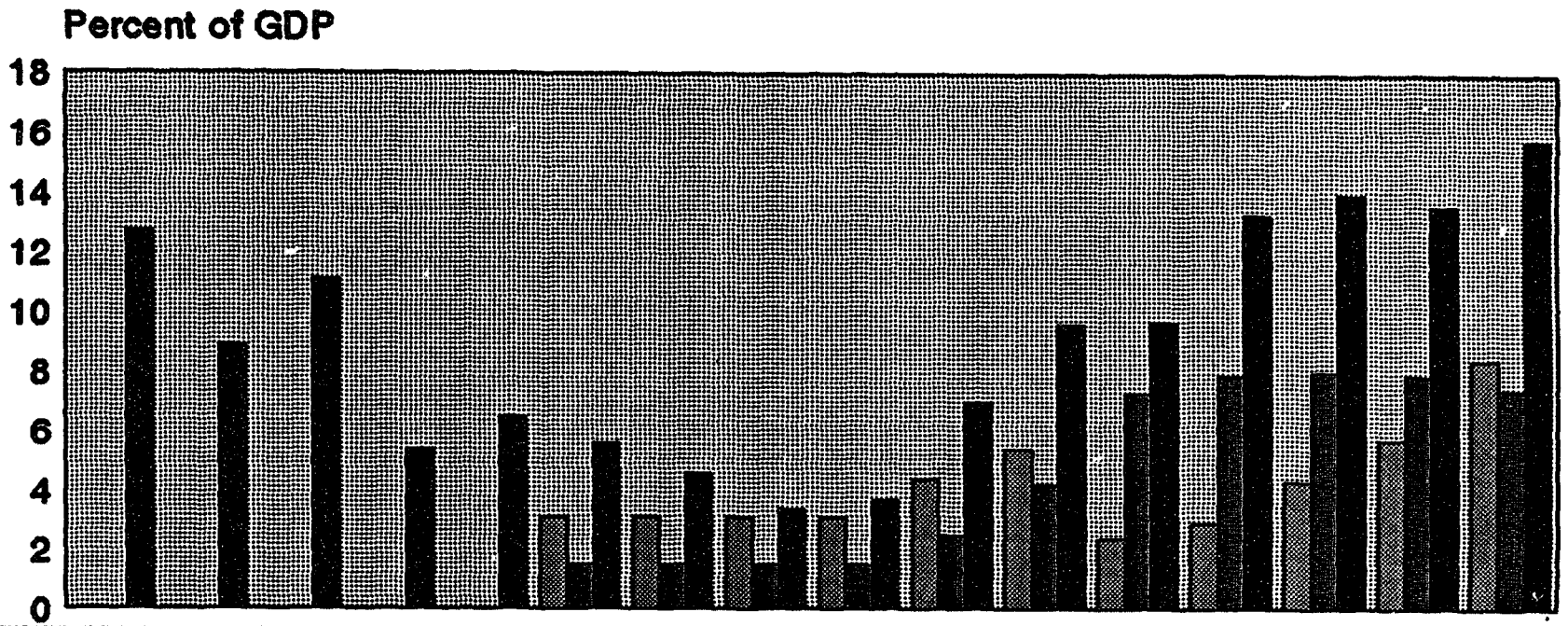


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP						9.3	10.1	8.1	5.6	3	5.2	5.4	4.4	7.3	12.4	11.2
PUB/GDP						17	14.5	12.6	11.7	16.2	10.6	14.9	14.1	10.7	9.6	9.5
GDI/GDP						26.2	24.5	20.6	17.3	19.2	15.8	20.4	18.5	18	22	20.7

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX

GHANA
Investment

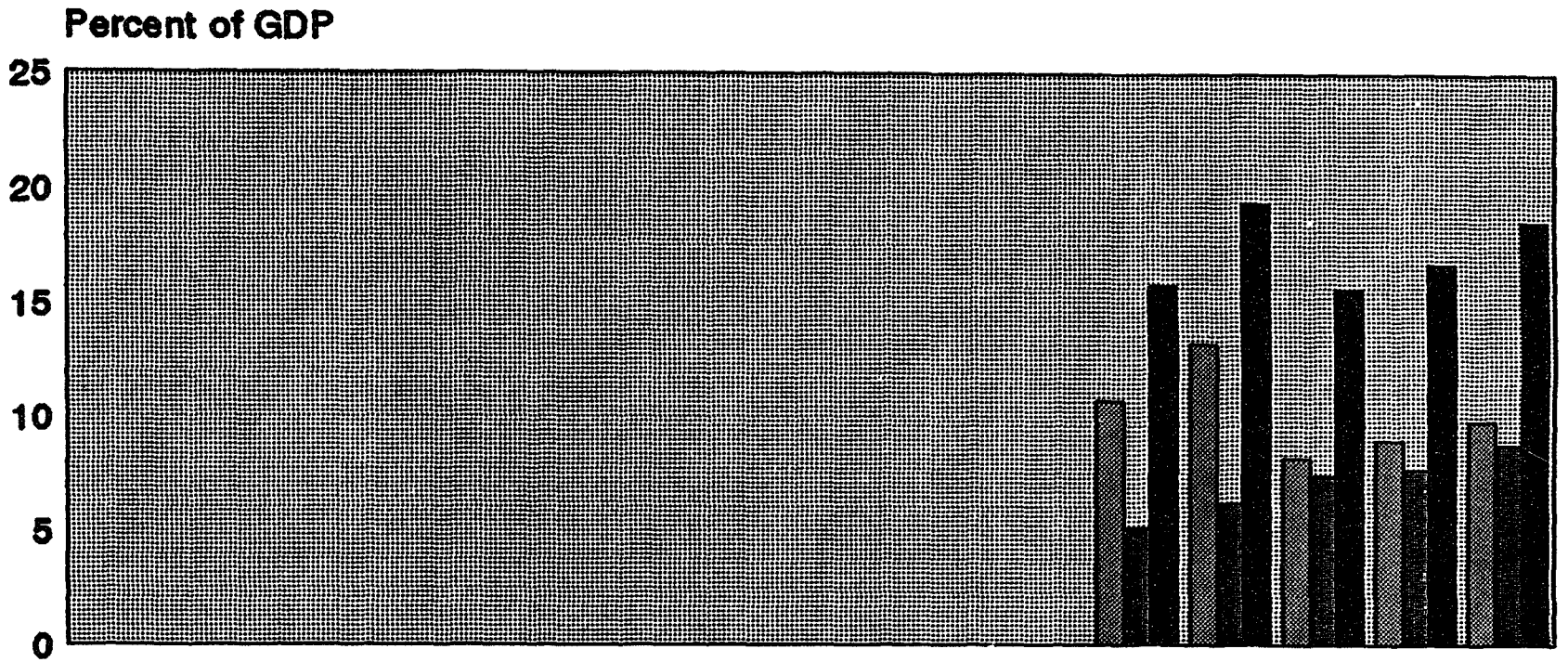


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP						3.1	3.1	3.1	3.1	4.4	5.4	2.4	2.9	4.3	5.7	8.4
PUB/GDP						1.5	1.5	1.5	1.5	2.5	4.2	7.3	7.9	8	7.9	7.4
GDI/GDP	12.7	8.9	11.1	5.4	6.5	5.6	4.6	3.4	3.7	7	9.6	9.7	13.3	14	13.6	15.8

PRI/GDP PUB/GDP GDI/GDP

Sources: For 1975-88: Ghana: Initiating Memorandum for CEM May 23, 1990; For 1989-90: Trends in Private Investment in Developing Countries, 1992 edition, IFC.

GUINEA
Investment

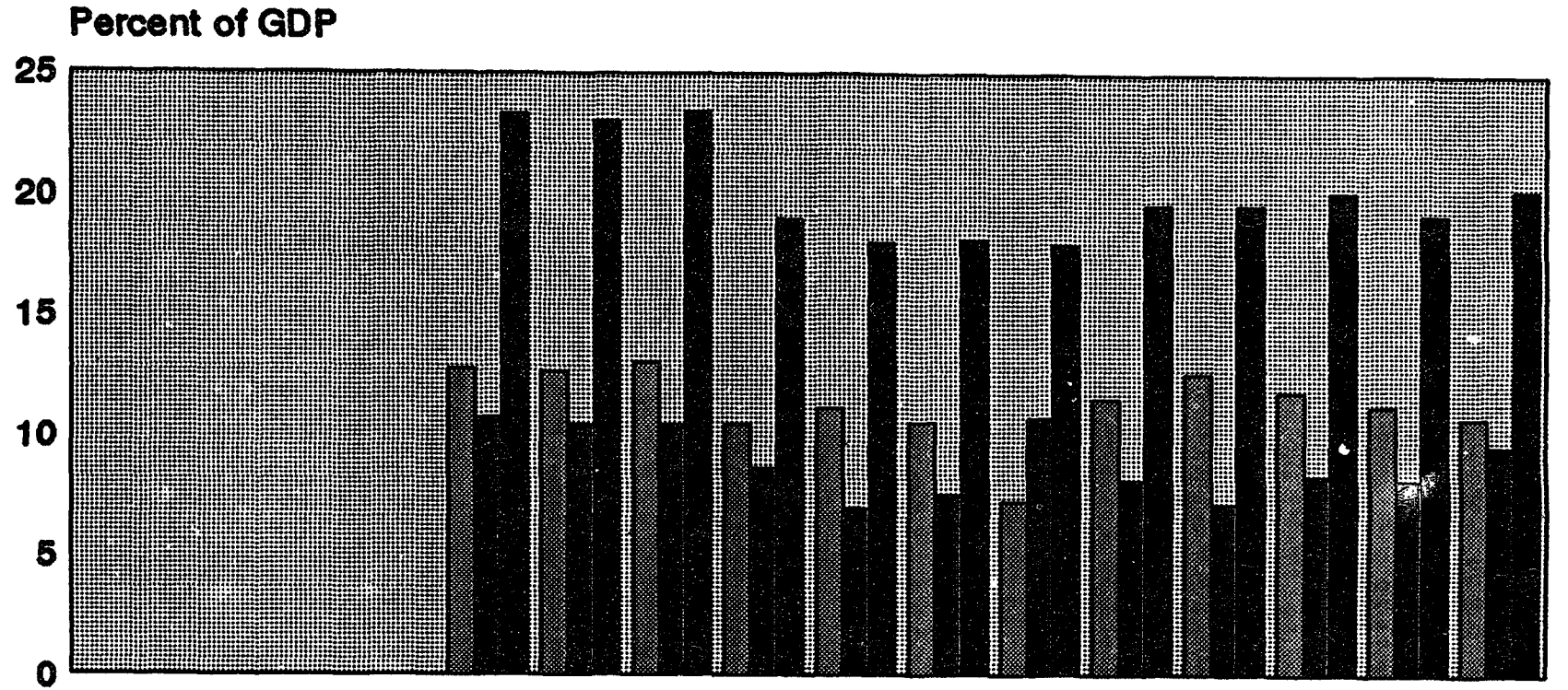


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP												10.7	13.2	8.2	9	9.8
PUB/GDP												5.1	6.2	7.4	7.7	8.8
GDI/GDP												15.8	19.4	15.6	16.7	18.6

PRI/GDP PUB/GDP GDI/GDP

Source: Trends in Private Investment in Developing Countries, 1992 edition, IFC.

KENYA
Investment

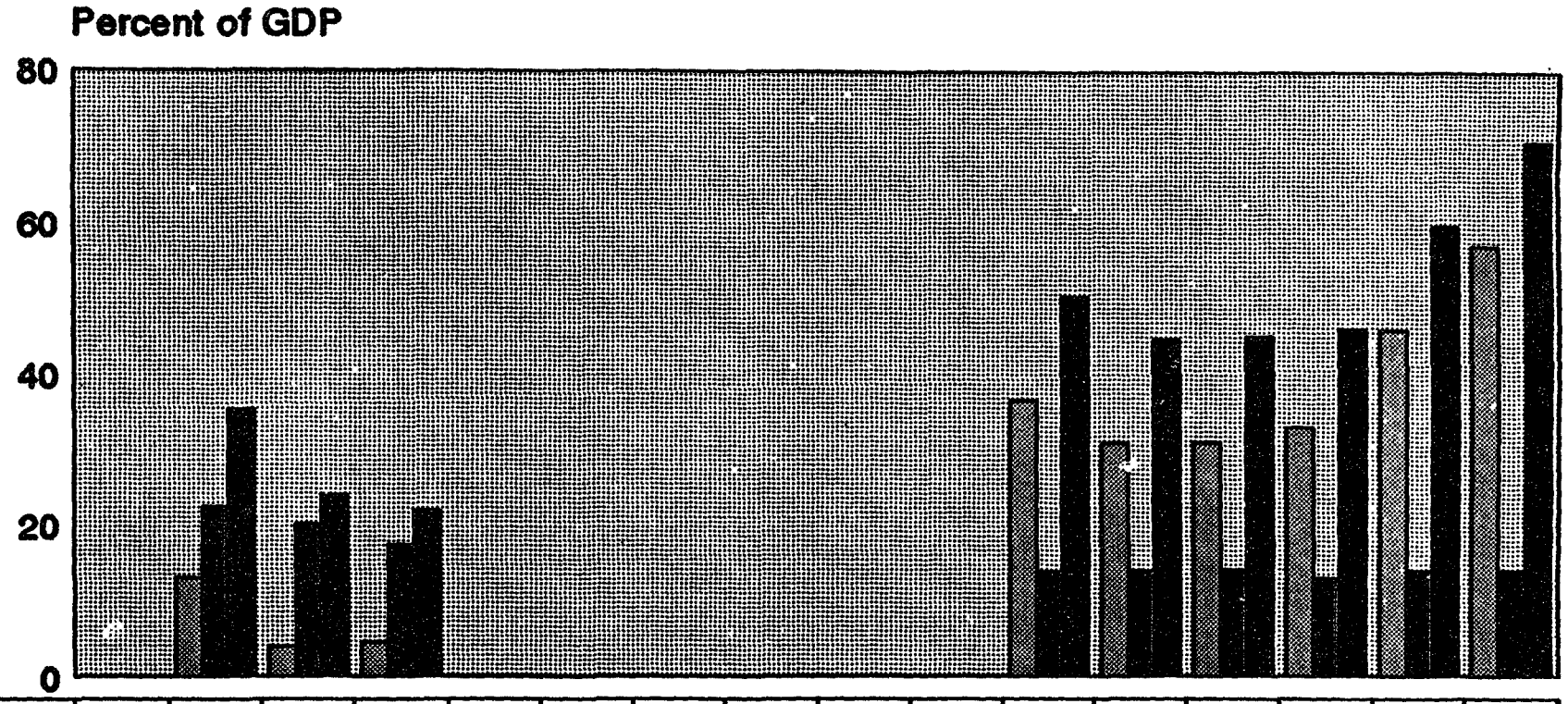


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP					12.7	12.6	13	10.4	11.1	10.5	7.2	11.5	12.5	11.8	11.2	10.7
PUB/GDP					10.7	10.4	10.4	8.6	6.9	7.5	10.7	8.1	7.1	8.3	8.1	9.5
GDI/GDP					23.3	23	23.4	19	18	18.1	17.9	19.6	19.6	20.1	19.2	20.2

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX

LESOTHO
Investment

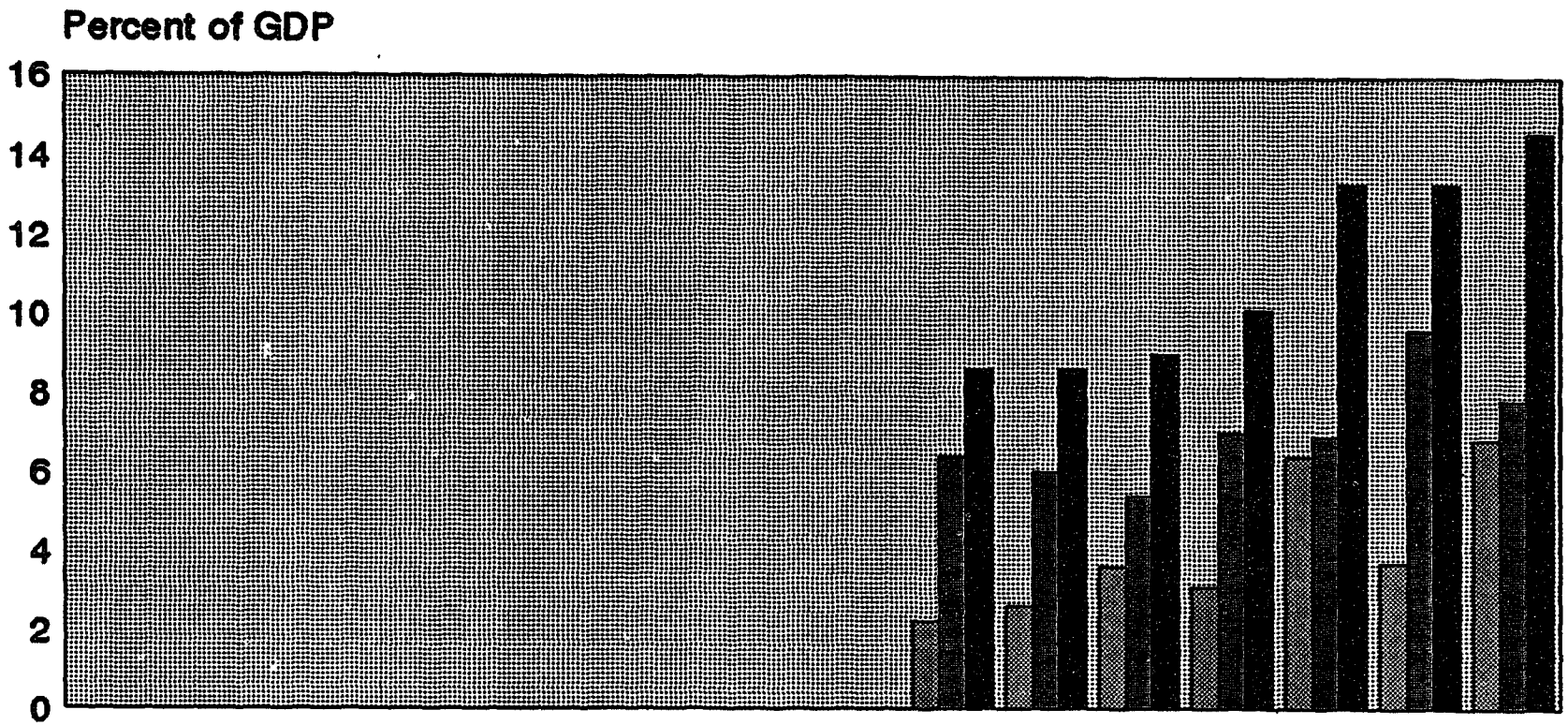


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP		13	3.9	4.5							36.4	30.7	30.9	32.9	45.8	57
PUB/GDP		22.4	20.1	17.5							13.8	13.9	14.2	13.1	13.9	13.9
GDI/GDP		35.4	24	22							50.2	44.6	45.1	46	59.7	70.9

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX

MADAGASCAR
Investment

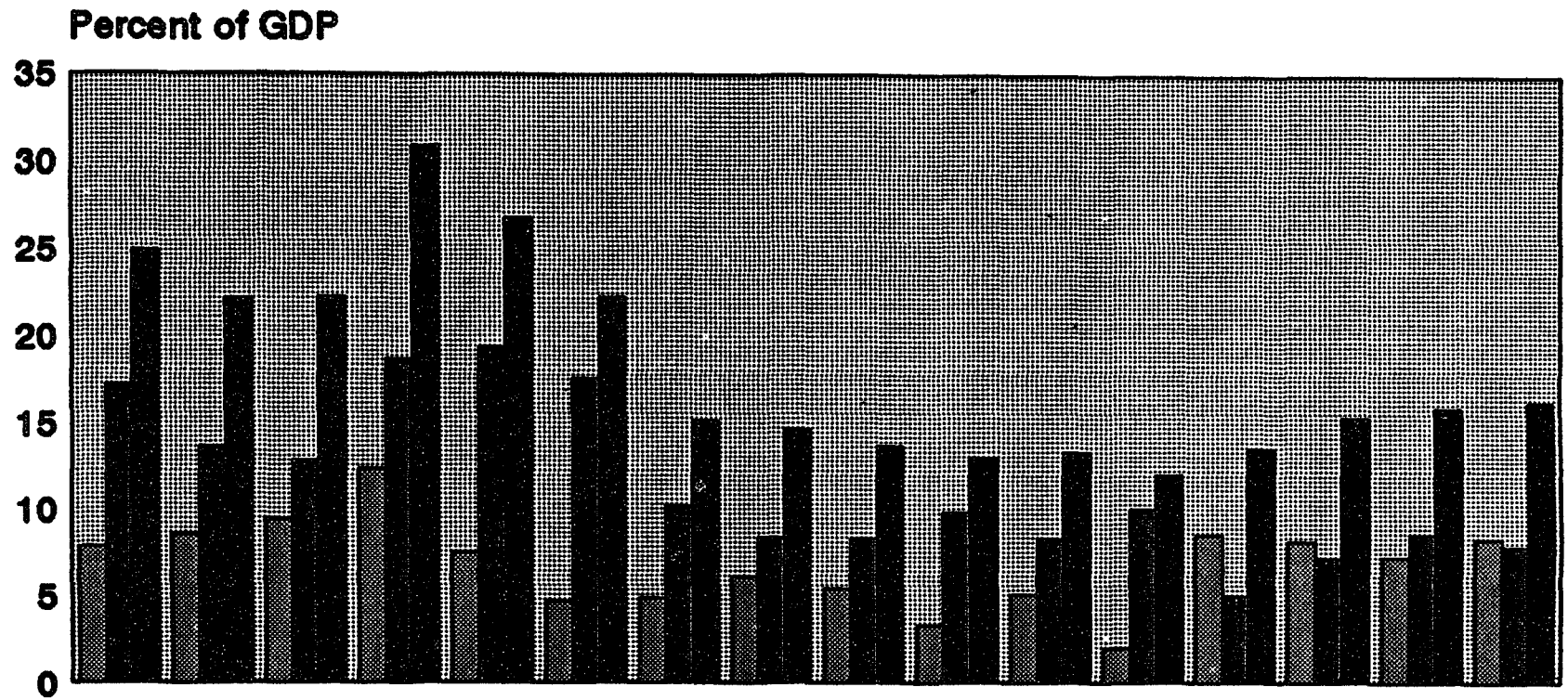


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP										2.2	2.6	3.6	3.1	6.4	3.7	6.8
PUB/GDP										6.4	6	5.4	7	6.9	9.6	7.8
GDI/GDP										8.6	8.6	9	10.1	13.3	13.3	14.6

PRI/GDP PUB/GDP GDI/GDP

Source: Country Economist

MALAWI
Investment

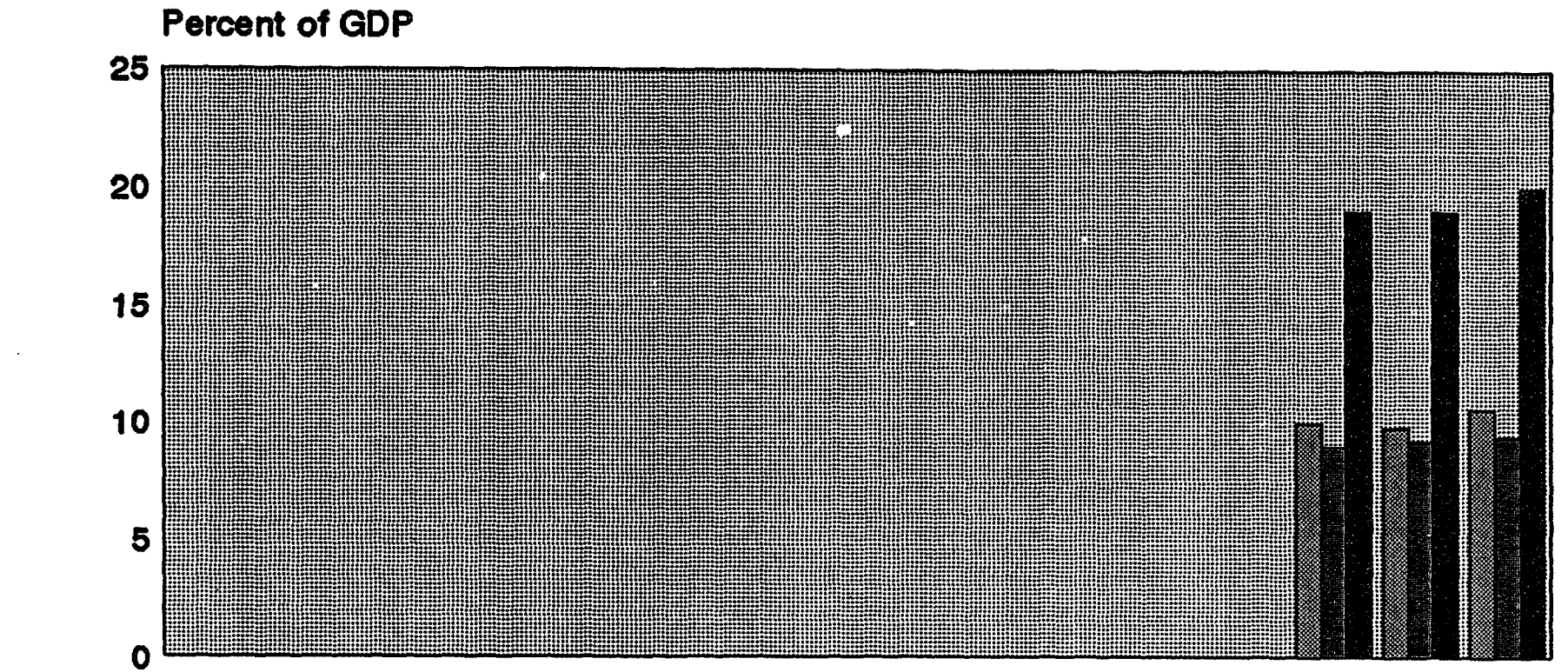


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP	7.8	8.5	9.4	12.3	7.5	4.7	4.9	6.1	5.4	3.3	5.1	2	8.5	8.2	7.3	8.3
PUB/GDP	17.1	13.6	12.8	18.6	19.3	17.5	10.2	8.4	8.3	9.8	8.3	10	5	7.2	8.6	7.9
GDI/GDP	24.9	22.1	22.2	30.9	26.8	22.2	15.1	14.6	13.7	13	13.3	12	13.5	15.3	15.9	16.2

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX

MALI
Investment

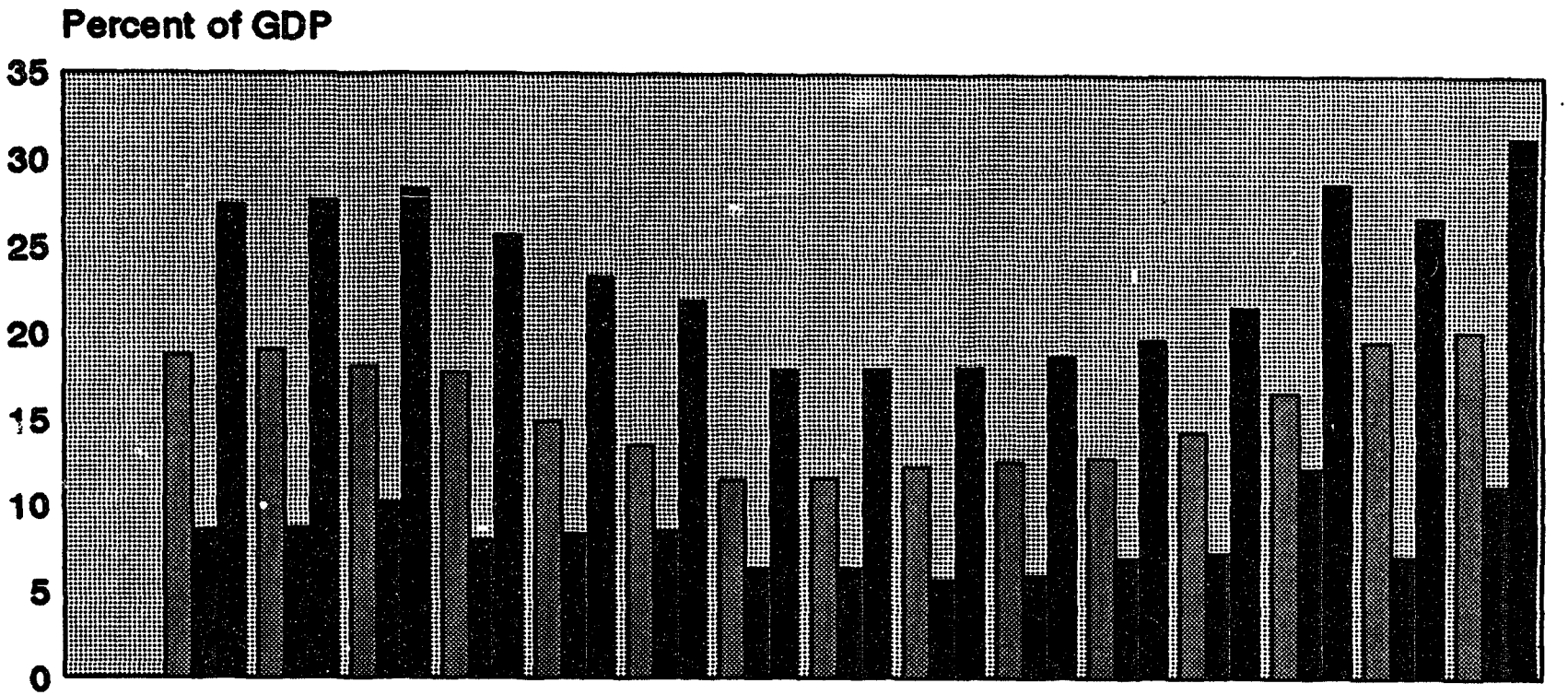


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP														10	9.8	10.6
PUB/GDP														9	9.2	9.4
GDI/GDP														19	19	20

PRI/GDP PUB/GDP GDI/GDP

Source: Country Economist

MAURITIUS
Investment

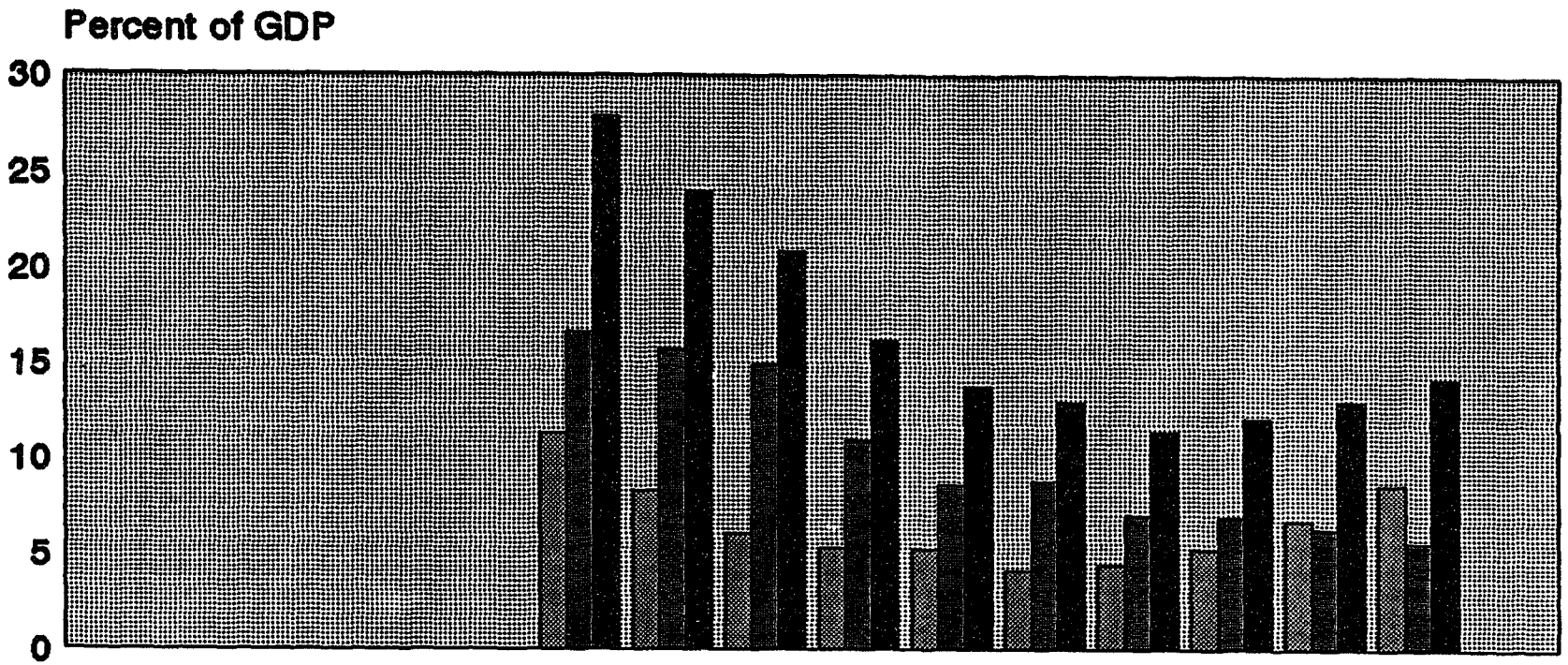


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP		18.7	19	18.1	17.7	14.9	13.5	11.5	11.6	12.3	12.6	12.8	14.3	16.6	19.6	20.2
PUB/GDP		8.6	8.7	10.2	8	8.4	8.5	6.4	6.4	5.7	6	7	7.3	12.2	7.1	11.2
GDI/GDP		27.4	27.7	28.3	25.7	23.3	21.9	17.9	18	18.1	18.7	19.7	21.6	28.7	26.8	31.4

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX

NAMIBIA
Investment

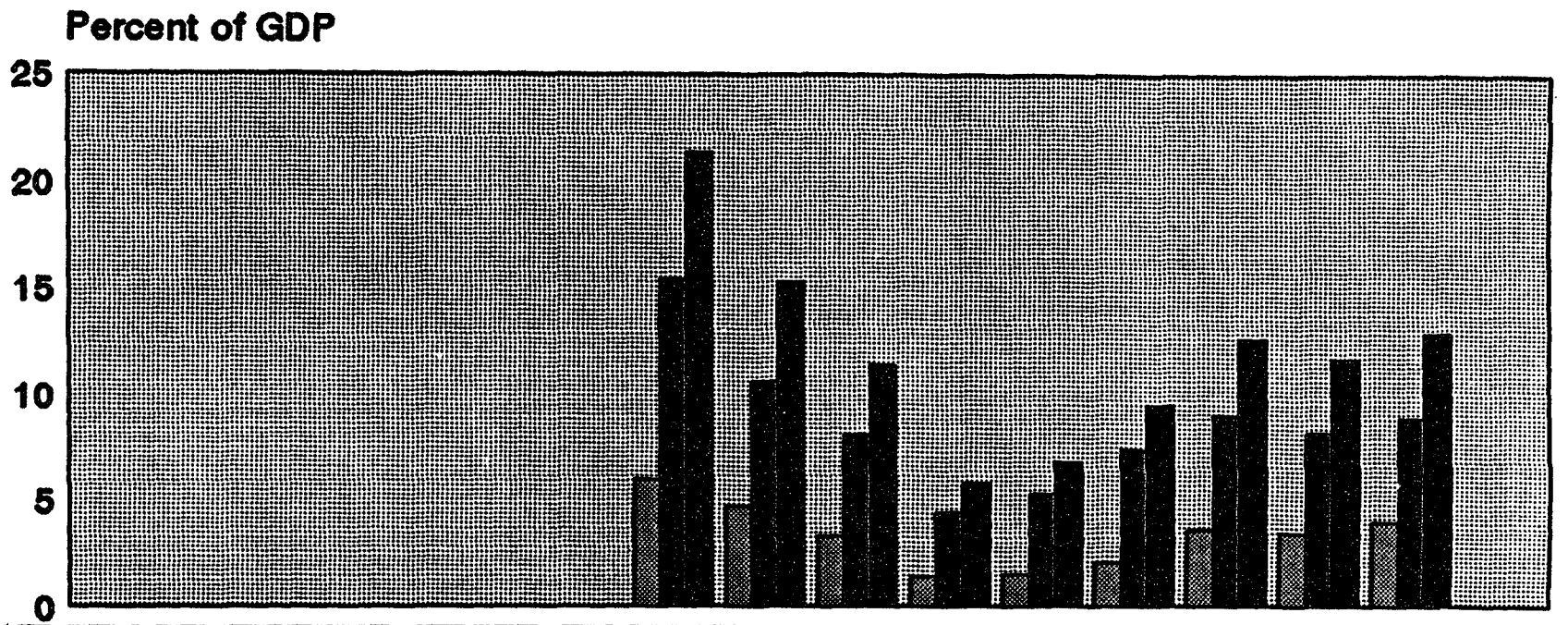


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP						11.3	8.3	6	5.3	5.2	4.1	4.4	5.2	6.7	8.6	
PUB/GDP						16.6	15.7	14.9	10.9	8.6	8.8	7	6.9	6.3	5.6	
GDI/GDP						27.9	24	20.9	16.2	13.8	12.9	11.4	12.1	13	14.2	

PRI/GDP PUB/GDP GDI/GDP

Source: Namibia, Poverty Alleviation with Sustainable Growth,

NIGERIA
Investment

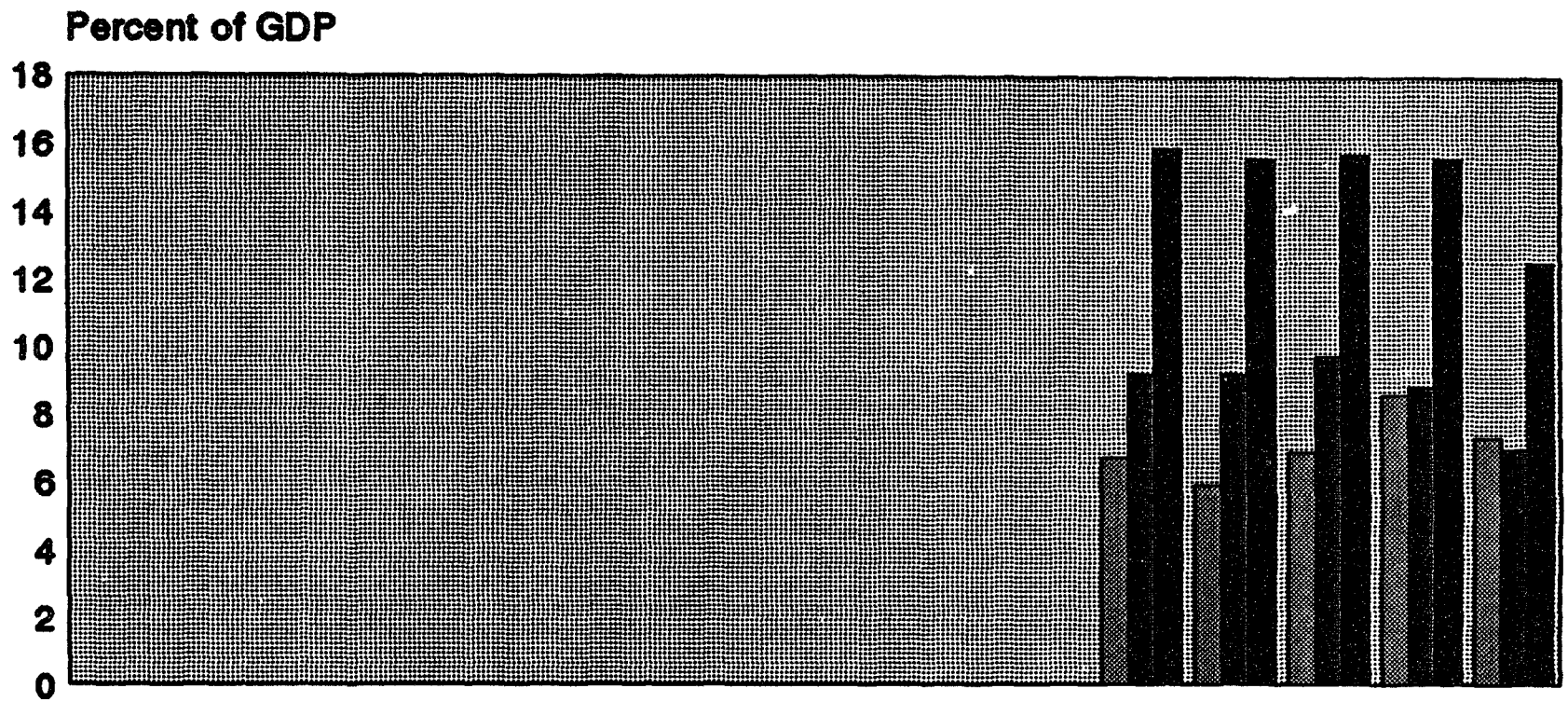


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP							6	4.7	3.3	1.4	1.5	2.1	3.6	3.5	4	
PUB/GDP							15.4	10.6	8.1	4.4	5.3	7.4	9	8.2	8.9	
GDI/GDP							21.4	15.3	11.4	5.8	6.8	9.5	12.6	11.7	12.9	

PRI/GDP PUB/GDP GDI/GDP

Source: Trends in Private Investment in 30 Developing Countries, 1990-91 edition IFC Discussion Paper No. 11. July 1991

RWANDA
Investment

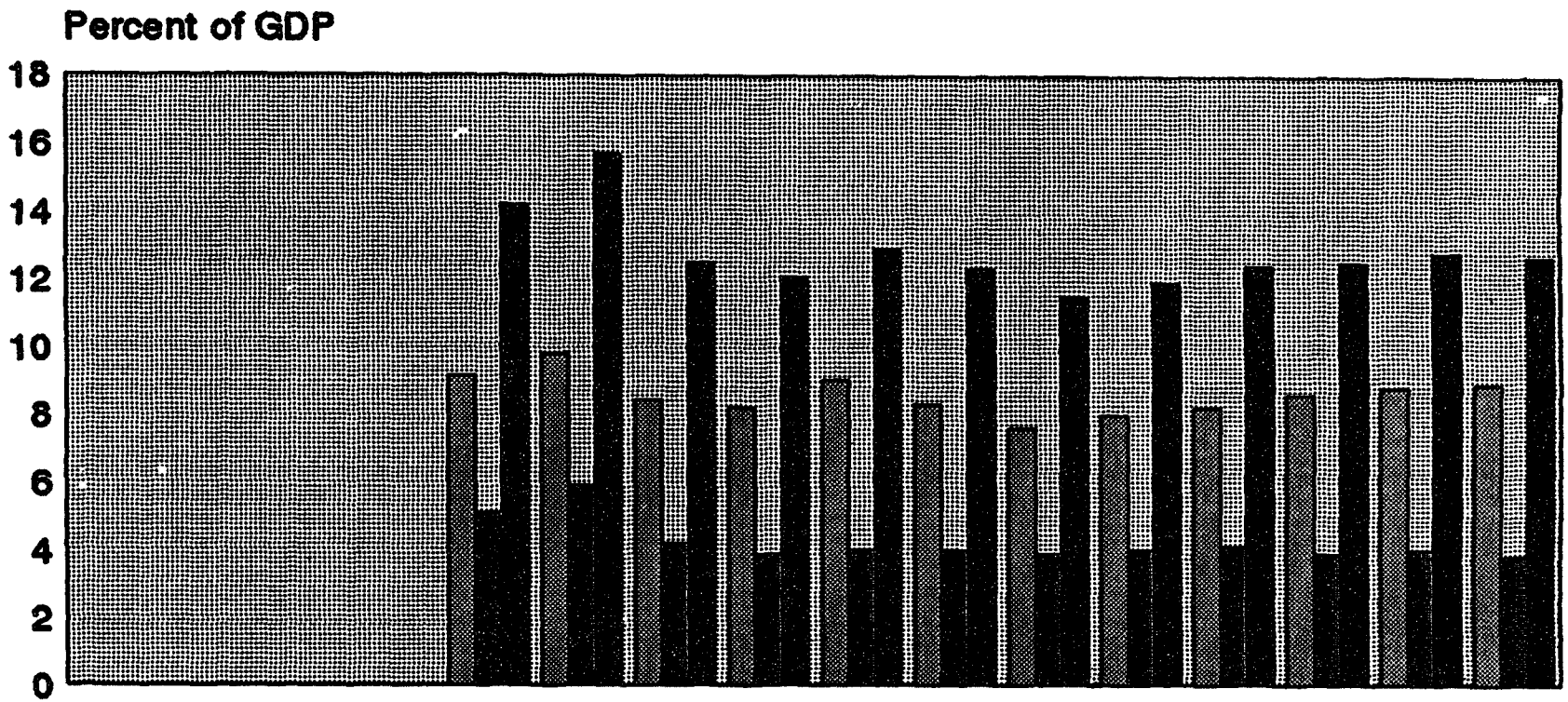


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP												6.7	5.9	6.9	8.6	7.3
PUB/GDP												9.2	9.2	9.7	8.8	7
GDI/GDP												15.9	15.6	15.7	15.6	12.5

PRI/GDP PUB/GDP GDI/GDP

Source: WB Report No. P-5544-RW 05/29/91

SENEGAL
Investment

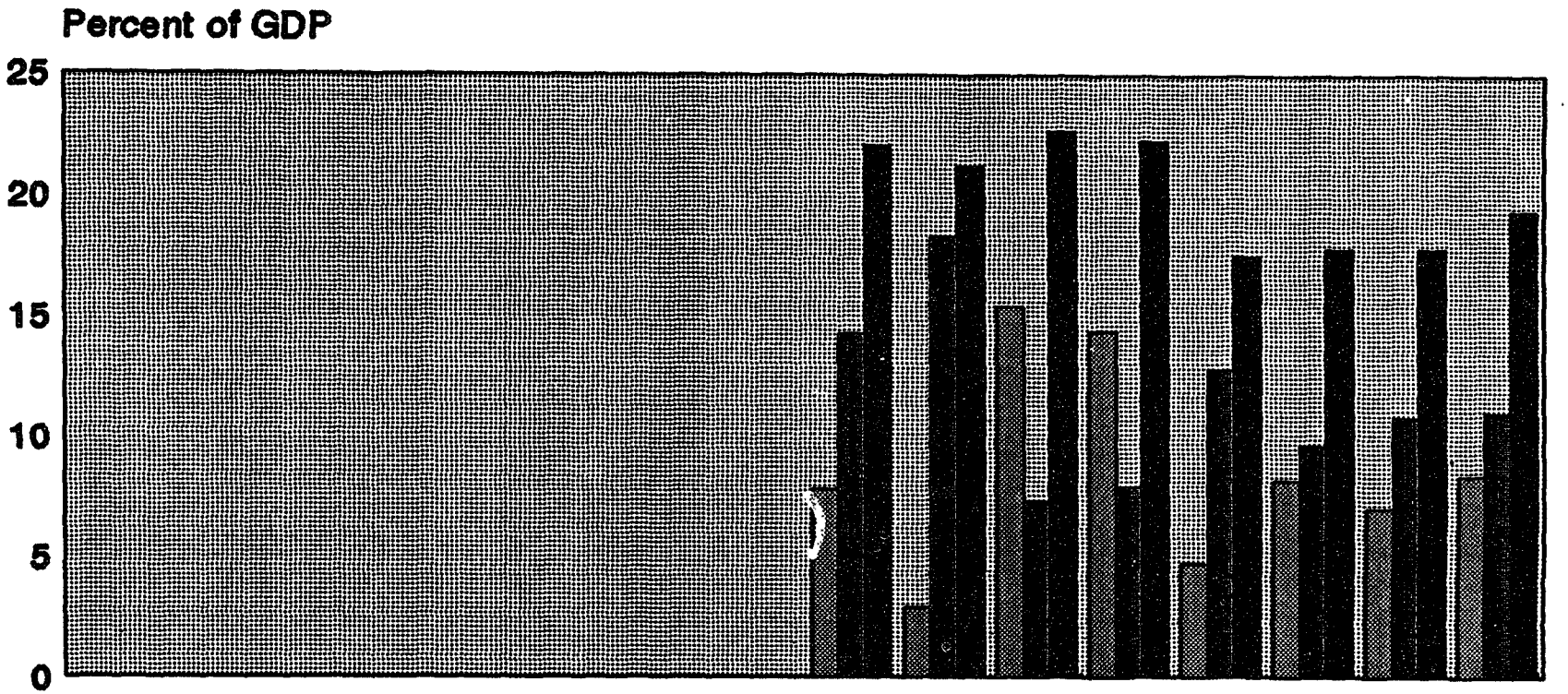


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP					9.1	9.8	8.4	8.2	9	8.3	7.6	8	8.2	8.6	8.8	8.9
PUB/GDP					5.1	5.9	4.2	3.9	4	4	3.9	4	4.1	3.9	4	3.8
GDI/GDP					14.2	15.7	12.5	12.1	12.9	12.3	11.5	11.9	12.4	12.5	12.8	12.7

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX

SEYCHELLES
Investment

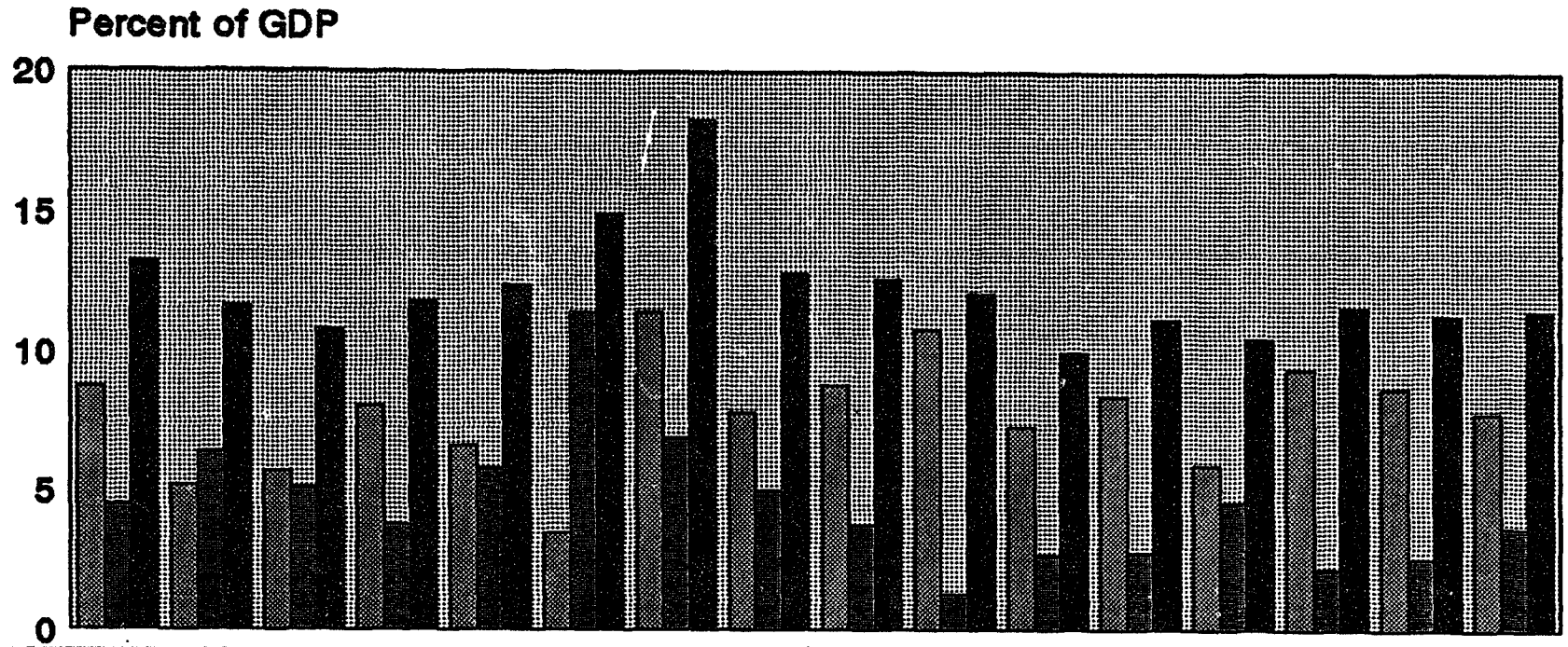


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP									7.8	2.9	15.4	14.4	4.7	8.2	7	8.4
PUB/GDP									14.3	18.3	7.3	7.9	12.8	9.6	10.8	11
GDI/GDP									22.1	21.2	22.7	22.3	17.5	17.8	17.8	19.4

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX

SIERRA LEONE
Investment

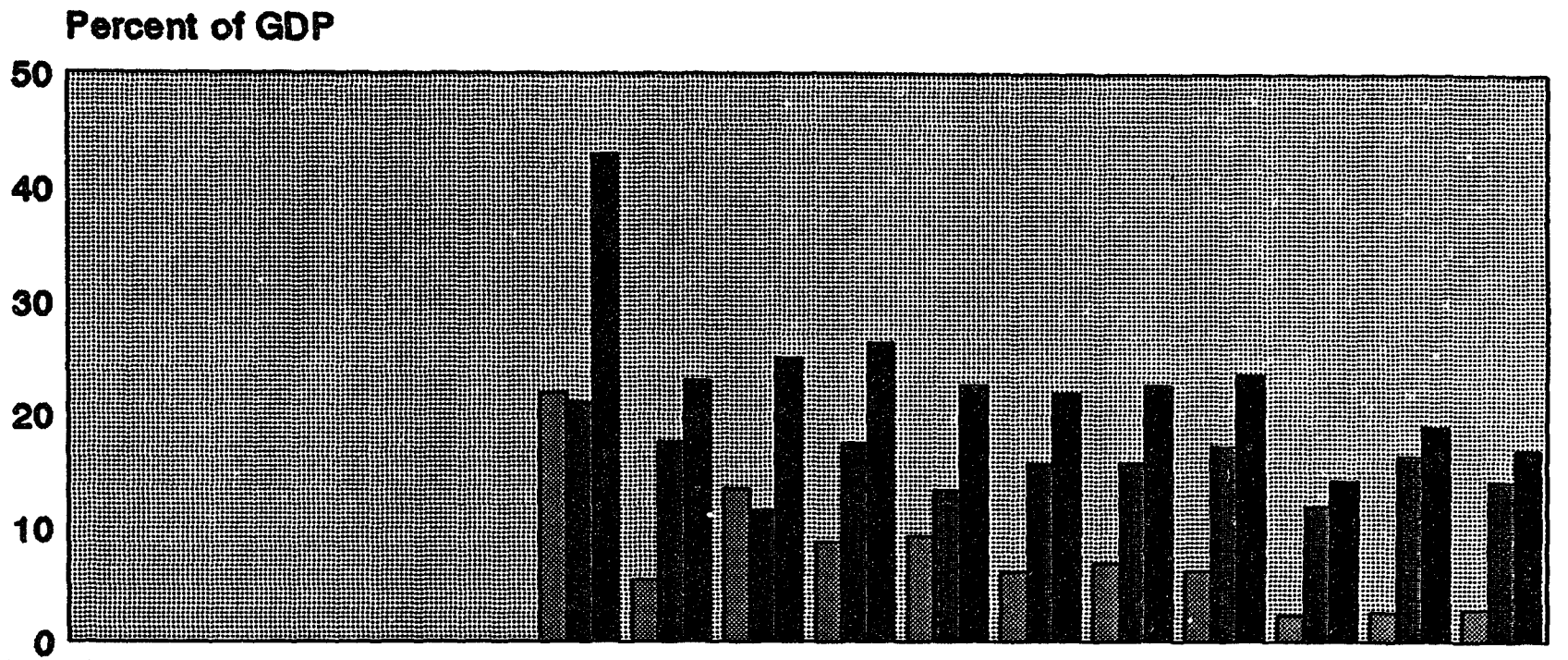


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP	8.7	5.2	5.7	8	6.6	3.5	11.4	7.8	8.8	10.8	7.3	8.4	5.9	9.4	8.7	7.8
PUB/GDP	4.5	6.4	5.1	3.8	5.8	11.4	6.9	5	3.8	1.3	2.7	2.8	4.6	2.2	2.6	3.7
GDI/GDP	13.2	11.6	10.8	11.8	12.4	14.9	18.3	12.8	12.6	12.1	10	11.2	10.5	11.6	11.3	11.5

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX (75-84)
For 1985-90: Sierra Leone: World Bank Macroeconomic Framework (Country Economist).

SOMALIA
Investment

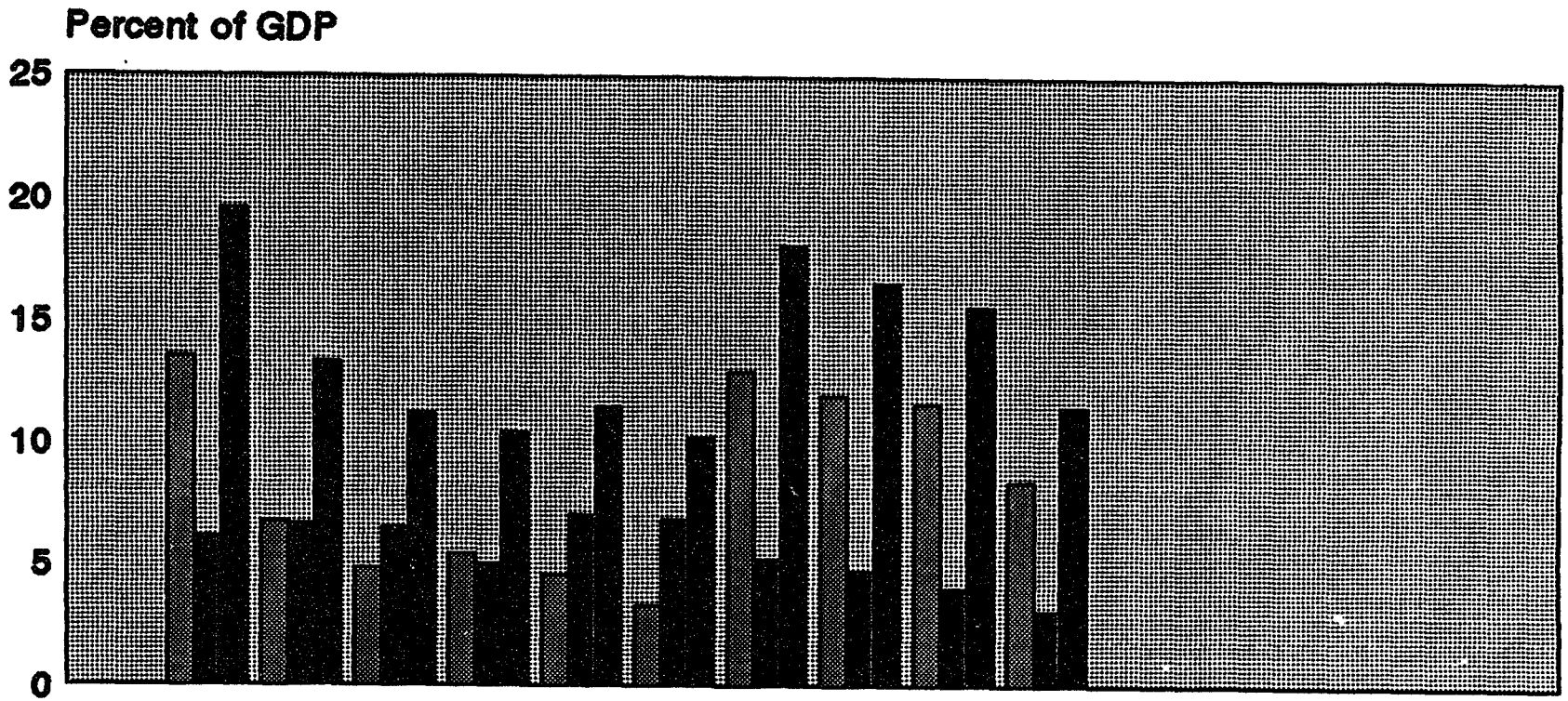


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP						21.9	5.4	13.5	8.8	9.3	6.2	6.9	6.3	2.3	2.6	2.8
PUB/GDP						21.1	17.7	11.6	17.6	13.4	15.7	15.8	17.3	12	16.4	14.1
GDI/GDP						43	23.1	25.1	26.4	22.7	21.9	22.7	23.6	14.3	19	16.9

PRI/GDP PUB/GDP GDI/GDP

Source: Trends in Private Investment in Developing

SUDAN
Investment

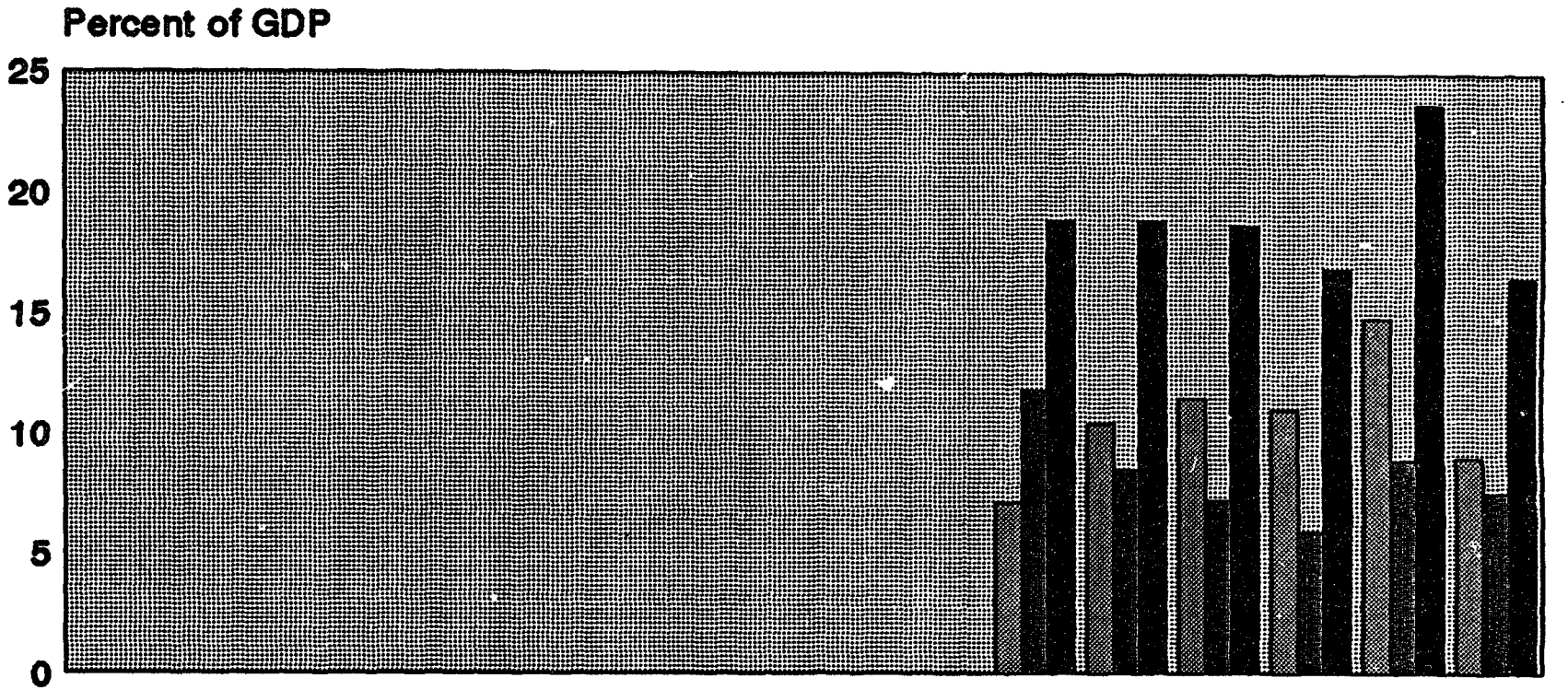


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP		13.5	6.7	4.8	5.4	4.5	3.3	12.9	11.9	11.6	8.4					
PUB/GDP		6.1	6.6	6.5	5	7	6.8	5.2	4.7	4	3.1					
GDI/GDP		19.6	13.3	11.2	10.4	11.5	10.2	18.1	16.6	15.6	11.5					

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX

SWAZILAND
Investment

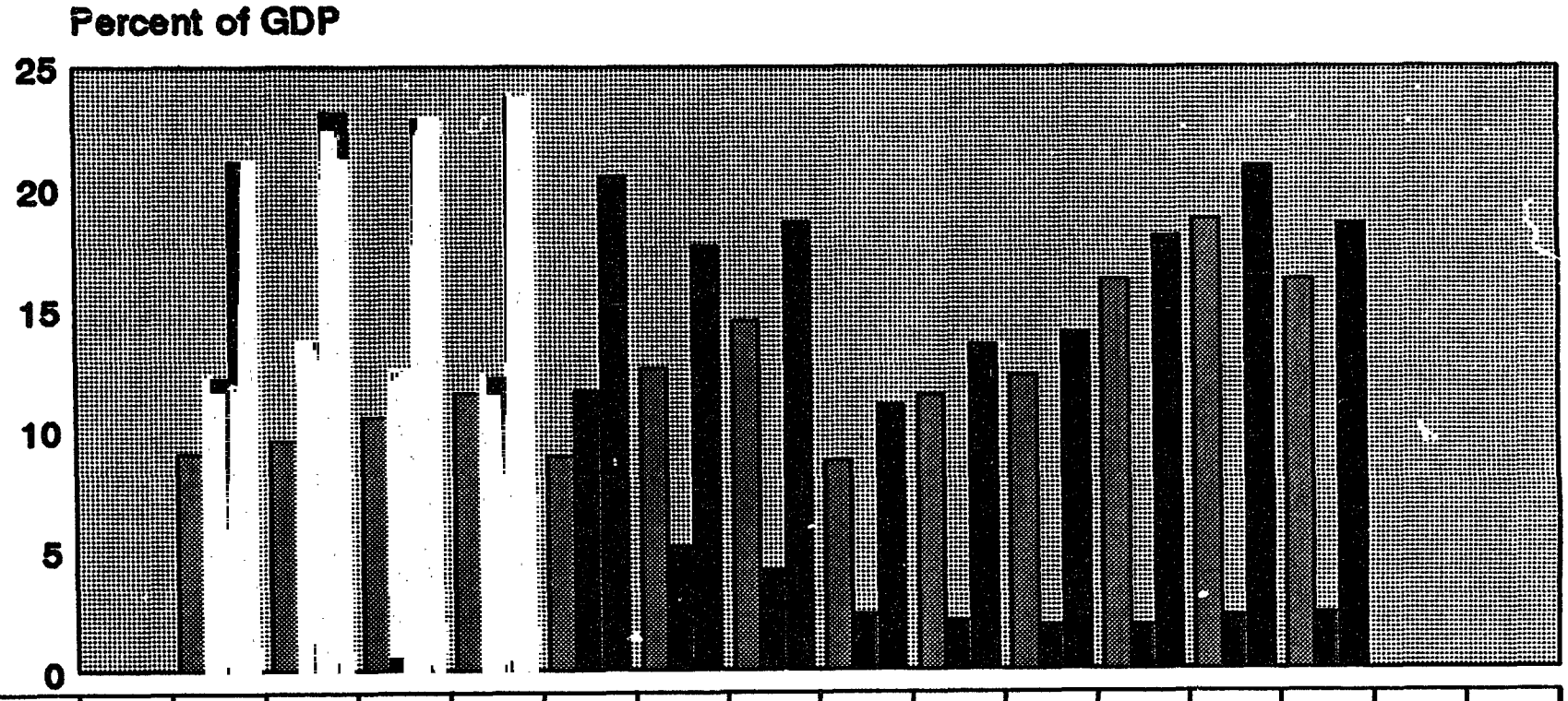


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP											7.1	10.4	11.5	11	14.8	9
PUB/GDP											11.8	8.5	7.2	5.9	8.9	7.5
GDI/GDP											18.9	18.9	18.7	16.9	23.7	16.5

PRI/GDP PUB/GDP GDI/GDP

Source: Country Economist

TANZANIA
Investment

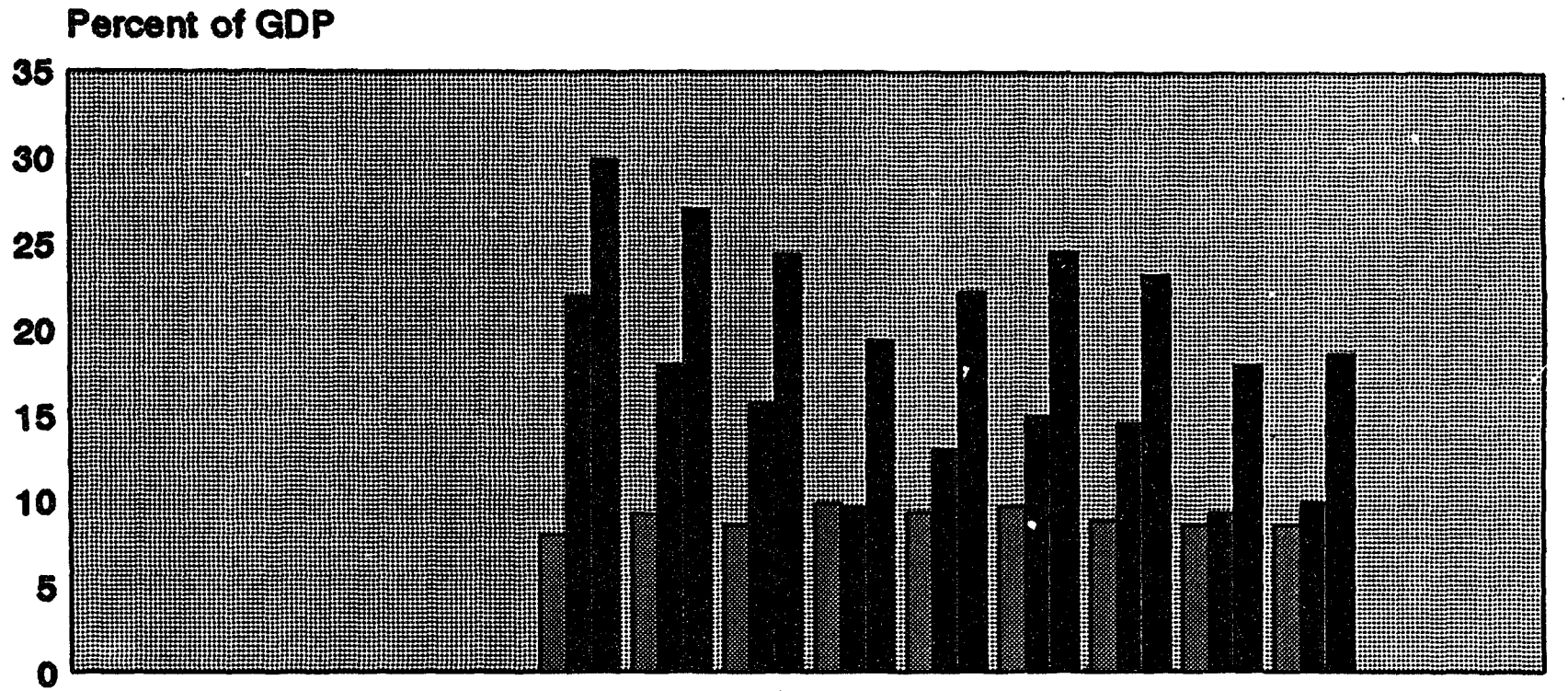


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP		9	9.5	10.5	11.5	8.9	12.5	14.5	8.7	11.4	12.2	16.2	18.7	16.2		
PUB/GDP		12.1	13.6	12.3	12.1	11.6	5.1	4.1	2.3	2	1.8	1.8	2.2	2.3		
GDI/GDP		21.1	23.1	22.8	23.7	20.5	17.6	18.6	11	13.5	14	18	20.9	18.5		

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX

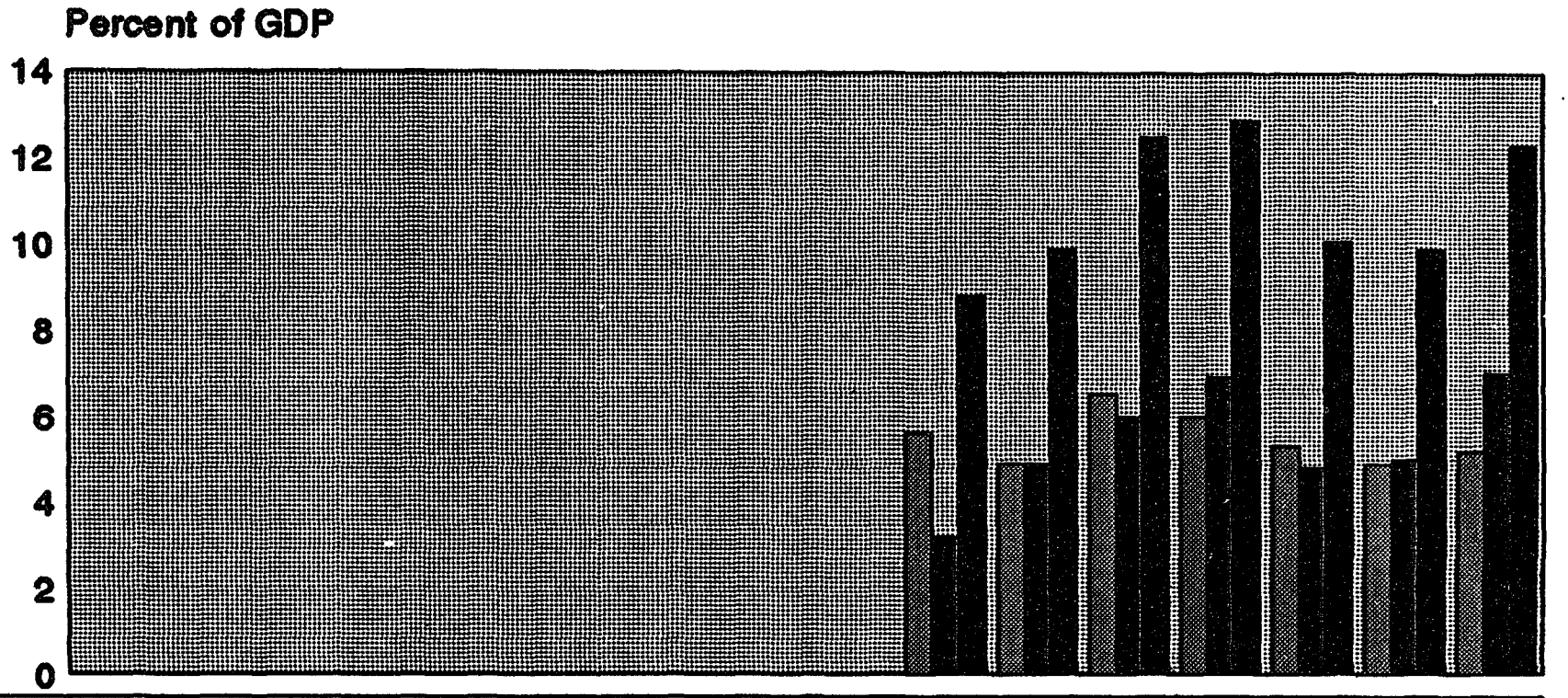
TOGO
Investment



Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP						8	9.2	8.6	9.8	9.3	9.6	8.8	8.6	8.6		
PUB/GDP						21.9	17.9	15.7	9.6	13	14.9	14.5	9.3	9.9		
GDI/GDP						29.9	27	24.4	19.4	22.2	24.5	23.2	17.9	18.6		

PRI/GDP PUB/GDP GDI/GDP

UGANDA
Investment

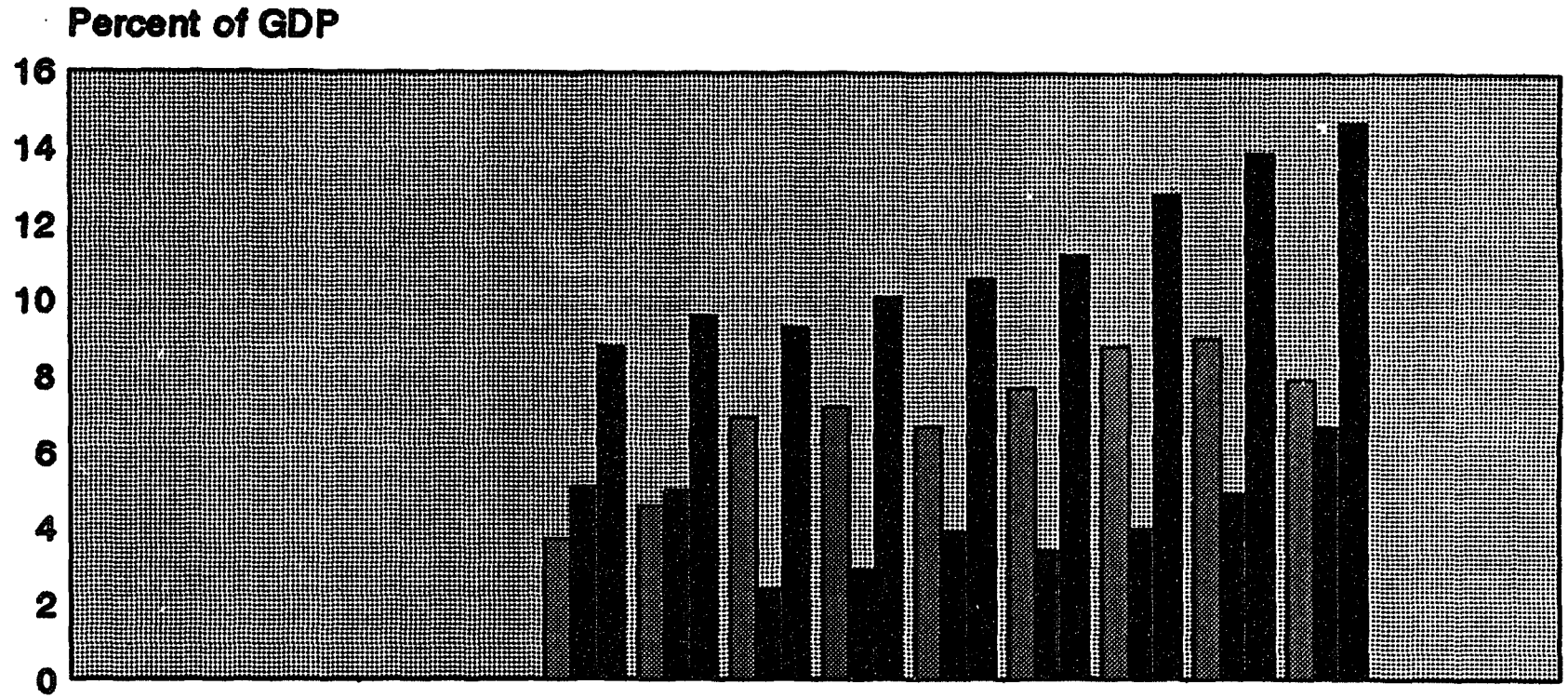


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP										5.6	4.9	6.5	6	5.3	4.9	5.2
PUB/GDP										3.2	4.9	6	6.9	4.8	5	7
GDI/GDP										8.8	9.9	12.5	12.9	10.1	9.9	12.3

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX

ZAIRE
Investment

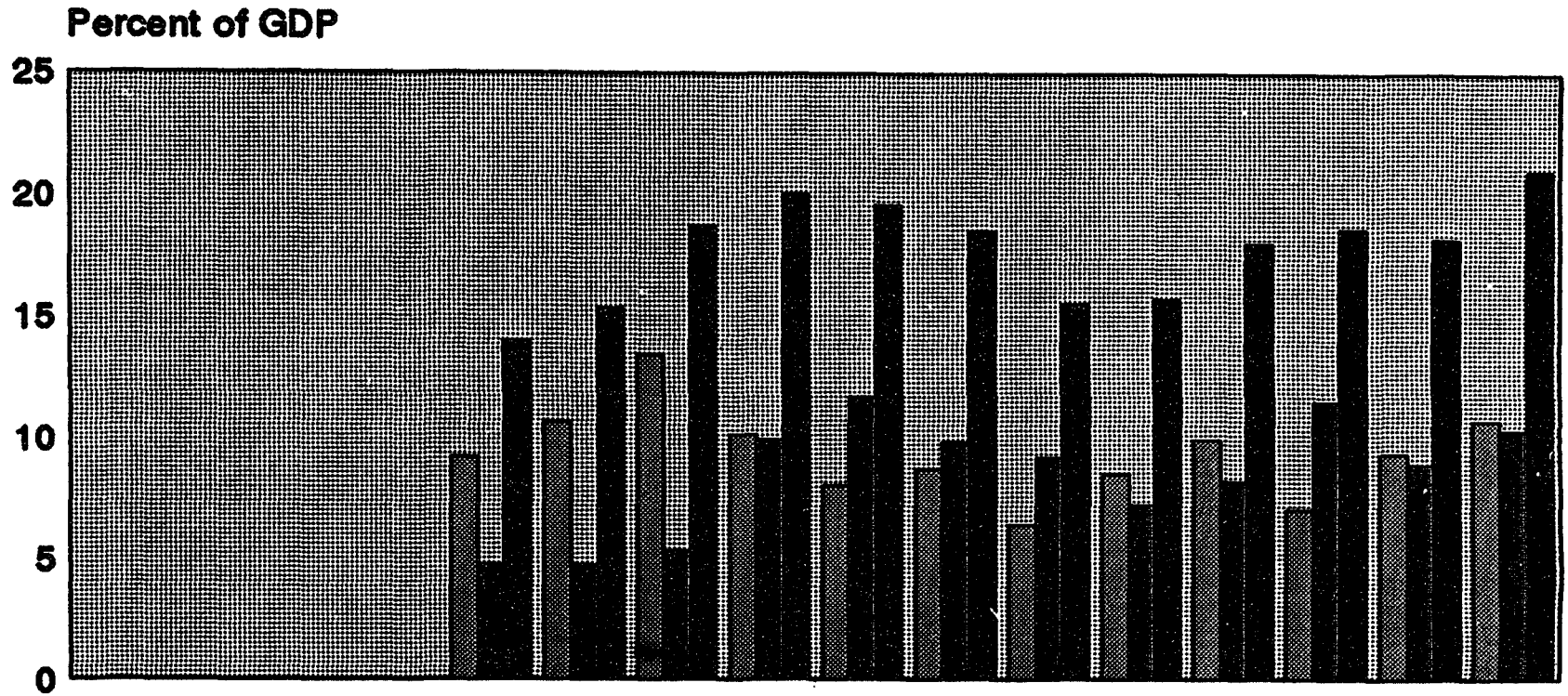


Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP						3.7	4.6	6.9	7.2	6.7	7.7	8.8	9	7.9		
PUB/GDP						5.1	5	2.4	2.9	3.9	3.4	4	4.9	6.7		
GDI/GDP						8.8	9.6	9.3	10.1	10.6	11.2	12.8	13.9	14.7		

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX

ZIMBABWE
Investment



Year	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
PRI/GDP					9.2	10.6	13.4	10.1	8	8.7	6.4	8.5	9.9	7	9.3	10.7
PUB/GDP					4.7	4.7	5.3	9.9	11.7	9.8	9.2	7.2	8.2	11.5	8.9	10.3
GDI/GDP					14	15.3	18.7	20	19.6	18.5	15.5	15.7	18	18.6	18.2	21

PRI/GDP PUB/GDP GDI/GDP

Source: BESD/ANDREX