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SASDA

Secretariat for Analysis of
Swedish Development Assistance

The Macroeconomics of Aid in Nicaragua

Rob Vos, Sara Johansson
Stockholm, August 1994

SASDA

...retariat for Analysis of Swedish Development Assistance

The Swedish government has appointed a committee with the task of analysing the results and effectiveness of Swedish development aid. A special Secretariat, SASDA, was set up on 1 March 1993 to carry out the work.

The Secretariat will work until the end of 1994 and will have as its main task to propose to Government suitable mechanisms for evaluations and policy analyses of Swedish aid. In its work SASDA will give priority to carrying out a set of of selected studies world-wide, at country, sector and subject level and to studies of individual organisations to provide a basis for decisions on development co-operation in the future and to gain experience on how policy evaluations should be carried out. A major study concerns Sweden's co-operation with Central and Eastern Europe.

SASDA's point of departure is the aim of a better understanding of the mechanisms of development in order to enhance the results and increase the effectiveness of aid in achieving the five goals set by the Swedish parliament: increased resources, economic and social equality, economic and political independence, the democratic development of society, and the long-term management of natural resources and care of the environment.

The studies and analyses will be managed partly by the Secretariat's own staff and will include studies commissioned from different specialists in the committee's areas of priority.

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THE MACROECONOMICS OF AID IN NICARAGUA

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PREFACE

This report is one of three country studies being prepared for the SASDA/SAU sponsored research on the macroeconomic effects of aid in the recipient countries. The other reports analyze the situation in Zambia and Guinea-Bissau. A fourth report contains summaries of these country reports (and an additional chapter on Tanzania) and a comparative analysis of the experience of these countries.

We would like to express our gratitude to the staff at SASDA/SAU for inviting us to participate in this study and to Enrique Ganuza in particular for his assistance in various aspects of the work. Useful assistance was provided by many people in Nicaragua. Although almost bombarded by a continuous flow of foreign consultants, many asking for the same information, we were well received, provided with useful detail and invited to good discussions. We cannot list all, but we would like to thank in particular Pablo Miranda of the Central Bank of Nicaragua, Nestor Reyes at the Ministry of Finance, Nestor Avendaño at the Ministry of External Cooperation, Trevor Evans of CRIES, Patrick Dumazert and Peter Marchetti at Nitlapán, Alejandro Martínez Cuenca of FIDEG, Mario de Franco at INCAE, and Francisco Laínez. Further we would like Monica Brodén of the Swedish Embassy in Managua and her staff for valuable assistance and guidance during our stay in Managua. None are of course responsible for this product and any errors and omissions are our own.

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CHAPTER 1
AID DEPENDENCE AND MACROECONOMIC DEVELOPMENT IN NICARAGUA

1.1 Introduction

Since 1980, aid inflows have played a critical role in the development of the Nicaraguan economy. Over the past decade and a half, foreign assistance to Nicaragua has been consistently much larger than export earnings. Yet, growth performance has been extremely dismal, such that it would be tempting to conclude that aid and development did not stand in a positive relationship in the case of Nicaragua. However, the purpose of this study is to avoid the trap of superficial conclusions and analyze the mechanisms through which aid inflows have affected the overall economic process. This chapter kicks off with a general overview of the development of the Nicaraguan economy.

Before the Sandinista revolution of 1979, official development assistance was of minor importance, amounting to less than 3% of GNP. During the 1960s and 1970s, Nicaragua's agro-export based economy outpaced the growth rhythm of its neighbouring Central-American countries and grew at an average rate of 6 per cent per annum. GDP per capita increased from US$ 335 to around US$ 1,500. Buoyant export earnings required only modest inflows of foreign savings to meet import needs. This 'golden age' of economic growth was, however, set in a context of a dictatorial political regime, a heavy concentration of economic wealth (most in the hands of the ruling Somoza family) and a sustained backwardness of education and health care.

The Sandinista revolution put a dramatic end to the unequal wealth distribution, but also - as it turned out - to economic prosperity. The reconstruction of the economy, the loss of a one-

year export cycle, the reparation of the infrastructural damages of the civil strive, and the spur in public social spending to improve the country's poor social record required significant foreign assistance. Foreign credits and grants averaged to some US$ 500 to 600 million during the decade, an amount twice the size of official export earnings during the second half of the 1980s. High aid inflows did not foster economic growth, however; a result strongly driven by political factors. The country was hit by a US trade embargo and a US veto on multilateral loans, requiring an inefficient substitution for trade with and aid from the former socialist countries. Furthermore, a US-supported *contra* rebel insurrection drove the country into another civil war, causing severe damages of productive capacity and military expenditures, and, thus, eroding the country's fiscal resources. The socialist country support provided no liquid foreign financing, such that the Sandinista government felt itself forced to resort to the money printing press to finance the costs of the war. The subsequent hyperinflation completely devastated the shaken economy.

A new, liberal government was elected in 1990 and would revolutionize the economy for the second time in a decade. A double transformation process was set in motion: (i) the pacification of the country and dismantlement of the war economy and (ii) reduction of the state and a transformation towards a free market economy. Ample foreign aid became available, reaching record heights of 50 per cent of GDP, provided by the US and European donors and virtually all liquid. The aid helped to stabilize the economy, but - along with the trade liberalization - it also promulgated a consumption boom. The aid-supported structural adjustment process has not led to economic reactivation during 1990-94.

1.2 Growth performance and external dependence

The agricultural export boom, 1950-78

The political and economic turbulence of the 1980s, and the difficult adjustment process of the early 1990s, set the economy back several decades. In 1993, GDP per capita was back at the level the country had reached forty years earlier. Around 1950, Nicaragua had, together with Honduras, the lowest per capita income in the region (Bulmer-Thomas, 1987). During the 1950s, 1960s and 1970s, Nicaragua recuperated much of the lost ground and GDP per

capita increased by some 150 per cent (Figure 1.1). GDP expanded at an average rate of around 6 per cent per annum, the fastest in Central America. In the late 1970s, Nicaragua caught up with Guatemala and El Salvador and reduced the income gap with Costa Rica. A decade and a half of economic decline and political turmoil turned Nicaragua again into the poorest country of the region.

Cotton exports provided the initial basis for the new agricultural export boom that started in the early 1950s. Falling international demand and diseases had affected Nicaragua's traditional export crops, coffee and bananas. The export boom was enhanced by other new primary exports (beef, sugar, shellfish), which developed in the late 1950s after a crisis in the cotton sector and with government support in the form of infrastructure supplies, credits and input subsidies. Exports expanded further in the 1960s through a boom in agro-industrial and other manufactured exports to the other members of the Central American Common Market (CACM) (Heriot, 1982; Bulmer-Thomas, 1987; and Gibson, 1987). These mainly wage good industries were heavily protected against imports from countries outside the CACM. Figure 1.2 shows the close relationship between exports and GDP growth during this period. Also export prices generally moved favourably compared to domestic prices, as can be derived from Figure 1.3 which shows that the current price export ratio consistently stayed above the constant price ratio between 1960 and 1979.[1]

The latter tendency was in part the result of the rather orthodox macroeconomic management during the boom period. The exchange rate was pegged at a rate of 7 *córdobas* per dollar and the Nicaraguan currency was completely convertible since the early 1960s. Low inflation was sustained by prudent fiscal and restrictive monetary policies. The export expansion and the conservative fiscal stance limited the demand for foreign borrowing. However, the growth model and the policies did make the economy highly vulnerable to the transmission of external shocks in the terms of trade and foreign demand for exports (Gibson, 1987). Manufacturing industry reached respectable growth rates and its share in GDP increased from 14 to around 20 per cent between 1960 and 1975 (Table 1.1). It was the import substitution policies within the framework of the CACM which boosted agro-industrial

Table 1.1 Economic Growth by Main Sectors, 1960-93
(average annual economic growth)

	1960-65	1966-70	1971-75	1976-78	1979	1980-84	1985-89	1990-93
Total GDP	10.08	3.81	5.08	1.66	-26.48	1.85	-4.10	-0.18
Agriculture, forestry and fishing	11.64	1.21	4.87	4.74	-15.37	3.04	-3.79	-0.18
Agriculture	14.77	-2.50	5.92	4.20	-13.36	5.33	-3.87	-4.22
Livestock	5.24	8.95	2.46	5.26	-16.55	0.34	-3.52	4.91
Forestry	-7.57	8.90	11.06	0.89	-40.13	-0.05	1.39	41.52
Fishing	30.73	10.89	5.86	13.38	-24.33	-12.39	-8.56	1.78
Industry	13.44	5.18	6.00	1.92	-35.27	1.91	-6.04	-0.14
Manufacturing	14.22	8.06	5.88	4.70	-27.36	2.25	-6.85	-0.21
Construction	18.52	5.33	13.91	-12.42	-74.16	1.08	-1.43	-0.81
Mining	9.17	-5.95	-4.48	4.12	-57.96	-7.94	4.19	5.65
Services	7.64	4.47	4.64	-0.14	-27.16	1.21	-3.10	-0.20
Commerce	9.50	4.70	5.15	-0.74	-37.80	-0.36	-4.32	1.33
Government services	3.77	2.21	6.31	8.06	-6.30	7.56	-1.61	-4.54
Transport & comm.	9.50	4.70	5.19	-2.54	-21.65	0.85	-6.57	1.36
Financial services	23.38	3.88	6.88	2.89	-12.71	-1.28	-1.74	-1.11
Energy, gas & water	14.83	7.72	5.58	4.71	-10.88	-3.11	5.10	2.28
Housing rents	1.73	2.98	-1.38	1.99	-26.57	0.09	-0.18	0.61
Other services	4.54	6.18	4.15	-8.05	-31.88	-0.66	-5.44	2.33

Source: Banco Central de Nicaragua, Direccion General de Cuentas Nacionales.

Table 1.2 Production Structure by Main Sectors
(percentage shares, based on values in constant 1980 cordobas)

	1960	1965	1970	1975	1978	1980	1985	1990
Total GDP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Agriculture, forestry and fishing	25.5	27.3	24.1	23.8	26.1	23.2	24.1	24.7
Agriculture	16.1	19.9	14.5	15.1	16.3	13.8	15.3	15.9
Livestock	8.3	6.6	8.4	7.4	8.2	8.3	8.1	8.2
Forestry	0.8	0.4	0.4	0.6	0.6	0.2	0.2	0.3
Fishing	0.2	0.5	0.7	0.7	1.0	0.8	0.5	0.3
Industry	22.6	26.2	28.0	29.3	29.5	29.3	29.5	25.8
Manufacturing	14.2	17.1	20.9	21.7	23.7	25.6	25.9	22.2
Construction	2.3	3.3	3.6	5.4	3.4	2.9	3.2	3.0
Mining	6.1	5.8	3.5	2.2	2.4	0.7	0.4	0.6
Services	51.9	46.4	47.9	46.9	44.5	47.5	46.3	49.5
Commerce	21.0	20.5	21.4	21.4	20.0	18.9	17.1	17.2
Government services	7.4	5.5	5.1	5.4	6.5	8.7	11.5	12.8
Transport & comm.	5.3	5.2	5.4	5.5	4.8	5.7	4.9	4.9
Financial services	1.5	2.6	2.6	2.9	3.0	3.4	2.9	3.3
Energy, gas & water	1.1	1.3	1.6	1.6	1.8	2.1	2.0	3.0
Housing rents	7.8	5.3	5.1	3.7	3.7	3.7	3.7	4.1
Other services	7.8	6.0	6.8	6.5	4.8	4.9	4.4	4.2

Source: Banco Central de Nicaragua, Direccion General de Cuentas Nacionales.

production and some intermediate products oriented at the Central-American market. Nevertheless, agriculture remained the mainstay of the economy employing more than half of the labour force, while its share in total GDP has remained more or less constant at 25 per cent since 1960.

During the 1970s, external shocks, natural disasters and an increasing intensity of guerrilla activities against the Somoza government, led to a break with the conservative macropolicies. The adverse effects of the 1973 oil price shock and the reconstruction costs of the 1972 earthquake led to rising current account and fiscal deficits and increasing foreign indebtedness. The external public debt rose from US$ 225 to 1,429 million between 1972 and 1979. This policy of demand expansion helped GDP growth keeping pace at around 5 per cent per year during the first half of the 1970s, but economic growth fell below population growth in the years just before the revolution (see Figure 1.1 and Appendix Table A1.1). Growing insecurity and physical damage to infrastructure hampered trade and production. Massive capital flight (see below) and a drain of skilled labour drew the economy into a complete collapse in 1979.

The Sandinista Revolution, 1979-89

The Sandinista government that took power in 1979 not only had to cope with repairing the damages of the civil war, it also had to face an increasingly hostile external environment. The material losses due to the revolutionary uprising were estimated by ECLAC at US$ 381 million, equivalent to 18 per cent of 1980 GDP and about equal the size of export earnings (CEPAL 1981). In addition to the external shocks common to the Central American region - falling terms of trade and declining access to international capital markets - Nicaragua was hit by specific drawbacks. External and internal balances were greatly affected by political factors, including the cost of combatting the US supported *contra* attack which started to take serious forms in 1982, the effects of the US trade embargo and the US veto on multilateral lending to Nicaragua which became effective in 1984. Natural disasters - floods in 1982 and Hurricane Joan in late 1988 - caused additional set backs to production.

Figure 1.1
Real GDP per capita

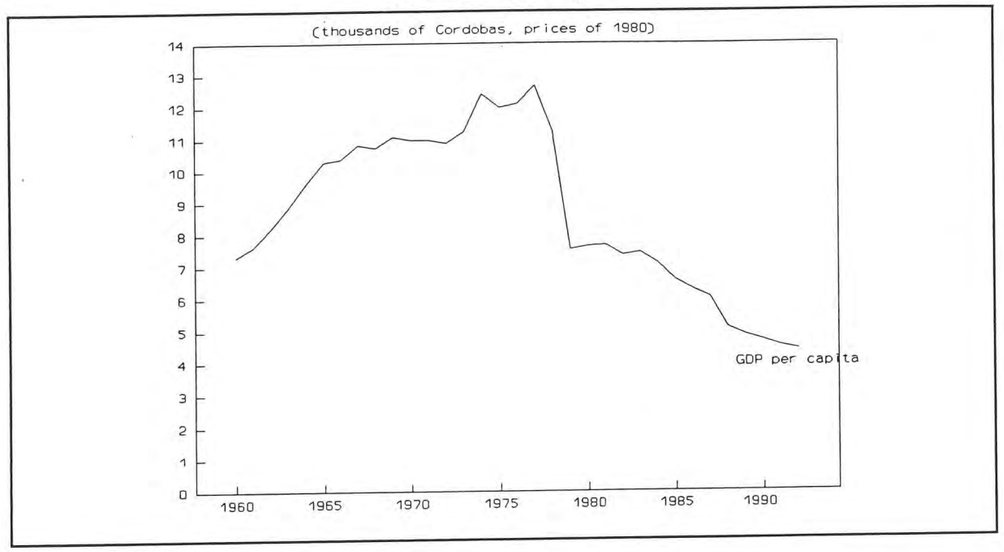
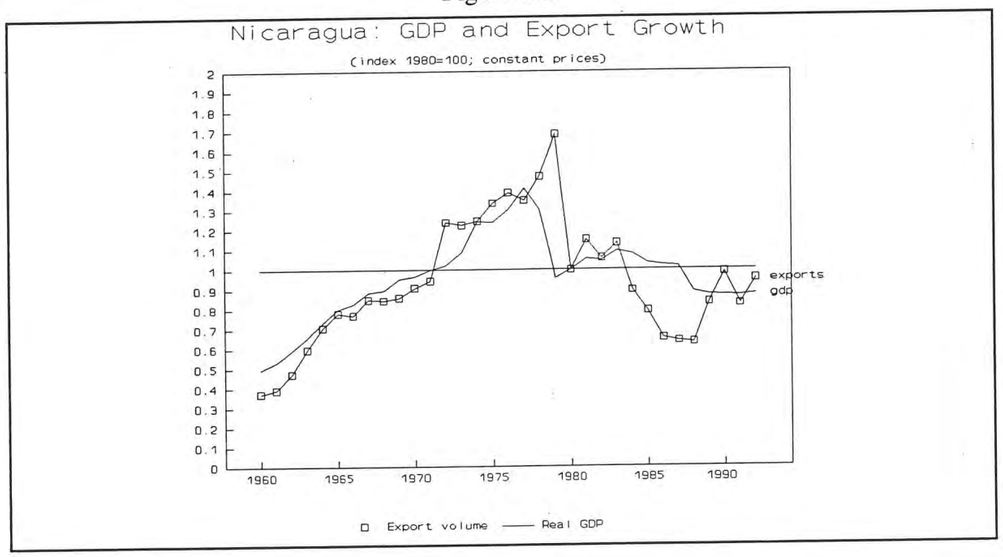


Figure 1.2



In this difficult environment, the Sandinistas tried to implement an ambitious programme of social and economic transformation, in search for a more equitable development process within the framework of a mixed economy with a leading role for the government (FitzGerald, 1989). The banks, foreign trade companies and the major industrial firms were nationalized, most being owned before by the Somoza family and his political allies. Also Somoza's land came into state hands, while cooperative farming was promulgated under small producers that benefitted from the agrarian reform implemented by the new government. In fact, the property changes were limited to state seizure of the Somoza group's properties in 1979; the negotiated acquisition of banana and mining assets from foreign companies in 1980; and the distribution of large underutilized estates (both private and public) to peasant cooperatives in 1984-85 (Nuñez, 1987). This massive redistribution of wealth brought the share of government spending in GDP from some 20 per cent of GDP in 1979 to 60 per cent around 1985, although it would decline again thereafter.[2] The share of public investment in total investment increased from about one quarter to over about half in the mid-1980s (see below Section 1.3). Agricultural landownership changed dramatically affecting about 50 per cent of rural property (Table 1.3).

Further, measures were taken to control the prices of basic wage goods and enhance public spending on education and health and other measures directed at redressing the inequalities in wealth and income distribution. Moreover, the mild exchange controls put in place by the Somoza government in late 1978 were enhanced and a restrictive system of multiple exchange rates and import controls introduced.

The external shocks and domestic policy reforms hit hard on the export sector. Exports fell significantly from high levels in 1978 and 1979, associated with the depletion of cattle stocks (Ocampo, 1991), but also from the levels reached by the mid 1970s (Figure 1.2). The Sandinista government inherited an overvalued exchange rate, but only partially corrected the disequilibrium by introducing special rates for various export crops (see Ocampo, 1991). A tendency towards a real exchange rate appreciation was thus sustained and this, together with the fall in world market prices, shifted relative prices against exportables. Figure 1.3 clearly

Table 1.3
Land Tenancy, 1978 and 1988
(percentage shares)

	1978	1988
Private sector	100.0	45.9
Small farms (< 7 ha)	2.1	1.7
Small-to-medium farms (7-35 ha)	15.4	11.5
Medium-sized farms (35-140 ha)	30.1	17.4
Medium-to-large farms (140-350 ha)	16.2	9.0
Large farms (> 350 ha)	36.2	6.4
Agrarian reform sector		48.4
State-owned farms		11.7
Cooperatives[1]		13.8
Individual beneficiaries		2.6
Other[2]		20.2
Abandoned lands		5.7
Total	100.0	100.0
Memo item:		
Hectares (000s)	5,651	5,651

Notes:

1. Includes only land area distributed under the agrarian reform. Covers Cooperativa Agrícola Sandinista (CAS), Cooperativo de Crédito y Servicios (CCS), Colectivo de Trabajo (CT) and Cooperativa de Surco Muerto (CSM).

2. Includes redistributed lands with 'special ownership titles' (titulación especial) and land distributed to indigenous communities.

Source: CIERA (1989)

Figure 1.3

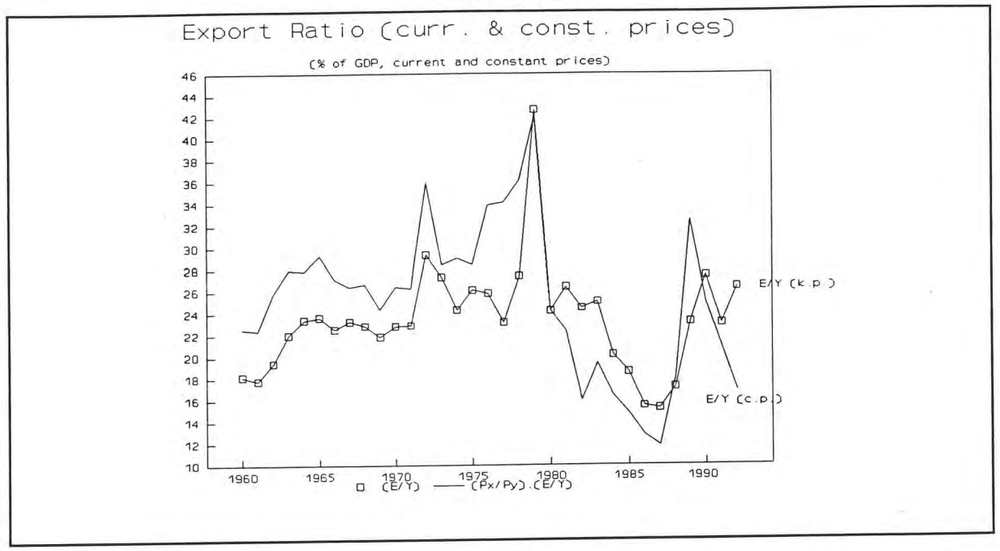
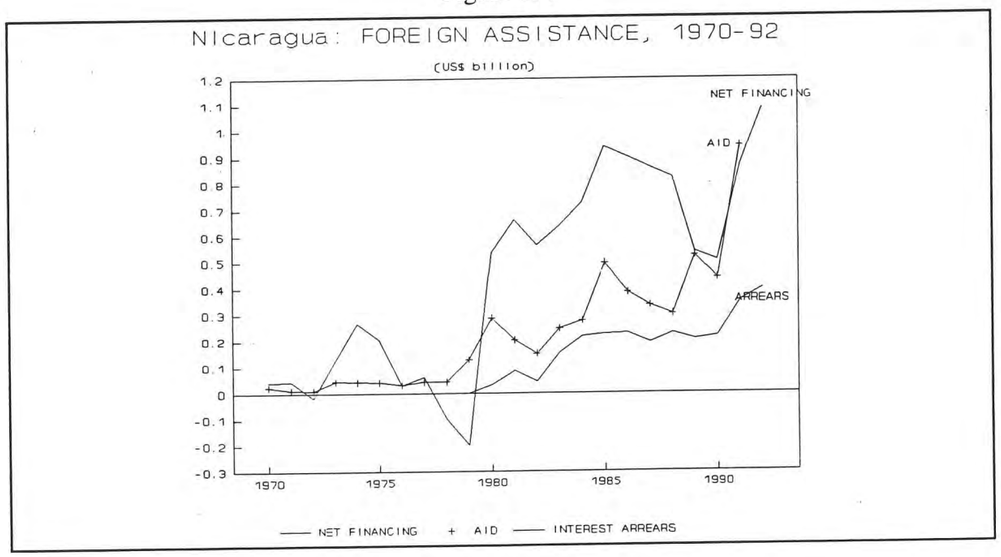


Figure 1.4



shows the shift, as after 1980 the current price export ratio fell below the constant price ratio, until the major devaluation shocks of 1988/9 (see below). The export volume was affected by these trends (except for a partial recovery in 1983) and declined steadily to half its level of the mid 1970s.

The relative price policy favouring agricultural production for the domestic market rather than for exports played a role, but was likely but one determinant, as price elasticities for Nicaragua's export supplies are not very high.[3] More importantly, the US trade embargo had a major impact as the US was Nicaragua's major trading partner, while rising insecurity because of the *contra* war and, in specific years, climatic factors contributed further to the export decline.

Export indicators moved in the wrong direction and the relationship between export growth and GDP growth weakened during this period (see Figure 1.1). However, this fact was not accounted for by more dynamic domestic production sectors, but rather by massive aid inflows which helped to keep up import capacity to some extent (but see Chapter 3) and prevented the economy from sliding down as far as exports. Net foreign savings[4] flowing to Nicaragua increased substantially during the 1980s (see Figure 1.4). The current account deficit, excluding official transfers, increased from US$ 552 million in 1980 to US$ 852 million in 1985. The net inflow of foreign loans and grants was as large as commodity exports in 1980-84 and twice as much in 1985-89. Nicaragua's external debt increased by almost ten times between 1979 and 1989, i.e. from US$ 1.4 to 9.7 billion. In 1980, the external debt was almost four times export earnings and by 1989 foreign liabilities were 30 times exports.

Most foreign financing came in the form of official development assistance ("AID"), defined as official transfers (grants) plus net concessional lending. As described in more detail in Chapter 2, the foreign assistance took initially principally the form of commodity aid from Latin American and other developing countries (oil from Mexico, Venezuela and Libya), Western Europe, the socialist economies, the IDB and the World Bank and even from the

United States. Commercial bank debt could be rescheduled on what seemed at the time as generous terms (Weinert, 1981). However, the arrangement did not involve any debt relief, while debt to the multilateral agents (World Bank and IDB, in particular) had to be serviced in full. This was a bet that did not pay off, as the US would veto all new loans from the multilateral agencies in 1984.

The commodity aid helped ease commodity shortages in the first years of the revolution. After 1982, the Latin American donors were unable to continue support, while the US vetoed further multilateral lending, after it had already withdrawn its own aid in 1981. Western donors (notably Sweden, the Netherlands and Spain), maintained a fairly steady flow throughout the decade, but it was inadequate to meet import needs. Most support was to come from the socialist world, providing 70 to 80 per cent of grants and external credits from 1984 onwards. However, virtually all of this support was provided in the form of commodities (oil, capital goods and armaments) and did not provide any hard currency. On the contrary, contractually the loans involved a loss of foreign exchange as the commodity loans had to be repaid in dollars. The foreign exchange situation became even more tight as the commodity aid from the socialist countries could not provide many appropriate inputs or replacement parts for the existing machinery and capital stock originating from the US or Western Europe. The build up of arrears on outstanding debt (see Figure 1.4) was an expression of the country's need for foreign exchange, despite the substantial aid inflows.

Thus, the country became increasingly aid dependent during the 1980s, but without boosting economic growth. GDP per capita increased slightly in 1980-81, but has fallen steadily since 1982 (except 1983). The mentioned external shocks and political factors contributed to this trend. In particular, the *contra* war and the US campaign against the country strongly affected production and economic policy decisions. Firstly, the civil war involved serious damage to production, but also created labour supply problems, in the form of a flight of skilled labour to abroad, diversion of young workers into the Sandinista army and rural-urban migration leading to scarcity of labour in several crucial sectors (particularly, coffee production) (Gibson, 1987; and FitzGerald, 1987 and 1989). Secondly, the US trade embargo

and its veto on multilateral lending, forced the government to an "inefficient substitution of trading partners and aid donors" (Taylor *et al.*, 1989; and Ocampo, 1991), which - as indicated - helped to reduce some supply shortages (e.g. oil), but created others (repairs for equipment). Thirdly, the promise of the revolution led to an expansion of public investment in infrastructure and production and to rising social expenditures, particularly during 1980-84. However, the mentioned supply constraints and rising defense expenditures in response to the *contra* war, generated a tremendous excess demand situation. The government sought financing by defaulting on its foreign debt obligations, but this proved insufficient and monetary financing of the deficit pushed up domestic prices to hyperinflation levels, reaching a record height - even by Latin American standards - of 43,029 per cent on an annual basis in January 1989.

Attempts at stabilizing the economy, including orthodox adjustment programmes in 1988 and 1989 (see below) could not stop the inflationary spiral, while at the same time causing a deep recession and a collapse in public sector employment.

More aid and economic stabilization, but no growth, 1990-94

The new Chamorro government that was elected in 1990 set in motion another full-scale structural transformation of the economy, aiming at the restoration of "market efficiency", involving full elimination of price controls, trade liberalization, financial sector reform and privatization (Corbo *et al.*, 1993; and CEPAL, 1994). In addition, expenditure reducing measures were taken next to a monetary reform. In the second half of 1992, various results became visible with the rate of inflation below an annual 6 percent, down from 7,500 per cent in 1990.[5] Generous foreign aid from the US, Western Europe and the multilateral agencies supported the process, including the near elimination of the black market for foreign exchange, while a fixed official exchange rate could be defended and help to contain inflationary expectations. At the same time, however, high aid inflows helped to sustain a large trade deficit and financed (indirectly) a substantial increase in private consumption (see below). The economy failed to recover, however. Real GDP fell by 0.1 per cent per year in 1990-93, while per capita income dropped at a rate of 3.4 percent. Only in 1992 did the

economy witness a slight positive growth rate.

The stabilization attempts under the previous government involved massive devaluations of the exchange rate and domestic price policies aimed at stimulating the production of basic grains and had already led to a recovery of agricultural exports (except cotton, which suffered from a collapse in world market prices). However, as indicated by Figure 1.2, the recovery of total commodity exports did not persist through during 1990-94. Firstly, the real exchange rate barely depreciated after 1991. Achieving a real depreciation was made difficult by the government's own policies, relying on high aid inflows and the use of the exchange rate as a nominal anchor through which most domestic prices and the value of financial assets are indexed. As suggested by Figure 1.3, relative prices shifted again against exportables (shown through the constant price export ratio being larger than the current price ratio). Secondly, next to the undesired relative price shift, the domestic credit squeeze virtually cut off agricultural producers from bank credits (see Section 1.4).

1.3 Savings and investment

The balance between domestic savings and investment forms the counterpart of the external balance. Gross domestic investment rates quickly moved up with the rest of the economy in the 1950s and early 1960s to reach an average level of about 20 per cent of GDP for the 1960s and 1970s. The 1972 earthquake provoked a steep fall in the investment rate, but it quickly recovered in the years thereafter, spurred by the reconstruction needs and peaked in 1975 at 25 per cent of GDP (Figure 1.5). Public investment accounted for the bulk of the investment increase in this period (Gibson, 1987; and Martínez 1994). Investment collapsed in 1978 and 1979 under the influence of the civil war and the related massive capital flight. In 1979, investment turned negative as a result damage to and looting of inventories of raw materials, finished goods and agricultural commodity stocks.

Investment rates recovered in the early 1980s with the assistance of the generous foreign aid. Following the nationalization of the Somoza group properties, the public sector became the main investor in this period (Figure 1.6). Between 1980 and 1982, public investment was

Figure 1.5

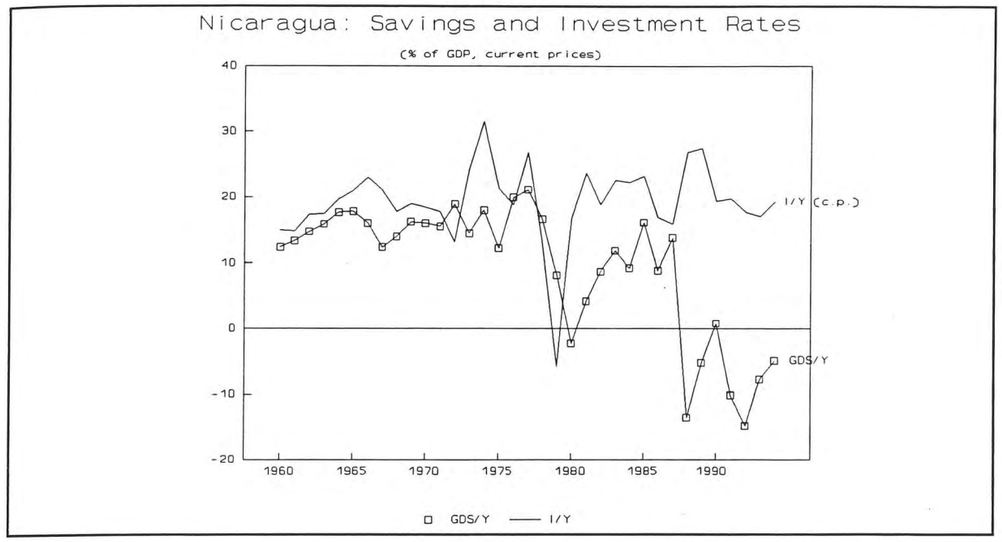
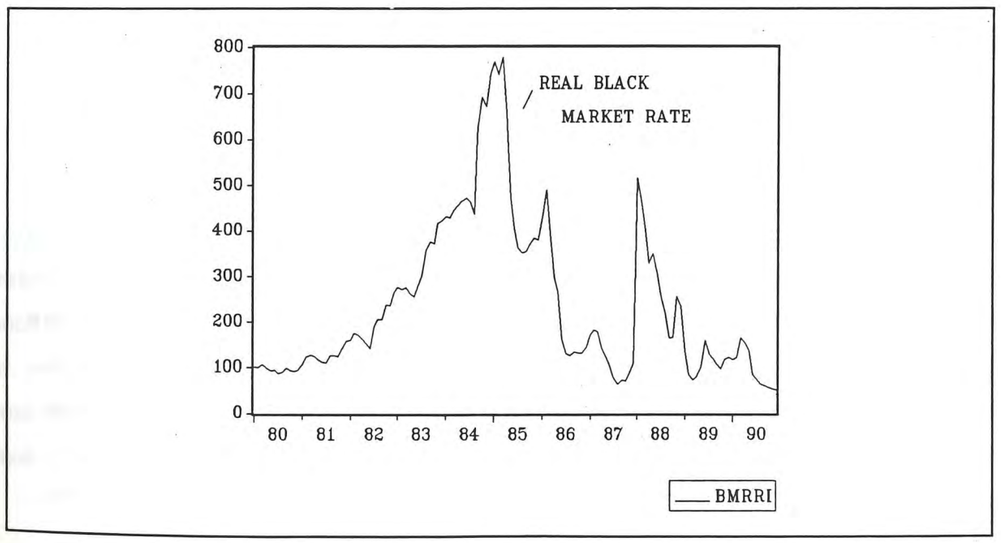


Figure 1.6
Monthly Real Black Market Exchange Rate, 1980-1990
(Index 1980.01 = 100)



allocated in almost equal portions of one third to social infrastructure (schools, health centers and water supply systems), economic infrastructure (roads, etc.) and production (INIES, 1988). In the subsequent period (1983-4), there was a shift towards investment in production, taking up almost 60 per cent of the total (*ibid.*). Many of the investment projects initiated in this period are of a long-run nature, particularly in agricultural and agro-industrial development. However, the total investment rate declines during this period as a consequence of a reduction of available domestic and foreign finance in the wake of the *contra* war and US embargo. During 1985-87 the investment rate collapsed; total fixed investment declining from 20.7 to 13.2 per cent of GNP. During 1987-88 there is a remarkable recovery to 28 percent, but this "investment boom" seems more related to incredible national accounts estimates due to accounting problems under conditions of hyperinflation, than to any real development. Whatever investment there was, it was largely supported by the foreign aid coming in the form of capital goods. Most of these were sold at heavily subsidized prices to the private sector (as they were valued at the official rather than the parallel exchange rate). Public investment declined due to an explicit decision to sustain current transfers to the population (subsidies on basic products) to the detriment of the investment fund (Gibson, 1994). Capital productivity declined drastically during this period, an issue to which we shall return in Chapter 3.

Under the stabilization programme of 1989 to counteract hyperinflation, public investment was cut further and fell to 5 per cent of GNP in 1989 (down from almost 10 per cent in 1985) and 1.5 per cent in 1990.

Aggregate investment did not recover under the structural adjustment of 1990-93. The investment rate fell further (to 17 per cent of GNP in 1993), despite an aid-funded recovery of public investment (up to about 7 per cent of GNP in 1993). Economic liberalization so far has failed to stimulate private investment. Continued economic and political uncertainty, the collapse of private savings and a lack of domestic credit availability provoked a near collapse of private investment, as it fell from 17.8 per cent of GNP in 1990 to 9.8 in 1993.

The economy's heavy reliance on foreign aid and external financing is further underlined by the complete collapse of domestic savings in the late 1980s (Figure 1.5). In the 1960s, the domestic savings rate stood at around 17 per cent of GDP. The resource gap between domestic savings and investment was about 3 per cent of GDP, requiring only a manageable amount of foreign borrowing. External financing increased rapidly in the years after the earthquake and continued until the late 1970s. However, the savings gap narrowed again after 1976, despite the foreign borrowing, which is consistent with the earlier observation of massive capital flight during this period.

After its collapse in 1978-80, domestic savings recovered during the first years of the revolution: to 9 per cent of GDP in 1984, up from -2 per cent in 1980. In subsequent years, the savings rate followed a rather erratic behaviour, mainly as a consequence of accelerating inflation. The 'inflation tax' seemed effective in 1985 and 1987, with the savings rate at 16 and 14 per cent of GDP, respectively, despite strongly negative government savings. However, private savings would fall drastically in the consecutive years, 1986 and 1988, with inflation still up, but the population trying to recuperate consumption. In 1990-93, domestic savings have remained alarmingly low, despite the fiscal adjustment and the recovery of public savings. Private savings have remained low as a consequence of the private consumption boom which was triggered by the aid-financed structural adjustment programme (see below).

In sum, the external shocks, the civil war and domestic policies do not seem to have been conducive to rapid growth of productive investment. The decline in capital productivity is probably not only explained by the civil war and related supply constraints, but likely as much by the tied aid from the socialist countries bringing backward technology. However, so far, productive investment has neither been stimulated by the boom in aid inflows, this time from the major market economies, and the market-oriented adjustment policies implemented since 1991.

1.4 Macroeconomic policies

Political factors obviously have played a major role in Nicaragua's economic development over the past quarter of a century. Also economic policy changes have been strongly led by these political factors. In the 1980s, the US economic embargo and the *contra* war forced the government into building a war economy and to recourse to inefficient aid from the socialist countries, overruling sound economic decision making. In the 1990s, security problems in parts of the country and antagonistic political forces still affect the economic decision making and its effectiveness. More importantly, foreign aid and lending have taken the lead in strongly conditioning external finance to structural reforms.

The degrees of freedom in the economic decision-making since 1979 thus have been extremely limited because of Nicaragua's acute lack of foreign exchange, so the country has had to accept the conditionalities of foreign creditors. Yet, even within this context there was some room to manoeuvre and options to choose from. Table 1.4 summarizes the main economic policy decisions since 1960 and the external shocks and external financing conditions these had to deal with.[6] The main changes in policy regime were already hinted at in Section 1.2. Here we will discuss macroeconomic policies in some more detail. As suggested by the table, the three main periods, the Somoza regime (1960-78), the Sandinista government (1979 to April 1990) and the Chamorro government (since April 1990), can be subdivided into several sub-periods, separated by some type of external shock.

The Somoza period

Economic policies during the Somoza years were conducted within a more or less constant institutional framework of, on paper, mild government controls. However, the market economy was of a peculiar sort, with a high concentration of wealth (rural, industrial and financial) in hands of the Somoza family and their political allies, as became overly manifest from the data on the nationalizations following the 1979 revolution. Private and public interests thus went for a good deal hand in hand. Most of exports and imports were financed outside the banking system (including the Central Bank) and the córdoba, fixed at 7 C$/US$, was fully convertible (from 1963). Economic policy appeared as a direct application of the

Table 1.4
External shocks, aid and adjustment policies in Nicaragua, 1960-94

Period	External shocks	Aid and debt policies	Structural reforms	Exchange rate regime	Fiscal policies	Monetary policies	Wage and price policies
Somoza 1960 - 1971		Negligible aid inflows, small external debt	Government infrastructural & marketing support to agro-exporters. Import-substitution within CACM.	Fixed rate at 7 córdobas per US$. Córdoba fully convertible from 1963 onwards.	Restrictive.	Restrictive. Fixed interest rate, but most financing of export activities outside banking system.	
1972 - June 1979	Earthquake, 1972 Oil price increase, 1973 Increasing strength Sandinista insurgence	Emergency aid for earthquake Rising external borrowing to meet BoP deficits	Mild exchange controls introduced late 1978.	Fixed exchange rate till April 1979. April 1979: - introduction multiple exchange rate system; - devaluation to 10 córdobas per US$.	More expansionary fiscal stance	Less tight monetary control.	

Period	External shocks	Aid and debt policies	Structural reforms	Exchange rate regime	Fiscal policies	Monetary policies	Wage and price policies
Sandinistas July 1979 - 1981	Revolution, July'79 Rising world interest rate Falling export prices Second oil price rise	Generous (import) aid support from Western donors and Latin American countries. Generous rescheduling external debt. Partial default on debt payments. Rising external debt.	Nationalization Somoza properties (banks,industries rural lands). Nationalization export/import firms. Agrarian reform. Organization popular classes. Elaborate system of exchange and import controls. Directed credit allocations through state banks.	Fixed exchange rate. Reinforcement multiple exchange rate regime. Emergence parallel market.	Expansionary fiscal policies. Rising social expenditures. Rising public investment in infrastructure and production.	Moderate monetary expansion.	Price controls of basic goods. Nominal wage increases, but below inflation rate.

Period	External shocks	Aid and debt policies	Structural reforms	Exchange rate regime	Fiscal policies	Monetary policies	Wage and price policies
1982 - 1984	"Cien años" floods, 1982. Emergence contra war. US threats of trade embargo Falling export prices.	Continued high aid inflows. Continued support European donors, increased support socialist countries. Stoppage US aid and import support from Latin American countries. Increasing payment arrears.	Build up war economy. Continued implementation agrarian reform and other reform measures.	Unchanged fixed exchange rate. Rising official exchange rate appreciation and rising black market premium.	Booming public expenditures in infrastructure and production. Continued expansion social expenditures; rising defense expenditures. Increasing tax rates and collection, yet rising fiscal deficit.	Accommodating monetary policies to finance fiscal deficits and Central Bank losses. Fixed nominal interest rate, well below inflation rate.	Sustained price controls and subsidies basic goods and public sector tariffs. Continued decline real wages, but slowed down in 1984, after introduction "SNOTS", but system of wage indexation soon abandoned.

Period	External shocks	Aid and debt policies	Structural reforms	Exchange rate regime	Fiscal policies	Monetary policies	Wage and price policies
1985 - 1987	Full US economic embargo. US veto on multilateral lending. Slight improvement export prices, but more or less unchanged terms of trade.	Nearly full reliance on (commodity) aid from socialist countries. Further increase in payment arrears on external debt.	Refocus of agrarian reform on small farmers and domestic food production (price and credit incentives). Increase direct import controls. Surcharge on most imports (TEM) to finance CB losses. Increased mobilization young workers in army	Devaluation to 28 córdobas per US$ in Feb. 1985 and successive devaluation in Feb. 1986 (to 70 C/$), maintained till Jan. 1988. Widening difference export/import exchange rates. Rapidly increasing black market premium.	Cuts in current, civil expenditures and halving of public investment (as % of GDP). Defense expenditures maintained at high level. Rising tax efforts undermined by Oliveira-Tanzi effect.	Strongly expansionary monetary policy (liquid foreign financing negligible). Adjustment nominal interest rates, but well below inflation rate.	Adjustment of many official prices, particularly to stimulate production of basic foods. Ineffective wage indexation, increasing schemes for payment in kind.

Period	External shocks	Aid and debt policies	Structural reforms	Exchange rate regime	Fiscal policies	Monetary policies	Wage and price policies
1988 - 1989	Contra war looses intensity, after successful peace talks (Esquipulas I accord of August 1987). Hurricane Joan (October 1988)	Near generalized moratoria on foreign debt. Continued dependence on socialist country aid.	Sequel of massive stabilization packages (Feb. and June 1988; Jan. 1989). Packages were increasingly orthodox in nature. Wages and prices liberalized in June 88 package; massive reduction public sector employment (Jan.89); and suspension land expropriations.	Monetary reform (new córdoba) and massive devaluation (Feb.88) 700% devaluation (June 1988) and frequent adjustments thereafter. System of gradual adjustment (Jan.89)	Restrictive fiscal policies announced, but insufficient adjustment to effects of devaluation on budget and wage increases. Oliveira-Tanzi effect remains. (Feb./June 88) Stronger fiscal austerity Jan.89 plan and *compactación* public employment.	More restrictive monetary policies and monetary reform. Effects devaluation not passed on to domestic debtors, implying generalized debt forgiveness and continued massive losses of CB (Feb.88) June 88: interest rates (imperfectly) indexed. Jan. 89: restrictive credit policy and active interest rate management (rising real rates).	Price controls lifted, excl. public utilities (June 88) and increase regulated prices. Private sector wage setting deregulated. Government wages modestly adjusted, but below inflation rate. Food subsidy given in compensation.

monetary approach to the balance of payments with a fixed exchange rate and fiscal deficits and monetary growth tied to the international reserve position. External shocks thus had to be immediately accommodated by fiscal and monetary adjustment. The restrictive fiscal and monetary policies kept inflation down (average inflation rate at 2-3 per cent per year) and foreign indebtedness within manageable proportions. Inflation moved closely with world prices, keeping the real exchange rate at a competitive level (Medal, Miranda & de Franco 1992).

The financial system under the Somoza regime was remarkably efficient (FitzGerald, 1989): the banks were mainly concerned with providing the working capital for the agro-export cycle on the basis of external trade credits from purchasing countries, such as the US and Japan. This mechanism automatically met exchange requirements during the year as credit could be issued to farmers on the basis of international reserves. The *córdoba* could thus be pegged to the dollar and import demand was automatically restricted by export earnings. Government current expenditure was limited to minimal administration financed through taxation and public works through US aid and multilateral lending. In consequence, there were no inflationary pressures, nor any active monetary policy. Wages were kept down by political repression and widespread underemployment, so that investment and growth were not hindered but by fluctuations in export markets.

The 1972 earthquake and the 1973 world oil price increase formed together a breakpoint in the macropolicies of the Somoza regime. The fiscal and monetary conservatism was abandoned. The costs of the earthquake have been estimated at US$ 1.1 billion (CEPAL 1973). Budget deficits rose to over 5 per cent of GDP in the second half of the 1970s (see Appendix Table A.1.1)[7] as a result of increased public investment to repair the damages of the earthquake and rising military spending in reaction to the rising rebellion against the regime. Much of the deficit was financed by external borrowing from commercial banks (30 percent) and multilateral creditors (another 30 percent) (see Chapter 2). However, part of the foreign financing tied to reconstruction projects were diverted to personal interests of government officials, leading to heavy disputes with important segments of the private sector,

a drop in private investment after 1975 and a stimulus to the armed struggle against the Somoza regime (de Franco, 1993; and Martínez Cuenca, 1994). Increasing domestic inflation (to more than 20 per cent per year in 1973-74), initiated by the oil price hike and spurred by the widening macroeconomic disequilibria, led to a growing overvaluation of the exchange rate by the mid-1970s. In the wake of the Sandinista victory, the Somoza government adjusted the exchange rate from 7 to 10 córdobas per US dollar and established a multiple exchange rate system.

The Sandinistas took over with an economy in shambles and found an empty treasury. Capital flight in 1978 and the first half of 1979 (see Chapter 3) had virtually depleted the international reserves.

Macropolicies under the Sandinista government

As indicated in Section 1.2, the Sandinistas implemented a series of structural reforms aiming at a reduction of external dependence and a more equitable development model, which would be based initially in the agricultural sector. This development should be achieved in the context of a mixed economy, with a leading role for the government. The nationalization of the Somoza properties immediately gave the state a far-reaching influence in economic activity. Direct state control would extend to part of agricultural production, finance, foreign trade and domestic commerce of basic goods (Gibson, 1987; and FitzGerald. 1989).

Macroeconomic stability was recognized right from the start as a crucial condition in the new economic strategy (FitzGerald, 1989). Economic policies aimed at reconciling the desired income redistribution and the planned investment-savings balance with macroeconomic stability through, on the one hand, strengthening the supply conditions of basic needs production through investment in physical and social infrastructure (with an emphasis on agriculture), and, on the other hand, a restraint of aggregate demand by reducing non-essential ('luxurious' consumption) through differential pricing and tax reform.

The practice of macropolicies under the Sandinista government can be divided into five sub-periods (see Table 1.4). The first period (1980-81) was one of reconstruction and reactivation of the economy.[8] Expansion of government spending took the form of subsidies on basic goods, increasing public sector employment (to 20 per cent of the labour force) and rising public investment (see Section 1.3). The fiscal gap widened to over 8 per cent of GDP,[9] but could be largely financed from abroad (see Table 1.5). The external support, of which a great part in the form of import support, helped to maintain a system of effective price controls. Yet, inflation averaged about 2 per cent on a monthly basis (more than 20 per cent per annum), which - given the maintenance of a fixed exchange rate - was enough to generate a tendency towards a real exchange rate appreciation. Together with the introduction of strict exchange controls, the appreciation led to the creation of a black market for foreign exchange (de Franco, 1989). The black market rose to 17 and 28 C$/US$ in 1980 and 1981, respectively, against an official exchange rate of 10 C$/US$. Monetary policies turned virtually passive. Interest rates were kept fixed and Central Bank credits were used as the residual source of financing of the public sector deficit. The nationalized banking system moved to a system of credit rationing consistent with the government priorities of the development of economic sectors, rather than the perceived credit-worthiness of the borrowers.

There was some economic reactivation. GDP increased at 4.6 and 5.4 per cent per annum in 1980 and 1981; a partial recovery from the collapse in 1978-79. Both the fiscal deficit and liquidity ratios to GDP increased from their pre-revolutionary levels. Nominal wage increases were modest and there was no attempt to raise them above the inflation rate, thereby stabilizing the real wage. As analyzed in Section 1.2, the external deficit widened with declining exports and rising imports.

In the second sub-period, 1982-84, macroeconomic conditions changed. Floods in 1982 caused damage to agricultural production, while the US veto on multilateral lending and stoppage of USAID assistance started to tighten the availability of liquid foreign exchange. Imports had to be cut back by some US$ 200 million and GDP fell by 0.8 per cent in 1982.

Table 1.5
Financing of Public Sector Deficits, 1980-93
(per cent of GNP)

Consolidated Public Sector[1]	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Deficit (before grants)	8.7	8.2	12.2	21.6	22.1	23.0	15.8	17.6	27.8	8.1	17.2	6.4	7.0	6.5
Central government	9.0	8.9	12.4	21.7	23.5	22.5	17.2	16.7	25.5	6.8	13.1	7.5	7.6	6.3
Rest of public sector (excl. Central Bank losses)	-0.3	-0.7	-0.2	-0.1	-1.4	0.5	-1.4	0.9	2.3	1.3	4.1	-0.9	-0.6	0.2
Memo items:														
Central Bank losses									8.0	13.8	2.0	0.7	1.1	1.3
Unpaid interests on external debt	0.2	1.2	0.9	3.4	2.4	4.3	1.5	2.2	12.6	18.0	9.0	8.9	9.2	n.a.
Financing of Deficit	8.7	8.2	12.2	21.6	22.1	23.0	15.8	17.6	27.8	8.1	17.2	6.4	7.0	6.5
External	4.6	3.3	3.1	6.9	3.4	1.0	1.5	0.5	3.0	8.2	22.6	10.0	14.3	8.1
Foreign Grants[2]	0.7	1.1	0.9	1.9	0.8	0.6	1.5	0.6	0.6	3.5	2.5	9.6	4.0	6.9
Net external borrowing	3.9	2.2	2.2	5.0	2.6	0.4	0.0	-0.1	2.4	4.7	20.1	0.4	10.3	1.2
Domestic	4.1	4.9	9.0	14.7	18.8	22.0	14.4	17.1	24.9	-0.2	-5.4	-3.6	-7.3	-1.6
Central Bank borrowing	4.3	1.5	10.5	33.6	16.3	23.0	11.8	11.7	20.5	-0.6	13.5	1.3	-7.9	0.8
Suppliers credits and other	-0.2	3.4	-1.5	-18.9	2.5	-1.0	2.6	5.4	4.4	0.4	-8.1	-4.9	0.6	-2.4

Source: Banco Central de Nicaragua, *Boletín Estadístico. Sector Público No Financiero: 1980-1992*, Managua, 1993; and revised data for 1990-93 supplied by Central Bank.

Note: 1. Refers to central government, local governments and non-financial public enterprises. Excludes state banks and Central Bank, as well as some off-balance budgets including part of military expenditures and part of the public health sector.

2. Grants as recorded by public finance data. These figures differ from the data for official transfers as recorded in the balance of payments for conceptual reasons, differences in coverage (some grants are supplied outside the budgets of the consolidated public sector) and accounting differences.

In 1983 there was again positive growth of 4.6 percent, but that would be the last in the decade.

Macroeconomic policies responded with a lag. Reform policies continued, with high public investment and subsidies to basic consumer goods, pushing the fiscal deficit up to over 20 per cent of GDP in 1983 and 1984 (Table 1.5), despite a rising tax rate from 23 to 36 per cent of GDP between 1980 and 1984! Nicaragua achieved the highest tax rate in Latin America in 1984. Inflation could be kept within limits (around 35 per cent per year), basically due to the commodity imports and subsidized domestic prices. Probably, the principle change in macropolicies in this period was the sophistication of the multiple exchange rate system, introducing preferential exchange rates to promote exports (Taylor *et al.* 1989, Ocampo 1991). This system led to an average nominal devaluation of 23.5 and 21 per cent for export commodities in 1983 and 1984, but this change was not sufficient to prevent a further overvaluation of the exchange rate. The black market rate started its skyrocketing movement reaching 275 córdobas per dollar in 1984 (with the official rate still at 10 and the export rate at 16).

Inflation accelerated stronger and exercised an ever increasing pressure on the fiscal deficit. With the implementation of the US trade embargo and the non-declared US war on Nicaragua, macroeconomic management became increasingly complicated from 1985 onwards, the third sub-period. Defense expenditures obtained priority as the contra war started to take its full shape. To meet the disquieting macroeconomic disequilibria, a partial attempt towards stabilization was initiated in 1985. The official exchange rate was devalued 180 per cent to 28 córdobas per dollar and the export rate by over 600 per cent to 106 C$/US$. Fiscal austerity for civil expenditures was called for, leading to a reduction in subsidies (and thus an increase in controlled prices) and a drastic cut in the public investment programme. To compensate workers for real wage declines in 1982-4, the government attempted wage indexation through a government-decreed scale (SNOTS). There was a slight recovery in the real wage in the first months after its introduction in May 1985, but they fell soon thereafter and wage policy proved ineffective and played no major role in the

inflationary process (Taylor *et al.*, 1989; and Ocampo, 1991).

Meanwhile, the fiscal deficit stayed up in 1985 (23 per cent of GDP). Liquid net external finance available to finance the public sector deficit had virtually dried up in 1985-87 (Table 1.5), leading to monetary injections of the size of the fiscal deficit. This monetary fuel, combined with the increasing supply constraints in agriculture[10], created explosive inflationary effects and turned black market dollars into the only hedge against inflation.

It has been argued (Ocampo, 1991), that the acceleration of the inflationary process to levels of hyperinflation was triggered by the increases of the controlled prices announced by the government. This policy change implied a shift from a regime of 'repressed inflation' despite the excess liquidity (controlled prices) to one of explosive inflationary effects of monetary expansion and a flight from córdobas to dollars pushing up the black market rate to staggering heights. As shown in Figure 1.6, the real black market rate (deflated by the consumer price index) peaked in early 1985 after the announcement of the price measures. Foreign exchange speculation was facilitated by the enormous monetary expansion. The hyperinflation and massive flight into the dollar, subsequently led to a drop in the real black market rate (Figure 1.6).

Monetary expansion was fed by the budget deficit and losses of the Central Bank in foreign exchange dealings (Table 1.5). The devaluation of the *córdoba* to 70 per dollar in February 1986 could do little to alter the situation. Equally, the creation of a legal parallel market, where workers remittances and a part of export earnings could be traded, could not stop the inflationary process and the flight in the dollar. The parallel market did prove effective to raise the effective exchange rate for exports well above the official rate (100 times in early 1988), but could not prevent the collapse in export earnings (Ocampo, 1991). As explained in Section 1.2, the real effective exchange rate probably only played a subordinate role in the decline of exports in this period.

The process of hyperinflation undermined all attempts at fiscal adjustment. In the absence of

indexation of tax revenues, the usual delays in tax collection lead to losses in government revenue in real terms (this the known as the Olivera-Tanzi effect). Government revenue in real terms actually fell from 1985 to 1990 (with an interruption in 1989), implying that the changes in nominal revenue should be fully ascribed to the inflation tax (see Table 1.6). Macroeconomic disequilibria increased during 1985-87, price controls turned ineffective and the public sector deficit went out of control. Inflation accelerated to 25 per cent per month in 1987 (770 per cent for the year) and the public sector deficit stayed high (17.6 per cent of GDP in 1987).

The foreign assistance was of little help to redress the situation. Most funds came from the socialist countries and did not provide any liquid funds and were the source of many inefficiencies (see Section 1.2 and Chapter 2). Mounting arrears on external debt were another source to keep import capacity up, but at some cost of the interruption of some sources of funding that had been important in the early years of the revolution (particularly, from Mexico and payment agreements under the CACM).

The third sub-period (1988-89) is characterized by more drastic and highly orthodox stabilization attempts and by hyperinflation. The contra war started to loose intensity and seemed the right condition for successful stabilization. Two major stabilization programmes were implemented in February and June 1988. The February programme included a substantial realignment of controlled prices, a devaluation of 14,300 per cent and the introduction of the *new córdoba* (1 new for 1000 old *córdobas*). Severe cuts in fiscal spending had to reduce the fiscal deficit to 10 per cent of GDP. A wage increase (675 percent) was the only 'heterodox' element in the programme (Ocampo, 1991). The programme achieved a massive real devaluation of the official exchange rate and the black market rate also fell. Still, the official exchange rate remained considerably overvalued. The devaluation and the price and wage increases in turn triggered inflation and impeded the achievement of the fiscal target due to the Olivera-Tanzi effect (see Table 1.6) and eroded real wages. Further, the domestic lending rate was tied to a ceiling of 45% *per year* (with inflation at more than 60% *per month*) and the devaluation of the official exchange rate

Table 1.6
Real Public Sector Revenue and the Inflation Tax
(as a per cent of GDP)

	Change in real income	Price change effect (Inflation tax)
1981	4.27	2.69
1982	0.84	4.33
1983	6.51	2.94
1984	4.17	10.30
1985	-4.89	26.68
1986	-1.40	28.15
1987	-6.92	31.06
1988	-11.85	34.11
1989	6.11	22.43
1990	-14.32	28.80
1991	11.34	11.70
1992	4.84	4.98

Note: Change in nominal revenue of the consolidated public sector ($P_y.T$) defined as:

$$\Delta(P_y.T) = \Delta T.(P_y.T) + \Delta P_y.(P_y.T)$$

P_y is the GDP deflator. Changes have been expressed as a percentage of GDP.

Source: Banco Central de Nicaragua, *Boletín Estadítico Sector Público No Financiero, 1980-92.*

would not be passed on to dollar-denominated liabilities, decisions which - under the prevailing conditions - were equivalent to a generalized debt forgiveness. It also implied that the Central Bank continued to incur massive losses in foreign exchange transactions and that any increase in nominal domestic credit would have to be financed by money creation.

In June 1988, another stabilization package was implemented, including a devaluation of 700 per cent and a liberalization of most prices and of wage setting. Yet, the money supply was not controlled and the economy moved further on a path of hyperinflation. Inflation was fueled further by the damages caused by Hurricane Joan in October 1988.[11] Consumer prices peaked at an annual rate of more than 30,000 per cent in December 1988 and GDP fell by 15 percent. Stabilization attempts continued during 1989 to face the rapid demonetization of the economy (M1 fell from 52.7 to 23.5 of GDP between 1988 and 1989; see Appendix Table A1.1) and to break the inflationary dynamics.

A new stabilization package was adopted in January 1989, including severe fiscal and monetary austerity, a real devaluation of the exchange rate, the adoption of a system of gradual devaluations and new realignments of controlled prices. The fiscal adjustment was crucial and the government proved "more catholic than the pope" as, in the first month of the year, expenditures were cut even further than targeted due to a new practice of the Ministry of Finance to transfer less resources than budgetted to the different ministries (Ocampo, 1991). A strong cut in public employment was another important element in the fiscal retrenchment. The other crucial element was a restrictive credit policy.

The programme was successful in cutting back inflation (to a monthly rate of 8 per cent in August 1989), which helped achieve a real devaluation and reduce the difference between the official and the black market rates. Confidence in the *córdoba* recovered, the process of demonetization ceased and the inflationary erosion of public finances was reduced (Table 1.6). This reduction was at the cost of a prolonged recession (GDP fell by another 2.0 percent) and rising unemployment.

Fiscal and monetary discipline began to show some flaws in the course of 1989, probably related to the upcoming elections of February 1990 (de Franco, 1994). In the first months of 1990, wages were increased by 800 percent, fiscal spending increased strongly and some state-owned lands were handed out to farmers and, it is alleged, to some of the Sandinista leaders. This act of populism, or "la piñata" as it is popularly known, did not produce the desired political result. The Sandinistas lost the elections and left the new government headed by Violetta Barrios de Chamorro with still a huge fiscal problem and a resurge of the inflationary spiral.

Despite their good intentions, the Sandinistas could not prevent the progressive deterioration of the Nicaraguan economy. Income per capita slid back to US$ 400, by far the lowest in Central America. Despite high levels of social spending,[12] the Sandinista government was not successful in reducing poverty, or at least not as successful as it planned to be. There is a dearth of information with respect to poverty trends in Nicaragua, yet there is little doubt that poverty is widespread and, by income and consumption measures, has increased during the 1980s. Per capita income fell to one third of the level reached in the mid 1970s (Figure 1.1), but also private consumption and real wages had fallen 48 per cent and 24 percent, respectively, of their 1977 levels. A socio-demographic survey conducted in 1985,[13] estimated that 70 per cent of the country's population was affected by at least one serious poverty condition.[14] Yet, some social indicators show improvement, likely as a result of the social spending of the Sandinista government. Infant mortality declined from 83 per 1,000 births to 72 between 1982 and 1990, but is still significantly higher than in the rest of Central America. Primary school enrollment nearly doubled between 1978 and 1990, with the enrollment rate up from 82 to 98, but it should be noted that the improvement was entirely achieved in the first half of the 1980s. After 1985, primary school enrollment declined (World Bank, 1993), a trend likely associated with falling social spending in the latter part of the 1980s (see Table 1.7). Food consumption and the nutrition situation also deteriorated in the second half of the 1980s. The average per capita caloric and protein intake fell by 26 and 14 per cent respectively, between 1986 and 1989, that is to 14 and 25 per cent below the daily recommended minimum of 1,850 calories and 50 grams of proteins (World

Table 1.7
Central Government Expenditures by Function, 1981-92
(per cent of GNP)

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Social Services	10.2	9.6	11.4	13.1	13.0	12.4	11.1	8.3	7.4	11.0	10.3	10.3
Education	4.2	4.1	5.0	5.7	5.7	5.5	5.1	3.4	2.7	5.1	4.9	4.7
Health	4.5	4.2	4.6	4.4	4.9	5.3	4.6	4.2	3.9	5.0	4.2	4.1
Housing	1.0	0.9	1.5	2.5	1.9	0.5	0.4	0.0	0.0	0.0	0.1	0.2
Other	0.5	0.4	0.3	0.4	0.5	1.0	0.9	0.7	0.7	0.9	1.1	1.2
Infrastructure and Economic Services	7.6	10.5	18.1	16.9	9.6	6.9	5.8	7.7	5.0	3.6	3.5	4.9
Agriculture and mining	2.1	4.0	6.7	5.6	3.1	2.3	1.5	2.6	1.6	0.6	0.8	1.4
Industry and commerce	1.8	2.6	5.8	4.6	1.4	0.8	0.5	0.6	0.2	0.1	0.1	0.2
Const. & transport	3.7	3.9	5.7	6.8	4.9	3.6	3.7	4.4	3.1	2.6	2.4	2.2
Other	0.0	0.0	0.0	0.0	0.1	0.3	0.1	0.0	0.0	0.2	0.1	1.1
Defense and security[1]	7.6	7.8	11.0	12.4	16.1	17.7	18.2	15.6	11.8	14.0	4.7	4.4
General administration	4.4	5.4	9.3	13.5	13.3	11.3	9.1	14.1	5.7	6.4	7.4	5.4

Source: Ministry of Finance.

Note: 1. Much of military expenditures before 1990 was off budget and therefore not included in these data. Still with the expenditures as recorded in the table, Nicaragua was, after Cuba, the most militarized country in Latin America during the 1980s (for comparative figures, see World Bank 1992).

Bank, 1993). Nutritional intake of poor households fell much further below the critical minimum. Access to food declined for these groups even after 1987, when supplies increased, because of declining real wages and the government channeling most food aid, through the AFA (rice-beans-sugar) programme, to public employees and the military.[15] Clearly, the poor were the major victims of war, trade embargo, bad weather, terms of trade shocks and unsound macropolicies. Under the circumstances one could even consider it remarkable that the Sandinistas came very close to winning the 1990 elections.

Stabilization under the Chamorro government

A first priority of the new government was to demobilize the contra rebels and initiate a process of national reconciliation. Foreign aid to the amount of US$ 40 million was made available by USAID to disarm the rebels and reintegrate them into civil society. Next, the focus was on economic stabilization and structural adjustment towards a market economy and dissolution of much of the government participation in the economy. The new government has to face a difficult political panorama. The business sector regarded the new government with almost as much suspicion as it had the Sandinistas. Given the polarized nature of Nicaraguan society, with the Sandinistas controlling much of organized labour and the army, Chamorro had no choice but to accept a *de facto* coalition government. This situation led to a loss of support of some former Chamorro allies who had hoped the government would take a "winner takes all" position. Yet, despite their political influence, the Sandinistas did little to obstruct the reforms of the new government, probably because of their experience in power.

Stabilization objectives came first. In May 1990 another monetary reform led to the introduction of the *córdoba de oro*, with parity of 1 to 1 to the dollar. Simultaneously, interest rates were raised to become less negative in real terms and, perhaps more importantly, financial assets (loans and deposits) were indexed to the *córdoba de oro*, which quickly led to the disappearance of the old currency, the *córdoba nueva*. Significant amounts of foreign aid entered the country, but import capacity was undermined by the attempt to support the new currency, which depleted scarce international reserves, and by using the

balance of payments support to normalize relations with foreign creditors, particularly the World Bank and the Inter-American Development Bank. Some US$ 0.5 billion went into the payment of accumulated arrears (Chapter 3). Further, a substantial amount of the country's massive external debt could be renegotiated (see Chapter 2 for further details).

Progress was made in achieving peace and a social consensus pact was reached between employers, workers and the government in October 1990, stressing the need for structural reforms, trade liberalization, removal of state monopolies and returning properties to expropriated owners (Corbo *et al.*, 1993). This pact was not in time to prevent a further worsening of the economic situation throughout 1990. Inflation accelerated to 7,500 per cent per year, the fiscal deficit increased to 17 per cent of GDP (Table 1.5), international reserves fell to US$ 108 million (less than 2 months of imports) and GDP fell by another 1 percent.

In March 1991 a major stabilization and structural adjustment programme was initiated, focusing on: (i) severe expenditure cuts to bring down the fiscal deficits to the level of available foreign assistance; (ii) a complete stoppage of domestic credit supplies by the Central Bank; (iii) a devaluation of the exchange rate to 5 *córdobas de oro* per dollar; (iv) increase in controlled prices (public utilities, gasoline and state enterprise products) by 150 to 300 percent; (v) a wage increase of 200 percent, only a partial compensation for the initial jump in the price level; and (vi) structural adjustment measures, including public sector reforms, privatization of 350 state enterprises, trade liberalization, financial reform, agrarian reform redistributing state-owned lands to individual farmers and mechanisms to enforce property rights (particularly ensuring rural land titles).

Fiscal adjustment was an essential element in the stabilization effort. The deficit of the consolidated public sector (excluding foreign grants) fell from 17 per cent in 1990 to 6.5 per cent of GDP in 1993 (Table 1.5), reached by a combination of higher revenues (particularly sales taxes related to the expansion of consumption) and lower expenses (mainly, current and military spending). Until 1992, the adjustment of the fiscal balance to foreign finance availability could be sustained and there was no borrowing from the Central Bank. Yet the

deficit is still high, even after discounting for the arrears on debt service of outstanding public external debt. Interest payments on public external debt increased from zero to 3.8 per cent of GDP between 1990 and 1993, but arrears remain high (9.2 per cent of GDP in 1992).

Fiscal targets were achieved in 1992, but a rise in current spending towards the end of the year related to a wage increase led to a disagreement with the IMF and a suspension of the Stand-by agreement with the IMF, signed in 1991, several months before it would expire in April 1993 (see below).

The privatization programme involved the merging of parastatals into the *Corporaciones del Sector Público* (*CORNAP*). By mid-1993, CORNAP had privatized or liquidated 239 out of the 350 enterprises in its portfolio, but as there was little (foreign) interest in buying the assets, the privatization effort did not provide additional revenues to the government. Instead, in many cases former owners (before the Sandinista nationalizations) were compensated, while new owners have been subsidized. The net gain to the government is likely to have been negative (Gibson, 1994).

The foreign trade regime has been completely redressed. The state monopoly on trade (except food and gasoline) has been eliminated, as well as quantitative restrictions on imports and exports. Tariffs and duties on imports were cut back to an average level of 15 percent, down from 50 percent.[16] The virtual elimination of import barriers and the ample liquid foreign financing pumped into the foreign exchange market, led to the boost in private consumption observed earlier. Exports did not recover (Section 1.2), so that the foreign aid *created* a widening of the trade deficit (from 18 to 32 per cent of GDP between 1990 and 1992) and facilitated the increase in private consumption from 57 to 74 per cent in the same period. This effect was inherent to the adjustment programme. Consumption booms seem typical of countries combining exchange rate stabilization, measures towards substantial trade and financial liberalization and adequate capital (aid) inflows. Such booms in non-essential consumption demand have been witnessed in the 1970s in the Southern Cone countries and

recently in Mexico. The stabilization of the exchange rate and lowering of import tariffs cheapens the cost of previously prohibitive consumer goods, while financial liberalization supported by capital inflows may underpin an expansion in consumer credits. This way, even with fiscal austerity, aid inflows may prove highly fungible and - together with liberalization measures - stimulate private consumption at cost of private savings and investment.

Inflation was cut back to below 6 per cent per annum in the second half of 1992 and the difference between the official and the black market rate almost disappeared.[17] Despite the increased monetary stability, private investment decreased and GDP growth remained negative in 1991 and was only 0.4 per cent in 1992. The restrictive monetary policies and the financial sector reform heavily affected producers, particularly small and medium-sized firms and farmers. The (seven) privatized commercial banks operate small portfolios and find lending to the producers with little collateral too risky. Yet they are able to earn substantial profits thanks to the large spread between deposit and lending rates. The state banks[18] have been restructured and traditionally have kept direct credit lines with (small) producers. This role has remained intact in principle, but under the new lending policy for state banks more credit discipline was introduced impeding lending to borrowers with payment arrears and all loans of state banks were indexed to the dollar.[19] Further, state banks can only extend new credits from the recovery of old ones. With the poor state of the economy and the high *real* interest rates (about 12 percent), debt servicing has been a problem for many producers and loan recovery has been low.[20] The Central Bank has used external financing to meet the liquidity problems of the state banks in 1991 and 1992, but towards the end of 1992 the government introduced stricter collateral requirements on state bank lending and tightened Central Bank financing. Under the circumstances, overall domestic credit supplies mainly went to financing of consumption through commercial credits to importers and traders of durable consumer goods, leaving very little for productive sectors.

Under Somoza there was a more or less efficient system of finance, owned by Somoza's group, tied to the agro-export cycle. The Sandinistas allocated credits to priority sectors at subsidized rates and between 1983 and 1987 more than half of total credit supplies went to

the agricultural sector benefitting about 90,000 rural households running small or medium-sized farms and businesses (Nitaplan, 1994). The stabilization programme and the financial sector reform have cut total credit supplies severely and have reduced the agricultural share to about 35 percent. In 1993, the number small rural firms with access to credits from the state bank *BANADES* has been reduced to 10,000 (Nitaplan, 1994). Inadequate credit supplies are now generally considered a constraint on agricultural production. An unqualified return to the subsidized credit schemes under the Sandinista government is probably not a wise move. Enlarging directed credit schemes is, however, necessary to reactivate agricultural production and to reach the smaller producers.

However, the focus of the government seems to be much more at the macroeconomic level. Despite the problems with the IMF, the government marched on to further adjustment measures in January 1993, including (i) further fiscal austerity, targetting a public sector deficit by 2 per cent points of GDP compared to 1992 and consistent with an expected decline in foreign assistance; (ii) further reduction of transfers from state banks to public enterprises and from the Central Bank to the state banks; (iii) a devaluation of 20 per cent and the introduction of an announced daily adjustments of the *córdoba de oro* at a pace of 12 per cent on an annual basis; and (iv) strengthening of social policies through the Social Investment Fund (FISE). In the course of 1992, the government had already taken measures to limit the growth of luxurious consumption, imposing a special consumption tax on durables.[21] In April 1993 a consultative group meeting was held with the donor community to mobilize the required foreign funding and conversations were initiated with the IMF on a new agreement and support of around US$ 350 million out of the Enhanced Structural Adjustment Facility (ESAF). Despite the increased adjustment efforts the ESAF loan was not agreed on in 1993 and negotiations proceeded until March 1994 with the expectation of an agreement no earlier than the end of April.

GDP failed to recover for yet another year and fell by 0.7 percent. The result is not surprising given the demand-depressing character of the adjustment measures and the tightening of credit constraints on the productive sector. Open unemployment increased to 22

per cent of the labour force and the underemployment rate to 28 percent. Real wages suffered an 8 per cent decline, as inflation resurged (20.4 per cent in 1993), basically reflecting the effects of the exchange rate devaluation (27 per cent in 1993) since most real and financial transactions have become indexed to the dollar.

The aid inflow has off-loaded the pressure on the foreign exchange market and has by and large eliminated the black market premium (Figure 1.7). The Central Bank has actively intervened in the market ensuring a stable córdoba, and so domestic prices. This form of stabilisation policies is, of course, sustainable as permitted by the country's foreign reserve position.

This monetary-cum-exchange rate regime makes it difficult to achieve a real depreciation of the córdoba. As shown in Figure 1.8, following the maxi-devaluations of early 1991 and January 1993 there would be a significant depreciation, but soon to be largely offset by the domestic inflationary process triggered by the same devaluation.[22] Yet, we do find some depreciation has taken place, particularly since 1993, contrary to the official estimates of the Central Bank, which - erroneously (see footnote 22) - find hardly any depreciation at all! As indicated, we do not expect the depreciation to have very strong effects on the trade balance and export performance due to the structural supply bottlenecks previously indicated.

The private sector response to the stabilization and structural adjustment efforts has been anemic. Consumption has gone up, but private investment collapsed. The latter has been attributed by some observers to major problems over property rights (Corbo *et al.*, 1993; CEPAL 1994; and Aguilar. 1994).

Property right conflicts have a long history in Nicaragua. The Sandinista government has enhanced uncertainty over property rights by the inadequate documentation and registration of the transfer of ownership during the land reform and the expropriation of the urban and rural assets of Somoza's family and his cronies. In many cases there was no formal expropriation, but just a reallocation of land and real estate to new owner/occupants. Under

the new government, previous owners (including the Somoza family) have started to reclaim properties, creating an atmosphere of uncertainty and obviously affecting the investment climate. The government has responded that, in principle, property confiscated by the Sandinistas will be returned or paid for. Compensation payments will be financed by 20-year córdoba-denominated bonds, indexed to the dollar (Gibson, 1994). A bond market is being created so that these securities can be traded.

It is difficult to estimate the precise importance of the property rights issue. Primitive and inadequate cadastral records are a problem, but this also has been a problem in the past. The multilateral institutions will provide support to improve the documentation, registration and legislation of property rights. The claims on old properties have more to do with a demand for compensation for confiscation in the past, than with confidence in the new regime regarding protection of private property in the future. In this sense, the issue should not be overrated and improving legislation and property administration will not be the *deus ex machina* to stimulate private investment. Moreover, fiscal problems could emerge if the government were to meet all compensation claims. The government plans to repay the related bond issues from the privatization programme, but as indicated the programme has probably provided a negative rather than a positive revenue. Government could thus be left with a domestic debt burden endangering fiscal targets.

The availability of reliable and up-to-date information on the poverty situation and social indicators is still a major problem. Macroeconomic developments since 1990 have been such that is reasonable to expect a significant deterioration in living conditions. A recent survey conducted by a local NGO (FIDEG), estimates that the number of households in the major cities (Managua, Granada, Leon) living below the poverty line increased from 46 per cent in 1992 to 56 per cent in 1993 (FIDEG, 1993). The intensity of poverty is also severe and increasing, as the percentage of urban households with an income below the cost of minimum food requirements increased from 26 to 33 between 1992 and 1993. The survey further indicates that the probability of being poor increases with the lower the educational level of the head of the household and if the household is headed by a female.

The poor have suffered greatly from the rise in tariffs and prices for energy and transportation and from the elimination of food subsidies and rise in the private costs of health care. Poor households seem to have adjusted by reducing the number of meals per day and use of health services (FIDEG 1993). The incidence of diseases like bronchitis and diarrhea has increased dramatically.

The government's response in anticipation of these social costs of adjustment has been the implementation of a social investment fund (FISE). The FISE was created in November 1990 and since 1991 about US$ 30 million per year has been invested in a large number of projects, nearly all financed through foreign aid. The investment in social infrastructure through the FISE amounts to 1 to 1.5 per cent of GDP and thus contributes more than one-tenth to the government's target of sustaining a social expenditure level of about 10 per cent of GDP (Table 1.6) and it comprises one third of total public investment in social infrastructure. The heavy reliance on foreign financing of the FISE, and of the public investment programme at large,[23] stresses once more the crucial importance of foreign assistance in meeting social spending and public investment targets within the tight macroeconomic constraints imposed by the adjustment programme. Despite these efforts, poverty and other social indicators seem to move in the wrong direction. Clearly, the recompense in the form of social infrastructure is insufficient compensation for unemployment and lack of means to acquire sufficient food.

1.6 Concluding remarks

Agro-based exports have been and still are the mainstay of the Nicaraguan economy. Agriculture and exports have suffered from a prolonged crisis for most of the past fifteen years. The economy as a whole and the poor in particular were heavily affected. Foreign aid has come to replace export earnings as the major source of foreign exchange. The increased access to foreign assistance and its nature have been strongly influenced by political events. The Sandinista revolution was hit by the new Cold War of the US under the Reagan administration and led Nicaragua to rely on tied aid from the socialist countries at generally unfavourable terms. The democratic shift to the neo-liberal Chamorro government reopened

access to US and multilateral foreign assistance, most untied and liquid, but conditioned to a structural adjustment programme.

The economic reform policies under the Sandinista government did not add up to a programme ensuring macroeconomic stability. External factors including the US trade embargo, the *contra* war, natural disasters and a ban on multilateral lending severely hampered attempts to keep control of the economy. These factors severely affected the supply side (export decline, infrastructural damage and labour shortages) and could not (sufficiently) be reversed by the reform policies (land reform, directed credit supplies, input support, multiple exchange rates). The increasing costs of financing the civil war led to a growing imbalance between demand and supply. As foreign aid from the socialist countries was largely illiquid and commodity support only partially met domestic supply shortages, a devastating inflationary process emerged with flourishing black markets. Policy responses of the Sandinista government often came too late and the gradual reinstallment of price incentives for farmers and other producers tended to lack credibility within the more general framework of controls and rationing mechanisms.

The economic reforms of the 1990s fully aim at price incentives as the key to economic recovery and growth. Generous and liquid foreign aid have been instrumental to restore price stability, but the microeconomic reforms have failed to promote private investment and growth. Foreign aid has been conditioned to an orthodox package of structural adjustment. Enhanced foreign exchange availability (aid), trade liberalization and stabilization of the exchange rate have triggered a boom in private non-essential consumption as previously prohibitive items were dramatically cheapened. This boom could happen despite falling real incomes and rising unemployment. The use of the exchange rate as the nominal anchor in the economy has probably been effective in reducing inflationary expectations. However, it also underlines the fragility of the current macroeconomic stability which seems fully dependent on foreign assistance. The response of producers and private investors has been anemic to the structural reform measures as supply-side problems, such as infrastructural bottlenecks, deficiencies in product marketing, tight credit supplies and (to some extent)

property right conflicts, have not been resolved. Export performance has been sluggish. Non-inflationary deficit financing is fully dependent on foreign aid availability and so is most of the public investment programme. With the economy in a downswing, domestic resource mobilization is highly problematic and a reduction in the aid inflows is likely to undermine macroeconomic stability. But, clearly, also with the current levels of aid, economic growth is not ensured. How aid has impacted on the growth process in Nicaragua during the past decades and what lessons can be learned from it will be further investigated in the next chapters.

Notes to Chapter 1

1. The difference between the current and constant price export ratio is determined by the exchange rate and the relative price change between export and domestic prices. The current price ratio may be written as:

$$\frac{EXPORTS}{GDP} = \frac{eP_x^* X}{P_y Y}$$

where nominal exports equal the exchange rate, e (córdobas per dollar), times the dollar price index, P_x^*, times the export volume, X. Nominal GDP is defined as the GDP deflator, P_y, times real GDP, Y. The percentage change in the export ratio may be decomposed into three effects (ignoring second order effects), devaluation, relative export price change and volume export ratio change:

$$\left(\frac{\hat{EXPORTS}}{GDP}\right) = \left(\hat{e} + \frac{\hat{P}_x^*}{P_y}\right) + \left(\frac{\hat{X}}{Y}\right)$$

where ^ denotes percentage change.

In Figure 1.3, a higher current than constant price export ratio implies that the domestic currency export price ($e.P^*_x$) increased relative to the overall domestic price level (P_y).

2. Data refer to consolidated public sector, including central government and non-financial public enterprises.

3. Using data for 1960 to 1992 we estimated a significant short-term price elasticity of export supplies of 0.5. Given agricultural cycles in Nicaragua, it was assumed that supply responds with a one-year lag. The long-run elasticity was estimated at 1.3. These estimates are substantially lower than those cited in the study by Taylor, *et al.* (1989: 37), which suggested a short-term export price elasticity of 1.2 and a long-run elasticity of 2.5, applied to data for 1970-86.

4. In Figure 1.4, foreign savings are defined as the current account deficit before official transfers, which equals by definition net capital inflows *plus* official transfers.

5. Note that there are wide differences whether using GDP deflators or the consumer price index (CPI) (see Table A1.1). The numbers in the text refer to annual rates of the CPI, being either averages for the year as a whole or, according to what is indicated, the annualized rate for a particular part of the year (e.g. month).

6. The table has been based on various studies and policy documents. For more extensive analyses (not necessarily agreeing with that in the text) of Nicaragua's economic policies over the past decades, see Heriot (1982), Gibson (1987, 1993, 1994), FitzGerald (1987, 1989), Taylor *et al.* (1989), Corbo *et al.* (1993), Aguilar (1989, 1992, 1993), Ocampo (1991), CEPAL (1994).

7. Refers to central government only.

8. CEPAL (1981) estimated the damage to the capital stock and inventories at around US$ 400 million or 18 percent of 1980 GDP.

9. Refers to consolidated public sector.

10. The increasing supply constraints involved in particular damage to infrastructure due to the civil war and labour supply shortages resulting from mobilizations for the Sandinista army.

11. The hurricane caused losses in the order of US$ 840 million according to CEPAL estimates (CEPAL 1988).

12. As shown in Table 1.7, expenditures on health and education averaged more than 9 percent of GDP in the 1980s. In Central America, this is only matched by Costa Rica (10 percent), but twice or more the social spending in El Salvador, Guatemala and Honduras.

13. Government of Nicaragua, *1985 Encuesta Socio-Demográfica Nicaraguense (ESDENIC-85)*, Managua.

14. The poverty index to classify households was based on the presence of one or more of the following conditions: (i) inadequate housing construction quality; (ii) over-crowding of housing, i.e. if four or more people sleep in the same room; (iii) low educational levels if there is at least one child in school age not attending school; (iv) high dependency ratio: two or more individuals economically dependent on household head who has less than primary education.

15. The World Bank (1993) rates the programme as the best food delivery programme in Nicaragua to date. It was initiated in 1987 and implemented by the Ministry of Finance to counter the fall in real wages. Public employees are partly paid through food subsidies, financed by the government and foreign aid. Beneficiaries pay 40 percent. The programme was not targetted to the most needed groups, but rather to middle-income people. The programme was terminated at the end of 1991.

16. See Corbo *et al.* (1993) for a fuller detail of these measures and Consejo Monetario Centroamericano (1994) for a stock-taking of the trade and exchange regime prevailing at the end of 1993.

17. The black market premium was fell to around 6 percent in 1991 and 1992 and to 3 percent in 1993.

18. These consist of three banks: Banco Popular (BP), Banco Nicaragüense de Inversión y Comercio (BANIC) and Banco Nacional de Desarrollo (BANADES). Further, there is the Fondo Nicaragüense de Inversión (FNI), a direct lending window of the Central Bank.

19. This policy reform has been part of the conditionality of the balance of payments support of multilateral agencies provided in 1991-3.

20. Informal estimates provided by the Central Bank suggest a recovery rate of 35 percent over 1990-93.

21. Ranging from 25 percent for electrical domestic products and 10 to 40 percent on cars.

22. The real effective exchange rate (MRER) in Figure 1.8, is defined as the trade-weighted real exchange rate for the ten principal trading partners of Nicaragua, using March 1991 as the base. The effective RER is defined as the effective nominal exchange rate divided by the relative price index of the weighted consumer price changes in the trading partner economies to Nicaragua's CPI. Thus, an increase in the MRER means a real depreciation, i.e. an expected increase in the competitiveness of Nicaragua's exports.

    The data for Figure 1.8 were supplied by the Central Bank, but we corrected the definition of the MRER. The Central Bank defines the index of the MRER as the MRER in "real" cordobas divided by the bilateral (US) nominal exchange rate (NER) in the same year. This way one rather defines a relationship between the real multilateral rate and the going price in the market, but it is not a real exchange rate in relation to a particular base year. Through its definition, the Central Bank finds very little change in the official "MRER". We find that some depreciation has taken place since 1991, although much of the initial effect following the devaluations is offset by domestic inflation.

23. According to data provided by the Ministry of Economic Development, 67 percent of the 1993 public investment programme was financed by foreign financing. The budgetted investment programme for 1994 relies for 73 percent on (committed and expected) foreign funds.

Figure 1.7
Official and Black Market Nominal Exchange Rate
March 1991 - March 1994 (1991.03 = 100)

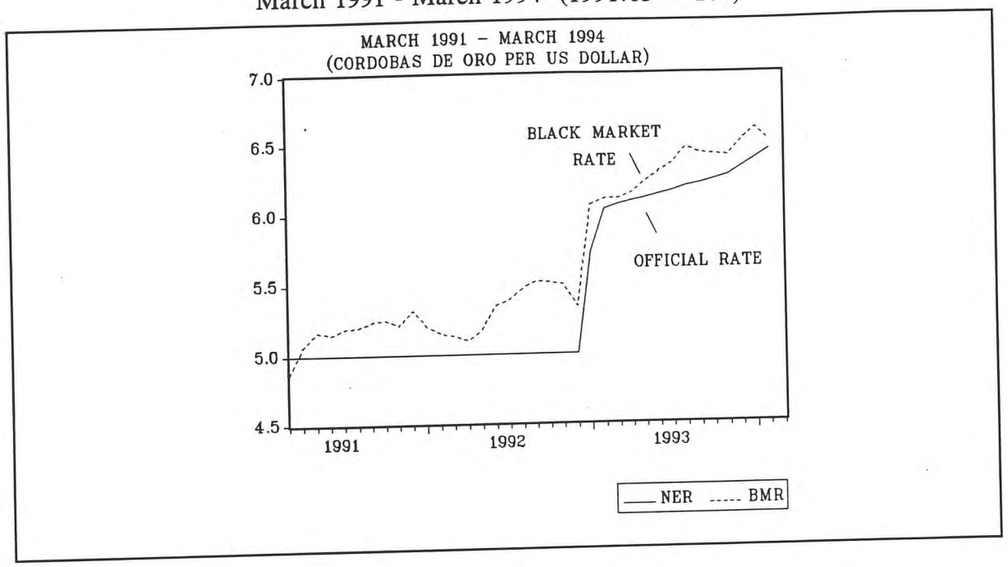
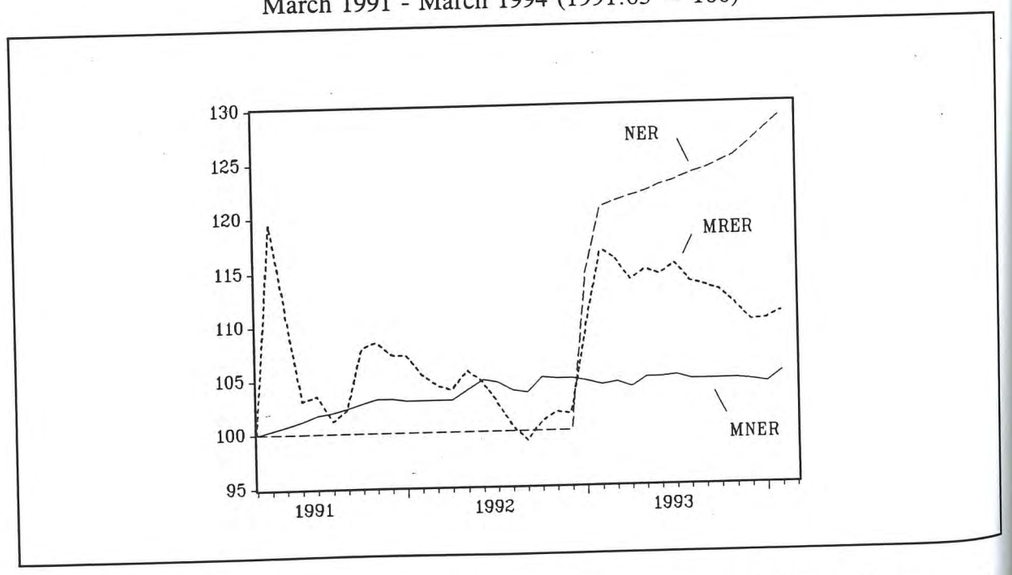


Figure 1.8
Multilateral (Effective) Nominal and Real Exchange Rate
March 1991 - March 1994 (1991.03 = 100)



Notes: MNER = (trade-weighted) effective nominal exchange rate; MRER = effective real exchange rate; NER = official nominal US$ rate.

Table A1.2
Monthly Inflation Rate and Nominal Official and Black Market Exchange Rates, 1980-1994

Year	Month	Inflation (CPI) 1980.01 = 100		Nominal exchange rate (Córdobas per dollar)	
		Index	Monthly rate	Offical rate	Black market rate
1980	January	100	-	10.0	16.35
	February	103	2.82	10.0	16.62
	March	105	1.64	10.0	18.26
	April	109	4.58	10.0	17.48
	May	116	6.40	10.0	17.56
	June	118	1.08	10.0	18.04
	July	119	1.38	10.0	16.72
	August	118	-1.28	10.0	17.22
	September	116	-1.69	10.0	18.61
	October	119	2.72	10.0	17.98
	November	122	2.90	10.0	18.38
	December	123	0.94	10.0	18.89
1981	January	125	1.03	10.0	21.88
	February	127	2.12	10.0	25.88
	March	130	2.36	10.0	26.93
	April	134	2.73	10.0	26.98
	May	138	3.01	10.0	26.19
	June	143	4.07	10.0	25.98
	July	152	5.94	10.0	27.27
	August	147	-3.42	10.0	29.95
	September	147	-0.09	10.0	30.00
	October	148	1.02	10.0	30.00
	November	151	1.57	10.0	35.00
	December	152	0.96	10.0	39.00
1982	January	154	1.02	10.0	40.00
	February	158	2.99	10.0	45.00
	March	161	1.57	10.0	45.00

	April	169	5.42	10.0	45.00
	May	181	6.84	10.0	45.00
	June	195	7.83	10.0	45.00
	July	192	-1.78	10.0	60.00
	August	179	-6.44	10.0	60.00
	September	178	-0.49	10.0	60.00
	October	180	0.86	10.0	70.00
	November	182	0.89	10.0	70.00
	December	186	2.31	10.0	80.00
1983	January	189	1.56	10.0	85.00
	February	192	1.85	10.0	85.00
	March	200	3.88	10.0	90.00
	April	210	5.25	10.0	90.00
	May	229	9.12	10.0	95.00
	June	243	6.02	10.0	110.00
	July	263	8.29	10.0	130.00
	August	258	-2.01	10.0	150.00
	September	244	-5.36	10.0	150.00
	October	247	1.34	10.0	150.00
	November	249	0.77	10.0	170.00
	December	247	-0.95	10.0	170.00
1984	January	256	3.59	10.0	180.00
	February	257	0.39	10.0	180.00
	March	261	1.57	10.0	190.00
	April	269	3.15	10.0	200.00
	May	289	7.35	10.0	220.00
	June	311	7.66	10.0	240.00
	July	330	6.28	10.0	250.00
	August	350	6.01	10.0	250.00
	September	342	-2.44	10.0	350.00
	October	354	3.62	10.0	400.00
	November	365	2.99	10.0	400.00
	December	371	1.70	10.0	450.00
1985	January	398	7.48	10.0	500.00
	February	454	14.00	28.0	550.00
	March	511	12.41	28.0	650.00
	April	603	18.04	28.0	650.00
	May	881	46.14	28.0	680.00
	June	1,056	19.87	28.0	700.00
	July	1,180	11.78	28.0	700.00
	August	1,251	6.01	28.0	720.00
	September	1,293	3.31	28.0	750.00
	October	1,321	2.16	28.0	800.00
	November	1,437	8.81	28.0	900.00
	December	1,610	12.05	28.0	1000.00
1986	January	1,708	6.09	28.0	1200.00
	February	2,001	17.17	70.0	1600.00
	March	2,883	44.05	70.0	1800.00
	April	4,099	42.20	70.0	2000.00
	May	5,256	28.23	70.0	2300.00
	June	7,962	51.49	70.0	2100.00
	July	10,333	29.78	70.0	2200.00
	August	10,766	4.19	70.0	2200.00
	September	10,484	-2.62	70.0	2300.00
	October	11,589	10.54	70.0	2500.00
	November	12,975	11.96	70.0	2800.00
	December	13,644	5.15	70.0	3200.00
1987	January	12,518	-8.25	70.0	3500.00
	February	12,779	2.09	70.0	3800.00
	March	14,231	11.37	70.0	4150.00
	April	22,563	58.55	70.0	5250.00
	May	34,643	53.54	70.0	7000.00
	June	49,731	43.55	70.0	8500.00
	July	76,045	52.91	70.0	9500.00

	August	105,907	39.27	70.0	11000.00
	September	109,383	3.28	70.0	13000.00
	October	140,862	28.78	70.0	16000.00
	November	172,056	22.14	70.0	25000.00
	December	197,454	14.76	70.0	35000.00
1988	January[1]	315,614	59.84	0.1	48.00
	February	603,514	91.22	5.6	82.76
	March	1,099,323	82.15	10.0	130.00
	April	1,420,585	29.22	10.4	138.00
	May	1,690,844	19.02	11.5	174.19
	June	2,803,897	65.83	41.5	253.33
	July	5,146,247	83.54	80.0	385.48
	August	6,197,613	20.43	83.2	400.00
	September	9,188,391	48.26	180.0	443.83
	October	16,634,900	81.04	320.0	810.81
	November	31,324,706	88.31	628.7	2363.33
	December	70,981,517	126.60	920.0	4880.64
1989	January	136,120,538	91.77	1,963.2	5438.87
	February	198,469,919	45.80	3,007.1	5000.00
	March	238,345,255	20.09	4,945.2	5106.45
	April	268,287,057	12.56	6,413.3	6473.33
	May	309,887,449	15.51	7,325.8	9241.93
	June	502,748,383	62.24	15,950.0	23566.67
	July	665,116,314	32.30	20,000.0	25000.00
	August	716,236,838	7.69	20,490.3	25000.00
	September	801,639,025	11.92	22,023.3	25000.00
	October	916,984,716	14.39	23,741.9	25632.26
	November	1,065,414,397	16.19	27,920.0	36680.00
	December	1,269,952,634	19.20	34,075.2	45806.45
1990	January	1,598,572,424	25.88	42,779.4	54822.58
	February	1,833,312,753	14.68	46,380.0	66571.43
	March	2,108,530,657	15.01	46,380.0	101750.00
	April	2,873,434,833	36.28	53,289.3	130333.33
	May[2]	6,217,258,787	116.37	114,516.1	248064.51
	June	12,473,482,746	100.63	239,500.0	307166.67
	July	23,251,842,665	86.41	418,387.1	515483.86
	August	42,436,336,431	82.51	720,645.2	788870.95
	September	67,390,037,128	58.80	1,070,333.3	1177666.68
	October	87,954,216,832	30.52	1,377,419.4	1464838.70
	November	117,006,276,608	33.03	1,745,000.0	1835333.33
	December	172,589,702,982	47.50	2,404,838.7	2571935.47
1991	January	262,664,871,215	52.19	3,453,548.4	3681612.91
	February	372,924,907,551	41.98	4,694,642.9	5557142.86
	March[3]	1,346,816,308,824	261.15	5.0	4.87
	April	1,620,021,017,774	20.29	5.0	5.07
	May	1,516,504,074,418	-6.39	5.0	5.17
	June	1,565,328,666,249	3.22	5.0	5.15
	July	1,577,711,168,446	0.79	5.0	5.19
	August	1,553,235,446,096	-1.55	5.0	5.20
	September	1,570,530,270,172	1.11	5.0	5.24
	October	1,653,964,435,062	5.31	5.0	5.25
	November	1,668,138,445,473	0.86	5.0	5.21
	December	1,666,595,501,856	-0.09	5.0	5.32
1992	January	1,684,359,032,527	1.07	5.0	5.20
	February	1,672,681,025,218	-0.69	5.0	5.15
	March	1,673,177,565,781	0.03	5.0	5.13
	April	1,682,367,616,849	0.55	5.0	5.10
	May	1,707,311,506,502	1.48	5.0	5.18
	June	1,691,648,656,972	-0.92	5.0	5.35
	July	1,676,874,014,003	-0.87	5.0	5.39
	August	1,667,948,185,732	-0.53	5.0	5.47
	September	1,665,271,774,765	-0.16	5.0	5.52
	October	1,685,694,841,816	1.23	5.0	5.51
	November	1,717,526,526,716	1.89	5.0	5.49

	December	1,725,026,769,627	0.44	5.0	5.33
1993	January	1,885,078,681,335	9.28	5.7	6.06
	February	2,031,581,747,056	7.77	6.0	6.10
	March	2,026,409,567,759	-0.25	6.1	6.10
	April	2,021,955,374,173	-0.22	6.1	6.14
	May	2,041,802,554,884	0.98	6.1	6.22
	June	2,013,050,753,545	-1.41	6.1	6.29
	July	2,048,925,233,365	1.78	6.2	6.35
	August	2,053,189,480,238	0.21	6.2	6.46
	September	2,064,701,518,095	0.56	6.2	6.42
	October	2,066,849,893,465	0.10	6.2	6.41
	November	2,064,649,026,372	-0.11	6.3	6.40
	December	2,060,711,978,754	-0.19	6.3	6.51

Source: Central Bank of Nicaragua.

Notes: 1. Monetary reform January 1988: 1000 old córdobas = 1 new córdoba; 2. Monetary reform May 1990: introduction córdoba de oro with parity 1 to 1 with US dollar. Figures in Table express exchange rate in córdobas nuevas; and 3. Monetary reform March 1991: devaluation exchange rate to 5 córdobas de oro per dollar. Table shows exchange rate in córdobas de oro from this date onwards.

TABLE A1.1
MACROECONOMIC INDICATORS 1960-94

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
GDP and Expenditures growth (%)																				
GDP		7.49	10.89	10.87	11.70	9.59	3.24	6.97	1.34	6.22	1.38	3.30	2.22	6.42	14.19	0.15	5.21	8.41	-7.87	-26.48
Consumption		7.95	11.11	7.97	9.08	9.70	2.63	10.96	-0.68	1.83	1.57	2.10	2.26	5.17	13.16	1.16	5.23	8.64	-4.07	-22.86
Private consumption		6.30	5.37	10.14	9.25	7.92	0.09	11.84	3.47	5.15	9.05	2.68	9.98	7.10	11.20	18.79	10.84	8.01	20.93	7.10
Public consumption		8.15	11.78	9.95	9.07	9.86	2.86	10.89	0.44	1.55	0.92	2.04	1.54	6.42	13.34	-0.38	4.64	8.71	-6.81	-27.12
Gross Domestic Investment		9.27	24.88	10.40	33.55	16.53	12.23	0.04	12.73	15.04	1.16	3.29	33.02	104.40	40.66	-40.81	2.37	65.81	-57.64	-143.66
Fixed investment		9.65	27.83	10.31	37.57	17.58	13.47	0.92	14.65	16.46	1.14	3.29	7.82	33.18	25.22	5.80	4.72	32.65	44.57	-64.92
GDP per capita		4.39	7.70	7.98	8.59	6.88	0.75	4.45	0.99	3.25	0.84	0.02	0.92	3.24	10.35	3.40	0.98	4.67	11.31	-32.88
Inflation																				
GDP deflator (annual inflation rate)		0.10	0.68	0.32	4.51	0.79	3.72	1.27	4.49	1.19	3.57	1.78	2.57	17.48	23.03	3.06	9.28	7.99	5.03	38.38
CPI (avg. annual inflation rate)														27.00	13.30	7.50	2.80	11.40	4.60	48.20
Money supply (% of GDP)																				
M1											10.52	10.71	12.35	15.13	12.34	11.46	12.80	11.46	12.31	21.28
Quasi money											6.29	7.66	10.74	11.49	10.17	11.85	14.80	14.84	13.57	11.44
Domestic Credit supply (% GDP)											39.87	41.17	42.19	38.99	38.68	44.77	50.30	52.31	59.86	68.62
to public sector											1.48	1.27	0.13	5.43	6.82	-7.58	3.48	-2.59	3.59	7.23
to private sector											38.39	39.90	42.06	44.41	45.51	52.35	53.78	54.90	56.27	61.39
External balance and debt																				
Current account balance (% GDP)	-2.24	-1.25	-2.52	-1.64	-2.03	-4.20	-8.44	-10.56	-6.35	5.27	-5.22	-5.46	2.36	8.67	-16.33	-11.37	-1.96	-8.39	-0.81	15.13
External debt (% of GDP)											18.7	21.7	26.0	29.9	29.8	37.9	36.9	60.5	70.0	88.6
External debt (in US$ million)											147	179	225	324	453	593	663	1274	1427	1429
Fiscal balance																				
Fiscal balance, Central Government (% GDP)	-0.46	-0.50	0.01	0.89	1.04	0.55	-0.55	-1.88	-1.13	-1.31	-1.03	-1.87	-3.47	-1.18	-2.76	-5.78	-3.85	-6.99	-8.08	-6.15
Revenues (% of GDP)	10.35	10.09	10.14	11.17	10.48	11.20	11.18	10.56	9.65	9.53	10.58	11.26	10.63	12.22	12.68	12.06	12.12	12.18	11.56	13.39
Grants (% of GDP)	0.32	0.15	0.08	0.09	0.15	0.23	0.52	0.29	0.09	0.12	0.22	0.57	0.15	0.79	0.44	0.14	0.10	0.09	0.06	0.45
Current Expenditures (% of GDP)	8.31	8.52	7.50	7.67	6.68	7.77	8.38	9.04	8.79	8.59	8.83	8.88	8.64	8.10	7.85	10.06	9.61	10.44	13.93	17.83
Fixed investment	2.01	1.88	2.34	2.14	2.00	2.49	3.25	3.24	1.86	1.70	2.01	2.37	1.90	1.70	1.97	3.17	2.94	6.25	2.82	1.02
Consolidated Public Sector Deficit	-0.46	-0.50	0.01	0.89	1.04	0.55	0.55	-1.88	-1.13	1.31	-1.03	1.87	3.47	-1.18	2.29	5.78	3.85	-6.99	-8.08	-6.15
Revenues (% of GDP)	10.35	10.09	10.14	11.17	10.48	11.20	11.18	10.56	9.65	9.53	10.58	11.26	10.63	12.22	12.68	12.06	12.12	12.18	11.56	13.39
Grants (% of GDP)	0.32	0.15	0.08	0.09	0.15	0.23	0.52	0.29	0.09	0.12	0.22	0.57	0.15	0.79	0.44	0.14	0.10	0.09	0.06	0.45
Current Expenditures (% of GDP)	8.31	8.52	7.50	7.67	6.68	7.77	8.38	9.04	8.79	8.59	8.83	8.88	8.64	8.10	7.85	10.06	9.61	10.44	13.93	17.83
Fixed investment	2.01	1.88	2.34	2.14	2.00	2.49	3.25	3.24	1.86	1.70	2.01	2.37	1.90	1.70	1.97	3.17	2.94	6.25	2.82	1.02

MACROECONOMIC INDICATORS 1960-94

	1980	1981	1982	1983	1984	1985	1986	1987	1988 1/	1989	1990	1991	1992	1993
GDP and Expenditures growth (%)														
GDP	4.61	5.36	-0.82	4.61	1.57	4.08	-1.02	0.71	12.45	-1.70	0.25	0.24	0.43	0.72
Consumption	20.73	-8.82	-5.72	7.08	3.46	1.55	2.49	1.09	0.11	13.26	4.04	8.42	2.93	6.57
Private consumption	34.77	13.43	16.90	37.06	17.30	7.00	4.00	5.00	39.29	21.01	23.19	34.79	4.03	4.99
Public consumption	17.79	-14.14	-12.86	-5.62	-5.06	-8.06	-8.24	-2.83	42.81	-9.68	15.01	33.66	2.62	-7.01
Gross Domestic Investment	-376.22	52.91	-17.59	8.73	0.88	-0.60	-1.23	-1.54	29.40	14.92	13.93	10.71	-6.77	-6.85
Fixed investment	152.22	60.09	-19.25	4.70	2.19	1.12	-6.08	1.01	12.03	18.14	11.35	8.95	9.11	4.65
GDP per capita	1.16	0.57	4.17	1.19	4.68	7.31	4.24	4.11	15.35	4.85	3.60	3.48	2.87	3.98
Inflation														
GDP deflator (annual inflation rate)	36.98	11.72	16.75	11.00	38.96	167.19	281.46	523.08	13611.63	4709.25	10120.90	377.10	23.67	25.00
CPI (avg. annual inflation rate)	35.30	23.90	24.80	30.80	35.20	207.70	620.00	770.90	10205.00	4771.40	7489.60	2734.60	80.60	20.40
Money supply (% of GDP)														
M1	19.50	20.79	22.62	33.09	44.56	48.14	44.27	53.95	52.69	23.53	14.69	9.74	9.12	6.90
Quasi-money	11.88	11.68	11.13	12.92	14.88	10.26	7.93	3.57	7.67	10.60	11.78	7.38	8.77	11.50
Domestic Credit supply (% GDP)	68.72	73.86	79.34	104.50	107.87	85.97	56.11	51.19	81.02	60.84	123.84	50.96	34.03	203.29
to public sector	11.14	8.44	15.53	45.22	48.51	41.78	20.34	12.89	19.15	13.95	33.77	13.00	1.62	166.59
to private sector	57.59	65.42	63.81	59.29	59.36	44.19	35.77	38.30	61.87	46.89	90.07	37.96	32.41	36.70
External balance and debt														
Current account balance (% GDP)	-18.93	-23.85	-14.91	-15.86	19.25	12.92	-9.58	5.24	43.56	35.13	19.48	16.28	41.13	33.25
External debt (% of GDP)	98.4	98.6	105.5	157.0	165.0	216.8	284.7	316.2	520.9	567.6	564.2	558.2	587.1	602.0
External debt (in US$ million)	2121	2414	2876	3941	4584	5439	6275	7055	7550	8226	8801	9260	10792	10987
Fiscal balance														
Fiscal balance, Central Government (% GDP)	-8.34	-7.94	-11.54	-19.86	-22.68	-21.76	-15.70	-16.22	-25.06	-3.46	11.42	4.10	3.29	0.63
Revenues (% of GDP)	22.18	24.36	25.69	31.24	35.19	32.33	32.38	27.72	20.34	23.05	11.36	19.49	20.53	19.43
Grants (% of GDP)	0.65	0.94	0.87	1.88	0.77	0.59	1.48	0.53	0.48	3.36	1.72	11.60	4.33	6.90
Current Expenditures (% of GDP)	26.06	31.12	34.91	41.45	45.78	48.95	45.32	42.35	40.54	30.47	26.31	27.41	27.09	24.98
Fixed investment	4.67	3.61	4.01	6.73	8.04	7.50	4.20	3.51	3.65	1.32	0.72	2.10	3.37	2.11
Consolidated Public Sector Deficit	-8.00	-7.10	11.24	19.68	21.36	-22.41	14.32	17.00	27.29	4.58	11.27	4.04	-3.79	0.48
Revenues (% of GDP)	27.03	29.93	30.83	36.16	40.90	37.76	36.74	30.08	22.53	29.01	14.77	25.08	28.68	28.54
Grants (% of GDP)	0.71	1.07	0.93	1.92	0.79	0.63	1.52	0.57	0.56	3.52	1.89	11.96	4.90	7.84
Current Expenditures (% of GDP)	26.06	31.12	34.91	41.45	45.78	48.95	45.32	42.35	40.54	30.47	26.31	27.41	27.09	24.98
Fixed investment	6.21	5.89	6.14	9.02	9.79	9.74	5.02	4.46	7.21	5.25	1.51	4.37	8.42	7.26

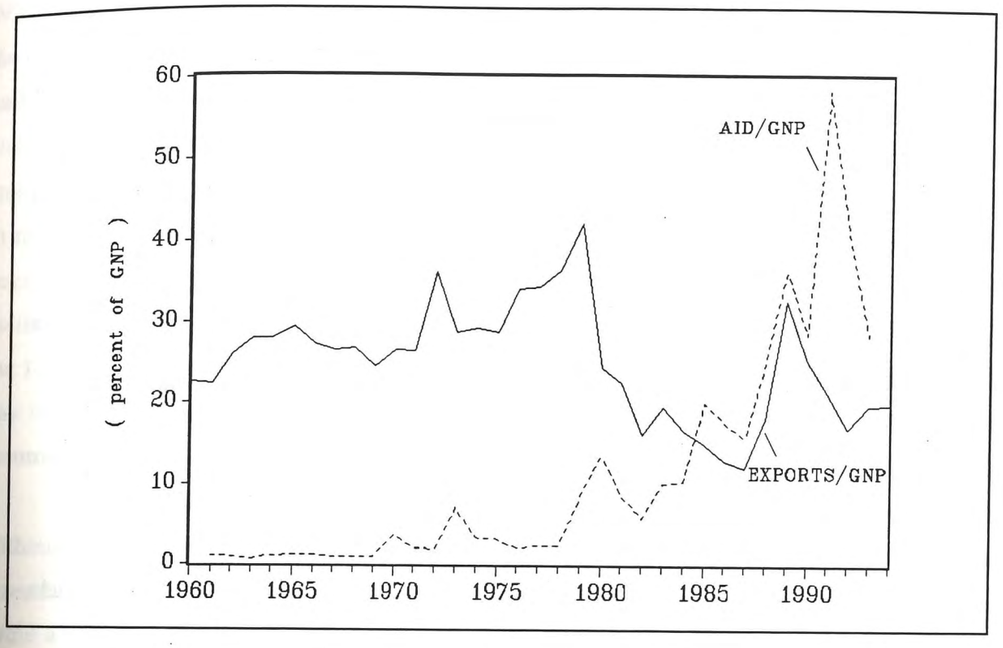
Source: Statistical Appendix

CHAPTER 2
SOURCES AND USES OF FOREIGN AID

2.1. Introduction

Foreign assistance to Nicaragua underwent major changes over the last two decades. Firstly, the level of aid inflows has increased substantially. In the 1970s, aid flows - defined as official transfers and net concessional lending - corresponded to less than 3 per cent of GDP, and 6 per cent of exports. In 1993, aid inflows equalled almost 50 per cent of GDP and were more than twice the size of exports (Figure 2.1)[1]. Secondly, the origin of aid flows has shifted from, principally, assistance from the former socialist countries (plus some European assistance, from Sweden and the Netherlands in particular) in the 1980s to a broader Western-based support (US, Europe, multilateral) in the 1990s. This shift is directly related to the change in political regime in 1990, changes in the international political climate and in Nicaragua's external relations in Nicaragua's external relations, changes which have a parallel in shifts in the pattern of foreign trade. Thirdly, there have been substantial variations in the forms of aid and the conditionality attached to it. In the 1970s, aid was mainly directed to specific projects, while in the 1980s, and to an even greater extent in the 1990s, it came mainly in the form of balance of payments support (de Franco, 1994). A major difference between the aid given in the 1980s and that of the 1990s is that most assistance from the former socialist countries came in the form of non-liquid commodity support, while the balance of payments support from the US, Western Europe and the multilateral agencies is mainly liquid finance conditional upon the implementation of far-reaching policy reforms.

Figure 2.1
Aid and Exports as % of GDP, 1970-93



Note: Aid excludes debt cancellation.

2.2. Aid in the 1970s

As indicated in Chapter 1, before the 1970s Nicaragua's dependence on international assistance was quite limited. In 1970, the total external debt amounted to US$ 147 million, less than 20% of GDP, half of it being concessional (Table S.18, Statistical appendix). However, reconstruction needs after the earthquake of 1972 led to a spurt in public expenditures and import demand. Internal and external balances widened further as a consequence of rising costs of the emerging civil war and ensuing capital flight. As government revenue did not increase, foreign savings had to fill the gaps. Donations from abroad, as well as concessional lending, increased in importance after the earthquake. The Inter-American Development Bank (IDB) provided most multilateral support. As for bilateral assistance, the United States entirely dominated the picture, although some EC member countries like Germany and the UK increased their aid levels. Nevertheless, the bulk of financial resources were supplied by commercial banks in the form of long and medium-term loans on market terms to the public sector. Complementary funding came from the international financial institutions and bilateral sources. At the end of the decade, foreign debt had passed US$ 1 billion, equal to 70 per cent of GDP. The share of concessional debt had declined from half to less than one third of the total external debt.

2.3. Aid in the 1980s

After the Sandinista revolution, foreign aid altered in structure, size and form. Capital flight and reconstruction needs required that there be sufficient foreign exchange for the imports of both consumer goods and producer goods. Immediately following the toppling of the Somoza regime, there was a large inflow of resources from the donor community as a whole, particularly from the World Bank and the IDB and a wide range of bilateral donors, including the US, Western Europe, socialist countries and Latin American countries. A considerable part of aid was given as aid-in-kind to deal with the most acute needs: food, machinery, medical equipment and so on. Some countries (mainly Latin American) extended commercial credits. Mexico and Venezuela also agreed to supply oil to Nicaragua on generous terms. Hence, the new regime was able to finance critical imports and, at least in the short run, meet its financial obligations to foreign creditors, debt payments which had

accrued under the last years of the Somoza regime.

With the new foreign policy of the Reagan administration, however, financial support from the US ceased after 1981 (Heriot, 1982; and TNI-CRIES, 1988). The position of the US also had considerable influence on multilateral financing. With its dominant position in the IDB and the World Bank, the US used its vetoing power to block new lending. Heavily indebted and facing falling export revenues, the Nicaraguan government found it increasingly difficult to meet old and new contractual payments schedules. Under US pressure, and as Nicaragua began to accumulate payment arrears with the multilateral banks, they reduced their assistance in the years that followed. From 1983 onwards, no new loans were granted from the IDB, and similarly, the World Bank stopped its lending in 1984. As Nicaragua failed to pay its oil bill, Mexico and Venezuela withdrew their supplies, although, after 1985, Mexico resumed its position as an important trading partner.

Although multilateral grant aid was maintained, the non-availability of multilateral lending threatened to impose severe financial constraints. Bilateral aid had to increase in order to avoid a collapse of import capacity. Some Western European countries, notably Norway, Finland, France, the Netherlands, Norway and Sweden, did maintain their financial support throughout the period albeit at a varying degree. However, as it turned out, their support was insufficient to make up for the export losses created by the US trade embargo.

Faced with an increasing domestic demand for resources and a sharp reduction in foreign supply of funds, Nicaragua turned to the socialist block. In the latter half of the 1980s, foreign financing came predominantly from countries like the USSR, East Germany, Bulgaria and Cuba. Socialist countries provided some 40 per cent of total external assistance between 1981-1983 and more than 70 per cent between 1984-86 (Table 2.1).

The US trade embargo and the loss of oil supply in combination with severe foreign exchange constraints resulted in an extremely limited choice of trading partners. Dependent on imports for both consumption and production, with feeble export earnings, and cut off

Table 2.1 Foreign Aid by Source, 1979-87 (as percentage of total)

	1979	1980	1981	1982	1983	1984	1985	1986	1987
Credits	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Multilateral	78.4	32.5	11.9	18.8	15.0	0.0	0.0	0.0	0.0
Bilateral	20.6	67.5	88.1	81.3	85.1	100.0	100.0	100.0	100.0
Western Europe	5.4	12.0	8.3	7.8	19.8	5.3	11.5	12.9	18.6
Spain	0.0	0.0	3.4	2.6	8.0	0.0	3.8	12.9	14.4
Netherlands	0.0	3.3	2.5	0.3	5.9	1.5	1.1	0.0	1.6
Americas	15.2	36.2	45.6	27.8	19.1	16.2	1.4	9.6	0.0
Mexico	0.0	14.0	37.2	22.8	12.3	7.3	0.0	0.0	0.0
Venezuela	0.0	2.3	3.6	5.0	0.0	0.6	0.0	0.0	0.0
USA	0.0	13.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Asia and Africa	0.0	0.0	14.1	0.6	7.7	0.0	0.0	5.0	0.0
Socialist countries	0.0	19.3	20.1	45.1	38.5	78.5	87.0	72.5	81.4
Grants	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Multilateral	10.5	16.9	12.0	14.7	6.9	12.2	4.8	10.4	16.8
Bilateral	89.4	83.1	88.0	85.3	93.0	87.7	95.1	89.6	83.1
Western Europe	35.6	11.6	14.3	15.2	11.1	14.6	6.2	10.6	31.7
Sweden	6.4	3.8	4.5	4.6	2.9	2.5	2.4	5.8	14.5
Netherlands	7.3	4.4	0.6	2.1	1.9	1.9	1.2	0.6	0.0
Americas	46.3	23.1	22.1	6.9	1.9	1.0	0.6	0.7	0.2
Asia and Africa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0
Socialist countries	7.5	48.4	51.6	63.2	80.0	72.1	88.3	76.6	51.2
Total in US$ million									
Credits	271.7	528.7	728.7	498.9	437.8	628.3	924.5	201.2	229.2
Grants	88.8	147.8	73.8	98.8	181.2	144.3	272.1	316.7	155.6

Source: Taylor *et al.* (1989), based on data supplied by *Ministerio de Cooperación Externa* (MCE).

from both important trading partners and most international financial resources, the Nicaraguan government had no option but to accept the goods and the terms of trade offered by the socialist block. Trade with the USSR would, among other things, guarantee access to essential supplies of oil. In general, the socialist countries charged higher interests on their credits than other donors. On the other hand, repayment obligations were "softer" and there was an understanding that there would be some degrees of freedom for rescheduling if necessary (TNI-CRIES, 1988).

The change in sources for external financing was reflected in the changing trade pattern. Aid funds from the socialist block were almost exclusively source-tied balance of payments support, i.e. these were to be used for the purchase of goods from the donor countries. Fuel, machinery, transport equipment were thus provided through import credits or in the form of direct commodity aid. More than two thirds of total assistance came in the form of commodities tied both to donor-supply and specific use (Taylor *et al.*, 1989). Evidently, the new trade pattern had little to do with comparative advantages and efficient international exchange of goods and services. The new trading partners had little interest in Nicaraguan traditional or nontraditional exports, and so the bilateral trade balance remained negative.

Aid in the 1980s led the creation of counterpart funds. This system, however, entailed some difficulties. First of all, aid was to a large extent channeled from donors directly to various parts of the public sector, and it proved very difficult to centralise the administration of the funds. Secondly, using the socialist countries' overvalued currencies as accounting prices would have resulted in overvalued domestic prices. Instead, the Nicaraguan government chose to heavily subsidise imported goods. When the black market exchange rate premium began to expand at an accelerating pace, the subsidised imported goods became ridiculously cheap. In terms of black market dollars, the domestic price of the Eastern European capital goods was so low that it would even pay off to purchase to dismantle and use the spare parts. Import costs rose for the government as it had to repay the loans in hard currency, while the value of the loan reflected the cost of imports valued at overvalued rubles and other soft currencies. But import costs fell for the importers, who could acquire the aid-financed

imports at a subsidized price valued at the official rate of the *córdoba*. These subsidies put severe strains on the fiscal balance. The problem was eased somewhat after the devaluations and other adjustment and stabilisation measures introduced in 1988, after which the demand for capital goods completely vanished.

The combined aid and trade diversion restricted the Nicaraguan import capacity in real terms. Disposable, unconditioned liquid funds for investment were scarce. Import costs spiralled, partly reflecting increased transport costs with the new trading partner. Moreover, as indicated, the contractual prices tended to exceed the market value of the imported commodities, an effect which was reinforced by the misaligned exchange rates. More importantly, Nicaragua was confined to machinery and equipment of inferior quality, often obsolete and inadequate for the country's needs to improve productivity. A major drawback was that the existing capital stock, inherited from investments in the 1970s and early 1980s, originated from the US and Europe, and was incompatible with the new suppliers' technology. Thus, reparation, rehabilitation and maintenance of older equipment became virtually impossible, as no spare parts could be imported. Relics from the socialist aid in the form of (unused) trucks and tractors still occupy some hectares of land in the vicinities of the Central Bank building in Managua.

2.4. Aid in the 1990s

Ample liquid financial resources became readily available to support the new government that took over. Long term external debt amounted to more than US$ 8 billion, of which approximately 35 per cent was concessional, which - compared to a GNP of 1.6 billion - indicates the magnitude of the problems and the need for negotiations. The large payment arrears to the multilateral organs had to be resolved in order to obtain new funding, drastic measures needed to be taken to stabilise the economy, and the physical and social costs of the civil war had to be dealt with. Essentially, aid flows since the 1990s have had the following main purposes:

1. *Disarmament* - in 1990, between US$ 40-60 million were used to disarm and

reintegrate the *contra* rebels and finance a reduction of the armed forces, in an endeavor to demilitarise and pacify the nation.

2. *Stabilisation* - resources were granted at an initial stage to curb hyperinflation. Aid flows permitted a recovery of the international reserve position, thereby decreasing the pressure on the *córdoba*.

3. *Replace internal financing of the fiscal deficit* - especially in 1992 and 1993, the role of aid was to help finance the government budget. Non-aid government revenues are limited, while domestic financing of the deficit was ruled out by monetary policy targets. Under this financial constraint, there is now a one-to-one relationship between the fiscal deficit and aid. Investment in physical infrastructure, health and education is almost entirely dependent on the availability of external resources.

4. *Debt repayments and debt reduction* - since 1990, significant amounts of aid have been used to service and reduce Nicaragua's public external debt, particularly in order to restore relations with the multilateral financial institutions.

Although external support did not come quite to the extent or with the speed hoped for, Nicaragua has certainly received substantial amounts of aid since 1990. As a large part has been used exclusively to pay some of the accumulated arrears, specifically to the World Bank and the IDB, actual net inflows have been notably smaller. In 1991, aid in terms of credit and grants to Nicaragua reached the extreme level of 90 per cent of GDP. However, almost half was in the form of debt cancellation (primarily of debt owed to USAID) and debt repayments, which substantially reduced the actual inflow of aid.[2] An agreement on a Standby credit was signed with the IMF, only to be halted in December 1992, when the Fund claimed public expenditures to be too much out of control to justify continued lending. A new agreement, the ESAF[3] 1994-96, has been negotiated since Spring 1993. Negotiations have been difficult, in part because the Nicaraguan government has found it very difficult to adhere to the very strict conditionality implied by the agreement. However, there was also a

resurgence of tense US-Nicaraguan relationships as US Congress, through the Helms amendment, cut US$ 116 million of a US$ 731 million two-year package in 1992, on the grounds that the government would effectively still be in Sandinista hands. After a personal visit of managing director Michel Camdessus to Managua, the official signing of the ESAF agreement is nevertheless expected by mid-1994.

The size of inflows of concessional financing has fluctuated in recent years (see Table 2.2). USAID has reemerged as the by far most important source for grant aid, providing almost 50 per cent of total grants between 1990 and 1993.[4] Other important grant donors have been Sweden, Norway and Japan. With most of the arrears on multilateral debt settled, new loans were made available by the IDB and the World Bank. Also Japan and Taiwan entered as new creditor countries. Table 2.2 also displays the irregular pattern of the tying status of the actual inflows. In 1991 and 1992 most funding was untied, but more recently there has been a tendency towards more tied funds. Most of the grant aid has become tied.

Strong policy conditionality has been attached to much of the balance of payments support. The multilateral agencies (including the IDB) have conditioned their support to the implementation of the stabilization and structural adjustment programme agreed with the IMF (see also Chapter 1).

Counterpart funds are now subject to stricter control. The monetary impact is ambiguous, as different donors apply different criteria. Some funds are immediately sterilised. On the other hand, some donors - such as Japan - use the counterpart funds system administered by the UNDP to allocate their aid and insists that the commodities imported be sold at a subsidised *córdoba* price (in the case of Japan, 80 per cent of the accounting price).

Although Nicaragua has been reasonably successful in securing external resources in the initial stages of the process of transformation towards a liberalized market economy, it is only realistic to expect aid flows to decrease in the future. Given the current financial constraints, this tendency is alarming. In the current situation, public finances are fully

Table 2.2 Foreign Assistance, 1990-94 (US$ million)

	1990	1991	1992	1993	1994
Credits	288.3	604.6	411.8	199.0	363.9
Liquid funds	1.6	156.1	334.7	86.7	187.7
Tied funds	286.7	72.9	45.8	99.4	176.2
Debt repayment	0.0	375.6	0.0	0.0	0.0
Capitalization of interest payments	0.0	0.0	31.3	12.9	0.0
Grants	201.6	844.4	378.6	290.7	204.1
Liquid funds	92.7	355.0	142.1	72.7	40.0
Tied funds	108.9	230.0	183.5	164.9	164.1
Debt forgiveness[1]	0.0	259.4	53.0	53.1	0.0
Total	489.9	1449.0	759.1	476.8	568.0
Liquid funds	94.3	511.1	476.8	159.4	227.7
Tied funds	395.6	302.9	229.3	264.3	340.3
Debt repayment	0.0	375.6	0.0	0.0	0.0
Debt forgiveness	0.0	259.4	53.0	53.1	0.0
Total excluding debt repayment and forgiveness	489.9	814.0	706.1	423.7	568.0

Notes: 1. Debt forgiveness by source: 1991: US-AID (US$ 259.4 million); 1992: France (48.6) and The Netherlands (4.4).; and 1993: The Netherlands (34.6) and Finland(18.5).

Source: Ministerio de Cooperación Externa. Data for 1994 are preliminary estimates of expected foreign assistance.

dependent on external support. A number of investment programmes, such as the social investment fund (FISE), are nearly fully aid financed. Further, as analyzed in Chapter 1, the stability of the exchange rate and, hence, domestic prices has been strongly dependent on adequate aid inflows.

2.5 The external debt situation

External debt is about six times GNP and thirty-fold the value of 1993 export earnings. This enormous external debt overhang has been a crucial issue in the discussions between the Nicaraguan government and the donor community. It remains one of the fundamental obstacles to economic recovery, and as pointed out, has been central in the aid negotiations. Table 2.3 shows the dramatic increase in external debt during the last two decades. Nicaragua still owes nearly US$ 3 billion to the former socialist countries, out of a total debt of US$ 7.5 billion.

In the debt renegotiations undertaken since 1990, different mechanisms have been used in the restructuring process: (i) "pure" debt forgiveness, (ii) swap of debt for non interest-bearing bonds, and (iii) debt-for-investment swaps, where investments funds thus freed are to be used according to donor preferences, e.g. for specific project support, for specific sector support, or for the privatisation process. The Nicaraguan government has clearly given highest priority to reestablishing sound relations with the most important international official creditors, mainly the multilateral financial institutions and the Paris Club. Nicaragua paid back more US$ 300 million of accumulated arrears to the World Bank and the IDB. In December 1991, the Nicaraguan government reached an agreement with the member countries of the Paris Club on a reduction of 50 per cent of the arrears. The agreement also included a passus which opens up for the possibility of further negotiations on rescheduling by the end of 1994. This, however, will be contingent the ESAF-agreement with the IMF.

While the focus has been on multilateral creditors, repayment to the commercial banks has been given lowest priority and remain largely unresolved. The commercial debt overhang has instead become an issue in aid negotiations, where aid supposedly should be used for debt

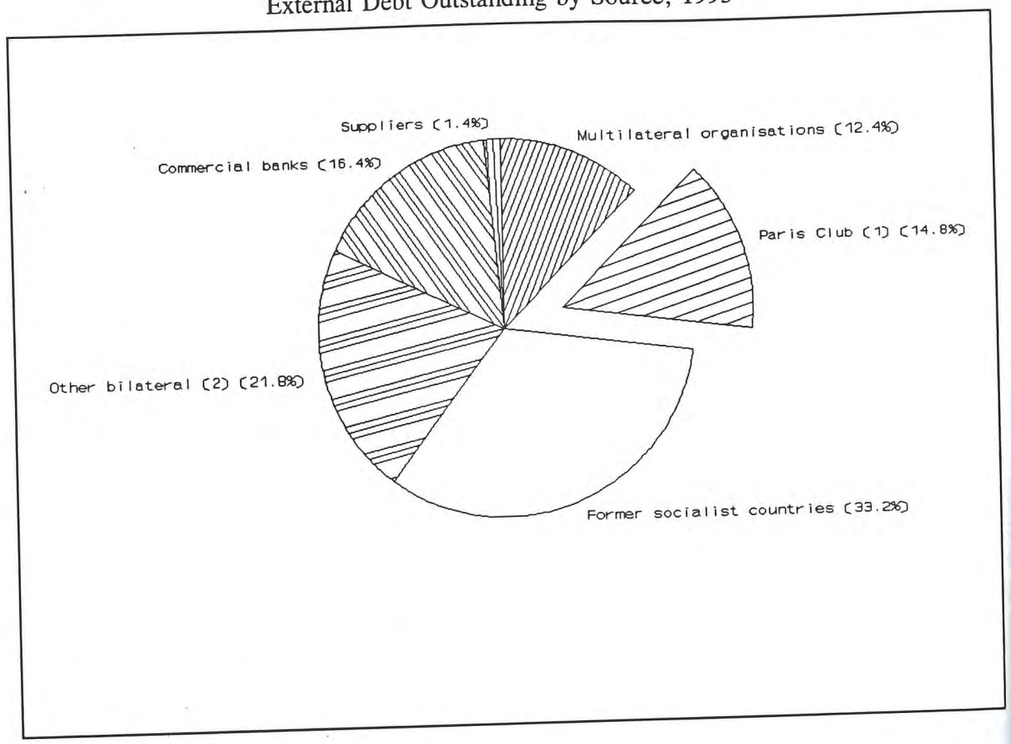
Table 2.3 Outstanding External Debt by Creditor, 1970-93
(US$ million and per cent of total external debt)

	1970		1979		1984		1989	
	US$	Per cent	US$	Per cent	US$	Per cent	US$	Per cent
Multilateral	48.1	32.8	344.2	31.7	668.5	16.5	928.1	12.4
Bilateral[1]	53.4	36.4	316.0	29.1	1737.8	42.8	2267.0	30.2
Socialist countries	0.0	0.0	0.0	0.0	355.4	8.8	2904.8	38.7
Comercial banks	37.6	25.6	392.5	36.2	1258.6	31.0	1296.6	17.3
Other[2]	2.0	7.7	5.2	31.6	2.9	39.1	1.0	111.6
Total	146.8	100.0	1084.3	100.0	4059.4	100.0	7508.1	100.0
Concessional	74.8	51.0	304.6	28.1	1314.9	32.4	2719.1	36.2
Non-concessional	72.0	49.0	779.7	71.9	2744.6	67.6	4788.9	63.8

Notes: 1. Bilateral, excluding socialist countries.
2. Includes, suppliers credits, bonds and buyers' credits.

Source: World Bank, Debtor Reporting System.

Figure 2.2
External Debt Outstanding by Source, 1993



Notes to Figure 2.2:

1. Of the 14.8 per cent that make up the Paris Club debt, a share of 1.8 per cent is not renegotiable, 4 per cent was renegotiated in 1991 and 9 per cent can be renegotiated. Debt to former East Germany makes up more than half of the latter category. The East German debt is not included in the figures for former socialist countries.

2. Mainly Latin America, China and India.

buy-backs etc. In June 1993, representatives of the Nicaraguan government met with the donor community in an effort to address the problem. The idea was to launch an operation to repurchase commercial debt, to inititate negotiations with commercial creditors, and simultaneously secure the aid funding necessary for the manoeuvre. However, the exercise was largely a failure, as Nicaragua only managed to obtain US$ 54 million, less than three per cent of total oustanding debt with the commercial banks

As of today, the debt situation remains unresolved, despite the large amounts of external financing which have been granted for the exclusive purpose of debt repayments. With no further reductions, debt service for the next years would equal approximately US$ 800 million per annum, which, given yearly export incomes around US$ 300 million, results in a debt service ratio of 250-300 percent. The gap between available resources and resources needed is alarming.

Presently, almost half of total long, medium and short term external debt is due to ex-socialist countries (excluding debt to former East Germany) and to commercial banks, mostly in the form of accumulated payment arrears. There is little belief that this debt will ever get paid, which is reflected in the low value on the secondary market, where it sells at 8 per cent of face value. Discussions on rescheduling with former lenders, such as Russia, as well as negotiations on alternative solutions for the commercial debt, will hopefully continue during 1994. High priority debt constitutes approximately one fifth of total, and includes debt with the multilateral financial organisations and the part of the Paris Club debt which already has been renegotiated or is non-negotiable.[5] The remaining debt to the countries in the Paris Club as well as debt to other official bilateral creditors and suppliers (e.g. Brazil and the Central American countries) will most likely be subject to further renegotiations during 1994.

From the Nicaraguan side, it is strongly felt that the country should qualify for a large debt cancellation in line with the Polish and Egyptian cases. Of specific importance is the question of Nicaraguan debt with former East Germany, which is now included in the German debt. As this debt makes up more than half of the Paris Club debt which remains to be negotiated,

it will be a crucial issue in future discussions. So far, however, there are no clear signals of a favourable solution for Nicaragua.

Notes to Chapter 2

1. The data presented in Figure 2.1 are derived from estimates of the Banco Central de Nicaragua, World Bank (World Debt Tables) and the Ministerio de Cooperación Externa. "Aid" is defined as official transfers and net long-term concessional lending. Estimate for 1991 does not include debt cancellation.

2. In the balance-of-payments accounting, the amounts of debt cancellation are booked first as an unrequitted transfer, which is subsequently used to "repay" the outstanding debt. In the "old" procedures the transfer is booked as an official, current transfer. Under the new IMF Balance of Payments Statistics guidelines, as well as the revised 1993 SNA, the booking should rather be as an unrequitted capital transfer.

3. Enhanced Structural Adjustment Facility.

4. Excluding debt cancellation of USAID debt amounting to US$ 259 million in 1991.

5. Debt contracted with Club de Paris countries after 1988 is not renegotiable.

CHAPTER 3
THE MACROECONOMIC IMPACT OF AID

3.1 Introduction

The traditional economic justification for development aid is that it will increase growth in the recipient country. Recent demands for additional foreign assistance by the Chamorro government to the multilateral institutions have been expressed in the same vein: the funds should foster economic growth. Much of the traditional argument has been based on the two-gap approach in which growth is either limited by domestic savings or foreign exchange availability. If the binding constraint is a lack of foreign exchange, then additional capital inflows will raise import capacity, import-constrained investment and thereby economic growth. If g is the growth rate of output, K the stock of productive capital, I investment in fixed assets, M is import capacity and AID is the amount of foreign assistance, one could summarize the argument as:

$$g = g(K,\dots) \tag{3.1}$$

$$\Delta K = I = k(M,S\dots) \tag{3.2}$$

$$M = m\left(AID,\ \Delta F_{oth},\ X,\ \frac{P_x}{P_m},\ \dots\right) \tag{3.3}$$

Starting from equation 3.3, more aid will lead to a higher import capacity, thus higher investment (equation 3.2) and ultimately higher growth (equation 3.1).

This fairly simple view has been challenged for various reasons:[1]

(1) One is the issue of fungibility: aid is said to be fungible if aid inflows primarily intended to raise investment and imports do not lead to an increase in these variables by the same value. Aid may lead to higher government consumption or lower taxes, which will affect the national savings level (S) and thus offset some of the positive effects of aid on investment and growth (equation 3.2). Aid inflows could also displace other foreign borrowing (ΔF_{oth}) or reduce exports (X) through 'Dutch disease' effects (i.e. an appreciation of the real exchange rate), and thereby import capacity may not increase by the full amount of the aid inflow (equation 3.3). Of course, these different forms of fungibility may occur simultaneously.

(2) A second reason why there may not be a straightforward positive relation between aid and growth is that aid inflows may affect incentives and create economic distortions. One type of disincentive effect was just mentioned: aid may lead to a real exchange rate appreciation and affect export growth. Another could be related to particular forms and uses of aid, e.g. food imports affecting agricultural prices and incentives to farmers. Aid provided in the form of technical assistance may provide a disincentive to the demand for local skilled labour and build up of local staff capacity. On the other hand, aid related to investment in social infrastructure and services may positively impact on growth and provide new incentives for productive investment through the formation of human capital. This element was not included in the growth equation (3.1) and also will not show as direct increases in (physical) investment (I) or imports (M). Moreover, the effect of investment in human capital on labour productivity and growth is likely characterized by important lags, so the relation will not be immediate. The same point will apply to many investment projects in physical infrastructure.

(3) Aid may affect macroeconomic policies, which in turn may influence aggregate demand and incentive mechanisms. In Nicaragua, the inverse seems to have applied after the Sandinista revolution, when the change in policies and, more importantly, the politics forced a shift from Western aid donors to aid from the former socialist

countries, implying a drastic change in the modalities of aid (see Chapter 2). After 1990, the new government stood for a new political break with the past. While aid initially came in generously with apparently fairly loose strings attached, official external assistance is now virtually fully tied to the implementation of specific structural adjustment policies under the guidance of the IMF and the World Bank.

This chapter addresses the first set of issues only, while we will speculate about the second and third set of issues in the concluding chapter.

3.2 An accounting framework

Following the methodological framework set out for this study (White, 1994), we take the national accounting identity:

$$\textit{Savings gap} = \textit{Current account deficit} = \textit{Capital inflow} \qquad \textbf{(3.4)}$$

as a starting point for the analysis of the macroeconomic impact of aid in Nicaragua. The gap between gross national savings and investment (savings gap) must be financed by a net inflow of foreign savings (capital inflow), which in turn must equal the current account deficit. Development aid was thus far considered as part of the capital inflow (equation 3.3), but in practice aid tends to be provided either as a grant - that is an official transfer (OT) - recorded on the current account or as a concessional long-term loan (ΔFL_c). The net aid inflow (net of amortization on past loans) is therefore given by:

$$AID = OT + \Delta FL_c \qquad \textbf{(3.5)}$$

The current and capital accounts of the balance of payments may be written in more detail as:

$$X - M + (NFP + OT + PCT) = -(\Delta FL_c + \Delta FL_{oth} + \Delta FS + OKI + \Delta R) \qquad \textbf{(3.6)}$$

where X and M are exports and imports of goods and services, NFP net factor payments, OT

and PCT net official and private transfers, ΔFL_c net disbursements of concessional loans, ΔFL_{oth} net disbursements of other long-term loans, ΔFS net short-term inflows and OKI net other capital inflows (including direct foreign investment) and ΔR the change in reserves.

Combining equations (3.5) and (3.6) gives the accounting identity for import capacity (realized imports):

$$M = X + NFP + PCT + AID + \Delta FL_{oth} + \Delta FS + OKI + \Delta R \qquad (3.7)$$

The orthodox view is that aid leads to a one for one increase in imports. Obviously, countries with a large aid inflow must have a large trade or current account gap. It could be said that aid fills that gap, but - as pointed out in the introduction - it may as well *create* that gap, either because aid is exogenous and generates a certain import capacity or because aid affects other variables in equation (3.7) and domestic spending aggregates.

3.3 Decomposition analysis of import capacity

This section details the major factors determining the changes in import capacity in Nicaragua during 1970-1993. Using equation (3.7) as a starting point, we identify *changes* in import capacity both in price and volume terms, applying the dollar price index of Nicaraguan imports as the appropriate deflator. The precise methodology is explained in Appendix A3.1, the results (expressed in millions of US$) are in Table 3.1.

Table 3.1 shows once more the severe instability in Nicaragua's import capacity over the past decades. The trend level (but what's in a name in the present case) of imports is about US$ 500 million, but deviations from this trend level have been 50 percent or more in many years. Such fluctuations are too violent by any standard.

During the early 1970s import capacity increased, with a strong expansion (of US$ 223 million) in 1973, due to substantial aid and other capital inflows associated with the aftermath of the 1972 earthquake. From 1975 onwards, import capacity started to collapse

Table 3.1 Decomposition of Import Capacity, 1971-93
(absolute changes in millions of US$)

		Price effects		Volume effects									Interaction effects
Year	ΔM	Δ(Px/Pm) .X_{v0}	Δ(1/Pm) .(M_{v0}-X_{v0})	ΔX	ΔPCT	ΔOT	Δ(ΔFL_c)	Δ(ΔFL_{nc})	ΔOKI	ΔDS	ΔARR	ΔRSC	Δ(ΔR)	
1971	34.7	0.3	-0.1	-26.5	6.2	4.7	43.7	-108.8	-47.5	32.4	0.0	0.0	66.8	63.6
1972	4.4	-17.3	-5.8	203.3	-0.8	5.1	-15.2	-4.9	-138.1	13.2	0.0	0.0	-98.6	63.4
1973	222.7	99.7	-11.7	-205.9	4.9	131.6	22.1	115.0	115.2	3.7	0.0	0.0	-8.1	-43.7
1974	47.3	-196.9	-14.0	63.3	2.2	-127.9	11.4	-52.6	34.7	51.9	0.0	0.0	260.3	15.0
1975	-153.6	-117.0	-1.1	116.0	-0.2	1.0	-6.9	-31.5	-66.1	14.5	0.0	0.0	-41.2	-21.1
1976	-27.5	204.7	-0.7	-8.9	4.7	-11.8	-10.4	-140.2	51.2	-58.4	0.0	0.0	-121.7	64.1
1977	315.7	58.6	-2.0	10.2	-3.8	-0.8	14.3	242.2	-189.8	0.1	0.0	0.0	162.9	23.8
1978	-329.1	-136.7	-2.2	113.7	-4.4	-3.2	-3.6	-235.2	-169.0	-17.5	0.0	0.0	154.0	-25.1
1979	-375.3	-16.0	-3.2	-215.2	-2.9	95.7	-4.6	31.6	-74.2	103.2	0.0	0.0	-258.4	-31.4
1980	292.1	-78.0	-3.2	-243.1	-9.1	13.4	120.8	3.1	504.6	-206.8	121.1	69.7	9.1	-9.5
1981	94.9	-90.6	-0.4	142.7	28.9	-66.5	-23.5	143.0	17.5	17.5	-48.2	32.5	-58.1	-0.0
1982	-188.5	6.8	0.7	-102.0	-24.1	-11.2	-34.3	85.6	-303.6	-3.3	18.9	21.8	143.4	12.8
1983	91.2	28.5	0.5	44.0	1.7	35.4	71.9	-141.4	-144.5	-282.0	220.0	317.3	-51.5	-8.8
1984	31.8	1.9	0.3	-32.7	-1.8	14.8	25.4	-47.3	77.2	78.2	39.2	-176.9	51.3	2.3
1985	52.2	-39.9	0.2	-103.9	-7.5	28.5	209.8	67.4	-12.6	7.4	-61.0	-97.1	40.3	20.8
1986	-157.8	-100.1	-1.2	-34.9	4.7	-9.2	-143.4	114.4	-249.0	104.0	45.0	-4.0	73.6	42.3
1987	27.5	47.9	-0.5	-21.2	0.7	24.6	-79.3	-63.7	254.2	-197.0	217.0	-155.7	12.4	-11.8
1988	195.1	41.5	4.4	10.7	1.3	100.5	19.7	-137.7	438.4	-63.7	23.3	17.3	-238.1	-22.5
1989	-234.6	2.2	-0.1	103.0	5.9	-27.2	231.1	-233.4	-418.5	-90.5	130.0	-24.9	105.0	-17.3
1990	-54.6	-37.9	-1.6	79.6	5.1	20.2	-174.1	146.8	-21.2	30.7	-47.2	0.0	-47.0	-8.0
1991	144.8	-11.2	-0.8	-71.2	-15.7	696.1	-137.6	1634.6	223.0	-1917.8	-918.1	699.7	-55.1	19.1
1992	69.8	-21.4	0.2	-32.7	-2.9	-506.9	276.4	-487.4	73.0	1184.2	1240.7	-1693.4	22.8	17.2
1993	-88.0	10.6	0.0	76.0	-0.1	-85.6	-176.9	-41.2	102.1	234.4	-115.9	-170.3	105.7	-26.7

Source: Calculations based on Banco Central de Nicaragua, Balance of Payments data.

(except 1977) reaching an all time low in 1978-79 when capital flight (ΔOKI is an indicator) peaked and exports (ΔX) collapsed. Import capacity recovered during most years of the 1980s, associated with generous aid inflows, accumulation of arrears and refinancing of external debt. However, recovery was interrupted by steep falls in 1982, 1986 and 1989, years characterized by either strong falls in the export volume and/or access to adequate external financing.

In 1989 and 1990, import capacity fell, despite a substantial recovery of export volumes. Falling aid inflows ($\Delta OT + \Delta FL_c$) from socialist countries and a resurgence of capital flight (ΔOKI) in the wake of the 1990 elections were the main factors behind this trend.

Massive aid inflows enhanced import capacity during 1991-93. During 1991, official transfers increase by nearly US$ 700 million, but import capacity by only US$ 145 million. Much of the difference went into debt servicing (ΔDS) and payment of accumulated arrears in the past (ΔARR) as part of the strategy to get to terms again with the international financial community, particularly with the IDB, the IMF and the World Bank. An even larger source of refinancing of external debt (US$ 1.6 billion) is from the same institutions, but supplied on non-concessional terms (ΔFL_{oth}). Debt relief and cancellations (among others of USAID debt) during 1991 permit a much lower debt servicing in 1992 and compensate for lower levels of net aid inflows. During the year arrears accumulated again, however, but mainly on socialist country and commercial bank debt (see Chapter 2). Levels of aid inflows, though still high compared to historic levels, fell further in 1993 and contributed to the decline in import capacity in that year. The drop in aid inflows is generally felt to signal a trend that Nicaragua will have to settle for a lower level of foreign assistance in the coming years and hopes will have to be set on a recovery of exports (ΔX) and other capital inflows (ΔOKI, such as direct investment, return of capital flight). Both variables had a positive sign in 1993, but - particularly the export volume - are as yet not part of a strong upward trend. To the extent import capacity is the main constraint on growth in Nicaragua, the observed trends sketch Nicaragua's uncertain economic future - to put it mildly.

Table 3.1 also highlights the importance of external shocks in import and export prices on Nicaragua's import capacity. Terms of trade effects ($\Delta P_x/P_m$) have been mostly (strongly) negative during most of the 1970s and (mildly) positive during the 1980s, except for 1985 and 1986 when the terms of trade fell rather steeply. During the first half of the 1990s, the terms of trade have again been unfavourable. but in both periods these have played only a minor role in explaining the trends in import capacity. The rise in import prices eroding the "purchasing power" derived from net inflows of non-trade foreign income and capital flows $[\Delta(1/P_m).(M_{v0}-E_{v0})]$ has been of minor importance, mainly due to the low level of net non-export earnings in the base year.

In sum, the decomposition analysis suggests clearly that there is no one to one relationship between aid inflows and import capacity. This fact is shown in the scatterplot of changes in the aid volume[2] and changes in real import capacity (Figure 3.1). The two variables are not significantly correlated. In fact, none of the components that explain the changes in Nicaragua's real import capacity show single-handedly a strong correlation with the import volume. Appendix Tables A3.1-3 give the additional evidence from which it can be concluded that:

(a) There is a weak direct link between aid inflows and import capacity.

(b) Aid inflows are strongly and positively correlated with other, non-concessional long-term capital inflows, suggesting a crowding in between the two types of aid. However, this only holds for the period after 1980 (Table A3.3), with the correlation strongly driven by the strong absolute increases in both types of flows in 1990-93.

(c) Particularly in 1980-93, aid inflows - or, rather the grants (OT) component of it - tend to increase with debt servicing, suggesting that a large share of grants has gone into debt servicing.[3] This strong link is maintained whether taking debt service payments due or those actually paid.

Figure 3.1 GDP and Total Import Volume
(millions of córdobas of 1980)

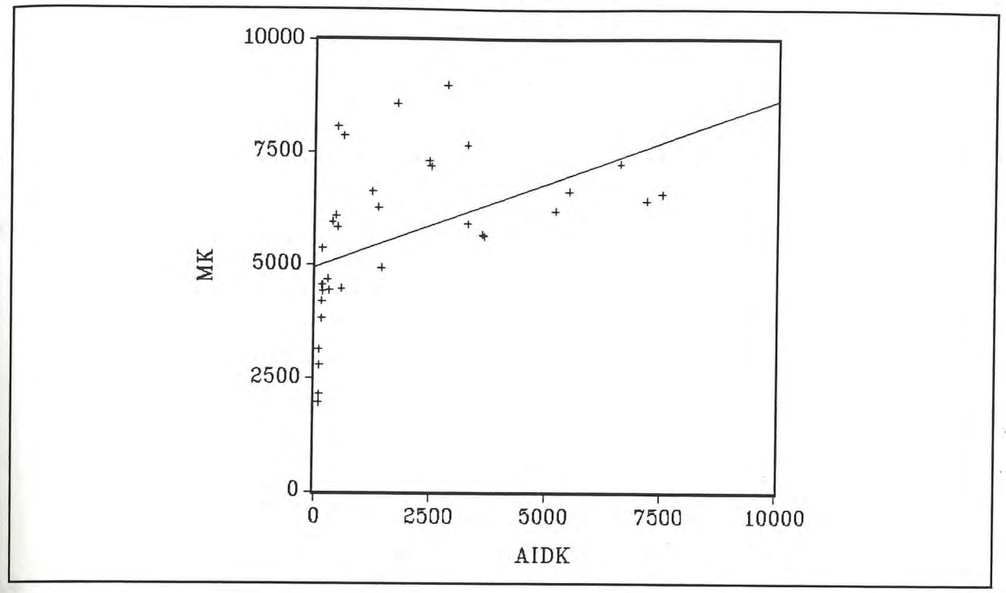
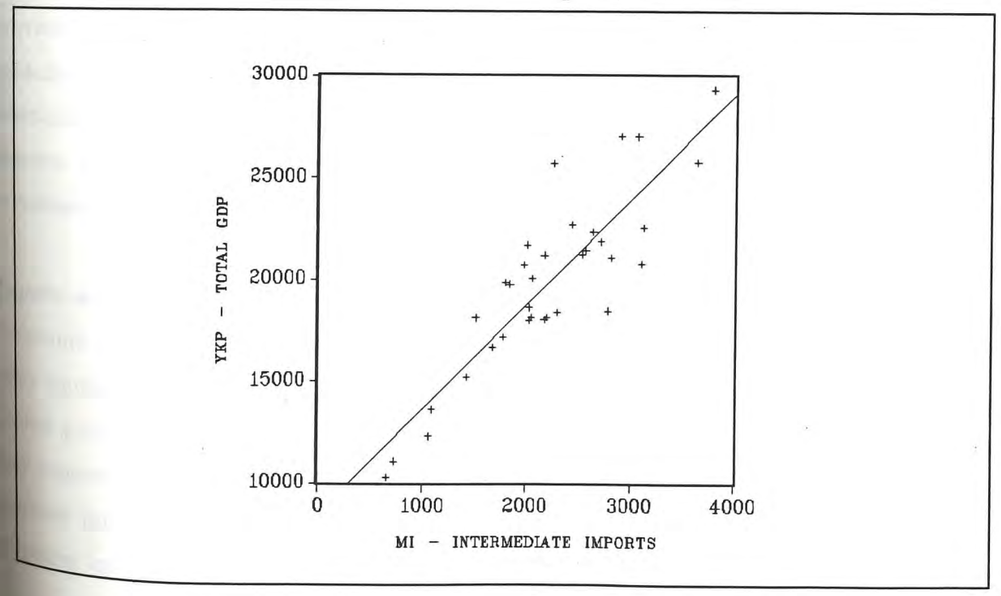


Figure 3.2
GDP and Intermediate Imports, 1960-93



(d) Increases in aid inflows are weakly, but negatively correlated with export volumes. It should be noted that the negative link is stronger in the 1970s (Table A3.2) when aid inflows were low, than in the 1980s and 1990s (Table A3.3) when aid inflows were high. In other words, this simple correlation does not seem to make the case for a typical Dutch disease phenomenon directly linked to the aid inflow.

(e) In 1980-93, import capacity appears most dependent on changes in other capital inflows (OKI) and uses of foreign exchange reserves (ΔR). The link with other capital inflows is not surprising since these relate, in the case of Nicaragua, mainly to short-term (trade) credits and, if it has a negative sign, capital flight. The link with reserve movements seems to express that over the past decade and a half, import capacity has been pushed to its maximum as permitted by available reserves, which seems consistent with the permanent foreign exchange problems the country had to face.

3.4 Aid, imports and investment

The introduction pointed at a number of potential mechanisms leading to fungible aid inflows and which could undermine aid's impact on imports and investment. We concluded in the previous section that there is no one-to-one relationship between aid inflows and import capacity in Nicaragua. Aid inflows do interact with other determinants of import capacity (particularly debt servicing), but have been inadequate to sustain a particular level of imports. In this section we investigate how fluctuations in import capacity have affected investment and growth.

Imports and growth

Economic growth may be foreign-exchange constrained if export earnings and net aid and other capital transfers are insufficient to purchase necessary imports of intermediates and capital goods required in the production process. In some developing countries aid inflows may support investment projects adequately, but may leave a foreign-exchange shortage to purchase foreign inputs and repairs, making imported intermediates the effective binding constraint on growth (for this argument in the case of Tanzania see Doriye, White and

Wuyts, 1993).

In Nicaragua, the level of imports increased from around US$ 100 million in the early 1960s to US$ 450 million in the 1970s and around US$ 750 to 850 million in the 1980s and 1990s (Table 3.2). The share of intermediate goods (excluding fuels) rose during the 1960s and 1970s to almost half of total merchandise imports, a shift related to the modernization of export agriculture and the build up of an industrial sector. During the 1980s this share fell; initially, because of rising costs of fuel imports and, subsequently (in 1985-89), because of rising capital good imports related to aid inflows from the socialist countries (see Chapters 1 and 2). The share of consumer good imports fell during the Sandinista government, but rose steeply to one third in 1990-93 as a consequence of the consumption boom created by the trade liberalization under the adjustment policies of the Chamorro government.

The available evidence indicates that the relationship between aid, imports and growth has been a complex one in the case of Nicaragua.[4] In the previous section it was shown that there is only a weak link between aid inflows and increases in import capacity, as aid was either inadequate to compensate exogenous shocks or leaked abroad (directly or indirectly) in the form of debt servicing or capital flight. The link between import capacity and growth also does not appear to be straightforward in the case of Nicaragua. Exploratory data analysis suggests the following:

(a) Overall GDP and GDP growth are positively related to foreign exchange availability for intermediate imports (Figure 3.2), but this obscures the fact that agricultural output does not seem to be constrained by imported inputs (Figure 3.3a)[5], while - in contrast - industrial output seems strongly import dependent (Figure 3.4a). Thus, emerging foreign exchange constraints, e.g. due to falling aid inflows, will hit essentially on the industrial output and employment.

(b) The direct link between output growth and capital good imports is weak (insignificant) in the case of both agriculture (Figure 3.3b) and industry (Figure 3.4b). Yet, in the

Table 3.2 Import Composition by Sector, 1960-93 (per cent share of total imports)

	1960-65	1966-70	1971-77	1978-79	1980-84	1985-89	1990-93
Consumer goods and fuels	41	35	33	37	40	33	47
Consumer goods	n.a.	n.a.	29	26	21	17	31
Non-durable	n.a.	n.a.	23	21	18	13	26
Durable	n.a.	n.a.	6	6	3	3	5
Fuels	n.a.	n.a.	4	11	20	16	16
Intermediate goods	36	41	45	46	36	37	28
For agriculture	n.a.	7	13	5	6	10	4
For industry	n.a.	n.a.	11	26	23	20	0
For construction	n.a.	n.a.	2	4	3	4	0
Investment goods	23	24	23	17	23	30	25
For agriculture	n.a.	n.a.	2	2	3	3	2
For industry	n.a.	n.a.	14	11	14	16	13
Transport equipment	n.a.	n.a.	6	4	7	11	10
Other	n.a.	n.a.	0	0	0	0	0
Total	100	100	100	100	100	100	100
Memo items:							
Total (US$ million)	108.70	189.20	446.80	477.00	859.10	779.10	735.20
Annual GDP growth rate	10.10	3.80	5.90	-17.70	1.90	-4.10	-0.20

Source: Central Bank of Nicaragua and Ministry of Economic Development.

Figure 3.3a
Agricultural output and intermediate imports, 1960-1993

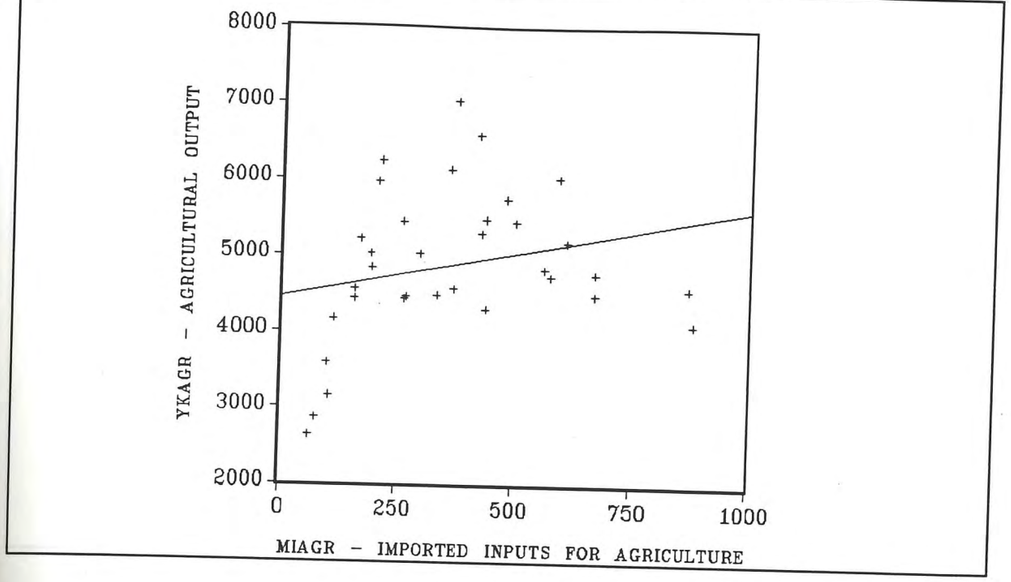


Figure 3.3b
Agriculture and Total Imports for Agriculture, 1960-93

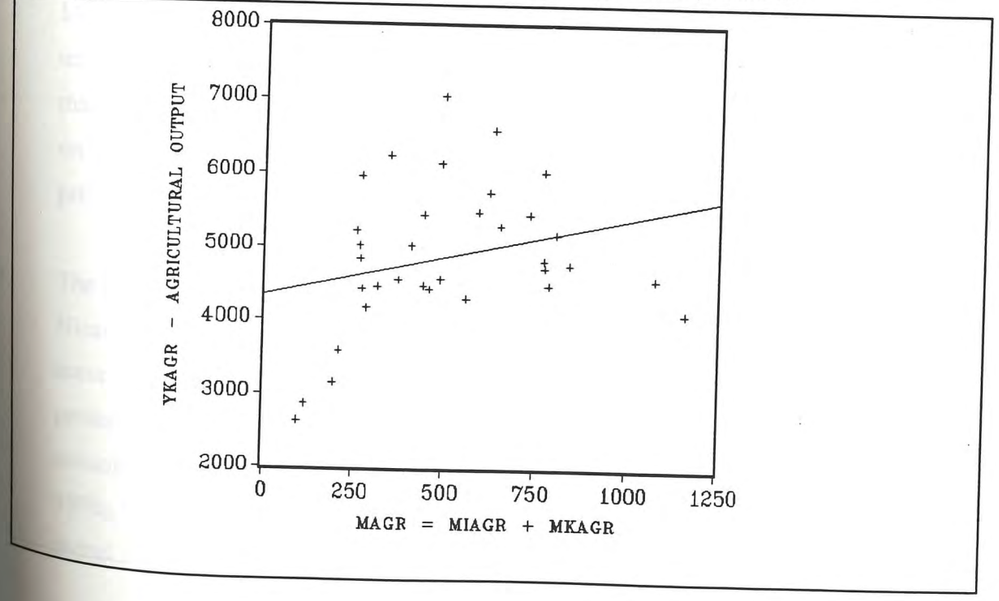


Figure 3.4
Industrial Output and Industrial Imported Inputs, 1960-93

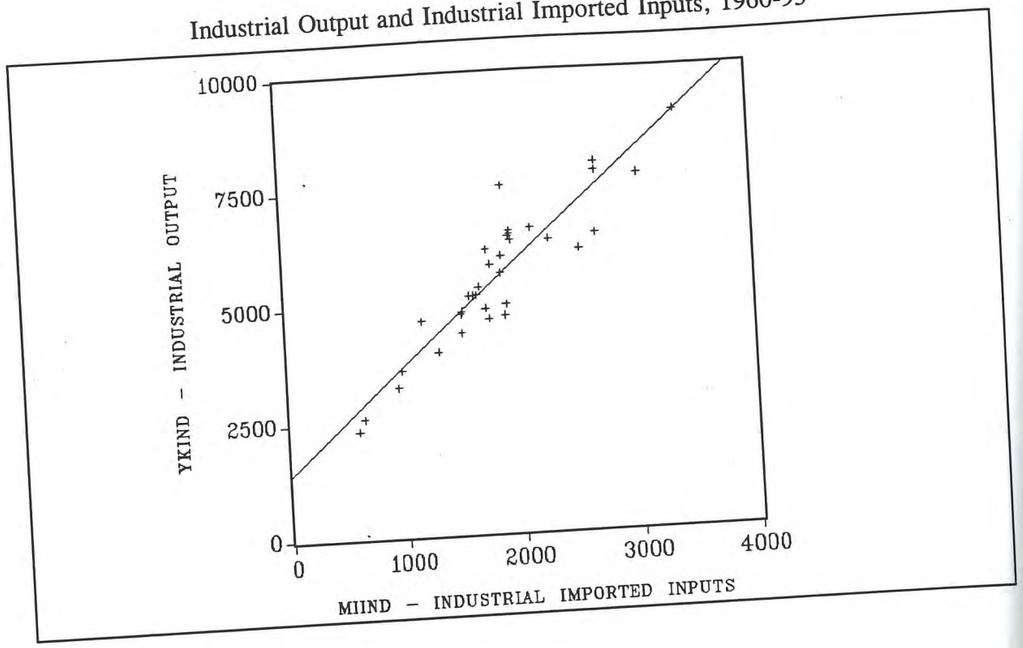
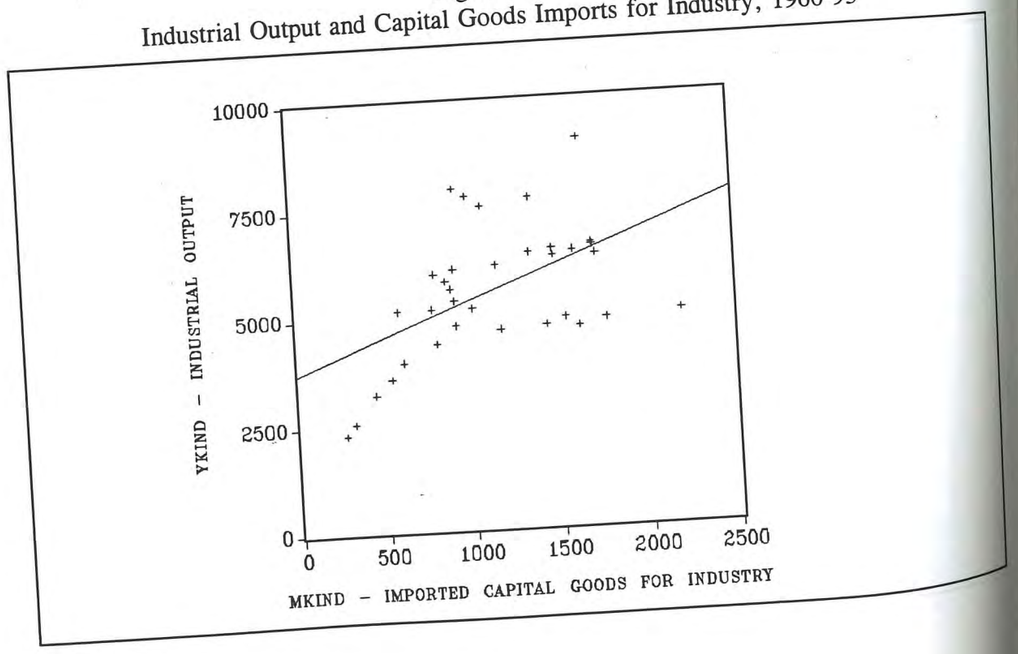


Figure 3.4b
Industrial Output and Capital Goods Imports for Industry, 1960-93



aggregate, investment in fixed assets is significantly dependent on import capacity. Econometric analysis suggests considerable shifts in the marginal import-investment ratio. Table 3.3 shows the estimation results using a reduced-form 'externally constrained accelerator' investment model, which assumes investment demand is a function of import capacity and passed year's investment decisions.[6] After studying the structural breaks in the investment function, it appears that the marginal import-investment ratio doubled from 0.35 in the relatively prosperous period from 1960-77 to 0.70 in 1980-84, but it subsequently fell to 0.20 in 1985-89 and 1990-93.[7]

This pattern fits well into the story told in Chapter 1. The upward shift in the early 1980s seems consistent with the investment boom in this period and the shift towards socialist aid donors who supplied assistance largely in the form of investment goods. Although this kind of support continued to dominate for most of the 1985-89 period the import-investment coefficient collapses, which could be explained by the fact that many aid-financed capital good imports (among others Russian trucks and tractors) never found there way into real investment projects, some were taken apart for spare parts supplies others are still parked next to the Central Bank headquarters in Managua. Import capacity was boosted in 1990-93, when aid inflows reached unprecedented heights (50% of GNP), but also when fungibility was probably larger than ever. As indicated above, part of the new inflows was used to refinance arrears on outstanding debt (particularly with the World Bank and the IDB) and to boost private consumption (see below).

(c) The link between investment and growth is *not* self-explanatory in the case of Nicaragua. The boost in investment levels during the first half of the 1980s was not accompanied by a strong increase in the growth performance. The marginal productivity of capital strongly declined during the 1980s (see Appendix A3.2 for an econometric analysis) and seems to have turned insignificant in the first half of the 1990s.[8] This confirms our impression that whatever little recovery there has been in recent years, it has built on existing output capacity with little to no contribution of

Table 3.3 Externally-Constrained Investment Demand Function 1960-93 (dependent variable is IFKP)

Variable	Model 1 Regression coefficient	t-stat.	Model 2 Regression coefficient	t-stat.
Constant	- 503.4	(-1.72)	45.7	(0.13)
MKP 6077	0.35	(4.05)*	0.35	(4.30)*
MKP 7879	0.29	(1.14)	0.37	(1.65)
MKP 8084	0.70	(3.46)*	0.76	(3.84)*
MKP 8589	0.22	(2.70)*	0.20	(2.78)*
MKP 9092	0.20	(3.07)*	0.21	(3.39)*
P_M/P_I	-	-	-483.1	(-3.97)*
$IFKP_{-1}$	0.68	(6.41)*	0.71	(7.65)*
DUM 7879	-2102.2	(-2.18)*	-2572.9	(-2.96)*
DUM 8084	-3233.3	(-1.87)	-3831.6	(-2.36)*
R^2 (adj)	0.92		0.93	
D.W.	1.88		1.96	
F-stat.	43.9		45.1	

Note: IFKP = fixed investment at constant 1980 cordobas; MKP = import volume at constant 1980 córdobas; period suffix = periods for which slope or intercept dummies were applied; P_M/P_I = relative import price to domestic price of investment goods; DUM = intercept dummy.
* - significant at 5% level.

new investment. Structural adjustment in the form of more efficient productive investment thus still has to take place in Nicaragua.

Summarizing, there is not much empirical evidence in support of the traditional macroeconomic view on the role of aid, in which aid alleviates a foreign exchange constrained domestic investment, thereby triggering economic growth. Not only has aid failed to systematically raise import capacity in the case of Nicaragua, also the link between import capacity and investment and between investment and growth has become problematic since the 1980s. During the years of export-led growth (1960-77) an enhanced import capacity did support productive investment leading into higher growth. In the 1980s import dependence initially increased, but the marginal productivity of capital collapsed without signs of recovery in recent years. Explanations of this breakdown of Nicaragua's growth equation are to be found in the civil war, the trade embargo, the technology effects of aid dependence on the socialist countries and domestic policy failures, as discussed in Chapters 1 and 2. Medium-term growth models developed for Nicaragua (e.g. Gibson, 1993: Sanchez Torres and Uribe, 1994) emphasize the traditional link and thereby seem to miss the point.[9]

Aid, Savings and Fiscal Response

In the traditional two-gap (as well as in the three-gap) approach, aid is assumed to complement domestic savings (aid will lead to higher income and thereby savings). This has been challenged by Griffin (1970) suggesting aid might displace domestic savings as it may lead to rising recurrent government expenditures (not all is invested) and complacency in the tax effort. Griffin's empirical analysis has been heavily criticized (e.g. White, 1992), but this is not to deny the possibility of a negative relationship between aid and domestic savings. However, the channels through which the two macro variables interact need to be investigated. As aid is generally allocated to public sector it is logical to disaggregate the savings-investment balance into those for government an private sectors:

$$\textit{Private savings gap} + \textit{Public savings gap} \equiv \textit{Current Account Deficit} \quad \textbf{(3.8)}$$

or, in symbols,

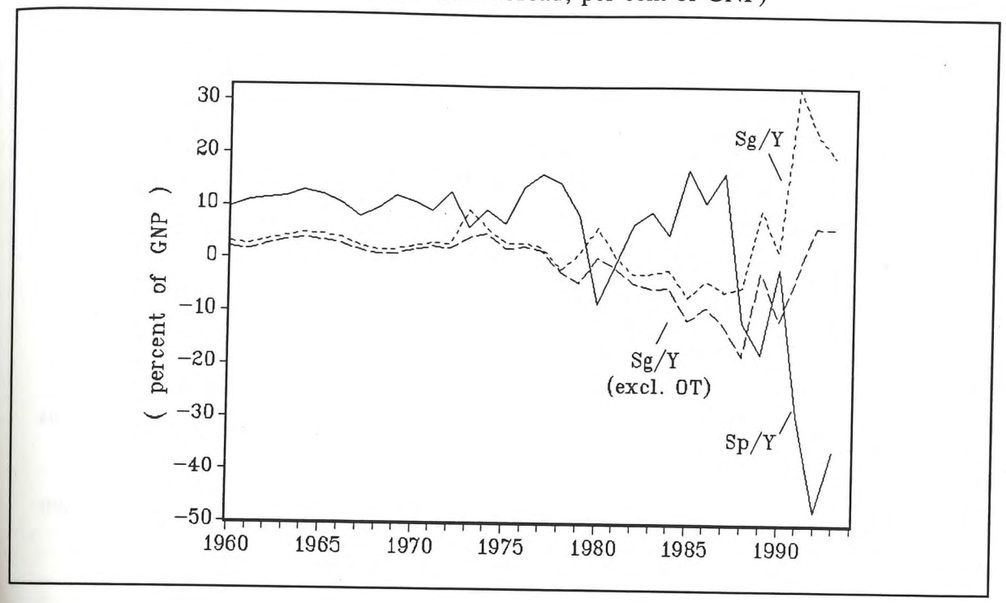
$$(I_p - S_p) + (I_g - S_g) = M - X + NFP + OT + PCT \quad \textbf{(3.9)}$$

where S_p and S_g represent gross savings of private and public sector agents respectively; I_p and I_g are private and public investment; and the external balance variables are the same as before.

The sum of private and public savings equals gross *national* savings, i.e. including grants and private transfers from abroad. As we have seen, grants (official transfers) have become quite significant in the case of Nicaragua and therefore strongly influence savings estimates for the 1980s and 1990s. Figure 3.5 shows the trends in private and public savings rates, before and after transfers from abroad. The evidence based on national accounts and public sector data signals a serious decline in private savings in the second year of the hyperinflation (1988) and a free fall since 1991. The latter decline to negative levels[10] coincides with the consumption boom triggered by the import liberalization and (probably) currency overvaluation. The fiscal adjustment in recent years has allowed for a recovery of public savings (before official transfers) and a return to positive levels, after having been negative since 1981. The rise in public savings (from -11.6 percent in 1990 to 6.1 percent of GNP in 1993) has not been sufficient, however, to compensate for the collapse of private savings. This is evidenced by the fact that gross national savings (even after transfers) have been negative since the late 1980s (see also Figure 1.5 in Chapter 1).

Historically, in the 1960s and 1970s, private savings rates stood at around 11 percent of GNP and public savings fluctuated around 3-4 percent. During the 1980s, until 1987 the inflation tax worked to push up private savings, but - as analyzed in Chapter 1 - eroded public savings. Aid inflows increased during this period, but the question is: did they play a role in the decline of savings? The description of trends and events suggest that, if any, the influence of aid on (public) savings probably has been different from period to period. Aid may affect public savings by raising recurrent expenditures (e.g. counterpart funds used above normal budget) or encouraging complacency in the tax effort, but in as far as aid stimulates income growth it may broaden the tax base and raise public savings.

Figure 3.5
Public and private savings rates, 1960-93
(before transfers from abroad; per cent of GNP)



A simple scatterplot analysis suggests aid inflows had a negative impact on public savings, albeit with strong deviations from the presumed trend (Figure 3.6). This phenomenon is underpinned by an apparent negative impact of aid on government revenue (Figure 3.7) and a positive impact on current public expenditures (Figure 3.8). Such a relationship is also found by Sanchez Torres & Uribe (1994), who apply the Gang-Khan fiscal response model to Nicaragua. Apart from specification problems attached to the Gang-Khan model (see White 1994), Sanchez Torres & Uribe fail to take account of the fact that the fiscal response to aid inflows in Nicaragua shows substantial differences from period to period. With so many structural breaks in trends due to the severe external shocks and policy-regime changes, econometric analysis is a risky undertaking.

Estimates of the shifts in the fiscal response are given in Appendix A3.3. Even though this analysis admittedly suffers from important limitations,[11] the mere objective here is to confirm our hypothesis that the fiscal response indeed has been different under the different policy regimes Nicaragua has witnessed since 1960.

The aid-public savings relationship is analyzed through a functional form in which the public savings depend on GNP growth (source of tax base), aid inflows (grants plus concessional lending) and the inflation rate (Oliveira-Tanzi effect). Public savings refer to the current revenue (excluding grants) less current expenditures of the non-financial public sector. The results show that:

(a) Aid inflows had a weak, but positive impact on public savings between 1960 and 1977, but the relationship turned negative during the 1980s, particularly during 1985-89 (Table A3.4). In the 1990s, there is no longer a significant relationship between aid inflows, a result of ambiguous effects of the adjustment policies conducted since 1991 (see below).

There does not seem to be a major difference when analyzing the effects of grants and concessional lending on public savings (see columns 2 and 3 of Table A3.4), but as

Figure 3.6
Public Savings (excluding grants) and Aid Inflows, 1960-93
(per cent of GNP)

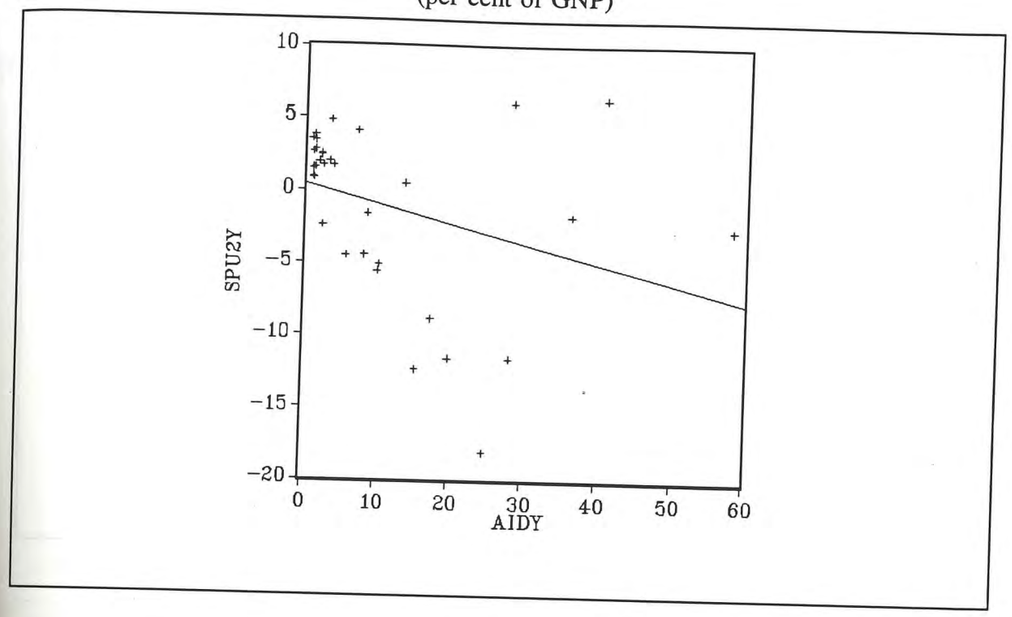


Figure 3.7
Public Sector Revenues (excluding grants) and Aid Inflows, 1960-93
(per cent of GNP)

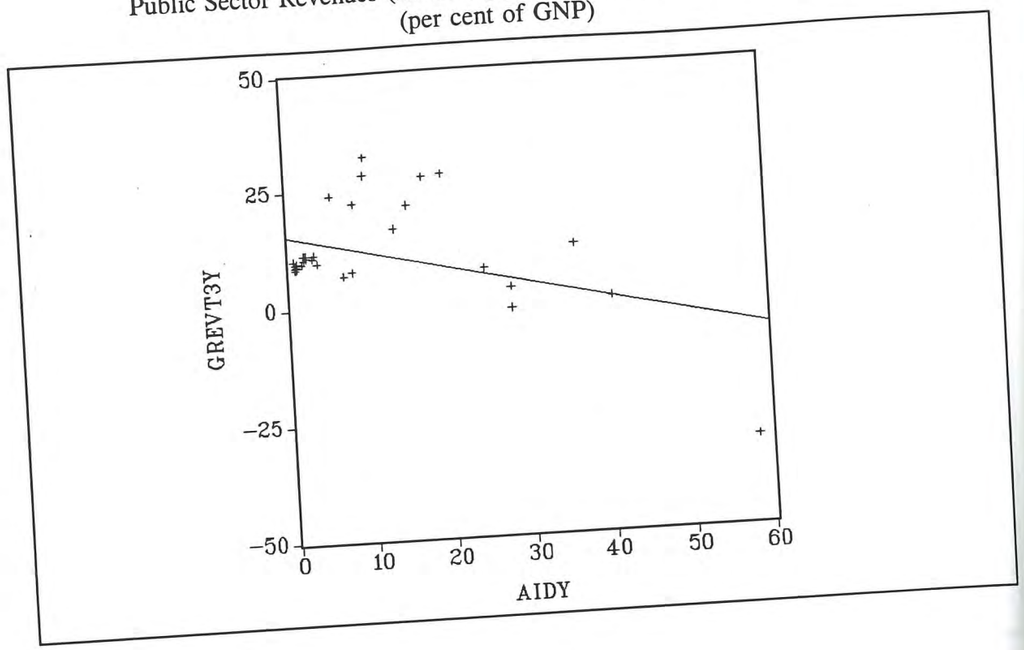
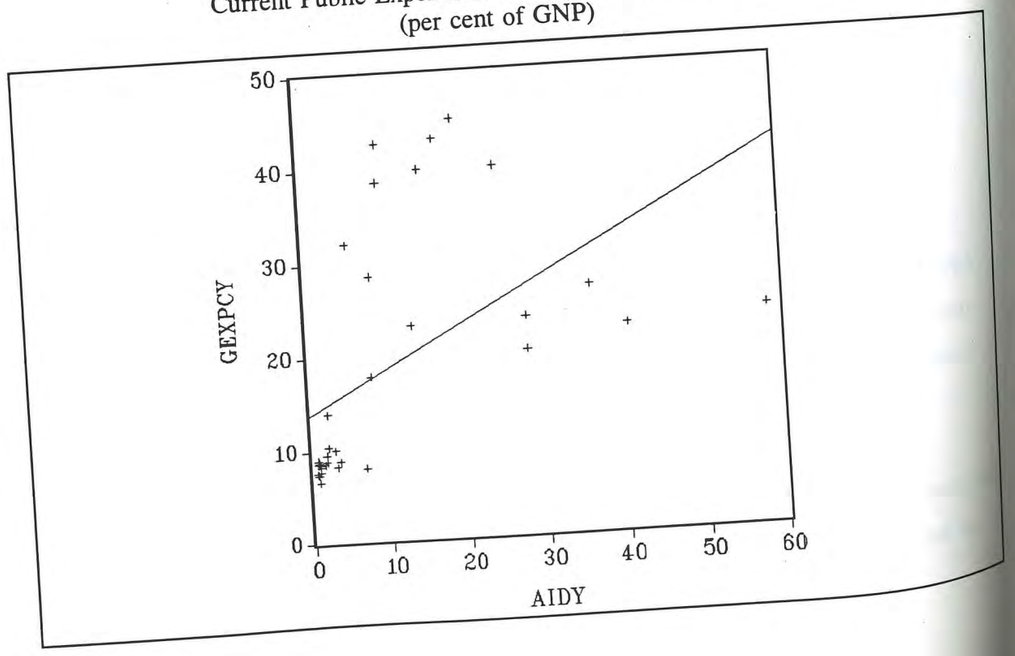


Figure 3.8
Current Public Expenditures and Aid Flows, 1960-93
(per cent of GNP)



indicated below the type of aid inflow does have a distinguishable effect on public revenue and current expenditures.

(b) Public sector revenue is positively related to GNP growth, while aid inflows generally have had a rather ambiguous impact (Table A3.5). In the 1960s and 1970s the effect of aid inflows on public sector revenue was not significantly different from zero. In the first years of the revolution (1980-84), the tax effort improved (see Chapter 1) and complemented the influx of foreign assistance. In contrast, during the years of hyperinflation (1985-89), the tax basis eroded rapidly as price increases run well ahead of the collection of taxes (the Olivera-Tanzi effect). Inflation, in turn, was partly a result of the monetization of the aid inflows, amongst other things in the form of subsidies on commodities imported through aid programmes (see Chapter 1).[12] Fiscal adjustment efforts in the 1990s have mainly fallen on the expenditure side. Policy conditionality attached to aid inflows have not been effective to eliminate the negative impact on government revenue, even though the negative link has become smaller compared to the late 1980s.

These effects relate strongest to the impact of grant aid. Assistance in the form of loans also shows a negative impact on the tax effort in the 1990s, which can be attributed to the highly liquid and fungible nature of the aid in this period. During the 1980s, however, concessional lending appears to have had a positive impact on public sector revenue, an effect which could be partly explained by the support provided by loans to public enterprise activity.

(c) Aid inflows tend to push up current spending of the government and non-financial public enterprises, but this effect seems to have been considerably stronger in the 1980s than in the 1970s or the 1990s (Table A3.6). In the 1960s and 1970s aid flows were probably too small to exhibit a strong effect on public spending, while in the 1990s fiscal retrenchment have contained the expansionary effect of aid. Yet, as shown in Appendix Table A3.6, also during 1990-93 aid inflows have pushed up

current spending by 21 cents out of each additional dollar of aid.

As indicated, in the 1980s, aid inflows directly (debt servicing, maintenance costs, military spending) and indirectly (subsidies on aid-funded commodity imports) stimulated current expenditures. Again, these effects are stronger for grant aid than for loans, but both sources seem to have worked in the same direction. During 1990-93, however, concessional lending has not had a significant impact on current government spending.

As indicated in Chapter 1, aggregate investment peaked in the mid 1970s (in part a response to the reconstruction needs after the 1972 earthquake), collapsed towards the end of the decade because of the civil strive and recovered during the 1980s. Under the Sandinistas, investment recovered largely through a boost in public investment following the nationalization of Somoza's properties and government policies geared at improving physical and social infrastructure. Private investment recovered as well in the first years of the revolution (Figure 3.9), mainly in peasant agriculture. Import constraints, labour supply constraints and the increasing intensity of the civil war lead to a further fall in private investment in the mid-1980s, while also public investment started to decline with the emerging fiscal problems. As discussed in Chapter 1, the Sandinista government made an explicit decision to pay for the war out of investment funds in order to minimize the impact on current transfers (food subsidies etc.) in an attempt to defend the 'social wage'. Private investment rose in the final part of the 1980s, but the rise may well be due to measurement problems in the national accounts. (The combination of hyperinflation, overvalued and multiple exchange rates cause a good deal of distortion in the national accounts for these years, with investment - particularly also commodity stocks - probably being grossly overestimated in these years.) The fall in public investment lasted until 1990, after which it recovered from 1.5 percent of GNP in 1990 to 8.4 percent in 1992, but declined again to 7.3 percent in 1993. The public investment rate of recent years is somewhat below that of the mid-1980s, but well above levels under the Somoza government in the 1960s and 1970s when they stood at 2-3 percent.

Figure 3.9 Public and private investment rates, 1960-93
(per cent of GNP)

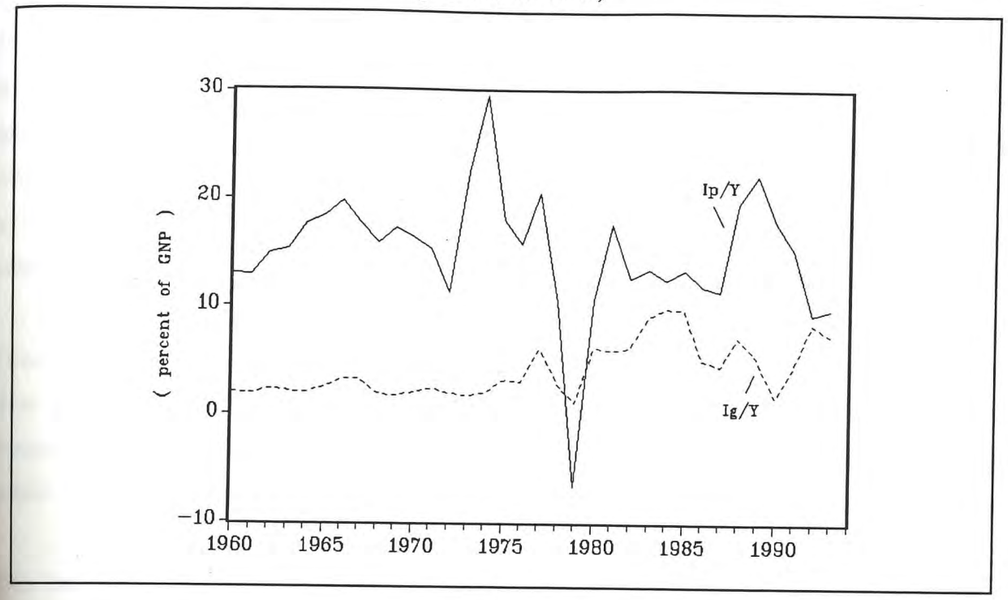
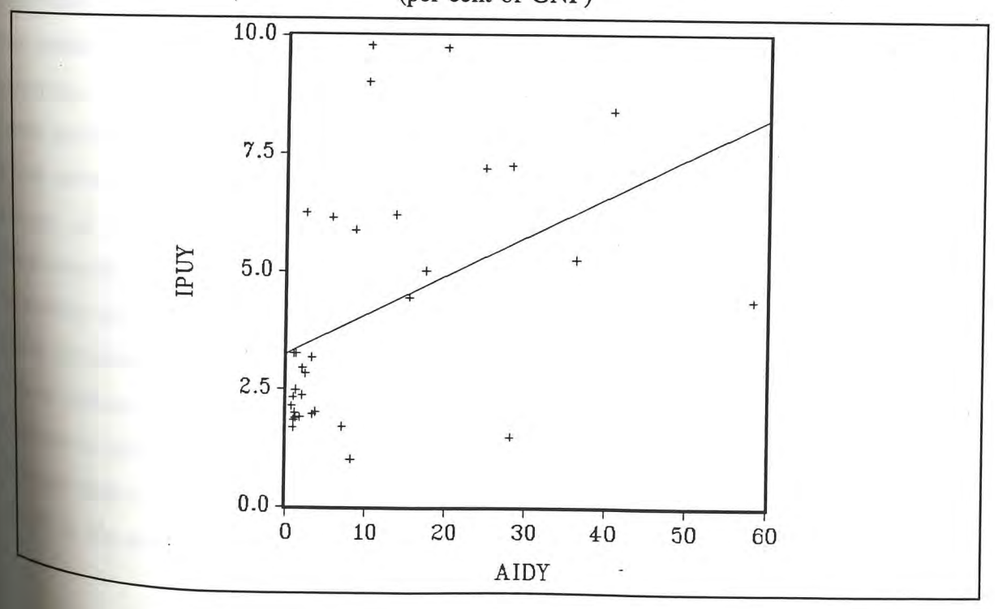


Figure 3.10 Public Investment and Aid Flows, 1960-93
(per cent of GNP)



Public investment has tended to increase with aid inflows (both grants and loans), since the 1980s (Table A3.7). In the 1960s and 1970s, public investment was hardly affected by development assistance. The public investment boom of 1980-84 is shown to have been strongly stimulated by foreign capital inflows (though with a marginal propensity of substantially less than unity, i.e. 0.35), but the link weakens thereafter, also during 1990-93 when public investment recovered. As assessed above, a substantial part of aid was not tied to investment projects, but rather to structural adjustment policy conditions and some debt relief operations.

These results put in doubt the assumption made by many studies on Nicaragua, namely that there would be a firm and positive relationship between aid and public investment. The aid-financed adjustment programme implemented since 1990 has led to a severe retrenchment in public investment, thereby weakening the impact of aid on the public investment rate.

This finding also has consequences for private investment. There is no conclusive evidence about whether public investment stimulates ('crowds in') or discourages ('crowds out') private investment in Nicaragua. The former effect is usually expected to occur when bottlenecks in social and physical infrastructure form a major constraint on production, such that public investment in such activities will form an important incentive for private investors. If, however, on the other hand, financial constraints are tight, enhanced public sector activity could lead to government claims on domestic and foreign finance resources which crowd out those available for private investors. Taylor (1993) and Gibson (1993) assume, in a three-gap model framework, that there is 'crowding in', while - in a combined fiscal response-three gap model - Sanchez Torres & Uribe (1994) find a predominant 'crowding out' effect. Our own investigation tends to agree with Taylor and Gibson that public investment plays an important role in encouraging private investment in Nicaragua. In a more elaborate externally constrained accelerator model it is found that the private sector response to public investment is significant, but showing a two- to three-year time lag (which is longer than usually assumed) and a marginal response coefficient of about 0.5 (which is similar to the one assumed by Taylor and Gibson, although the observed time lag is longer

according to our results).[13] If these results based on past experience still have relevance, we should expect that private investment might recover in 1994-6, following the increase in public investment in 1991-93.

Similar to the relationships between aid and imports and import capacity and growth, also the quantitative analysis of the fiscal response to aid inflows is hampered by the great number of structural breaks in the trends. These breaks could be clearly identified in the above analysis and support the political economy analysis of Chapters 1 and 2. This is probably useful as historical analysis, but what is the relevance of these findings for present policy-making?

They are at least useful in a negative sense: the rather paradoxical conclusion of the econometric investigation is that econometric models for policy analysis building long-run relationships are probably of little use for policy making. That is, if no account is made of the structural shifts in the relationships, such models will be of little help.

Further, the above findings on the fiscal response to aid inflows were built on a partial equilibrium approach, which has important limitations for omitting interaction effects (see White (1994) for a discussion of the importance of such effects). The structural shifts in the key macroeconomic adjustment mechanisms are not easily handled in a simultaneous equation system, so we have limited ourselves to the exploratory data analysis in the above. The results do fit the political economy analysis rather well, however. From that angle we could conclude that:

(a) Due to its small magnitude, aid had little effect on fiscal aggregates in the 1960s and 1970s.

(b) During the 1980s, aid was initially allocated in fair amounts to public investment projects, but became increasingly fungible thereafter, despite the heavy tying status of most of the aid originating from the former socialist countries. That is, aid had a negative impact on government revenue and raised public spending. The poor

adaptation of the aid-financed capital good imports to Nicaragua's economic conditions and the economic and political turmoil of the second half of the 1980s contributed to the observed fiscal response effects.

(c) Severe fiscal adjustment in the 1990s has reduced the degree of aid fungibility, although it is still there. The stimulus on public and private investment from aid fell to a minimum during 1990-93, despite a recovery in the public investment rates. The observed lag (two or three years) in the response of private investors to improved infrastructure could give rise to expecting a recovery of private investment in the coming years. However, as long as the strict monetary and fiscal policies severely restrict domestic credit supplies, the immediate binding constraint on private investment may be financial rather than a lack of infrastructure. Aid flows have only to a small extent been tied to investment projects. Macroeconomic policy conditionality has been more important and has imposed strict fiscal and monetary targets on economic management. Aid served in this context to stabilize the economy (see further Chapters 1 and 4 on this), but - so far - failed to contribute to growth. As shown, public investments are important in encouraging private investment, albeit with substantial lags, and hence economic growth. This finding merely reconfirms the impression that a drive towards a fully market-based incentive scheme and economic stability are not sufficient conditions for economic recovery.

Notes to Chapter 3

1. See White (1992 and 1994) for extensive reviews of the literature on the macroeconomics of aid.

2. Comprising official transfers and net concessional long-term lending.

3. Table A3.3 shows a negative correlation coefficient (-0.98), but since in the accounting definition of the import capacity decomposition analysis debt servicing has a negative sign, a negative correlation coefficient means that aid inflows and debt service payments move up together.

4. This relationship is thus unlike the usually rather straightforward modelling of these relationships in existing macroeconomic models, such as those presented by Gibson (1993) and Sanchez-Torres and Uribe (1994).

5. Also when looking at the different periods in Nicaraguan economic development, no significant relationship is found.

6. See FitzGerald, Jansen and Vos (1994) for the elaboration of this investment model. It departs from the simple accelerator model, but after inclusion of external variables (exports, foreign financing) and public finance variables, shows how investment demand may be fully determined by external variables and previous investment decisions. Under certain conditions, the model can be reduced to the specification applied in Table 3.1.

7. As shown in Table 3.1, inclusion of a price variable (the relative price of imports vis-à-vis the domestic price of capital goods, which is significant, the estimates for the marginal import-investment propensity remain by and large the same.

8. These variations in the productivity of investment are not captured by existing models for the Nicaraguan economy. Three-gap models do not capture the changes in the relationship between the growth and the capital stock and output growth, but different versions do indicate that there might be a wide range: Gibson (1993) and Taylor (1993: Chapter 2) use a marginal productivity of capital of 0.25 (consistent with our estimate for 1960-77, but not for the more recent period), while Sanchez-Torres & Uribe (1994) assume it is 0.77. As indicated in the text, supply conditions as well as the quality of capital investment have changed over time in Nicaragua and have to be accounted for. In addition, it seems difficult to establish the productivity of capital through partial equilibrium analysis as done in the text and in the cited studies, as many constraints have been binding simultaneously in Nicaragua, affecting the growth-investment relationship. Although the three-gap models provide a wider framework the relevant coefficients were obtained either as 'guesstimates' or through partial analysis.

9. This holds for Gibson's three-gap model (adapted from Bacha 1990 and Taylor 1990), but not for his analysis of economic and political events.

10. Note that private savings have been derived as a residual from the national accounts estimate of gross national savings and public sector savings as obtained from public sector data.

11. To mention one: analysis is only of a partial equilibrium nature, ignoring simultaneous determination of various variables, as well as general equilibrium effects.

12. Note that in Table A3.5 the inflation variable has a small, but positive impact on public sector revenue. However, this result holds for the period as a whole. Analysis by periods, suggests a negative relationship between the inflation rate and tax revenue for 1985-89.

13. The relation found for the private investment rate (1960-93) is:

$$\frac{I_p}{Y} = \underset{(2.04)}{0.36}\, g_y + \underset{(3.11)}{0.48}\left(\frac{I_g}{Y}\right)_{-2} + \underset{(5.16)}{0.29}\left(\frac{M}{Y}\right)_{60-77} + \underset{(4.40)}{0.18}\left(\frac{M}{Y}\right)_{78-79} + \underset{(7.18)}{0.22}\left(\frac{M}{Y}\right)_{80\cdot}$$

$$+ \underset{(12.90)}{0.23}\left(\frac{M}{Y}\right)_{85-89} + \underset{(4.83)}{0.13}\left(\frac{M}{Y}\right)_{90-93} + \underset{(3.67)}{0.29}\left(\frac{I_p}{Y}\right)_{-1}$$

$$- \underset{(-5.04)}{-3.67}\, D72 + \underset{(5.25)}{4.73}\, D73 - \underset{(-2.08)}{8.29}\, D79 + \underset{(2.13)}{4.72}\, D88$$

$$\bar{R}^2 = 0.88 \quad D.W. = 2.11 \quad F = 22.2$$

where I_p is private investment, Y is GNP, g_y is GNP growth, I_g is public investment, M is imports (with the subscripts indicating that the periods to which slope dummies were applied) and D72, D73, D79, and D88 are intercept dummies capturing respectively shocks in private investment demand due to the earthquake (1972), the reconstruction thereafter (1973), the Sandinista revolution (1979) and the peak in hyperinflation and political uncertainty (1988). T-statistics are in parentheses. All coefficients are significant at the 5 percent level.

Estimating the same equation for a one-year time lag for public investment gives a lower coefficient (about 0.3), which significant only at the 10 percent level of confidence.

Unit root tests for the private investment rate suggests the series is stationary.

Appendix A3.1 Decomposition of Import Capacity

In the text the accounting identity for import capacity was given as (eq. 3.7):

$$P_m M_v = P_x X_v + NFP + PCT + AID + \Delta FL_{oth} + \Delta FS + OKI + \Delta R \quad \textbf{(A3.1)}$$

where all variables represent dollar values at current prices and where imports and exports now specify volumes (M_v, X_v) *times* their respective dollar prices (P_m, P_x). Disaggregating aid again between official transfers and concessional lending and specifying long-term capital flows (ΔFL) in gross terms and incorporating interest payments and amortizations in three new variable debt servicing of payment obligations that are due (*DS*), payment arrears (*ARR*) and rescheduled payments (*RSC*) we can rewrite equation A3.1 as:

$$P_m M_v = P_x X_v + PCT + (OT + \Delta FL_c) + \Delta FL_{nc} + OKI - (DS - ARR - RSC) + \Delta R \quad \textbf{(A3.2)}$$

where other capital inflows (OKI) include short-term flows and in 'net' terms, as before. Factor payments related to other capital have been incorporated in the private transfer item (PCT).

Real import capacity can now be defined by deflating both sides of equation A3.2 by the import deflator:

$$M_v = \frac{P_x}{P_m} X_v + \frac{PCT + (OT + \Delta FL_c) + \Delta FL_{nc} + OKI - (DS - ARR - RSC) + \Delta R}{P_m} \quad \textbf{(A3.3)}$$

Clearly, the real import capacity is accounted for by are accounted for (without implying a necessary causation) by the following factors:

- the terms of trade (P_x/P_m)
- the export volume (X_v)
- the unit price of imports (P_m)
- private transfers and factor payments on OKI (PCT)
- aid inflows ($OT + \Delta FL_c$)
- non-concessional long-term lending (ΔFL_{nc})
- other net capital inflows (OKI)
- debt servicing due on long term debt (DS)
- payment arrears (ARR)
- rescheduled debt service payments (RSC)
- change in reserves (ΔR)

Changes in the real import capacity can be obtained by taking first differences, which gives:

$$\Delta M_v = \Delta\left(\frac{P_x}{P_m}\right).X_v + \Delta X.\left(\frac{P_x}{P_m}\right)$$

$$+ \Delta\left(\frac{1}{P_m}\right).(PCT + OT + \Delta FL_c + \Delta FL_{nc} + OKI - DS + ARR + RSC + \Delta R)$$

$$+ \left(\frac{1}{P_m}\right).(\Delta PCT + \Delta OT + \Delta(\Delta FL_c) + \Delta(\Delta FL_{nc}) + \Delta OKI - \Delta DS + \Delta ARR + \Delta RSC + \Delta(\Delta R$$

$$+ \textit{interaction effects}$$

(A3.4)

where we have on the right hand side:

- terms of trade and export volume effects
- import price effects on net non-export earnings and external financing
- changes in real net non-export earnings and external financing

In Table 3.1, the import price effects on non-export earnings and external financing are referred to as $\Delta(1/P_m)$.

Table A3.1 Correlation Matrix of Import Capacity Determinants, 1971-93

	ΔM	ΔAID	ΔOT	Δ(ΔFL$_c$)	ΔX	Δ(ΔFL$_o$)	ΔDS	ΔOKI	Δ(ΔR)
ΔM	1.00								
ΔAID	0.23	1.00							
ΔOT	0.12	0.80	1.00						
Δ(ΔFL$_c$)	0.14	0.19	-0.44	1.00					
ΔX	-0.21	-0.35	-0.22	-0.17	1.00				
Δ(ΔFL$_{oth}$)	0.24	0.63	0.89	-0.49	-0.18	1.00			
ΔDS	-0.17	-0.78	-0.95	0.39	0.10	-0.87	1.00		
ΔOKI	0.59	0.17	0.20	-0.07	-0.37	0.17	-0.19	1.00	
Δ(ΔR)	-0.01	-0.26	-0.35	0.08	-0.15	-0.10	0.14	-0.36	1.00

Table A3.2 Correlation Matrix of Import Capacity Determinants, 1971-83

	ΔM	ΔAID	ΔOT	Δ(ΔFL$_c$)	ΔX	Δ(ΔFL$_o$)	ΔDS	ΔOKI	Δ(ΔR)
ΔM	1.00								
ΔAID	0.24	1.00							
ΔOT	-0.05	0.86	1.00						
Δ(ΔFL$_c$)	0.55	0.66	0.20	1.00					
ΔX	-0.12	-0.67	-0.58	-0.44	1.00				
Δ(ΔFL$_{oth}$)	0.45	0.00	0.11	-0.17	-0.24	1.00			
ΔDS	-0.41	-0.44	-0.09	-0.72	0.11	0.29	1.00		
ΔOKI	0.49	0.38	0.06	0.67	-0.47	-0.00	-0.33	1.00	
Δ(ΔR)	0.23	-0.39	-0.54	0.05	0.17	0.01	0.04	-0.15	1.00

Table A3.3 Correlation Matrix of Import Capacity Determinants, 1980-93

	ΔM	ΔAID	ΔOT	Δ(ΔFL$_c$)	ΔX	Δ(ΔFL$_o$)	ΔDS	ΔOKI	Δ(ΔR)
ΔM	1.00								
ΔAID	0.35	1.00							
ΔOT	0.21	0.79	1.00						
Δ(ΔFL$_c$)	0.16	0.19	-0.45	1.00					
ΔX	-0.40	-0.32	-0.21	-0.17	1.00				
Δ(ΔFL$_{oth}$)	0.18	0.65	0.89	-0.49	-0.17	1.00			
ΔDS	-0.23	-0.81	-0.98	0.39	0.16	-0.89	1.00		
ΔOKI	0.86	0.16	0.20	-0.08	-0.39	0.16	-0.18	1.00	
Δ(ΔR)	-0.68	-0.27	-0.29	0.07	-0.15	-0.16	0.24	-0.59	1.00

Appendix A3.2 The Link between Investment and Growth

The link between investment and output growth can be analyzed, starting from a traditional exogenous growth model, which can be set up from a standard production function:

$$Y_t = A_t \cdot f(K_t, L_t)$$

where Y_t is output at time t, K_t is the capital stock at time t, L_t is the labour force (or population) at time t, and A_t is a constant which could reflect the level of technology. With constant returns to scale output per capita ($y_t = Y_t/L_t$) can be written as:

$$y_t = A_t \cdot k_t^{\alpha}$$

where k_t is the capital-labour ratio. Neo-classical growth models typically focus on the long-run ('steady state') with output growth and the capital stock reflecting desired levels. Following common practice in empirical investigations of *endogenous* growth models (e.g. Roubini & Sala-i-Martin 1992, King & Levine 1992), we assume that due to adjustment costs and other imperfections actual levels deviate from desired levels and specify a type of stock-adjustment equation. Taking logarithms and first differences the stock adjustment process with respect to GDP per capita growth rate (approximated by the first difference of the log of GDP per capita) can be specified as:

$$\Delta\Delta \ln y_t = \beta_1 \cdot \left(\Delta \ln y_t^* - \Delta \ln y_{t-1}\right)$$

where $\Delta \ln y^*_t$ is the desired growth of GDP per capita. If the desired growth rate of GDP per capita is related to the growth of the (desired) capital stock per capita (Δk), the actual growth rate of output can be derived as:

$$\Delta\Delta \ln y_t = \beta_1 \left[\beta_2 \left(\Delta \ln \Delta K_t - \Delta \ln \Delta L_t\right) - \Delta \ln y_{t-1} \right]$$

so that

$$\Delta \ln y_t = \beta_1 \beta_2 \left(\Delta \ln \Delta K_t - \Delta \ln \Delta L_t\right) + (1 - \beta_2) \Delta \ln y_{t-1}$$

where ΔK is the change in the (desired) capital, or the level of (fixed) investment.

Applying this model to data for Nicaragua for 1960-93 gave the following result:

$$\Delta \ln y = -\underset{(-1.99)}{0.24} + \underset{(5.74)}{0.26}\,\Delta \ln IF_{1960-77} + \underset{(4.57)}{0.21}\,\Delta \ln IF_{1978-89}$$

$$+ \underset{(2.36)}{0.06}\,\Delta \ln IF_{1980-89} + \underset{(1.63)}{0.02}\,\Delta \ln IF_{1990-94} - \underset{(-3.30)}{2.79}\ln \Delta L + \underset{(2.86)}{0.03}\ln y_{-1}$$

$$\bar{R}^2 = 0.90 \qquad D.W. = 2.30 \qquad F = 40.2$$

with t-statistics in parentheses; all coefficients are significant at 5 percent level, except investment variable for 1990-93 period. Suffixes to fixed investment variable (*IF*) indicate slope dummies were applied for the indicated periods.

Appendix A.3 Fiscal Response to Aid: Some Econometric Evidence

Table A3.4 Public Savings[1] and Aid, 1960-93

Dependent variable = S_g/Y	Total aid	Grants	Loans
Constant	0.07	0.03	-0.60
	(0.07)	(0.03)	(-0.52)
GNP growth	0.25*	0.21**	0.31*
	(2.93)	(2.43)	(3.06)
AID/Y 1960-77	0.43**	0.69***	0.86**
	(2.93)	(1.97)	(2.04)
AID/Y 1978-79	0.21	0.20	1.23
	(0.50)	(0.34)	(0.84)
AID/Y 1980-84	-0.36***	-0.86	-0.50**
	(-1.77)	(-1.34)	(-1.89)
AID/Y 1985-89	-0.62*	-1.49*	-0.75*
	(-6.55)	(-4.41)	(5.49)
AID/Y 1990-94	0.05	0.03	0.34*
	(0.57)	(0.34)	(3.82)
Inflation	0.02*	0.01*	0.02*
	(7.89)	(4.30)	(5.67)
Intercept dummies:			
1977	-1.38*	-	-
	(-6.08)		
1990	-12.94*	-11.97*	-16.15*
	(-5.82)	(-8.22)	(-10.9)
R^2_{adj}	.81	.76	.83
D.W.	1.81	1.48	1.80
F-stat.	15.98	13.42	18.60
n	33	33	33

Notes: AID variable refers to total ODA (grants *plus* concessional lending) in first column, to grants only in second column and to concessional loans only in third column. t-statistics are in parentheses: * confident at 1% level; ** confident at 5% level; *** confident at 10% level.

1. Public savings refers to savings of consolidated non-financial public sector, excluding grants.

Table A3.5 Public Sector Current Revenue[1] and Aid, 1960-93

Dependent variable = T/Y	Total aid	Grants	Loans[2]
Constant	8.84 (1.60)	7.08* (5.77)	9.46* (7.06)
GNP growth	0.21** (2.52)	0.53** (3.08)	0.38* (3.52)
AID/Y 1960-77	-0.55 (-1.30)	-0.79 (-1.37)	-0.58 (-0.74)
AID/Y 1980-84	0.91* (3.73)	5.23* (5.33)	2.48* (7.30)
AID/Y 1985-89	-0.83* (-2.84)	-2.47* (-15.5)	1.04* (2.59)
AID/Y 1990-94	-0.01 (-0.15)	-0.14** (-2.14)	-0.45* (-3.87)
Inflation	0.02* (3.99)	0.01* (3.28)	-0.02*** (-1.79)
Intercept dummies:			
1985-89	2.41* (2.85)	3.18* (11.4)	-
R^2_{adj}	.86	.82	.73
D.W.	1.90	1.84	2.06
F-stat.	23.67	20.85	11.22
n	33	33	24

Notes: AID variable refers to total ODA (grants *plus* concessional lending) in first column, to grants only in second column and to concessional loans only in third column. t-statistics are in parentheses: * confident at 1% level; ** confident at 5% level; *** confident at 10% level

1. Government Current Revenue, excluding grants; and 2. Refers to 1970-93.

Table A3.6 Public Sector Current Expenditures and Aid, 1970-93

Dependent variable = G/Y	Total aid	Grants	Loans
constant	13.11* (7.02)	12.29* (8.54)	17.99* (3.82)
AID/Y 1970-77	-1.07*** (-1.82)	-1.18*** (-1.79)	-4.57*** (-1.82)
AID/Y 1978-79	0.57*** (2.08)	1.01* (3.70)	-0.79 (-0.35)
AID/Y 1980-84	2.60* (7.94)	9.08* (11.11)	2.90* (3.29)
AID/Y 1985-89	1.78* (10.69)	6.37* (10.82)	2.03* (5.51)
AID/Y 1990-94	0.21* (4.03)	0.30* (3.11)	0.27 (0.90)
Inflation	-0.06* (-9.45)	-0.07* (-9.64)	-0.05* (-6.16)
R^2_{adj}	.94	.91	.89
D.W.	2.38	2.38	2.10
F-stat.	39.15	30.79	24.50
n	24	24	24

Notes: AID variable refers to total ODA (grants *plus* concessional lending) in first column, to grants only in second column and to concessional loans only in third column.t-statistics are in parentheses: * confident at 1% level; ** confident at 5% level; *** confident at 10% level.

Table A3.7 Public Investment and Aid, 1960-93

Dependent variable = I_g/Y	Total aid	Grants	Loans
Constant	0.92*	0.75*	1.39*
	(3.29)	(2.65)	(5.92)
AID/Y 1960-77	0.04	-0.03	0.06
	(0.35)	(-0.32)	(0.43)
AID/Y 1978-79	-0.22*	-0.33*	-0.55*
	(-3.59)	(-5.84)	(-5.54)
AID/Y 1980-84	0.35*	0.86*	0.61*
	(7.64)	(6.61)	(8.13)
AID/Y 1985-89	0.15*	0.26*	0.31*
	(7.75)	(5.53)	(8.25)
AID/Y 1990-94	0.07*	0.07*	0.26*
	(2.58)	(2.38)	(14.61)
Inflation	-0.01*	-0.004*	-0.01*
	(-12.87)	(-8.52)	(-9.82)
$(I_g/Y)_{-1}$	0.56*	0.70*	0.38*
	(8.60)	(8.57)	(6.17)
Intercept dummies:			
1977	3.59*	3.46*	3.62*
	(21.69)	(14.37)	(17.86)
1986	-3.92*	-3.80*	-3.81*
	(-11.58)	(-6.29)	(-12.92)
1990	-4.30*	-3.84*	-5.89*
	(-6.03)	(-6.77)	(-32.44)
R^2_{adj}	.89	.83	.94
D.W.	2.36	2.38	1.57
F-stat.	26.68	17.01	50.41
n	33	33	33

Notes: AID variable refers to total ODA (grants *plus* concessional lending) in first column, to grants only in second column and to concessional loans only in third column. t-statistics are in parentheses: * confident at 1% level; ** confident at 5% level; *** confident at 10% level.

CHAPTER 4
SUMMARY AND CONCLUSIONS

4.1 The Macroeconomic Importance of Aid to Nicaragua

Foreign assistance to Nicaragua underwent major changes during the last two decades. *Firstly*, the level of aid inflows increased substantially during the 1980s and 1990s. In 1993, aid inflows equalled almost 50 per cent of GDP and were more than twice the size of exports. *Secondly*, the origin of aid flows shifted from the former socialist countries (plus some European assistance from Sweden and the Netherlands in particular) in the 1980s to a broader based Western-based (US, Europe, multilateral) support in the 1990s. *Thirdly*, there have been substantial variations in the forms of aid and the conditionality attached to it. In the 1970s, aid was mainly directed to specific projects, while in the 1980s, and to an even greater extent in the 1990s, it came mainly in the form of commodity and balance of payments support. A major difference between the aid given in the 1980s and the 1990s has been that most assistance from the former socialist countries came in the form of non-liquid commodity support, that is providing little spendable foreign exchange, while in the 1990s the balance of payments support from the U.S. and Western Europe was mainly liquid finance, but strongly conditioned to far-reaching policy reforms.

Since 1980, aid inflows have come to play a critical role in the development of the Nicaraguan economy. Over the past decade and a half foreign assistance to Nicaragua has been consistently much larger than export earnings. Yet, growth performance has been extremely dismal. However, it would be too simplistic to conclude that aid and development have not been positively related in the case of Nicaragua. Since 1991, most aid and other capital inflows have been strongly conditional on stabilization and structural adjustment programmes. Undoubtedly, aid has played a crucial role in stabilizing the economy, but it has not provided the shot in the

arm the economy needed to recover from a prolonged period of crisis. A reduction of aid flows would certainly endanger economic stability in the short run, but at the same time there is the risk aid will increasingly function as a drug leading to the addiction of aid dependency. Macroeconomic conditionality attached to aid will remain important, but central attention should shift to the major supply-side problems of Nicaraguan economy, including inadequate physical and social infrastructure, malfunctioning distribution networks, uncertainty about property rights and the shortcomings in the credit allocation system.

4.2 Economic Development in Perspective

Before the Sandinista revolution of 1979, official development assistance was of minor importance, amounting to less than 3% of GNP. During the 1960s and 1970s, Nicaragua's agro-export based economy outpaced the growth rhythm of its neighbouring Central-American countries and grew at an average rate of 6 per cent per annum. Buoyant export earnings required only modest inflows of foreign savings to meet import needs. This 'golden age' of economic growth was, however, set in a context of a dictatorial political regime, a heavy concentration of economic wealth (mostly in the hands of the ruling Somoza family) and a sustained backwardness of education and health care.

The Sandinista revolution put a dramatic end to this situation, but also, as it turned out, to economic prosperity. The reconstruction of the economy, the reparation of the infrastructural damages of the civil strive, and the spur in public social spending to improve the country's poor social record required significant foreign assistance. Foreign credits and grants amounted to some US$ 600 to 700 million, double the level of export earnings. High aid inflows did not foster economic growth, however; a result strongly driven by political factors. The country was hit by a US trade embargo and a US veto on multilateral loans, requiring an inefficient substitution for trade with and aid from the former socialist countries, and a US-supported *contra* rebel insurrection drove the country into another civil war causing severe damages of productive capacity and military expenditures eroding the country's fiscal resources. The socialist country support provided no liquid foreign financing, such that the Sandinista government felt itself forced to resort to the money printing press to finance the costs of the war. The subsequent

hyperinflation completely devastated the shaken economy.

A new, liberal government was elected into power in 1990 and would revolutionize the economy for the second time in a decade. A double transformation process was set in motion: (i) the pacification of the country and dismantling of the war economy and (ii) reduction of the state and a transformation towards a free market economy. Ample foreign aid became available, reaching record heights of 50 per cent of GDP and was provided by the US and European donors and virtually all liquid. The aid helped to stabilize the economy, but - along with the trade liberalization - it also promulgated a consumption boom. The aid-supported structural adjustment process has not led to economic reactivation during 1990-94.

4.3 Aid in the 1990s

Much of the aid effort in the early 1990s has been related to the country's large outstanding external debt. Substantial payment arrears to the multilateral agencies had to be resolved first in order to obtain new funding. Further, aid went in support of the drastic measures needed to stabilise the economy. Finally, funds have been provided to deal with the physical and social costs of the civil war. Specifically, aid since 1990 served the following main purposes:

(a) *Disarmament* - in 1990, between US$ 40-60 million were used to disarm and reintegrate the *contra* rebels and finance a reduction of the armed forces, in an endeavour to demilitarise and pacify the nation.

(b) *Debt repayments and debt reduction* - since 1990, significant amounts of aid have been used to service and reduce Nicaragua's public external debt. Debt has been reduced, but is still cannot be fully serviced. Relations with multilateral creditors have been normalized after eliminating arrears to the World Bank and the Inter-American Development Bank (IDB).

(c) *Stabilisation* - many resources were granted at an initial stage to curb hyperinflation. Aid flows increased international reserves vastly and, consequently, decreased the pressure on the *córdoba*.

(d) *Replace internal financing of the fiscal deficit* - especially in 1992 and 1993, the role of aid was to help finance the government budget. Non-aid government revenues are limited, while domestic financing of the deficit has been ruled out by monetary policy targets. Under this financial constraint, there is now a (near) one-to-one relationship between the fiscal deficit and aid, established by government decree. Investment in physical infrastructure, health and education is almost entirely dependent on the availability of external resources.

As a large part of the aid has been used exclusively to pay some of the accumulated arrears, specifically to the World Bank and the IDB, actual net inflows have been notably smaller. In 1991, aid in terms of credit and grants to Nicaragua reached the extreme level of 90 per cent of GDP. However, almost half was in the form of debt cancellation (primarily of debt owed to USAID) and debt repayments, which substantially reduced the actual inflow of aid. An agreement on a stand-by credit was signed with the IMF, only to be halted in December 1992. when the Fund claimed public expenditures to be too much out of control to justify continued lending. A new agreement, the ESAF 1994-96, has been negotiated since Spring 1993. Negotiations have been difficult, in part because the Nicaraguan government had found it very difficult to adhere to the very strict conditionality implied by the agreement. Further, there was a resurgence of tension in US-Nicaraguan relationships as US Congress, through the Helms amendment, cut US$ 116 million of a US$ 731 million two-year package in 1992, on the grounds that the government would effectively still be in Sandinista hands.

Strong policy conditionality has been attached to much of the balance of payments support. The multilateral agencies (including the IDB) have conditioned their support to the implementation of the stabilization and structural adjustment programme agreed with the IMF.

Counterpart funds are now subject to stricter control. The monetary impact is ambiguous, as different donors apply different criteria. Some funds are immediately sterilised. On the other hand, some donors - such as Japan - use the counterpart funds system administered by the UNDP to allocate their aid and insist that the commodities imported be sold at a subsidised *córdoba* price (in the case of Japan, 80 per cent of the accounting price).

4.4 Aid and External Debt

External debt is about six times GNP and thirty-fold the value of 1993 export earnings. This enormous external debt overhang has been a crucial issue in the discussions between the Nicaraguan government and the donor community. It remains one of the fundamental obstacles to economic recovery, and as pointed out, has been central in the aid negotiations. Nicaragua still owes nearly US$ 3 billion to the former socialist countries, out of a total debt of US$ 7.5 billion.

In the debt renegotiations undertaken since 1990, different mechanisms have been used in the restructuring process: (i) "pure" debt forgiveness, (ii) swap of debt for non interest-bearing bonds, and (iii) debt-for-investment swaps, where investments funds thus freed are to be used according to donor preferences, e.g. for specific project support, for specific sector support, or for the privatisation process. The Nicaraguan government has clearly given highest priority to reestablishing sound relations with the most important international official creditors, mainly the multilateral financial institutions and the Paris Club. Nicaragua paid back more US$ 300 million of accumulated arrears to the World Bank and the IDB. In December 1991, the Nicaraguan government reached an agreement with the member countries of the Paris Club on a reduction of 50 per cent of the arrears. The agreement which opened up the possibility of further negotiations on rescheduling by the end of 1994. This, however, will be contingent on reaching an ESAF-agreement with the IMF.

While the focus has been on multilateral creditors, repayment to the commercial banks has been given lowest priority and remains largely unresolved. The commercial debt overhang has instead become an issue in aid negotiations, where aid supposedly should be used for debt buy-backs

etc. In June 1993, representatives of the Nicaraguan government met with the donor community in an effort to address the problem. The idea was to launch an operation to repurchase commercial debt, to initiate negotiations with commercial creditors, and simultaneously secure the aid funding necessary for the manoeuvre. However, the exercise was largely a failure, as Nicaragua only managed to obtain US$ 54 million, less than three per cent of total outstanding debt with the commercial banks.

As of today, the debt situation remains unresolved, despite the large amounts of external financing which have been granted for the exclusive purpose of debt repayments. With no further reductions, debt service for the next years would equal approximately US$ 800 million per annum, which, given yearly export incomes around US$ 300 million, results in a debt service ratio of 250-300 percent. The gap between available resources and resources needed is alarming.

Presently, almost half of total long, medium and short term external debt is owed to ex-socialist countries (excluding debt to former East Germany) and to commercial banks, mostly in the form of accumulated payment arrears. There is little belief that this debt will ever get paid, which is reflected in the low value on the secondary market, where it sells at 8 per cent of face value. Discussions on rescheduling with former lenders such as Russia, as well as negotiations on alternative solutions for the commercial debt, will hopefully continue during 1994. High priority debt constitutes approximately one fifth of total, and includes debt with the multilateral financial organisations and the part of the Paris Club debt which already has been renegotiated or is non-negotiable. The remaining debt to the countries in the Paris Club as well as debt to other official bilateral creditors and suppliers (e.g. Brazil and the Central American countries) will most likely be subject to further renegotiations during 1994.

From the Nicaraguan side, it is strongly felt that the country should qualify for a large amount of debt relief in line with the Polish and Egyptian cases. Of specific importance is the question of Nicaraguan debt with former East Germany, which is now included in the German debt. As this debt makes up more than half of the Paris Club debt which remains to be negotiated, it will be a crucial issue in future discussions. So far, however, there are no clear signals of a

favourable solution for Nicaragua.

4.5 The Macroeconomics of Aid to Nicaragua

Aid and Economic Growth

The traditional economic justification for development aid is that it will increase growth in the recipient country. Recent demands for additional foreign assistance by the Chamorro government from the multilateral institutions have been expressed in the same vein: the funds should foster economic growth. Much of the traditional argument has been based on the two-gap approach, according to which growth is either limited by domestic savings or foreign exchange availability. If the binding constraint is a lack of foreign exchange, then additional capital inflows will raise import capacity, import-constrained investment and thereby economic growth. This line of reasoning, in one form or another, is still influential in Nicaragua.

This fairly simple view has been challenged for various reasons: (1) aid can be fungible; (2) aid inflows may affect incentives and create economic distortions, such as a real exchange rate appreciation affecting export growth; (3) aid may affect macroeconomic policies, which in turn may influence aggregate demand and incentive mechanisms.

In Nicaragua, mechanisms underlying the link between aid, import capacity, investment and growth, as well as those underlying the effect of aid on domestic savings, government revenue and expenditures have varied from period to period depending on the nature of the aid inflows and the economic policy regime.

Aid and Import Capacity

There is no one to one relationship between aid inflows and import capacity in the case of Nicaragua. Evidence for the period from 1970 to 1993 indicates that:

(a) There is, generally, a weak direct link between aid inflows and import capacity.

(b) Aid inflows - and particularly those supplied in the form of grants - tend to increase with

debt servicing, suggesting that a large share of official transfers has gone into debt servicing.

(c) Aid inflows are strongly and positively correlated with other, non-concessional long-term capital inflows, suggesting a crowding in between various forms of external finance.

(d) Increases in aid inflows are weakly, but negatively correlated with export volumes. It should be noted that the negative link is stronger in the 1970s when aid inflows were low, than in the 1980s and 1990s when aid inflows were high.

In other words, this simple correlation does **not** make the case for a typical Dutch disease phenomenon directly linked to the aid inflow. True, the *córdoba* has generally been overvalued during the 1980s, special exchange rates for exports have provided some compensation for exporters. However, more importantly, the US trade embargo of the 1980s, labour supply constraints in some export sectors (e.g. coffee) and (persisting) infrastructural bottlenecks should be considered, along with downward trends in world markets (e.g. for cotton), as more relevant factors in explaining the poor export performance since 1980. In the 1990s, the currency is still widely held to be overvalued and the real exchange rate appreciation is allowed for by the high aid inflows. Yet, structural supply-side problems remain, now principally consisting of inadequacies in physical infrastructure, poorly developed distribution systems, credit constraints facing many farmers and institutional problems (including a contentious property rights issue).

(e) Fluctuations in import capacity appear most dependent on changes in other net capital inflows, capital flight and uses of foreign exchange reserves. During the latter part of the 1970s and part of the 1980s capital flight reduced import capacity, while short-term trade credits have been short in supply. During 1991-93, short-term private capital outflows have reverted and access to trade credit has improved, thereby contributing to import capacity. The link with reserve movements seems to express that over the past decade and a half, import capacity has been pushed to its maximum as permitted by available

reserves, which seems consistent with the permanent foreign exchange problems the country had to face.

Imports and Economic Growth

The level of imports increased from around US$ 100 million in the early 1960s to US$ 450 million in the 1970s and around US$ 750 to 850 million in the 1980s and 1990s. The share of intermediate goods (excluding fuels) rose during the 1960s and 1970s to almost half of total merchandise imports, a shift related to the modernization of export agriculture and the build up of an industrial sector. During the 1980s this share fell; initially, because of rising costs of fuel imports and, subsequently (in 1985-89), because of rising capital good imports related to aid inflows from the socialist countries. The share of consumer good imports fell during the Sandinista government, but rose steeply to one third in 1990-93 as a consequence of the consumption boom created by the trade liberalization under the adjustment policies of the Chamorro government. Such consumption booms may now be considered as typical outcomes of adjustment policies that combine exchange rate stabilization and a reduction of inflation with trade liberalization. They have been observed elsewhere in Latin America as well.

The available evidence indicates that the relationship between aid, imports and growth has been a complex one in the case of Nicaragua. As indicated, there is only a weak direct link between aid inflows and increases in import capacity, as aid was either inadequate to compensate exogenous shocks or leaked abroad (directly or indirectly) in the form of debt servicing or capital flight. There is thus a rather more complex relationship between import capacity and growth in the case of Nicaragua:

(a) Overall GDP and GDP growth are positively related to foreign exchange availability for intermediate imports, but this obscures the fact that agricultural output cannot be said to be constrained by imported inputs, while - in contrast - industrial output is strongly import dependent. Thus, emerging foreign exchange constraints, e.g. due to falling aid inflows, will essentially hit industrial output and employment.

(b) The direct link between output growth and capital good imports is weak (insignificant) in the case of both agriculture and industry. Yet, investment in fixed assets has always been strongly dependent on import capacity, although the dependence seems to have declined in recent periods. Econometric analysis suggests considerable shifts in the marginal import-investment ratio. The marginal import-investment ratio doubled from 0.35 in the relatively prosperous period from 1960-77 to 0.70 in 1980-84, but it subsequently fell to 0.20 in 1985-89 and 1990-93.

This pattern fits well into the political economy of aid to Nicaragua. The upward shift in the early 1980s seems consistent with the investment boom in this period and the shift towards socialist aid donors who supplied assistance largely in the form of investment goods. Although this kind of support continued to dominate for most of the 1985-89 period the import-investment coefficient collapses, which could be explained by the fact that many aid-financed capital good imports (among others Russian trucks and tractors) never found there way into real investment projects, some were taken apart for spare parts supplies others are still parked on terrains next to the Central Bank headquarters in Managua. Import capacity was boosted in 1990-93, when aid inflows reached unprecedented heights (50% of GNP), but also when fungibility was probably larger than ever. As indicated, part of the new inflows was used to refinance arrears on outstanding debt (particularly with the World Bank and the IDB) and to boost private consumption.

(d) The link between investment and growth is *not* self-explanatory in the case of Nicaragua. The boost in investment levels during the first half of the 1980s was *not* accompanied by a strong increase in the growth performance. The marginal productivity of capital strongly declined during the 1980s and still seems to be low in the first half of the 1990s. Whatever little economic recovery there has been in recent years, it has built on existing production capacity with little to no contribution of new investment. Structural adjustment in the form of more efficient productive investment thus still has to take place in Nicaragua.

Summarizing, there is not much empirical evidence in support of the traditional macroeconomic view on the role of aid, in which aid alleviates a foreign exchange constraint on domestic investment, thereby triggering economic growth. Not only has aid failed to systematically raise import capacity in the case of Nicaragua, also the link between import capacity and investment and between investment and growth has become problematic since the 1980s. During the years of export-led growth (1960-77) an enhanced import capacity did support productive investment leading into higher growth. In the 1980s import dependence initially increased, but the marginal productivity of capital collapsed without signs of recovery in recent years. Explanations of this breakdown of Nicaragua's growth equation are to be found in the civil war, the trade embargo, the technology effects of aid dependence on the socialist countries and domestic policy failures. Existing medium-term growth models developed for Nicaragua tend to emphasize the traditional link and thereby seem to miss the point.

The Fiscal Response to Aid Inflows

Aid does not tend to complement domestic savings in Nicaragua. During the period of high aid inflows in the 1980s, public savings (excluding grants) have declined. Fiscal adjustment in the 1990s has corrected the negative link to some extent.

Aid inflows had a weak, but positive impact on public savings between 1960 and 1977, but the relationship turned negative during the 1980s, particularly during 1985-89. In the 1990s, there is no longer a significant relationship with aid inflows, a resultant of ambiguous fiscal effects of the adjustment policies conducted since 1991.

Public sector revenue (taxes) is positively and strongly related to GNP growth, but aid inflows generally have had a rather ambiguous impact. In the 1960s and 1970s, the effect of aid inflows on public sector revenue was negligible. In the first years of the Sandinista revolution (1980-84), the tax effort improved and complemented the influx of foreign assistance. In contrast, during the years of hyperinflation (1985-89), the tax basis eroded rapidly as price increases run well ahead of the collection of taxes (the Olivera-Tanzi effect). Inflation, in turn, was partly a result of the monetization of the aid inflows, among others in the form of subsidies on commodities

imported through aid programmes. Fiscal adjustment efforts in the 1990s have mainly fallen on the expenditure side. Policy conditionality attached to aid inflows have **not** been effective to eliminate the negative impact on government revenue, *even though the negative link has become smaller compared to the late 1980s.*

The type of aid makes a difference. Lower public revenue is mainly associated with grant aid. Assistance in the form of loans also shows a negative impact on the tax effort in the 1990s, which can be attributed to the highly liquid and fungible nature of the aid in this period. During the 1980s, however, concessional lending appears to have had a positive impact on public sector revenue, an effect which can be partly explained by the support provided by loans to public enterprise activity.

Aid inflows tend to push up current spending of the government and non-financial public enterprises, but this effect seems to have been considerably stronger in the 1980s than in the 1970s or the 1990s. In the 1960s and 1970s aid flows were probably too small to exhibit a strong effect on public spending, while in the 1990s fiscal retrenchment have contained the expansionary effect of aid. Yet, also during 1990-93 aid inflows have pushed up current spending by 21 cents out of each additional dollar of aid.

As indicated, in the 1980s, aid inflows directly (debt servicing, maintenance costs, military spending) and indirectly (subsidies on aid-funded commodity imports) stimulated current expenditures. Again, these effects are stronger for grant aid than for loans, but both sources seem to have worked in the same direction. During 1990-93, however, concessional lending did not have significant impact on current government spending.

Public investment tends to increase with aid inflows (both grants and loans), since the 1980s. In the 1960s and 1970s, public investment was hardly affected by development assistance. The public investment boom of 1980-84 is shown to have been strongly stimulated by foreign capital inflows (though with a marginal propensity of substantially less than unity, i.e. 0.35), but the link weakens thereafter, also during 1990-93 when public investment recovered. As assessed

above, a substantial part of aid was not tied to investment projects, but rather to structural adjustment policy conditions and some debt relief operations.

This finding also has consequences for private investment. Existing studies are not conclusive about whether public investment stimulates ('crowds in') or discourages ('crowds out') private investment in Nicaragua. The former effect is usually expected to occur when bottlenecks in social and physical infrastructure form a major constraint on production, such that public investment in such activities will form an important incentive for private investors. If, on the other hand, financial constraints are tight, enhanced public sector activity could lead to government claims on domestic and foreign finance resources which crowd out those available for private investors.

Our analysis of the available evidence leads to the conclusion that public investment plays an important role in encouraging private investment in Nicaragua. However, it also suggests that the private sector response comes with a two- to three-year time lag (which is longer than usually assumed). If these results based on past experience have still relevance, we should expect that private investment might recover in 1994-6, following the increase in public investment in 1991-93.

Similar to the relationships between aid and imports and import capacity and growth, also the quantitative analysis of the fiscal response to aid inflows is thus hampered by the great number of structural breaks in the trends. This is probably useful as historical analysis, but what is the relevance of these findings for present policy-making?

The findings on the macroeconomics of aid in Nicaragua are in the first place meaningful in a negative sense: the rather paradoxical conclusion of the econometric investigation is that econometric models for policy analysis building long-run relationships are probably of little use for policy making. That is, if no account is made of the structural shifts in the relationships, such models will be of little help (and should be considered of being so).

On substance, we conclude that:

(a) Due to its small magnitude, aid had little effect on fiscal aggregates in the 1960s and 1970s.

(b) During the 1980s, aid was initially allocated in fair amounts to public investment projects, but became increasingly fungible thereafter, despite the heavy tying status of most of the aid originating from the former socialist countries. That is, aid has a negative impact on government revenue and raises public spending. The poor adaptation of the aid-financed capital good imports to Nicaragua's economic conditions and the economic and political turmoil of the second half of the 1980s contributed to the observed fiscal response effects.

(c) Severe fiscal adjustment in the 1990s has reduced the degree of aid fungibility, although it is still there. The stimulus on public and private investment from aid fell to a minimum during 1990-93, despite a recovery in the public investment rates. The observed lag (two or three years) in the response of private investors to improved infrastructure could give rise to expecting a recovery of private investment in the coming years. However, as long as the strict monetary and fiscal policies severely restrict domestic credit supplies, the immediate binding constraint on private investment may be financial rather than a lack of infrastructure. Aid inflows have only to a small extent been tied to investment projects. Nevertheless, a significant share of the public investment programme is dependent on external financing, which is in part the result of the macroeconomic policy conditionality attached to the aid and which has imposed strict fiscal targets and left no scope for domestic financing of fiscal deficits. Since, much of the total aid inflow has been used for debt reduction, debt servicing and strengthening of international reserves, the link between total aid and public investment is not very strong. Aid served essentially to stabilize the economy, but - so far - failed to contribute to growth.

(d) Public investments are important in encouraging private investment, albeit with

substantial lags, and hence economic growth. This finding merely reconfirms the impression that a drive towards a fully market-based incentive scheme and economic stability are not sufficient conditions for economic recovery.

4.6 Conclusions and Policy Recommendations

(1) Undoubtedly, aid has come to play a crucial role in determining the macroeconomic balances of the Nicaraguan economy. Its precise role, however, has changed during the past decade and a half due to a number of related factors, which are the changing nature and source of aid inflows, a changing external environment, a change in political regime and a change in economic management. Due to these changes it is difficult to build on an analysis of long-term trends to assess aid's macroeconomic impact. Rather, the structural parameters of the economy have to be assessed from period to period.

(2) The relationships between aid, import capacity, investment and growth are complex ones in the case of Nicaragua. Import capacity has not immediately been fostered by aid inflows, essentially because much of aid tends to go into servicing of outstanding debt. Although, aid and exports are negatively correlated, it is difficult to sustain the argument that this is a typical 'Dutch disease' phenomenon: export performance has principally been determined by major supply constraints related to the civil strive (infrastructure and labour constraints) and external factors (trade embargo, declining world markets). Further, the observed price elasticity of export supplies is low, implying that - likely - the real exchange rate only weakly affects export performance.

(3) Aid has been fungible in Nicaragua, in the sense that is has displaced non-grant public sector savings by exercising a negative influence on tax collection and leading to higher current expenditures. The experience of the 1990s shows, however, that one way to contain fungibility is to have a strong macroeconomic policy framework in place with well defined fiscal targets.

(4) Public investment has recovered somewhat during the 1990s after a steep fall in the late 1980s. The stabilization policies conducted by the Sandinista government, firstly, to finance the

war economy and, subsequently, to contain the hyperinflation were (explicitly) to the detriment of public investment. Aid inflows in the 1990s have permitted some recovery of public investment. Public investment tends to influence private investment positively in Nicaragua, though with some time lag. This could give some reason for optimism about a possible economic recovery in the coming years.

However, the dependence of public investment rates on aid inflows should also be a reason for some concern. Although Nicaragua has been reasonably successful in securing external resources in the initial stages of the process of transformation towards a liberalized market economy, it is only realistic to expect aid flows to decrease in the future. Given the current financial constraints, this tendency is alarming. In the current situation, public finances are fully dependent on external support. A number of investment programmes, such as the social investment fund (FISE), are 100 per cent aid financed. There may be not enough flexibility in the budget to keep up public investment if aid inflows would go down.

(5) Another major point of concern is the sustainability of macroeconomic stability. Aid inflows and the adjustment policies have successfully contained hyperinflation and reduced fiscal imbalances. Further, major steps have been taken to install a market-based economy (trade liberalization, financial sector reform). Yet, inflation and inflationary expectations have been contained to an important extent by using the *córdoba* as a nominal anchor. Many basic prices and financial variables are pegged to the dollar exchange rate. With the poor export performance and high debt servicing obligations, foreign financing is the key to sustain the exchange rate. A decline in aid inflows will almost certainly undermine the current economic stability by weakening the *córdoba* and offset a new inflationary spiral.

(6) Improving supply conditions is the long-term solution to ensure greater economic stability also in the absence of aid. The supply problems will, however, take time to be resolved. Agriculture is the mainstay of the economy and is likely to remain so. The structural problems affecting the sector are: (a) infrastructural deficiencies, (b) ill-functioning distribution systems, (c) lack of access to credits by many farmers, and (d) property rights conflicts. All these four

issues are broadly recognized, but the latter two seem the most disputed. Specifying these problems in detail is beyond the scope of this study, but on the credit system and the property rights issue, we are inclined to conclude the following.

The issue of property rights is on the political agenda, but has a long history dating back to the Somoza years and deficiencies in the land reform programmes of the Sandinista government. However, it seems the issue is at the same time handled too easily as *the* explanation for sluggish private investment. This position clearly exaggerates the problem. Under the present government, previous owners (including the Somoza family) have started to reclaim properties, creating an atmosphere of uncertainty and obviously affecting the investment climate. The government has responded that, in principle, property confiscated by the Sandinistas will be returned or paid for. It is difficult to estimate the precise importance of the property rights issue. Primitive and inadequate cadastral records are a problem, but this also has been a problem in the past. It would seem that the claims on old properties have more to do with a demand for compensation for confiscation in the past, than with confidence in the new regime regarding protection of private property in the future. In this sense, the issue should not be overrated. It is important to improve legislation and property administration, but it will not be the *deus ex machina* to stimulate private investment. Moreover, fiscal problems could emerge if the government were to meet all compensation claims. The government plans to repay the related bond issues from the privatization programme, but this programme so far has probably provided a negative rather than a positive revenue. Bond-financed full compensation of properties confiscated in the 1980s could thus create a *sizeable domestic* public debt burden leading to enlarged fiscal deficits.

Financial sector reform has come a long way, but the new institutional framework and restrictions on credit expansion by the state-owned banks have so far not proven conducive to resolving credit constraints of the agricultural sector. Efficiency-based credit allocation schemes at market interest rates are needed to complement the private banking system. These may be run through the state-owned development banks or, maybe preferably, through new specialized credit institutions.

The macroeconomic framework of policy conditionality should extend to include targets for tackling these supply constraints.

(7) Programme versus project aid? Programme aid in the form of balance of payments support played a central role in the stabilization programme implemented by the Chamorro government. Policy conditionality is central to the programme aid. For this to work, a good amount of consensus regarding the nature of the economic programme is required. So far, the basic framework for macroeconomic policy conditionality has been provided through IMF agreements. Consensus building has not been easy, as shown by the difficult discussions which have taken place since early 1993 around the conditionality attached to the Enhanced Structural Adjustment Facility (ESAF) loan. It would be tempting to plea for more project aid, instead of programme aid, as such assistance might be easier to isolate from the political debate and policy debates around the right structural adjustment policy framework. Project aid will directly influence the resource allocation process, which may be more effective to reach specific targets. However, it also raises the danger of fungibility and creation of macroeconomic distortions if the project fails to fit a tough macroeconomic framework and if there is weak donor coordination.

Probably the ideal situation would be to have a well-defined macroeconomic policy framework with clear sectoral targets that can deal with the indicated structural supply constraints. For the latter more government action influencing incentive schemes (e.g. in the form of the supply of physical and social infrastructure and credit allocation mechanisms) is needed than the conventional IMF structural adjustment programme is usually willing to accept. With such a framework in place, programme should be as good as project aid.

REFERENCES

Aguilar, R. (1989) 'Nicaragua: Political economy and international aid', The Planning Secretariat, Stockholm: SIDA.

Aguilar, R. (1992) 'Nicaragua: A new leadership takes over', The Planning Secretariat, Stockholm: SIDA.

Aguilar, R. (1993) 'Nicaragua 1993: Failing to keep the pace', The Planning Secretariat, Stockholm: SIDA.

Aguilar, R. (1994) 'Aid policy in the context of structural adjustment in Nicaragua', Stockholm: SIDA (mimeo).

Bacha, E. (1990) 'A Three-Gap Model of Foreign Transfers and the GDP Growth Rate in Developing Countries', *Journal of Development Economics*, 32:279-296.

Bulmer-Thomas, V. (1987) *The Political Economy of Central America since 1920*, Cambridge: Cambridge University Press.

CEPAL (1973) 'Informe sobre los daños y repercusiones del terremoto de la ciudad de Managua en la economía nicaragüense', Santiago: CEPAL.

CEPAL (1979) 'Nicaragua: repercusiones económicas de los acontecimientos políticos recientes', Nota de la Secretaría de la CEPAL, Santiago.

CEPAL (1981) 'Nicaragua: El impacto de la mutación política', Santiago: CEPAL.

CEPAL (1988) 'Daños ocasionados por el huricán Juana en Nicaragua', Nota de la Secretaría', Mexico: CEPAL (November).

CEPAL (1994) 'Nicaragua: Una economía en transición', CEPAL LC/MEX/R.458, Mexcio: CEPAL (February).

CIERA (1989) 'La reforma agraria en Nicaragua, 1979-1989', Vol. IX, Managua: Centro de Investigaciones y Estudios de la Reforma Agraria (July).

Corbo, V., M. Bruno, S. Fischer, R. Laban & P. Rojas (1993) 'An economic assessment of Nicaragua', SIDA, Stockholm (mimeo).

de Franco, M. (1989) 'An Analysis of the Black Market for Foreign Exchange in a

Computable General Equilibrium Model: The Case of Nicaragua' PhD Dissertation, University of Massachusetts, Amherst.

de Franco, M. (1993) 'Nicaragua: Evolución de la ayuda externa 1960-1992', Managua: INCAE (mimeo).

Doriye, J., H. White & M. Wuyts (1993) *Fungibility and Sustainability. Import Support to Tanzania*, SIDA Evaluation Report 1993/5, Stockholm: SIDA.

FIDEG (1993) 'Las condiciones de vida y pobreza en 1993 (Agosto 1992-Agosto 1993)' *El Observador Económico*, No. 24, December 1993.

FitzGerald, E.V.K. (1987) 'An evaluation of the economic costs to Nicaragua of the U.S. aggression: 1980-84', in: R.J. Spalding (ed.) *The Political Economy of Revolutionary Nicaragua*, Boston: George Allen & Unwin.

FitzGerald, E.V.K. (1989) 'Problems of financing a revolution: accumulation, defense and income distribution in Nicaragua, 1979-86', in: E.V.K. FitzGerald & R. Vos *Financing Economic Development. A Structural Approach to Monetary Policy*, Aldershot (U.K.): Gower, pp. 262-298.

FitzGerald, E.V.K., K. Jansen & R. Vos 'External constraints on private investment in developing countries', in: J.W. Gunning, H. Kox, W. Tims & Y. de Wit (eds.) *Aid, Trade and Development. Essays in Honour of Hans Linnemann*, London: Macmillan.

Gang, I. & H. Khan (1991) 'Foreign aid, taxes and public investment', *Journal of Development Economics*, 34: 355-369.

Gibson, B. (1987) 'Nicaragua', *Stabilization and Adjustment Policies and Programmes. Country Study No. 3*, Helsinki: WIDER.

Gibson, B. (1993) 'Nicaragua', in: L. Taylor (ed.) *The Rocky Road to Reform*, Cambridge (Mass.): MIT Press, pp. 431-456.

Gibson, B. (1994) 'Unsustainable growth in Nicaragua', Paper prepared for WIDER Conference on Medium-Term Growth Strategies, Phase II, HelsinkI: WIDER (April).

Griffin, K. (1970) 'Foreign capital, domestic savings and economic development', *Bulletin of the Oxford Institute of Economics and Statistics*, 32: 99-112.

Heriot, J.C. Jr (1982) 'The Economy', in: J.D. Rudolph (ed) *Nicaragua. A country study*, Washington D.C.: The American University.

INIES (1988) *Acumulación y Transformación: Nicaragua 1979-85*, Cuadernos de

Investigación No. 3, Managua: INIES.

Johansson, Sara (1993) 'Overview of the macroeconomic development of Nicaragua', School of Economics, Stockholm (mimeo; SASDA project) (October).

King, R. & R. Levine (1992) 'Financial Indicators and Growth in a Cross Section of Countries', Policy Research Working Papers WPS 819, Washington D.C.: World Bank.

Martínez Cuenca, A. (1994) 'El comportamiento inversionista en Nicaragua', *Materiales de Estudio y Trabajo* No. 13, Managua: FIDEG/Fundación Friedrich Ebert.

Medal, J., P. Miranda & M. de Franco (1992) 'El tipo de cambio real', INCAE, Programa de Gestión Pública, Serie: Documentos de Discusión y Trabajo, Managua: INCAE (November).

Ministerio de Cooperación Externa (1994) 'Recursos Externos 1990-1994', Managua: MCE (mimeo).

Nitlapán (1994) 'Situación y perspectivas de las nuevas estructuras institucionales de financiamiento rural. Informe final', Document prepared for SIDA, Managua: Instituto Nitlapán, Universidad Centroamericana.

Nuñez, O. (1987) *Transición y lucha de clases en Nicaragua, 1979-86*, Mexico City: Siglo XXI.

Ocampo, J.A. (1991) 'The collapse and (incomplete) stabilization of the Nicaraguan economy', in: R. Dornbusch & S. Edwards (eds) *The Macroeconomics of Populism in Latin America*, Chicago: The University of Chicago Press, pp. 331-368.

Roubini, N. & X. Sala-i-Martin (1992), 'Financial Repression and Economic Growth', *Journal of Development Economics*, 39(1): 5-30.

Sanchez Torres, F. & T. Melguizo Uribe (1994) 'Ayuda y crecimiento económico en un modelo de tres brechas: El caso de Bolivia, Costa Rica, El Salvador y Nicaragua. Resumen', Bogotá: FEDESARROLLO (mimeo).

Taylor, L. (1990) *Foreign Resource Flows and Developing Country Growth*, Helsinki: WIDER.

Taylor, L. (ed.) (1993) *The Rocky Road to Reform. Adjustment, Income Distribution and Growth in the Developing World*, Cambridge (Mass.): MIT Press.

Taylor, L., R. Aguilar, S. de Vylder & J.A. Ocampo (1989) *Nicaragua: The Transition from*

Economic Chaos toward Sustainable Growth, Stockholm: SIDA.

TNI-CRIES (1988) *Aid that Counts. The Western Contribution to Development and Survival in Nicaragua*, Amsterdam: TNI.

Weinert, R. (1981) 'Nicaragua's debt renegotiation', *Cambridge Journal of Economics*, (June).

White, H. (1992) 'The macroeconomic impact of development aid: A critical survey', *Journal of Development Studies*, 28(2): 163-240.

White, H. (1994) 'Macroeconomic effects of aid. Literature review and methodological framework', ISSAS Document, The Hague: Institute of Social Studies.

World Bank (1993) *Republic of Nicaragua: Review of Social Sector Issues*, Report No. 10671-NI, Washington D.C.: The World Bank.