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STABILIZATION AND ADJUSTMENT
POLICIES AND PROGRAMMES

COUNTRY STUDY

3

NICARAGUA

BILL GIBSON

WORLD INSTITUTE FOR DEVELOPMENT ECONOMICS RESEARCH OF THE UNITED NATIONS UNIVERSITY

STABILIZATION AND ADJUSTMENT
POLICIES AND PROGRAMMES

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PREFACE BY THE DIRECTOR

This monograph is part of a series being published by WIDER on the experience of developing countries with stabilization and adjustment programmes in the 1970s and 1980s. Each study analyzes the package of policies implemented by a specific country; its relations with the IMF and World Bank; the effects of the policies on production, employment, the balance of payments and social welfare; and what other policies might have been followed instead.

The intention of the series is to assist developing countries to devise adjustment policies that would, while accomplishing desirable adjustment and growth objectives, simultaneously remain politically viable in the particular country settings studied.

For this purpose it was thought desirable to explore policy alternatives to the adjustment programmes being implemented. Built into the design of the series, therefore - and constituting indeed its special feature - is the requirement that each study include a 'counterfactual' exercise to illustrate the effects of alternative policies. Utilizing econometric models adapted or specifically developed for each country, the probable effects of alternative policy packages are estimated; the object was to see how far the balance-of-payments adjustment and growth goals of a particular programme might have been achieved at a possibly lower social cost with a different policy mix.

Each country study is written by an independent scholar and expert in the relevant country. First drafts of the studies in this series were discussed at the WIDER conference on stabilization and adjustment policies in developing countries which was held 19-22 August, 1986 in Helsinki. Each study has been reviewed by WIDER's research advisers for the project, Professors Gerry Helleiner and Lance Taylor, and revised substantively by the author as necessary; subsequent editing has been conducted under the overall supervision of Mr Robert Pringle, Senior Fellow, who serves also as editorial adviser on WIDER publications.

A companion volume by Professor Taylor summarizing the experience of the countries surveyed will draw broader implications for the theory and practice of stabilization and adjustment policies; this volume will be published by Oxford University Press. The individual country studies in this series will subsequently be grouped into separate volumes, also for eventual publication by Oxford University Press.

Lal Jayawardena
Director
March 1987

EXECUTIVE SUMMARY

Although the economy expanded very rapidly in the 1960s and 1970s, with the manufacturing sector growing three-fold, the great majority of the people were excluded not only from the fruits of this economic progress but also from any participation in the political process. This was adapted to serve one aim: the personal enrichment of the Somoza family and its associates.

The distribution of income was one of the worst in Latin America, the homicide rate was the highest in the world, more than 50 per cent of the population were illiterate, life expectancy was the lowest in central America and only 20 per cent of homes had running water. Since the revolution in 1979, the Sandinistas have been attempting to get the economy moving again while keeping the key foreign-exchange earning sectors largely in private hands. But investment has fallen. Private investment all but disappeared in the first few years after the revolution and government investment has been crowded out by the war effort. Growing budget deficits have been financed by printing money, and inflation has ranged up to 200 per cent a year.

The author of the following authoritative study, Dr. Bill Gibson, put the overall cost of the war against the Contras at \$1,567 million up to 1984, or about 18 per cent of GDP. The war has aggravated the rapid flow of labour from the countryside causing an acute shortage of labour during the harvests.

Ironically, the Sandinistas have been forced back on relatively orthodox economic policies, almost of an IMF type. While relying on socialist countries increasingly for foreign loans, they have announced repeated rounds of austerity measures in 1984-85, including several devaluations of the cordoba and market forces have been encouraged to play a larger role both in the pricing and credit systems.

In the author's view, further IMF-style contractionary policies would weaken the regime's political support. The basic problem is the lack of savings and private investment. The business class is insisting on greater access to the political system. This suggests that ultimately the regime will be faced with a choice: assume control of the foreign exchange earning sector or abandon the revolution.

WIDER wishes to make clear that, while every effort has been made to check the facts reported in this analysis, it takes full responsibility for the contents of the report and for any errors that remain.

I. INTRODUCTION

The economic problems currently faced by Nicaragua stem directly from 19 July, 1979 the day in which the 34-year Somoza dictatorship was overthrown by the Frente Sandinista de Liberacion Nacional (FSLN). Since then the external and internal reaction to the nature of the Sandinista revolution has been responsible for a host of thorny stabilization dilemmas. By far the most important issue has been the explicit destabilization effort of the United States through the CIA-directed war against Nicaragua. This has included a trade embargo (imposed by the United States in May 1985) and a virtual aid embargo. Together with a mounting debt crisis and a capital strike by the domestic bourgeoisie, the 'Contra' war has denied the Sandinistas a fair hearing on the merits of their programme.

Immediately after the 1979 revolution, there was, perhaps surprisingly, abundant foreign financing to assist the new regime, but Nicaraguan policy-makers soon realized that rather drastic measures would be necessary to bring the trade account into balance. They put into place an unorthodox set of policies which sought in part to achieve external equilibrium by contracting incomes in the upper income brackets. Policies to redress the external imbalance were explicitly designed to benefit the popular classes who spend less of any increase in income on imports than higher-income groups. External balance proved to be elusive, however, and in February 1985, the Sandinistas introduced a far more orthodox set of policies. This had many of the trappings of a standard IMF stabilization package: devaluation, restrictions on monetary growth and a reduction in the government deficit. It was announced that 'expensive' social programmes would be dismantled and new 'supply-side' incentives given to private agroexporters. Additional austerity measures were announced at the beginning of 1986; indeed, critics contend that the new policies amount to a 'monetarism without the monetarists'¹. The Sandinistas

retort that the policies are necessary to stabilize the economy in the face of external aggression.

So the Sandinistas at least nominally escaped the grip of the IMF, largely through direct trade and foreign exchange controls². Shortly after the FSLN took power, the government nationalized the banking system and established a government-controlled export clearing house. Imports were tightly regulated, and in 1982 private dollar transactions were declared illegal, effectively nationalizing all foreign trade. Closing the capital market and directly controlling imports fundamentally altered Nicaragua's historical relationship with world commodity and financial markets. In the early 1980s, these measures provided the FSLN with a degree of autonomy in conducting internal redistributive policies³. But with the escalation of the war, the Sandinistas saw their autonomy evaporate. Recently the FSLN openly admitted that it could not resolve the economic crisis without an end to the war⁴. Thus the US Congress decision to end fun Contras was timely, to say the least.

The objective of this chapter is to consider Sandinista stabilization policy in the context of the structural features of the economy inherited from the Somoza era as well as those which have evolved under the leadership of the Sandinistas. The following section discusses the structure of production and social class in the economy, how the agroexport-industrialization model finally broke down and the economic costs of the transition to the Sandinista period. Although no formal analytical model is presented, the argument will be implicitly grounded in a structuralist macro framework⁵. The third section discusses various policy problems faced by the Sandinistas: the nature and role of the state, monetary and fiscal policy, debt and the foreign sector as well as the key features of agricultural policy. Specific stabilization policies are addressed in the fourth section. Costs of the United States destabilization policy are presented and computable general equilibrium (CGE)

estimates of the distribution of the burdens of the war across the class structure is discussed. A concluding section offers some observations on the political aspects of Sandinista-styled stabilization programmes.

II. PRODUCTIVE STRUCTURE

Throughout its history, Nicaragua has faithfully served world markets. Not unlike many of the countries studied in this series, its transition from semi-feudalism was brought about largely through trade with richer countries. From the nineteenth century to the Great Depression, Nicaragua exported indigo, cocoa and especially coffee to the United States and Western Europe. Until the world price of cotton doubled in the early 1950s, exports consisted essentially of two crops, coffee and bananas. But in 1950-51, the area sown to cotton tripled and by 1955, cotton surpassed coffee as the leading export. In the post-war period, the policies of the Somoza family dictatorship promoted the rapid transformation of a marginal and backward two-crop economy into a modern capitalist economy, fully integrated into the world market (Austin *et al.*, 1985). Exports became more diversified (livestock, sugar and later tobacco and shellfish) as the Somoza government provided infrastructure, credit, marketing, storage and processing facilities as well as highly favourable support prices for export agriculture (Biderman, 1982).

The formal model appropriate to the Somoza period is described by Taylor (1986) as 'external strangulation', borrowing a phrase from ECLA of the 1960s, with the availability of foreign exchange as the principal determinant of the level of economic activity. Similar macrosystems appear in the chapters on Ghana, Tanzania, and Sudan and these are distinguished from the larger economies of Brazil, Mexico, Argentina, Peru and South Korea in which effective demand is the more prominent constraint. Since the cotton boom, Nicaraguan agriculture has provided 70 per cent of the foreign exchange needed to import intermediate and capital goods for the 'manufacturing' sector.

Supply in the non-traded sectors is limited by the availability of foreign exchange for imported intermediates. In the Somoza era, foreign exchange was allocated through a complex process, described in some detail below. Since the revolution, foreign exchange has been explicitly rationed at increasingly unrealistic exchange rates. With flexible prices clearing the markets, those with access to officially supplied foreign exchange reap large rent. The protection afforded by CACM achieved the same effect under Somoza: gross profits on Nicaraguan manufacturing assets in 1968 was reported at 45.6 per cent, the highest in the Central American Common Market (Rudolph, 1982).

Overlaying the basic two sector structure is a distended commercial sector accounting for approximately 30 per cent of GDP. Commerce employs about a third of the urban economically active population (EAP) and some 85 per cent are 'small producers' with less than five workers per establishment (Harris and Vilas, 1985:44). In the 1970s, the centre of gravity of profit-making began to shift from agriculture to agricultural processing and commerce⁶. Commercial capital came to constitute a power base from which the Somoza regime could be challenged and political alliances were formed with the agrarian bourgeoisie. Large commercial capital was influential, moreover, as a supplier of credit in the informal capital market. Credit allocation from the Central Bank was re-channeled through commercial capital to end-users who were infrequently able to qualify for formal bank credit. Since the revolution, the growth of the commercial sector has accelerated rapidly, drawing workers from more productive activities to share in the rent generated by the foreign-exchange shortage. The disproportionate size of the commercial sector has created a political crisis for the FSLN by widening the gap between official and market prices of scarce commodities. In 1984-85, the government stepped up its official campaign against 'speculation', imposing harsh penalties on unlicensed vendors. But because the underlying macroeconomic

conditions remained unchanged, there was little net effect. The attempt strictly to enforce the law was seen as thinly-veiled repression of a petty-capitalist class, barely surviving in a hostile economic environment.

1. **Structural duality: formal/informal sectors**

Further disaggregated, both agriculture and industry show the standard 'dualism' characteristic of the region as a whole with modern capital-intensive processes operating alongside traditional processes. Agroexports tend to be relatively modern, capital-intensive and technically sophisticated: cotton, for example, is planted and harvested by machine and dusted with pesticides by aircraft. Demand for labour in agroexports is typically weak, limited usually to a three to four-month harvest period. Domestic crops, corn, beans and sorghum, on the other hand, are produced under rudimentary, labour-intensive conditions. Productivity in domestic agriculture, having been at a standstill for three decades before the revolution, is now rising, owing to Sandinista policies which have reallocated some of the best land to homegood production for the first time. The dichotomy is not strict: coffee is produced by both traditional and modern growers and rice, a domestic food crop, is almost uniformly mechanized. While as a whole agriculture has contributed about a fourth of GDP since 1950, Table 1 shows that the percentage of the labour force absorbed has fallen steadily from 68.8 per cent of the EAP in 1950 to 41.8 per cent in 1980. Note also from Table 1 that the proportion of the agricultural labour force employed on modern farms fell from 62 per cent in 1950 to 43.1 per cent in 1980. During the same period, value-added in the predominantly modern agroexport sector rose from a quarter to half the total (Barraclough, 1982)⁷.

As in agriculture, there is strong structural duality in urban sectors. With the abundance of foreign exchange in the 1960s and 1970s, the modern industrial sector grew. The

share of manufacturing in GDP rose from 16 per cent in 1969 to 25 per cent in 1978. Between 1960 and 1978, real GDP grew by 164 per cent, while the manufacturing sector increased more than three-fold (BCN, 1979). Increasing capital-labour ratios of imported capital did not allow employment to keep pace, however, and the informal sector began to flourish. The proportion of the non-agricultural labour force employed in the informal sector rose to nearly one-half in 1980, whereas in other countries of Central America the percentage declined or was stable (CIERA, 1984). Labour in the informal sector serves as an industrial reserve army, satisfying the demand for formal sector labour when required⁸.

2. From growth without redistribution to redistribution without growth

In the period 1950-77, real output tripled, and although population was growing a 3 per cent, per capita income doubled. Real output grew at 5.8 per cent in the 1950s, spurted ahead at 8.7 per cent in the 1960s and slowed in the 1970s to 5.5 per cent (IMF, 1981). Figure 1 shows per capita GDP in terms of 1980 prices for the period 1951 to 1985. This graph strikingly illustrates the growth in per capita GDP up until 1977 and its collapse during the insurrection.

During this period, Nicaragua followed an export-led growth strategy, and was consequently vulnerable to shifts in the terms of trade. Figure 1 shows that as the export drive took off in the early 1950s, per capita income grew rapidly, but then slumped in the late 1950s along with the rest of the world economy. Growth resumed in the early 1960s, but was followed by another recession later in the decade. Observe that between 1950 and 1977, per capita GDP doubled, but since the insurrection, per capita income has yet to regain mid-60s levels.

The substantial real growth in real income that occurred in the first two years after the revolution, 10 per cent in 1980 and 8.5 per cent in 1981, was interrupted in 1982 by 100-year floods, which, according to UN estimates, caused more damage than the revolution itself (CEPAL, 1982). In 1983, the economy grew by approximately 5 per cent, while Latin America as a whole contracted by 3.1 per cent (CIERA, 1984). With the effects of the Contra war starting to make themselves felt, the economy contracted by 1.4 per cent in 1984 and 2.6 per cent in 1985. What is most striking about Figure 1 is the virtual collapse of per capita income after the 1979 revolution; the insurrection was clearly very costly. More than \$2 billion in foregone income alone was lost in the struggle to overthrow Somoza; in addition to direct damage of \$481 million, 35,000 people lost their lives, 80 per cent of which were civilians (CEPAL 1981:17). Since the revolution, losses in real income have continued to mount.

A broad explanation for why these enormous sacrifices were made holds that the agroexport model failed, in part, due to its success (Mayorga 1986, CEPAL, 1981). While growth rates were extraordinary, it became increasingly clear that the process excluded the great majority of the people. There is ample data to support this point of view. Although agricultural output was rising at a phenomenal rate from 1965-75, ECLA reported that the incidence of malnutrition doubled, affecting 60 per cent of children under four years of age (ECLA, 1980). In the early 1970s, 77 per cent of rural families had annual incomes of less than \$700 which, since the average rural family had 6 members, pushed per capita earnings below the estimated \$150 required for minimum subsistence needs (Biderman, 1982). Reasonably reliable data shows that in 1970, the top five per cent of the urban EAP consumed more than twice as many calories, protein and fat than the poorest 50 per cent of the population (FIDA 1980:53). Overall, the distribution of income was one of the worst in Latin America. In 1977, the

top 5 per cent of the EAP earned 20 per cent of the income, while the bottom 50 per cent earned only 15 per cent (CIERA 1983:41). Real wages increased from 1950 until 1967, but then the trend reversed itself and real wages have declined since.⁹ In the countryside, almost a third of the workforce was unemployed according to the 1971 census. Open unemployment hovered around 12 per cent in urban areas and including hidden unemployment was about a fifth of the labour force. Nicaragua's illiteracy rate was among the highest in the region, as was infant mortality, death due to contagious disease and number of persons per available hospital bed (CEPAL, 1981:8). Only 5 per cent of the population finished six or more years of education and 50 per cent were illiterate. Life expectancy was the lowest in Central America and 60 per cent of terminally ill Nicaraguans received no medical treatment for their condition. Twenty per cent of homes in Managua had running water and only 18 per cent had toilets. Under Somoza, Nicaragua had the highest rate of alcoholism in Central America and the highest homicide rate in the world (Rudolph, 1982).

In part, the revolution was the product of this profound economic crisis affecting the majority of the Nicaraguan people. Vilas (1984) and others, however, argue that the political crisis of the dictatorship was even more fundamental in bringing about its overthrow. By the mid-1970s, the Nicaraguan political system had degenerated into a 'kleptocracy', an arrangement designed and operated to enrich the dictator and his associates. In the 1930s, the patriarch of the Somoza family was installed as the head of the National Guard by the US Marines; he had virtually no assets. When the dictatorship was finally overturned in 1979, the personal wealth of the General's son was estimated \$1.5 billion (EIU: 1979:3,13). Assets included 20 per cent of the arable land, a quarter of industry, most of the banking system, the airline, as well as large parts of construction, food retailing and shipping concerns. The Somoza family was flanked by two numerically small but

powerful domestic coalitions which controlled 70 per cent of the financial assets and 20-40 per cent of GDP (Mayorga 1986:64). Domestic capital was dominant in banking, insurance and agricultural processing, but commerce and marketing were shared with multi-national corporations after the Alliance for Progress. In the aftermath of the 1972 earthquake, Somoza was accused of sidetracking relief funds for his own use. There were also charges of profiteering against Somoza and his associates in construction and land development. These and other abuses contributed to the outrage of what Vilas (1984) characterizes as an urban-based coalition of students and workers and elements of the bourgeoisie. Students were radicalized by the plight of the rural poor and workers by their own deteriorating economic conditions. But the fatal defect of the Somoza regime was in concentrating the benefits of the agroexport model in an increasingly small radius, using state power to further its private interests. The critical point was reached when an important fraction of the bourgeoisie, the Group of Twelve, disassociated itself with the regime and formed a tactical alliance with the FSLN.

The victory of the Frente Sandinista fundamentally altered the nature of the economy, but to a degree perhaps less drastic than its detractors have suggested. The Sandinistas were programmatically committed to the notion of a mixed economy and there was substantial ideological adherence to the view that the Cuban model, with its deep dependence on the Soviet Union, was unfeasible in Nicaragua. Private property was not identified as inherently evil or the source of exploitation and inequality. Since the Somoza properties nationalized by the Sandinistas were considered to have been stolen in the first place, the nationalizations were widely regarded as legitimate (Austin et al., 1985). The state increased its share in the economy from 15 per cent in 1978 to 41 per cent in 1980, but more importantly, the key foreign-exchange earning sectors remained in private hands. Cotton, for example which produces a fourth of annual

export earnings, was 75 per cent private in 1983, while beef was 80 per cent and coffee, 78.5 per cent.

3. Costs of the revolution

Quantifying the real price Nicaraguans paid for the transition from the dictatorship depends crucially upon the conception of the pre- and post-revolutionary economic structure and adjustment mechanisms. Mayorga (1986) argues that part of the poor performance since the revolution is attributable to inherent defects in the agroexport model. A simplified projection of pre-war growth rates overestimates the cost of the transition in that the Somoza model was structurally incapable of sustaining its extraordinary post-war performance. According to Mayorga, by 1978, the agroexport-industrialization model was 'on the verge of collapse ... the economic difficulties of the Nicaraguan economy from 1980 to 1984 were to a major extent a reflection of the exhaustion of the agroindustrial model.'

Mayorga's conclusions are based on a 166-equation disaggregated Keynesian macroeconometric model using data from 1953 to 1978. In the pre-revolutionary period, Mayorga argues that a combination of monetary, fiscal and exchange rate policies overstimulated capital imports of technology more suited to the relatively labour-scarce capitalist countries of the North. Employment stagnated. Output per worker grew with capital intensity, but a reserve army prevented labour from capturing productivity gains. Consequently aggregate demand began to weaken. Neither was there a sustained incentive to invest, since opportunities for exports were closed off by the decline of the CACM. The highly skewed distribution of income limited domestic purchasing power. In Mayorga's conception of the economy, stabilization would presumably involve demand stimulus, either through government expenditure or income redistribution. Hence, the programmes of the Sandinistas should have stimulated growth in the post-revolutionary period.

Table 2 shows the actual and forecast level of per capita GDP from 1978 to 1984 where the latter is a quadratic extrapolation of the pre-war trend values. The forecast level of per capita GDP suggests that the cost of the revolution has been high, almost half of per capita income. Mayorga's model, on the other hand, shows that the Sandinistas have done better than the ancien regime would have done under similar circumstances. The 40 per cent devaluation which occurred in 1979 is contractionary in his model and combined with the deterioration in the terms of trade, causes profits to fall to the point that investment and GDP contract.

An alternative view of the economy is presented in Gibson (1985), a SAM-based CGE. In this model, agriculture earns foreign exchange which is used for industrial intermediates. With a binding foreign exchange constraint, urban output and employment increases with the earnings capacity of export agriculture. The price in agriculture is given by the world price converted at the official exchange rate. Demand stimulus in this model is contractionary in that it causes exports to fall as demand for exportables rises. With constant foreign savings, non-agricultural output and employment shrinks to balance the new lower level of export earnings. Increasing effective demand also diverts resources from agroexports to domestic production and the lower dollar earnings translate into higher unemployment as the flow imported intermediates is restricted¹¹. Flexible nontraded prices cause rents to scarce foreign exchange to move countercyclically, providing the wrong signal for investment allocation inasmuch as it is agriculture which is ultimately producing the growth in income. Although the model is designed for comparative static analysis and cannot be directly compared with Mayorga's, the adjustment mechanisms suggest that deficit financed Sandinista policies greatly contributed to the stagnation observed in the economy after 1983. The war is thus a much greater impediment to recovery of pre-revolutionary income levels.

III. PROBLEMS AND POLICIES

Since the revolution, the principal problem confronting the Sandinistas has been how to restart the economy in the aftermath of the war, given the disaffection of the post-Somoza bourgeoisie and the hostile international economic and political environment. In order to maintain a sense of domestic legitimacy, the FSLN has also redistributed income in various ways including the agrarian reform, state subsidized health and education expenditure, and an attempt to underwrite the consumption of the popular classes through a system of consumer subsidies. In a demand limited economy, these goals are not necessarily inconsistent. But in a foreign-exchange constrained economy, the balance is more delicate, requiring trade-offs, compromises and politically difficult choices. Stabilization in the Sandinista context involves restricting demand but at the same time shifting its social composition, an exceptionally difficult manoeuvre under the best of conditions. In a supercharged political atmosphere, the task may well be impossible. A minimum prerequisite was to greatly step up state participation in the economy.

1. The Sandinista state

The principal internal structural reform of the revolution was the expansion of the role of the public sector. This effort was facilitated by the degree to which property was concentrated in the hands of Somoza and his supporters. After the expropriations, the Sandinistas controlled 21 per cent of agriculture, 25 per cent of manufacturing, 70 per cent of construction, 95 per cent of mining and 56 per cent of services. Overall, the state employed 21 per cent of the EAP (Irvin, 1983). But above all, the state under the Sandinistas has been responsible for maintaining the pace of accumulation (investment). In the first four years after the insurrection, private investment all but disappeared as the state's share in the total rose to more than two-thirds¹².

Despite efforts by the Sandinistas to centralize and coordinate the accumulation process, investment as a share of GDP has fallen compared to the pre-revolutionary period. In the boom years, 1952-57, investment averaged 16 per cent of GDP. After slowing in the recessionary period 1958-62, investment recovered to approximately a fifth of GDP in the 1960s, although it then decelerated in the late 1960s and did not recover until the reconstruction effort after the earthquake¹³. After an initial period of capitalization in 1980, government capital spending fell as a percentage of GDP in 1981 but then accelerated rapidly in 1982 and 1983. By 1982, social expenditure was 115 per cent above the 1977 level, with the majority of growth in the areas of health and education (CIERA, 1983). But by the end of 1983, the war began to exact a larger toll on state sponsored accumulation as the government has now explicitly opted for financing defence expenditure out of investment rather than consumption. Table 3 shows the rate of investment at only 15 per cent of GDP in 1984 and it probably declined further in 1985 (IHC, 1986).

Figure 2 shows that private savings financed the bulk of accumulation in the pre-revolutionary period. The share of savings provided by foreigners was small (less than 10 per cent of GDP) until after the 1972 earthquake¹⁴. After 1977, foreign savings virtually disappeared as capital flight in anticipation of the revolution gained momentum. Total capital lost was recently estimated at \$518 million, or about a fourth of current GDP (INIES 15, 1984). The figure shows that government savings was stable until 1972, at a small fraction of GDP, but after the earthquake, government dissavings absorbed an increasing proportion of private savings. Prior to the revolution, the public sector budget was essentially in surplus until the late 1960s and government consumption was on average below 10 per cent for the entire pre-revolutionary period¹⁵. The ratio of tax revenues to GDP was the lowest in Central America, with two-thirds of tax revenues derived from regressive indirect taxation and there was widespread tax evasion (Biderman,

1982). Although Somoza had signed an agreement with the IMF to limit deficit spending as a condition for drawing on its stand-by facility, in the last months before the revolution the deficit soared. The deficit for the month of July, 1979 alone was higher than for any year before 1973.

The first three months of 1980 were characterized by near fiscal equilibrium since the government instituted a new flat tax and a one-time 'patriotic' tax on capital assets. The effective tax rate increased as corrupt tax collectors fled the country. In real terms, current revenues increased by 50 per cent from the 1978 level but since then rising government deficits have plagued the new regime. Recent budget deficits as a percentage of GDP are three times the average for 1974-77 and seven times the average for 1968-72. Largely due to the estimated 50 per cent of the government budget which has been devoted to defence, the deficit peaked at an all-time high of 25 per cent of GDP in 1984 (INIES 21,1985). This figure is up from 20 per cent in 1983 and 13.6 per cent in 1982. Preliminary data for 1985 indicate that the deficit has fallen slightly to 23 per cent of GDP (IHC, 1986)¹⁶.

In the first years after the revolution, government deficits were financed by foreign loans, but since 1982 the Sandinistas have increasingly turned to the printing press. In 1979, 79 per cent of the deficit was financed by central bank borrowing, but in 1980 the figure fell to 32 per cent. Since then, the percentage of internal finance has risen rapidly, reaching a high in 1982 of 86 per cent and then declining to 59 per cent in 1983 (CEPAL, 1984). Government borrowing is well in excess of its fixed capital needs and has been used to finance current expenditures. In 1983, for example, borrowing was twice the level of real investment (CEPAL, 1984).

Inflation has increased in step with the excess demand pressure from the government deficit and the reduction in imports. In 1979, the CPI increased by 70 per cent. For the

next three years, a combination of imports and price controls on key consumer goods held the rate at approximately 22-25 per cent per year, but in 1983 inflation accelerated to 37 per cent. In 1984 it surged to 70 per cent and to about 200 per cent in 1985.

2. The foreign sector

Immediately after the revolution, the Sandinistas established virtual monoposony control of exports through a system of six enterprises under the Ministry of Foreign Trade. Although there is some private-sector participation, imports are also by and large controlled. Each week the government decides, based on currently available earnings from exports, loans and donations, what is to be imported. Sandinistas have permitted repatriation of a limited quantity of profits by multinationals, but capital flight has been constrained with strict controls over domestic dollar accounts. There is undoubtedly a significant amount of leakage through the black market and remittances, but savers who would otherwise hold dollar denominated assets in foreign banks are now required to keep their capital at home. Recently adopted policies, such as selling dollars to the public through a small number of exchange houses and permitting exporters to earn dollars through export promotion schemes have put more foreign exchange in the hands of the private sector (Pizarro, 1986). These measures weaken the control the government is attempting to exercise over migrant capital but the trade-offs is in stimulating production.

Table 4 indicates the enormous gap between imports and exports sustained since the revolution. Nicaragua is an economy which imports half of its material supply and pays for barely a third of its imports with exports. Nicaragua has managed to run current account deficits of more than half a billion dollars a year in the five years since the insurrection.

Until 1972, Nicaragua's current account deficit as percentage of GDP was well below the 10 per cent mark and even after the earthquake remained below 17 per cent of GDP (BCN, 1979)¹⁷. Foreign debt, at least until the earthquake, was of relatively manageable proportions and Table 4 shows the debt-service ratio for 1973-77 averaged 17.2 per cent. During this time, the means of financing current-account deficits was primarily through medium- and long-term borrowing by the public sector with foreign commercial banks supplying much of the required capital. In September 1978, however, Somoza applied to the IMF for \$20 million under its compensatory finance scheme. In an effort to force Somoza to resign, or at least agree to a plebiscite on his continued rule, the United States persuaded the IMF, first in October and then in November, to defer its decision on the loan (EIU, I, 1979). When the Central American Monetary Council agreed to a \$20 million loan from its stabilization fund, Somoza withdrew his request from the IMF. But then when the Ministry of Treasury notified the private banks that Nicaragua would be unable to meet its obligations, a new IMF mission was dispatched the following February. Because the government had applied for its full quota of \$43.3 million, in addition to a \$22.7 million provision for export losses, the IMF was in a position to impose strict conditions for the loan, including a 43 per cent devaluation of the cordoba and a limit on deficit spending. With the onset of the revolution, the capital flight and destruction of productive capacity, however, there was little change of 'stabilizing' the economy; indeed, the loan is considered among the most ill-conceived in IMF history (Stahler-Sholk, 1986). The loan was approved only nine weeks before the regime collapsed and what disbursement did take place before the Sandinista victory was used to finance armaments and capital flight (Stahler-Sholk, 1986). Somoza himself transferred some \$70 million to his foreign accounts in the final days of the regime (EIU 3, 1979).

When the new regime came to power, there were sufficient reserves for only two days' imports. The combination of debt financing of the reconstruction, the defence build-up prior to the revolution and the accumulated current account deficits has left the Revolutionary Government facing the highest ratio of foreign debt to GDP in Latin America and a total debt of \$1.6 billion. Three-quarters of this was owed to commercial banks and debt service exceeded exports. With the exception of weapons loans from Israel and Argentina, the Sandinistas accepted the entire burden of the Somoza debt in order to remain creditworthy and bolster the confidence of the private sector. In December 1980, \$582 million in debt owing to 72 US and European banks was re-negotiated for a 12-year period, including a 5-year grace, at a flexible rate to rise from one per cent to 1.75 per cent over LIBOR in 5 years. Several features were considered unprecedented by the banking community: first, that the loans were renegotiated in reference not to market conditions, but to the ability of the debtor to pay; and, second that the negotiations took place in an environment free of IMF interference¹⁸.

Shortly after taking power, the Reagan administration cut off bilateral aid, the last \$15 million of the \$75 million granted by the Carter administration, Exim Bank credits and \$10 million in PL 480 financing for wheat. In 1983, the Treasury confirmed that it was US policy to oppose all multilateral loans to Nicaragua (Stahler-Sholk, 1986). By 1984, total debt increased to \$4.3 billion, or \$1,347 per capita, second in the region only to Costa Rica and more than four times that of Guatemala (INIES 21,1985). Table 5 shows the debt-service ratio as a contractual obligation as well as what was actually paid. Since the bulk of the debt is non-commercial, the Sandinistas have enjoyed some flexibility in debt rescheduling and consequently the amounts actually paid are considerably lower. It is clearly the substantial political support from Latin America, Western Europe and the socialist countries, together with

the image of Nicaragua as a victim of the 'bully from the north' that is responsible for such extraordinary access to foreign financing. As CEPAL recently noted, the rate at which capital is entering Nicaragua is seven times its current interest payments and 'this puts Nicaragua in a different situation than that which confronts the majority of other Latin American countries...' (CEPAL, 1984).

More recently, however, the mix of creditors has shifted markedly toward the socialist countries. From 1979 to 1982, 28 per cent of loans came from multilateral institutions, while 31 per cent were from Latin America and 22 per cent from the socialist countries. For the 1983-85 period, the balance shifted to 4.3 per cent from multilaterals, 14 per cent from Latin America and 64 per cent from the socialist countries. In 1984, there were no multilateral loans and in 1985, the preliminary data shows 84 per cent of loans coming from the socialist bloc (Stahler-Sholk, 1986). Similarly, the direction of trade has shifted. In 1980, 36 per cent of exports went to the United States with 2.7 per cent to the socialist countries. But by 1984, United States absorbed only 12.1 per cent; Japan has largely picked up the shortfall. On the import side, the socialist countries supplied 26.5 per cent in 1984, up from 0.2 per cent in 1980 (Mayorga, 1986:168).

Table 5 shows that imports have fallen steadily since 1981 as import controls have been gradually tightened. Between 1980 and 1983, import prices declined 12 per cent, but rebounded in 1984 and 1985. Export prices have fallen much more, as seen in Figure 3. In 1981, the prices of all four major export products dropped simultaneously for the first time in Nicaragua's history and, on balance, the terms of trade declined 30 per cent between 1978 and 1983. Factoring in debt service, import potential has declined to 41 per cent of its 1978 value (INIES 15,1984). Mayorga (1986) argues that the bulk of Nicaragua's indebtedness has gone to pay for the deterioration in the terms of trade and

debt service. Table 5 portrays the 'debt-trap' which has ensnared Nicaragua; when adjusted for the terms of trade and debt service, real credit absorption has steadily declined through the post-revolutionary period. By 1984, real external credit was almost negligible as a source of accumulation for the economy. Since 1980, credit has increased Nicaragua's real purchasing power by only 25 per cent of the change in nominal indebtedness of \$2.5 billion.

3. Agrarian policy

In light of these trends in export performance and debt, the conception of the economy as limited by the availability of foreign exchange suggests that the Sandinistas will have to promote agroexports as part of any stabilization programme. Thus far, the emphasis of agrarian policy has been somewhat biased toward domestic agriculture¹⁹. The agrarian reform, credit, internal terms of trade and subsidy policy have favoured small and medium farmers who are by and large producers of basic grains and other foodstuffs²⁰. On balance, Sandinista agricultural policy has resulted in substitution of domestic agricultural crops for agroexports, at least through the 1983/84 cycle. The average proportion of total cultivable land devoted to agroexports was 45 per cent between 1970-77, but by 1982/83, the figure had fallen to 39 per cent. There is some evidence that this trend is reversing, however, as the foreign exchange shortage becomes more acute. In the 1984/85 cycle, the proportion rose to almost half.

As a whole, the agrarian policy record is mixed. On one hand, the agrarian reform can be counted as one of the major policy successes achieved since the revolution, in that land has been redistributed without greatly reducing output. By 1981, agriculture as a whole had regained 70 per cent of its 1980 loss due to the interrupted cycle in 1979. But as can be seen from Table 6, maintaining export performance, especially in cotton, has been more

problematic²¹. In terms of total cultivated area, the export sector has still not recovered the 1970-77 mean of 285.2 thousand hectares, yet the domestic sector surpassed the average in the 1983/84 crop cycle. Gains in agroexports have largely come from small producers and the Area de Propiedad del Pueblo (APP), or state sector. (Baumeister and Neira, 1985). In the 1980/81 cycle, large growers accounted for 74 per cent of the total area sown to cotton, but by 1983/84 the figure dropped to 47 per cent. Small producers, private and organized in co-operatives, increased their share dramatically from 9 per cent to 25 per cent of the total area sown, while APP increased from 17 per cent to 25 per cent (Vilas, 1985). Large-scale growers have by and large not cooperated with the regime and there has been a productivity slow down on the state farms established on the expropriated properties of Somoza and his associates (Mayorga, 1986). Even though state farms have access to the most fertile land in the country, they have been slow in recovering pre-war acreage levels. Given the tendency for the foreign-exchange shortage to manifest itself in high non-traded prices, terms of trade favourable to agriculture have been difficult to maintain. The obvious problem is incentives: with the exception of sugar, all real prices of agroexports have declined since the revolution (Mayorga, 1986:127). The chapters on Tanzania, Ghana and Sudan confirm the dilemma as typical of externally strangled economies without effective price controls on scarce imports.

Somoza followed a 'cheap food' policy designed not only to maintain low urban wages but also to force peasants to provide peak-period harvest labour to supplement their incomes. By means of stopgap imports (up to 20 per cent of national corn consumption and 10 per cent of bean consumption) Somoza held down the price of basic grains and, predictably, output stagnated. Corn yields stagnated for three decades prior to the revolution and the time trend for bean yields at the national level is actually negative²². Terms of trade were turned against domestic agriculture with

prices of basic grains below those of the world market and small food producers were systematically denied access to state resources in the form of agricultural credit, inputs and technical assistance (Barraclough, 1982; Biderman, 1982).

When the Sandinistas took power in 1979, they inherited a highly skewed agrarian structure comprised of three basic social classes: a modern agrarian bourgeoisie, peasant agricultural producers and rural workers. Land ownership was heavily concentrated. As agroexports expanded, peasants were bought out and sometimes forcibly evicted by the emerging landed aristocracy with the assistance of the National Guard and local police. Much of the land fell into the hands of the Somoza family itself. Between 1952 and 1978, total area cultivated increased by 162 per cent, while the number of farms increased by only 62 per cent. By 1978, the rural bourgeoisie, 5 per cent of the rural EAP, owned about 85 per cent of the land. Semi-proletarian peasants, 58 per cent of the EAP, controlled the rest of the land and the remaining 37 per cent of the EAP were landless (Deere et al., 1985). Between 1952 and 1971, the real income of the rural poor, minifundistas with land holdings less than 7 hectares, rose only by 8.7 per cent. (Barraclough, 1982). Table 7 provides data on the level of inequality in rural Nicaragua in 1971.

Since the revolution, the Sandinistas have sought to reverse the trends in the distribution of rural income through the agrarian reform, an across-the-board reduction in land rent by 85 per cent and a declared commitment to food security. Titles have been granted to more 2.7 million hectares of land benefiting more than 86,000 families as farm owners or members of farm cooperatives (INIES 30, 1986). The new titles have affected 50 per cent of Nicaragua's farmland. The agrarian reform was successful in counteracting the trend toward land concentration in pre-revolutionary Nicaragua. From Table 8, it is seen that

the proportion of land held by large commercial farmers (holdings greater than 350 hectares) increased from 40 per cent in 1952 to 48 per cent in 1978 and medium-sized holdings down to 35 hectares declined by 14 per cent. But by 1981, the APP accounted for 20 per cent of total land, reducing substantially the share of land held in large private units.

The agrarian reform law of July 1981 limited expropriations to under-utilized, abandoned or decapitalized land, and shifted the focus of the agrarian reform from expropriations to co-operative development. Middle peasants with an adequate land base were organized into credit and service co-operatives (in which land is held individually) whereas landless workers and minifundistas have formed production co-operatives (see Table 8). The agrarian reform accelerated with the onset of the Contra war. Squatters were given titles to land in the war zone and for the first time, some large state farms were broken up for individual distribution.

Certainly much of Nicaragua's stabilization problems stem directly from an inadequate mix of macro and agricultural policies. Throughout the post-revolutionary period, the exchange rate has been systematically overvalued, with the result that the incentive to produce and accumulate has shifted from traded to nontraded sectors. Foreign exchange becomes increasingly scarce and the associated rent is captured by the private sector, which is reluctant to reinvest. The overvalued exchange rate prevents the Sandinistas from recycling the surplus back to the foreign-exchange earning sectors and the crisis continuously deepens. Gibson (1985), using a SAM-based CGE, suggests substantial devaluation (among other policies) as a basic stimulant to agroexports²³. In 1982, the government instituted a system of multiple exchange rates, but the implicit rate of devaluation in the first year was only 20 per cent on average and approximately 15 per cent thereafter

(De Franco, 1985). Cotton and sugar have been favoured in the trajectory of implicit exchange rates, reflecting more the powerful bargaining position the large, organized growers have begun to wield (Colburn, 1986). Agricultural policy is intimately connected to macropolicy in that Central Bank losses on foreign exchange transactions implied in the system of multiple exchange rates is a source of monetary growth which feeds back through the black market for foreign exchange, raising costs and stunting growth in real output.

It is probably true that even a highly favourable exchange rate could not induce agroexporters to full recovery inasmuch as foreign-exchange controls have cut off access to imported luxuries and dollar-denominated vehicles for savings. In February 1982, the government addressed this problem through its Programa de incentivos a las Exportaciones (PIE), which provided for foreign exchange 'certificates', instruments which could theoretically be used to import intermediates and some luxury goods. Accounts were established, but almost immediately frozen and growers never had effective access to dollars. With an ineffective 'carrot', the Sandinistas seem to be left with only the 'stick'. The threat of confiscation which the Sandinistas hold over agroexporters has forced a minimum compliance with utilization requirements²⁴. But many experienced growers have already left the country and those that remain are simply treading water or have switched to sorghum, a crop which is more easily cultivated, but earns little foreign exchange (Colburn, 1986). Coupled with the constant threat of expropriation, the overall package of incentives presented to the agroexporters by the Sandinistas is regarded as hopelessly inadequate. With the fiscal burden of the war, the government will be hard pressed to remedy the situation without fundamentally altering the nature of the economy. Thus far the Sandinistas have resisted the temptation to bring the principal foreign-exchange earning sectors under state control, but if the aggression continues

to escalate, the proportions of the 'mixed economy' might well change in the direction of more state control sectors vital to the existence of the economy.

4. Supply and demand for food

Table 9 shows that food production has substantially recovered, although the results are by no means consistent across products. Peasant producers, responsible for 80-90 per cent of basic grain production, have been supported with credit, technology, marketing and processing services and have generally responded. But the redistribution of income under the FSLN, together with sub-minimum nutritional levels of the pre-revolutionary period has meant that the increase in the demand for food has outstripped supply. Apparent food security has therefore diminished under the Sandinistas. Table 10 indicates that basic grain imports reached historical highs in 1983, with a shortfall of 25 per cent of internal demand. Although national self-sufficiency in rice was achieved in 1982, imports of all foodgrains resumed in 1983 and 1984. In recent years, the government has not been able to import sufficient quantities of basic grains to stabilize prices, which have been free to fluctuate since February 1985. Total food imports rose from 8.3 per cent of total imports in 1978 to a high of 15.6 per cent in 1982 and 11.1 per cent in 1984. Basic food imports as a percentage of imports of food increased from 48.1 per cent in 1978 to 83.3 per cent in 1984 (Utting, 1986).

Prior to the revolution, small and medium farmers received only 7 per cent of total agricultural credit, with 80-90 per cent of the credit absorbed by agroexporters. (Colburn, 1986; Enriquez and Spalding, 1986). In 1980, the amount increased six to seven times pre-revolutionary levels, but the massive infusion did not have its intended consequences of increasing output and productivity. Credit was not accompanied by access to technology and other support services and much of the harvest was never collected

by government officials (Collins, 1985). Estimates of credit needs were based on standardized technologies which few peasants could actually utilize. Consequently, much of the new financing was used for consumption and probably even contributed to the labour shortage for harvests of export crops. Only about 26 per cent of the credit was repaid and the programme was curtailed sharply in 1981 (Enriquez and Spalding, 1986). In 1983, 370 million cordobas in peasant debts were forgiven and the recuperation rate rose to 61 per cent for the 1984/85 season (Enriquez and Spalding, 1986).

Until 1983, Sandinista agrarian policy amounted to a rejection of many of the basic features of the Somocista agroexport model. Access to resources was considerably widened and the distribution of income became less skewed. Peasants maintain, however, that despite Sandinista efforts their real incomes have suffered, largely due to the deterioration in the internal terms of trade. In 1978, a machete and a pair of pants cost the equivalent of 50 pounds of corn; but by the end of 1984, these same goods were exchanged for 120 and 550 pounds of corn, respectively. Sandinista rhetoric has supported reversing the historical slide in the internal terms of trade observed since 1972, while at the same time the government has attempted to maintain low food prices (Mayorga, 1986). Support prices for basic grains were increased in response to the US cutoff of wheat shipments in March 1981; rice and bean prices were increased more rapidly than corn and sorghum. But even with this initiative, no support price has kept pace with consumer prices (Zalkin, 1986). Small producers are not nearly as well organized as agroexporters and consequently are not able to press their claims for better terms of trade²⁵.

It is nevertheless possible to argue that Sandinista agricultural policies have been successful to the point that the average Nicaraguan is eating better now than before the revolution. Utting (1986) provides evidence that average

annual per capita consumption for most basic foods increased during the 1980-82 period but then stagnated thereafter as the foreign exchange crisis and war made their impact felt. Subsequently, the redistributive policy has been undertaken through imports. Utting (1986) finds that per capita consumption levels of eight of the eleven basic products still exceed their pre-revolutionary levels. Shortages have occurred in sugar, rice, cooking oil, soap, and gasoline, commodities which have since been distributed through a system of rationing cards. Demand for exportable beef is high due to the redistribution of income and the perception by most Nicaraguans that meat is an essential component of a nutritionally adequate diet. The Sandinistas' official policy is to encourage beef exports, even though the average house cat in the United States consumes more beef than the average Central American. Chicken has been an acceptable substitute and its consumption was 80 per cent above 1977 levels in 1982 (Austin, et al. 1985). Per capita consumption of corn and beans is about equal to its pre-revolutionary maximum and rice consumption is above its historical trend; virtually all non-basics, such as clothing, household effects and consumer durables are down.

In order to maintain consumption levels, the government has relied upon an extensive system of consumer subsidies of basic commodities. Until 1984, food subsidies increased with each year of the revolution. In 1983, the subsidy to ENABAS, the national marketing system, was the largest expense of the central government after defence (Colburn, 1986). The exorbitant cost of these programmes, as seen in Table 11, led to a dramatic cut by 50 per cent in May 1984 and their virtual elimination in 1985. Even with the reductions, consumer subsidies rose from 3.8 million cordobas in 1979 to more than 672 million in 1984. By 1983, the ratio of the producer price to the consumer price was 2, 1.5 and 1.35 for corn, beans and rice respectively (Mayorga, 1986). In the case of corn, the difference was so enormous that producers would often sell their entire crop to the

government and then buy corn at the subsidized price for consumption and intermediate uses.

Sandinista agricultural policy would no doubt be more successful in an environment free of external aggression. In addition to direct damage to agricultural production, the war restricts labour supply and absorbs resources which could be devoted to solving agricultural problems. Prices are low and demand is high: currently 10 per cent of rice production and 8 per cent of corn and cooking oil output goes to defence. Moreover, the agrarian policy-making process is supercharged by the perceived need to channel human and material resources to the war effort²⁶. Colburn (1986) makes the point that there is substantial pressure to continue some unproductive commitments of credit, resources, etc., since peasants are being recruited for the counter-revolution. Clearly, the war in part explains the acceleration in the agrarian reform observed in 1985. But the Sandinistas are extremely sensitive to the need to promote agroexports and, hence, the gains made by peasants in the first four years of the revolution will be gradually eroded if the Contra war continues.

IV. STABILIZATION POLICY

In the three decades of the Somoza period, the Central Bank operated under the assumption that complete convertibility precludes the possibility of monetary activism through interest rate policies (Incer, 1974). Money was endogenous in the sense of its being demand determined and the monetary authority saw its main responsibilities as determining the quantity of foreign borrowing by the financial system (Mayorga, 1986:183). Conservative monetary policy and convertible currency kept domestic prices in line with international prices. Neither was capital flight a problem: prior to the revolution, the only year in which there was a deficit on the private capital account was 1972, the year of the earthquake. The close control held by the Somoza bureaucracy on the government account and money supply insured that Nicaragua would not spend more on imports than it could afford to pay for, at least up until the end of the regime.

From the perspective of the Somoza-era policy makers, the guiding principle of stabilization policy was the monetary approach to be balance of payments²⁷. The success achieved in managing the fiscal and foreign accounts was due to a conservative approach to government spending and careful programming of the money supply. Until the earthquake, the central bank could, with considerable accuracy, predict the demand for money. A target for reserves was then established and guidelines for credit expansion were determined. Estimates of the credit needs of the public sector were made according to expenditure projections and private sector loan demand for working capita varied closely with output, in both agriculture and manufacturing. The commercial sector in the Somoza period was the lubricant which kept the entire system functioning. With fixed interest rates and a relatively stable money supply, credit absorption of the commercial sector was the adjusting variable. Of course, any excess demand for credit

from the commercial sector could be met with private foreign capital flows or trade credits, but this exposed the commercial bourgeoisie to a considerable degree of risk due to the possibilities of default. Moreover, even though the exchange rate was stable throughout the period, there was some degree of exchange-rate risk. Consequently, commercial capital often reacted to central bank credit rationing by reducing its own internal trade credit with its customers, thereby transferring the credit crunch to other sectors of the economy. Because of the depressing effects on real activity, the central bank would sometimes accede to the demand for commercial credit, over-running its monetary targets. In view of Somocista policy-makers, this was the principal cause of balance-of-payments difficulties.

In the medium-term, the government reacted to deficits on the current account through fiscal adjustment. Since spending was relatively inflexible, the main adjustment was on the revenue side, through tariffs and indirect taxes. The urban oligarchy was sufficiently strong to deflect any attempt to raise taxes on the manufacturing and commercial sectors, but the agricultural sector was more vulnerable. This was especially true in coffee, in that the sector consisted of an amalgam of producers, small and large, crossing all social classes. More tightly organized producer groups, as in cotton, sugar and rice, could wield considerable influence on tax incidence. When sector specific taxes could not be raised, indirect taxes were increased to make up any shortfall. The adjustment to foreign sector disequilibria was a model of the smooth functioning of what Dornbusch (1982) calls the 'old paradigm' due largely to the social structure of the dictatorship. Those on whose shoulders the burden of adjustment fell were structurally incapable of resisting the deterioration of their real incomes.

Until 1972, the scheme worked well, but after the earthquake, the system began to unravel. Nominal wages

actually fell for three years after 1972, while inflation accelerated²⁸. There was little pressure to maintain government spending for social programmes or infrastructure and the regressive tax system was pumped up to reduce the deficit on the government account. Had the revolution not interceded, the post-earthquake adjustment might have been possible, although as seen above, there is some evidence that the model itself was on the brink of exhaustion.

The Somoza regime maintained a close relationship with the IMF since its first use of Fund credit in 1957 (IFS, 1980). Since then, and until the revolution, Nicaragua was a prominent client of the IMF, signing in 1964, 1972 and 1975. Relations with the Fund were unblemished in that the Somoza dictatorship was able to adhere strictly to the Fund's policy advice. Somoza's policies were virtually coterminous with IMF prescriptions in that the monetarist conception of the economy was fully shared with IMF officials. Moreover, an IMF agreement, while opprobrious to progressive regimes, was a source of power and prestige to the central bankers of the Somoza period in their struggle with elements of the bourgeoisie, especially powerful merchant capital. This fact explains Nicaragua's use of Fund credit even when there was no real balance-of-payments crisis²⁹. The weight of Fund recommendations backed the Central Bank in negotiations with the domestic bourgeoisie, which always preferred to acquire access to foreign sources of financing through official rather than private channels.

1. Sandinista stabilization policies

If Somocista macroconsistency hinged on government spending as the adjusting variable, the Sandinistas have erected a scheme in which a flexible non-traded price serves the same purpose. With a fixed nominal exchange rate, external balance required rather close control over imports and capital movements. On the financial side, the control variable for the Somocista model was commercial credit with

private foreign exchange holdings adjusting to a target. Portfolio balance under the Sandinistas is increasingly taking place through black market foreign exchange transactions. The Sandinistas have no target for the black market exchange rate, but realize that excessively high flexible prices for goods with imported content (or their close substitutes) has caused a serious misallocation of labour resources. But more importantly, the war has deprived the Sandinistas of much of the flexibility enjoyed by Somocista policy-makers in that substantial fiscal adjustment to external shock is simply not as feasible as it once was.

Temporally, post-revolutionary stabilization policies can be broken down into three relatively distinct phases. July 1979 through December 1981 was a period of reconstruction and consolidation of the victory over Somoza. In this early phase, stabilization policy was aimed at changing the composition of aggregate demand to reduce dependence on foreign exchange. A ban on luxury goods was imposed and gasoline was rationed. Advances in the social wage and consumer subsidies as well as the agrarian reform helped to weld together a solid base of support for the regime. Agroexports were recovering, foreign loans were abundant and nominal wage growth was restrained. Defence needs were slight and there was little inflation. Without the effects of the war to contend with, there was no need to contract demand, except perhaps to reduce the rate of growth of foreign debt and this was not a priority. There was little excess demand pressure. Immediately after the revolution, formal reserve requirements were virtually abolished and domestic credit more than doubled between 1978 and 1980. Most of this credit creation was absorbed by the government. By mid-1980, however, it was recognized that the growth in credit was untenable due to the pressure on the balance of payments and an official policy credit containment was adopted (WB, 1981). The money supply increased by only 29 per cent in 1980 and 24.3 per cent in

1981. The 'initial conditions' of the post-revolutionary period were favourable, except for the downswing in the terms of trade and loss of productive capacity in the revolution itself.

The second phase, December 1981 through October 1983, was a period of transition from the early, almost euphoric days to a war economy of. In response to Reagan's authorization of \$19 million in CIA funds for the support of the Contra and a sevenfold increase in military aid to Honduras, government expenditure on defence increased from 13 per cent to 25 per cent of the total budget (INIES 15,1984). External financing fell sharply as the budget deficit accelerated. Demand induced inflation began to pick up in 1983. Consumer subsidies continued to rise to the point that the government realized they could not be sustained. In light of the large injection of government spending, private investment would have undoubtedly been 'crowded in' under more balanced political circumstances. With the support of the World Bank and other multilateral institutions, government spending on infrastructure as well as providing small and medium producers with credit and technology would have created a highly favourable investment climate. In the current context, however, even substantially negative interest rates for freely flowing credit have not been sufficient³⁰. The state took over the bulk accumulation for the economy, but largely through deficit financing since defence expenditure exhausted current revenues. Stabilization in this context meant reducing investment or defence spending; the Sandinistas chose the former.

The next phase, began in November 1983 when the US Congress approved another \$24 million in aid to the Contra. Emergency measures were taken to counteract the impact of the war and an extreme foreign exchange shortage. In 1984, total internal credit rose by 40 per cent with private sector credit increasing by only 20 per cent and credit to the government by 82 per cent. The fiscal deficit rose to 25

per cent of GDP and inflation surged with the corequisite decline in real wages. From the beginning of this period it was clear to the Sandinistas, that government expenditure and monetary expansion incommensurate with real resource flows could not continue. The source of inordinate growth was first the war, second social spending and third the import subsidy implied by central bank losses on foreign exchange transactions. The excessive injections of liquidity into the economy caused enormous dislocations in the internal economy, especially in the development of the black market for foreign exchange, discussed in more detail below.

2. De-Stabilization policy

The issue currently facing the Sandinistas is whether there exists a set of policies which could conceivably counteract the effect of the CIA-financed Contra war. The de-stabilization campaign waged against Nicaragua by the United States has disrupted production, distorted monetary and fiscal policy, caused chaos in the labour market and accelerated the development of a black market in foreign exchange. This is in addition to the human and material damage inflicted and the fact that the Contra war has effectively curtailed social and infrastructural investment. Although the Contras have no territorial or political footholds in the country, the burden of defence has proven to be debilitating to the small, relatively weak Nicaraguan economy. Given that the possibilities of a military victory seem remote, the United States appears to have adopted a strategy of wearing down the economy and undermining the social and political support for the Sandinistas (Fitzgerald, 1986).

The direct costs of the aggression through 1984 are given in Table 12, broken down into direct material damage and foregone production³¹. Now, more than half the government budget is devoted to the war effort and as of 1985, the total cost of direct military aggression since 1980

is approximately \$498.2 million, about a fourth of current annual GDP. In addition to direct damage, the United States has blocked \$272.9 million in development projects to be financed by the World Bank and IDB (approximately a fifth of total investment during the period.) The impact of the US trade embargo was estimated at \$50 million for 1985. In a comprehensive study, World Bank (1981) project growth of 39 per cent between 1980 and 1995, with exports reaching \$1.1 billion by 1984. As a result of the war, the disaffection of the domestic bourgeoisie and miscellaneous costs of the transition from the dictatorship, actual growth has been of the order of 9 per cent, with exports roughly one-third of the predicted level. The World Bank anticipated a net flow of \$424 million from multilateral lenders when, in fact, gross disbursements were only \$336 million. \$234 million has been re-paid in interest charges. Fitzgerald (1986) identifies a key irony of the World Bank report:

The projects blocked in the World Bank itself and the Inter-American Development Bank are precisely those that the World Bank had identified as essential for the stable development of the Nicaraguan economy, especially in agricultural production and social infrastructure.

Indirect losses account for the effect of the foreign exchange shortage on the level of economic activity of the economy. According to Fitzgerald (1986) direct and indirect losses amounted to a 4 per cent reduction in real GDP in 1983 and 5 per cent in 1984. The sum of all losses to 1984 amounted to \$1,576.8 million or approximately 18 per cent of gross domestic product for the 1980-84 period and 137.1 per cent of the value of exports. Assuming the peacetime budget would have been the same in real terms as it was in 1981, the fiscal deficit would have been reduced from 29 to 25 per cent in 1983, from 24 to 15 per cent in 1984 and from 15 to 5 per cent in 1985. But a reserve army prevented labour from capturing productivity gains. Consequently aggregate demand began to weaken. Neither was there a sustained incentive to invest, since opportunities for exports were closed off by

the decline of the CACM and the highly skewed distribution of income limited domestic purchasing power. In Mayorga's conception of the economy, stabilization would presumably involve demand stimulus, either through government expenditure or income redistribution. Hence, the programmes of the Sandinistas should have stimulated growth in the post-revolutionary period.

Table 2 shows the actual and forecast level of per capita GDP from 1978 to 1984 where the latter is a quadratic extrapolation of the pre-war trend values. The forecast level of per capita GDP suggests that the cost of the revolution has been high, almost half per capita income. Mayorga's model, on the other hand, shows that the Sandinistas have done better than the ancien regime would have done under similar conditions. In 1985, inflation would have also been reduced from 70 to 23 per cent. Agricultural production was reduced in 1983 by 8 per cent and in 1984 by 11 per cent, losses were concentrated in grains, cattle and coffee. Part of the reason lies in an acute labour shortage, as labour migrates from the war zone to the safety of Managua³³.

Fitzgerald's estimates of indirect losses are based on a highly simplified, aggregate model of the economy and there was no estimate of how the war affected the distribution of income across social classes. Simulations using the SAM-based CGE discussed in Gibson (1985), however, do provide estimates of the indirect effects and distributional consequences of the Contra war³⁴. Data from Fitzgerald (1986) for agricultural losses (11 per cent for agroexports and 0.3 per cent for domestic agriculture) and the deterioration in the balance of trade (-26.3 per cent) were used in the model. (Since no data is given for defence expenditure, it was assumed conservatively that the war causes government expenditure to rise by only 10 per cent). The results of the simulation are shown in Table 13.

This simulation broadly confirms the results of Fitzgerald (1986). The growth rate of GDP is not as high as Fitzgerald's since in the present mode, output in the commercial sector contracts by 22 per cent and this reduces the growth rate of GDP. Note that excluding commerce and central government wages, 'material GDP' rises by 11.8 per cent, a figure substantially above Fitzgerald's. The simulation reflects the foreign exchange dependency built into the model. As exports increase and output in the nontraded sectors rises, inflation falls and employment expands. Government savings rise as a by-product of the higher level of economic activity. The change in real income is shown in the second column of Table 13. Observe that all social classes would benefit from peace. Urban bourgeois incomes rise the most due to the increased availability of foreign exchange and higher levels of nontradeable output. Rural workers' incomes rise through both employment and real wage effects, while peasants and the rural bourgeoisie benefit from higher output levels. The expansion of employment and lower inflation also helps urban workers while workers in the informal sector benefit the least since they are concentrated in commerce.

3. Macroeconomic effects of the Contra war

Second to defence expenditures themselves, the principal impact of the war on the economy is the rapid flow of labour from the countryside to the urban informal sector. The Sandinistas see this as their main internal allocation problem and 'getting the prices right' to counteract the effect of the war has not been trivial. The labour shortage in export agriculture has not been repaired by simply raising nominal wages. First, there is the contributing factor of the agrarian reform which reduces labour supply. For thousands of Nicaraguan peasants it is no longer necessary to participate in export harvests in order to survive. Second, manpower needs have reduced labour supply in that one of every five young males has been mobilized for

the war. The northern coffee growing regions have been especially hard hit. Government employees have been mobilized to pick both cotton and coffee when traditional cortadores refused to enter the war zone. In the past, harvest labour shortfalls were filled by migratory workers from Honduras and El Salvador, but the war in El Salvador and the fact that migrants must cross or work in a free-fire zone has slowed the flow down to a trickle. Foreign exchange controls have also contributed to the shortage since guest workers are no longer able to convert their cordoba wages into dollars as they were in the regime of free convertibility under Somoza.

The labour shortage is not confined to agriculture. Excess demand pressure, together with the foreign exchange shortage enable informal sector workers to earn in a few hours more than during an entire week of formal sector activity. Initially conservative nominal wage policy in the early phase of the revolution, beginning with a wage and salary freeze announced in early 1980, magnified the problem. Nominal wages rose only slightly until 1983, but inflation was kept under control by imports and to a lesser extent price controls on basics.³⁵ Since 1984, the government has attempted to redress the acute labour shortage by way of larger nominal increases for formal-sector workers. The initial idea was to shift the economy from a 'low- (nominal) wage-low-price' scheme to a more Brazilian styled inflationary economy, with wages of formal-sector workers adjusting more quickly than others. This view of the way in which the economy functions, however, may be fundamentally at odds with reality. It seems far more reasonable to believe that the government deficit has inflated the rent earned by scarce foreign exchange and nominal wage increased only amplify the excess demand inflationary pressures.³⁶

A second by-product of the aggression directed at Nicaragua is the intense pressure on the black-market

exchange rate. Excess demand pressure created by deficit defence expenditures and large nominal wage increases have caused the black market rate to soar. The rate is substantially higher than would be the free floating peacetime equilibrium rate due to the highly restricted supply and persistent speculation against the cordoba caused by the war. In 1981, the Ministry of Foreign Trade estimated the total volume of the black market in foreign exchange at \$34 million and the central bank's estimate for the 1982 flow was roughly the same, amounting to 7-10 per cent of exports (De Franco, 1985). The quantity is, without question, vastly larger in later years. In mid-1985, the government created a 'grey' market in foreign exchange by funding a small number of exchange houses which sell foreign exchange to private citizens at a rate which balances supply and demand. In addition to these transactions, there is evidence of overinvoicing of imports (there is little under-invoicing of exports since the majority are controlled by government clearing houses.) Recently, the government has allowed licensed importers to function without first obtaining official reserves. Together these measures amount to a significant liberalization of import and exchange controls.

The black market is itself a brake on productive activity in that the demand for safe and mobile savings instruments aggravates the foreign exchange shortage. The existence of the black market has undoubtedly reduced the private sector's contribution to real investment through both portfolio effects as well as its impact on costs. Producers unable to get foreign exchange to import raw materials and crucial spare parts are forced into the black market, competing for scarce dollars supplied by over-invoicing operations, tourists and international functionaries. A rise in the black-market exchange rate also increases working capital costs to the extent that real costs are inflated. Demand for dollar denominated assets has also been affected by the political instability of the

regime and this is but another way in which the Contra war has undermined Sandinista policy objectives.

In the face of these seemingly overwhelming problems, the Sandinistas have attempted to control the government budget and reduce the rate of monetary emission. In May 1984 the government announced the austerity programme mentioned above in which the cordoba was devalued and consumer subsidies reduced by 50 per cent. In February 1985 yet another round of austerity measures was implemented in which the cordoba was again devalued and dollar incentives were given to agroexporters based on the marginal increment in production. Taxes were increased, especially on the commercial sector and there was a crackdown on unlicensed vendors in an attempt to rechannel consumer goods away from 'speculators'. The expansion of social services was seriously cut back; no new schools or hospitals were planned for 1985 and no government financed construction, outside the war zone was to be undertaken. A formal system of wage and salary adjustments was introduced (SNOTS) which, among other adjustments, allowed a 100 per cent increase in agricultural wages in an attempt to redress the labour imbalance in the sector (Pizarro, 1986).

Economic policies for 1985-86 reaffirm the change in policy direction the military/economic crisis has brought.³⁷ The trend is toward a more liberal economy, with market forces playing a more important role than in the early phases of the revolution. The cordoba has been further devalued to 150 per dollar, the exchange rate has been largely unified and dollar incentives for exporters have been strengthened. More control has been given to the Sistema Financiero Nacional (National Financial System) to manage credit creation and interest rates on time deposits have been raised. Wage increases are now limited to partial compensation for inflation and virtually all consumer and parastatal subsidies were eliminated. Guarantee prices for all agricultural products have been raised and expropriation

of under-utilized, rented, or abandoned land has been liberalized under a 'public weal or social interest' clause amending the agrarian reform law. The Sandinistas clearly see these measures as retrograde policy, forced upon them by the war, and to be defended to their constituencies. In all likelihood, the FSLN will clamp down on political freedoms as further substitution of defence needs for social programmes erodes their popular base. Stabilization policy which seeks to contract demand by shifting income to the poor is no longer sufficient, given the magnitude of the required adjustment, as well as the political reality of an economically exhausted bourgeoisie.

V. CONCLUSIONS

Nicaragua under Somoza was in many ways a showcase of peripheral capitalist development. There was a drive toward modernization conducted by the government in concert with a class of forward-looking capitalists willing to exploit the country's ample resources. Policy strongly promoted the market mechanism and there was little social organization in the face of a government which showed a substantial capacity to resist any popular initiative or demand. Growth rates responded to the stability imposed by the dictatorship, but by the late 1970s, three factors coalesced to produce a broad underlying economic crisis: (1) the obvious failure of the system equitably to distribute the benefits of growth; (2) the appropriation of the foreign exchange surplus of agriculture (vital to the maintenance of the industrial sector) in the form of commercial and financial profit, as well as rent to those who controlled scarce foreign exchange; and (3) the investment of the surplus in the form of capital-intensive production processes which did not provide employment for the growing labour force. The catalyst was an overarching political crisis, attributable to the tendency of Somoza regime to use state power to advance its private economic interests. The dictatorship was acceptable to the dominant political factions only as long as macromanagement was its main objective.

Under the Somoza dynasty, macropolicy amounted to abdicating control over the domestic economy to the world market for Nicaragua's exports. But however legendary the dictatorship was as a model of corruption and brutality, it must be said that its policy options were limited as long as Nicaragua remained open and vulnerable. Income redistribution would have upset the delicate balance required to maintain the openness of the economy and thus stabilization policy amounted to little more than rolling with external punches.³⁸

After the revolution, the Sandinistas took a basic step in regaining control of the economy by closing the capital market and controlling imports. Under normal peacetime conditions, these measures would free domestic policies to carry out the regime's plans for recovery and stabilization through income redistribution. But the challenge presented to the traditional means of North-South domination but the arrangement proved to be more than could be tolerated. What could not be achieved through orthodox laissez-faire economics, became the task of the CIA, the Somocista National Guard and ultimately the peasants who fought and died in the war. Stabilization policy in Nicaragua was reduced to the question of how to allocate more resources to defence in the midst of a reconstruction effort buffeted by deteriorating terms of trade and internal conflict over the social restructuring brought on by the revolution. The metaphor of 'external strangulation' became far more apt than it ever was under Somocista rule.

Further IMF-styled contractionary stabilization policies, similar to what was introduced in 1985 and 1986, will probably amount to 'too little, too late' and further undermine the regime's domestic political support. Further devaluation earlier on might have helped in that more resources would have been allocated to foreign exchange earners. Some liberalization of imported luxuries would then have been feasible as the economy recovered. Certainly the composition of the domestic bourgeoisie would have changed as small and medium producers replaced the dominant classes of the old regime. But now, schemes such as marginal dollar payments to exporters will probably be insufficient in that the US aggression has again overlaid an economic crisis with a political crisis. In the current conjuncture, policy which does not address the basic issue of political vs. economic power of the Somoza-era bourgeoisie will probably fail. The consistent attitude of the private sector is that it will not invest until the 'climate is right', which means that economic opportunities have to be balanced by access to

the political system, access which has in fact been greatly reduced. Ultimately the regime will be faced with a choice of whether to assume control of the foreign-exchange earning sector or reverse the course of the revolution.

There are, however, three specific policy problems which the government retains some latitude in confronting: first, Nicaraguans of all classes will eventually have to have access to some 'safe' vehicle of savings, assuming capital markets remain closed. Although the 'fundamentals' of the black market suggest that investors would have little confidence in any device the Sandinistas present at this point, indexed savings accounts, or some imaginative Nica-dollar schemes will have to be implemented. Second, the labour shortage in the export harvests must obviously be addressed. Although the war remains the key determinant in rural labour supply, more could be done to improve the availability of wage goods and working conditions in the countryside. This longer-term strategy will have to be accompanied by continued support for the small and medium producers who feel they have a stake in the revolution. Inputs, credit (in the form of inputs advanced), technical support services, better marketing and processing facilities is the time-honoured solution for the problem of increasing agricultural output in Nicaragua and the government's effort to redirect this support to the social sectors most likely to respond has already paid off. Third, the regime must resist the temptation to finance the war out of accumulation rather than consumption. Most large-scale projects started in the first three years of the revolution continue, but new investment projects were cut back after 1983.

What is emerging is a high degree of dependence upon the Soviet-bloc countries for financing and much of the credit is in the form of trade agreements. Assuming the country survives the short-term aggression, some difficult choices lie ahead with regard to the long-term prospects of trade with the East versus trading partners closer to home.

FOOTNOTES

- 1 See for example 'Un Proyecto Monetarista en Nicaragua', in (INIES/CRIES 22,1985).
- 2 While the Sandinistas have not been forced to apply for new IMF financing, the revolutionary government did accept the burden of Somoza's Fund debt. In April 1985, the Sandinistas completed payment on 17 million SDRs which were part of the 1979 IMF Stand-by loan to the Somoza government.
- 3 Such measures are not, however, considered part of the rules of the game:

Other critics of Fund policies, such as Taylor (1981) have further argued for the use of controls on imports and capital flows as a substitute for demand management policies and exchange rate action on the grounds that these are less costly alternatives. Fund policy leans heavily in the direction of eliminating controls and restrictions on trade and payments...(Footnote) The use of controls on trade and payments also is inconsistent with the objectives of the Fund as set forth in the Articles of Agreement. (Khan and Knight 1985, p.3)
- 4 See INIES/CRIES, 'Políticas de sobrevivencia' in Pensamiento Propio 32, 1986, p.19.
- 5 See Taylor (1983); a good summary of the structuralist approach to stabilization policy appears in Taylor (1986). Also see Taylor (1985).
- 6 Until the mid-1960s, the bulk of profit was earned in agriculture with industry accounting for less than 15 per cent of the total (Mayorga 1986:67); thereafter, agricultural profits declined to approximately a third of the total until the revolution.

- 7 Neither is it necessarily true that agroexporters are large. Mayorga (1986) based on the research of Baumeister (1984) argues that the traditional interpretation in which large latifundia displace small peasants is not an accurate picture of post-war capitalist development in Nicaragua.
- 8 Shifts in and out of the formal sector are reflected in aggregate productivity data: during the decade on the 1950s, agriculture was booming and the growth rate in output exceeded that of the labour force by more than 3 per cent. Consequently, the informal sector contracted from 42.6 per cent to 39.6 per cent of the EAP. During the 1960s and the rapid integration of the CACM, the growth of the labour force slowed to 2.5 per cent and productivity rose by 6.2 per cent. By the 1970s, however, the pace of output growth slowed considerably as possibilities for import substitution were exhausted and CACM began to break down. Growth in productivity dropped to 1.7 per cent, and the informal sector grew to 43 per cent of the EAP.
- 9 The average real wage in 1970 was the same as in 1961 (CEPAL, 1981:8).
- 10 It is true that while export production remained basically private, government control of dollar earnings has undoubtedly been a major disincentive to production.
- 11 The effect is relatively small in that auto-consumption of cotton and coffee is unlimited. In the larger economies of Latin America (Brazil, Argentina and Mexico) in which 'tradeable' is a broader category, the contractionary effect of demand stimulus in a model closed by a foreign exchange constraint would be more pronounced. The point made in the text is rather that stimulus is not expansionary as is typical of more Keynesian economies. For a stylized model in which labour supply is integrated explicitly, see Gibson (1986).
- 12 The extraordinary share of investment undertaken by the government seems to jeopardize Nicaragua's standing as 'mixed economy', especially in the view of the World Bank which argues that to be truly 'mixed',

private sector investment should be on the order of 10 per cent of GDP (WB, 1981).

- 13 Half of public investment in the 1973-77 period went to rebuilding government offices, contributing very little to productive capacity. After 1969, investment for import substitution or new markets virtually disappeared (BA, 1979) and the share of public investment accelerated. Capital outlays by the central government in the Somoza period were overwhelmingly devoted to infrastructure and transfers to other governmental organizations (WB, 1981).
- 14 There were few restrictions on foreigners and between 1962-69 they accounted for 30 per cent of investment in manufacturing and agricultural processing, providing 37 per cent of new investment, more growth capital than from domestic banks (Rudolph, 1982).
- 15 The government's current account showed a budget surplus for eleven of the fifteen years between 1950 and 1965 (DGE, 1961).
- 16 Of course, there has been a similar trend in other Central American countries: the deficit in Honduras, for example, reached 14 per cent of GDP in 1984 even though the US poured \$127 million in military and economic aid to that country (INIES 21,1984).
- 17 Nicaragua maintained currency controls and multiple exchange rates for three decades until 1958 when the cordoba was devalued from 5 to 7 per US dollar and then declared freely convertible in 1963. Throughout the post-war period, at least until the earthquake, the fiscally conservative policies of the Nicaraguan central bank insured that the real value of the cordoba remained on par. The massive capital flight immediately preceding the insurrection, however, forced the Somoza government to reinstitute exchange controls and devalue the currency for the second time in the post-war period.
- 18 There were other unique features of the negotiations such as past due interest renegotiated at new rates.

For details see Weinert (1981). To appreciate the gentle terms of the renegotiation see the chapters on Brazil, Argentina and especially Mexico. See also the discussion of debt renegotiation in the chapter on Sudan.

- 19 Both Utting (1986) and Mayorga (1986) underline the joint-products aspect of export agriculture. Cotton, for example, has as a joint-product vegetable oil which is an important domestic good. Beef exports jointly produce milk, cheese and other by-products used for animal feed as well as leather for shoes and soap products. Any reduction in agroexports simultaneously effects a reduction in the supply of non-tradeables.
- 20 In sugar and rice, three quarters of total production was on large farms while 90 per cent of corn and beans was produced on small and medium farms (Medal 1985). Small and medium sized producers accounted for more than two-thirds of coffee production, but only a third of cotton (Barraclough, 1982). Mayorga (1986) strongly emphasizes the point that Sandinista policy was initially biased against agroexports, noting that the 'People's Economic Reactivation Plan' established a target of 170,000 manzanas for the 1980-81 cycle, while for 1977-78 cycle 300,000 manzanas had been cultivated. 'The credit programme designed for the incoming season,' writes Mayorga 'ratified the tacit cotton restrain policy.' (Mayorga 1986: 113). (1 manzana = 0.699 hectares). Cotton growers were initially seen by the FSLN as 'class enemies', who should not be the main beneficiaries of credit and pricing policies. Moreover, while much of the agrarian bourgeoisie despised the Somoza clan, cotton growers, in particular, were not on the cutting edge of armed resistance. This left them with little influence over policy-making, at least early on. See below for details of more recent policies.
- 21 Beef exports in the same year were down to 41 per cent of the 1978 level, but this reflects an estimated 25-35 per cent reduction in herds as cattle was prematurely slaughtered or rustled across the border during the revolution. (BCN, 1979; MIDINRA, 1985).
- 22 Data from (BCN 1979: 80). T-statistic = 2.93 with $R^2 = 0.349$.

- 23 Gibson (1985) models the case of 'external strangulation,' in which devaluation is expansionary. This outcome is contrary to standard structuralist expectations in which devaluation may contract economic activity, but is characteristic of the macrosystems presented in the chapters on Ghana, Tanzania, Kenya, and Sudan. How expansionary the policy is depends upon supply response in agroexports -- but even if there is no supply response, output can rise as domestic demand is choked off by higher exportable prices. Note also that nominal devaluation is likely to bring about a real devaluation. Despite the fact that food prices rise, non-agricultural prices fall as the additional foreign exchange supports a higher level of industrial output. This model is discussed in more detail below.
- 24 See Gibson (1985) for a macroeconomic analysis of decapitalization.
- 25 The exception is rice growers who are large, concentrated and very well organized. Consequently, the real guarantee price for rice has increased every year since the revolution.
- 26 A recent article in Pensamiento Propio evaluating the economic plan for 1986 lists the five basic challenges for the regime that year as:
- (1) How to transfer resources, goods, services and manpower from the civilian to the military sphere?
 - (2) How to transfer surpluses, goods, services and manpower from the informal to the formal sector?
 - (3) How to use the market mechanism and regulation in ways that can respond to these needs, and at the same time, increase productivity and output?
 - (4) How can further deterioration of the peasant economy be avoided?
 - (5) How to alleviate the deterioration in the standard of living of the popular sectors, in particular the productive sectors?

(author's own translation)

- 27 This section relies heavily on Mayorga (1986) and private conversations with the author, who was a member of the central bank staff during the Somoza regime.
- 28 Nominal wages were virtually fixed by the state with real wages determined by inflation in the homegoods sector. Until the late 1960s, inflation was by and large absent: between 1958 and 1972, the GDP deflator increased by only 22 per cent (BCN, 1979). Although data is not particularly good, it appears that real wages grew steadily from 1960 (the first year for which data exists) until the downswing in 1967, initiated by the collapse in the terms of trade in 1965. Real wages continued to decline until 1969 and then recovered until 1971 (BCN, 1979). Within a year after the earthquake, real output had recovered and real output per capita rose dramatically between 1974 and 1975 (See Figure 1). The accompanying inflation of about 45 per cent nevertheless caused real wages to plunge.
- 29 From a conversation with Francisco Mayorga.
- 30 In 1983, internal credit to the public sector increased by 83 per cent while private sector absorption increased by only 11 per cent (CEPAL, 1984).
- 31 All data on war losses is from Fitzgerald (1985a-b). Fitzgerald oversaw the preparation of war-related losses for presentation to the World Court.
- 32 These actual inflation figures are Fitzgerald's.
- 33 The growth rate of Managua is 7 per cent, approximately twice the national rate. Contra attacks have been directed at infrastructure, roads, bridges; 10 per cent of silo capacity has been destroyed, medical clinics and even daycare centres. These attacks have been responsible for the deaths of 149 teachers and the destruction of eight schools. Services for more than 50,000 students have been suspended. Some 225,000 have lost access to health

services as a result of Contra attacks on hospitals and health clinics. In 1984, half of the operating rooms and buses were out of service for lack of foreign exchange. The war has left 12,000 dead, 50,000 wounded, 300,000 refugees and 5,000 kidnapped.

- 34 The model is an updated version of Gibson (1985) which accounts explicitly for the commercial sector and independent producers (called the 'informal sector' here).
- 35 Average real wages are difficult to compute. Until May 1984 the government defended a basket of 'basics' to the point that in 1982 the food bill of an average family was the lowest in Central America (Deere et al., 1985). Moreover, the contribution of the 'social wage,' health and education, is difficult to assess although it is clear that real wages in terms of 'nonbasics' have shown a continuous downward slide since the revolution. Deflated by the consumer price index, the real minimum wage declined to 39 per cent of its 1980 value by 1984 (INIES 21, 1985).
- 36 Rather than solving the problem of 'speculation' in retail and wholesale trade, the wage increases have accelerated the process. Among the hardest hit are workers in the state bureaucracy whose nominal salaries are frozen and whose participation in 'speculation' is limited for ideological (patriotic) or practical reasons. It is hardly surprising that recently corruption, the hallmark of the Somoza era, is threatening to undermine the moral legitimacy of the new regime.
- 37 See 'Políticas de sobrevivencia: Nicaragua, Plan Económico 1986' in INIES (32,1986).
- 38 In the face of declining terms of trade, the only viable set of policies is, as Medal (1985) points out, a 'mixture of contractionary and expansionary measures, the former aimed at unproductive, political and other non-basic consumption and the latter at the export sector.' In the institutional context of the Somocista economy, redistributive policies introduced to cushion the blow of the external adjustment would have only intensified the crisis.

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Table 1 Sectoral Composition: EAP

	1950	1960	1970	1980
Agriculture	68.8	62.0	51.9	41.8
Manufacturing	14.5	15.9	18.7	20.7
Service	16.7	22.1	29.4	37.5
Total	100.0	100.0	100.0	100.0
Agriculture				
Modern	62.4	54.0	49.9	43.1
Traditional	37.6	46.0	50.1	56.9
Total	100.0	100.0	100.0	100.0
Nonagriculture				
Formal	57.4	60.4	57.0	51.4
Informal	42.6	39.6	43.0	48.6
Total	100.0	100.0	100.0	100.0

Source: PREALC "Mercados de trabajo en cifras 1950-1980", as cited in (CIERA, 1984).

Table 2: Per Capita GDP (1980 Cordobas)

	1978	1979	1980	1981	1982	1983	1984
Actual	7351.0	7903.5	8281.2	7936.5	8090.7	7705.0	7622.6
Forecast	12439.5	12595.3	12747.0	12894.5	13037.8	13176.9	13311.9
Mayorga	7351.0	6799.7	6881.3	6901.9	6474.0	7050.2	6655.4

Table 3: Capital Formation (%)

	1953-57	58-62	63-67	68-72	73-77	80-83	1984
Investment/GDP	16.0	14.0	20.8	18.0	23.0	18.8	15.0
Public/Total	26.0	28.6	22.3	25.2	32.9	70.8	n/a

Sources: 1952-62 (Nugent, 1974); 1962-77 (BCN, 1979); 1980-83 (Vilas, 1985), 1984 (INIES 21, 1985)

Table 4: Foreign Sector

	1973-77	1980	1981	1982	1983	1984
Imports ¹	508.0	930.0	1030.0	829.0	760.0	749.5
Exports ¹	442.5	503.0	545.0	449.0	426.6	360.6
Volume Index ²	737.5	529.4	698.7	615.1	568.8	393.1
Trade Balance ¹	-327.8	-427.0	-185.0	-380.0	-333.4	-388.9
Debt-Service Ratio	17.2	40.6	37.6	56.4	67.6	57.2
Actually paid	17.2	16.2	30.9	37.8	17.9	27.8

Notes: 1. Millions of U.S. dollars. 2. Export price, 1979 = 100.
Sources: BCN, (1979), CEPAL (1984), INIES (21, 1984), MIPLAN (1984),
Stahler-Sholk (1986) and Mayorga (1986)

Table 5: Credit Absorption (millions of 1980 dollars)

	1980	1981	1982	1983	1984	Total
Increase in External Debt	408	504	491	584	520	2,507
Less Interest Payments	108	121	149	210	230	818
Effective Use of Credit	300	383	342	374	290	1,689
Less Losses through:						
Export Prices	--	9	88	122	55	274
Import Prices	--	156	173	228	230	787
Real Credit Absorption	300	218	81	24	5	628

Source: Mayorga (1985).

Table 6: Production Indices for Export Agriculture

	1977/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85
Cotton	100	89	15	53	45	55	62	50
Coffee	100	101	98	103	106	125	85	89
Sugar	100	109	86	98	111	109	111	95

Source: Utting (1986)

Table 7: Distribution of Income in Agriculture 1971.

	% of Rural EAP ¹	% of Rural Income	Per Capita Income ²
Bourgeoisie	3.5	63.1	14,737
Small and Medium Peasants	45.5	29.4	533
Agricultural Workers	51.0	7.5	120

Source: Comite Nacional Agropecuario, Unidad de Analisis Sectorial (UNASEC) in Zalkin (1986). Notes: 1. EAP = Economically Active Population. 2. U.S. dollars (converted at the official exchange rate of 7 to 1).

Table 8: Land Tenure and Social Structure (% of total cultivated area)

	1952	1963	1971	1978	1981	1982	1983	1984	1985
Large Farms (>350 ha.)	40	41	45	48	21	17	14	12	13
Medium Farms (35-350 ha.)	44	44	43	38	42	42	42	42	43
Small Farms (0-35 ha.)	16	15	12	14	15	16	9	8	8
Credit and Service Cooperatives	0	0	0	0	0	0	10	10	10
Production Cooperatives	0	0	0	0	2	2	5	9	7
APP	0	0	0	0	20	24	20	19	19
TOTAL	100	100	100	100	100	100	100	100	100

Note: numbers may not sum due to rounding.

Source: 1952-1978, (Barraclough, 1982); 1981-84 (Deere, et al., 1985); 1985 (INIES 30,1986).

Table 9: Domestic Agriculture: Production Indices (1977/78 = 100)

	1977/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85
Corn	100	155	80	101	106	101	119	129
Beans	100	209	71	70	101	115	137	160
Rice	100	114	132	133	193	204	213	219
Sorghum	100	146	148	208	225	124	239	262
Beef	100	112	100	75	59	63	64	80
Milk	100	93	65	97	128	157	153	144
Chicken	100	117	104	131	183	202	214	187

Source: Utting (1986)

Table 10: Food Imports Index (1980 = 100)

	1978	1980	1981	1982	1983	1984
Corn	33	100	65	47	264	34
Beans	140	100	216	18	178	88
Rice	0	100	61	0	13	48
Chicken	9	100	120	10	17	0
Vegetable Oil	14	100	96	76	77	55

Source: Utting (1986)

Table 11: Consumer Subsidies

	1980	1981	1982	1983	1984
Basic Grains	280.0	325.8	448.9	667.4	644.0
Other ¹	219.1	244.8	599.5	604.2	672.0 ²
Total	499.1	570.6	1048.4	1271.6	1316.0
% of Government Deficit	27.2	18.9	25.0	17.3	13.6

1. Includes milk, sugar, cooking oil, soap, meat, drinking water, transportation and local supermarkets. 2. Includes sugar and milk only.
Source: (Deve and Grenier, 1984).

Table 12: Damages due to Contra War (millions of U.S. dollars)

	1980	1981	1982	1983	1984	1985	TOTAL
Raw material and Capital	0.5	2.7	9.0	41.1	16.1	20.3	89.7
Production	0.9	4.3	22.3	102.4	171.4	107.2	301.3
Total	1.4	7.0	31.3	143.5	187.5	127.5	498.2
Financial Losses	-	8.2	38.3	61.3	92.1	73.0	272.9

Source: Fitzgerald (1986).

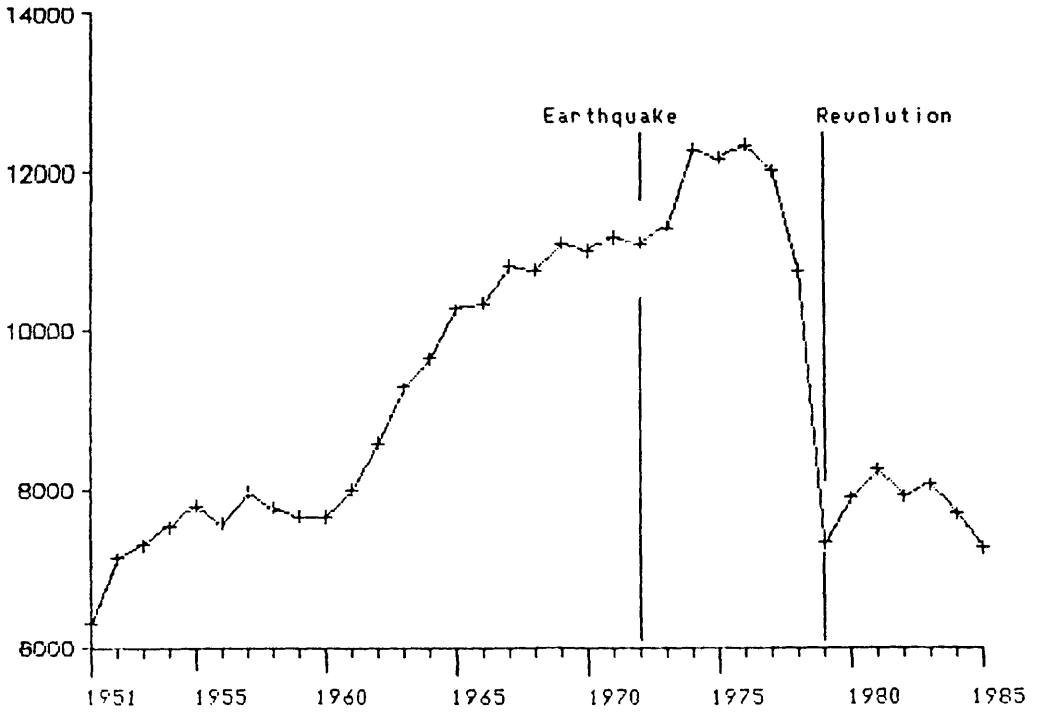
Table 13: A Simulation of the Effects of the Contra War
(relative to actual data for 1983).

Agroexports	11.5	Real Incomes	
Domestic Ag.	0.3	Rural Bourgeoisie	24.0
Foreign Savings	-26.3	Urban Bourgeoisie	34.1
Government Spending	-10.0	Rural Workers	26.7
GDP	0.3	Urban Workers	14.3
GDP ¹	11.8	Pesants	21.2
CPI	-14.5	Informal Sector	8.7
Exports	36.3		
Government Savings	21.3		
Employment	7.3		

Note: 1. "Material GDP," excluding commerce and government wages.

Figure 1

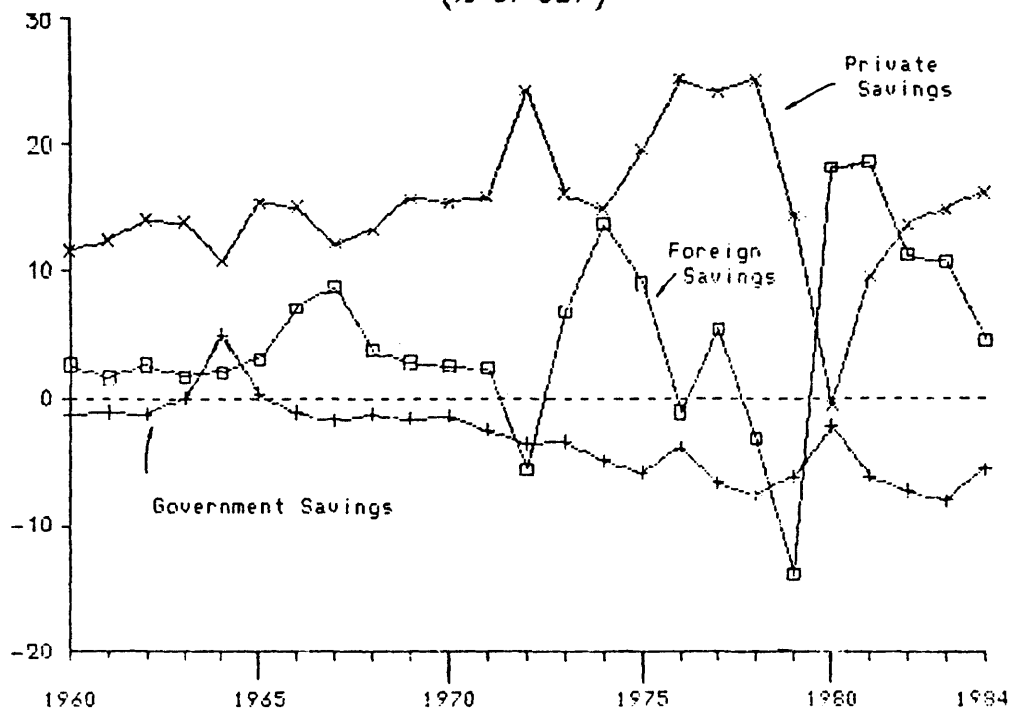
GDP per capita 1980 Cordobas



Source: 1951-77, IMF (1981); 1978-83, CEPAL (1984);
1984-5, INIES/CRIS 1985-6.

Figure 2.

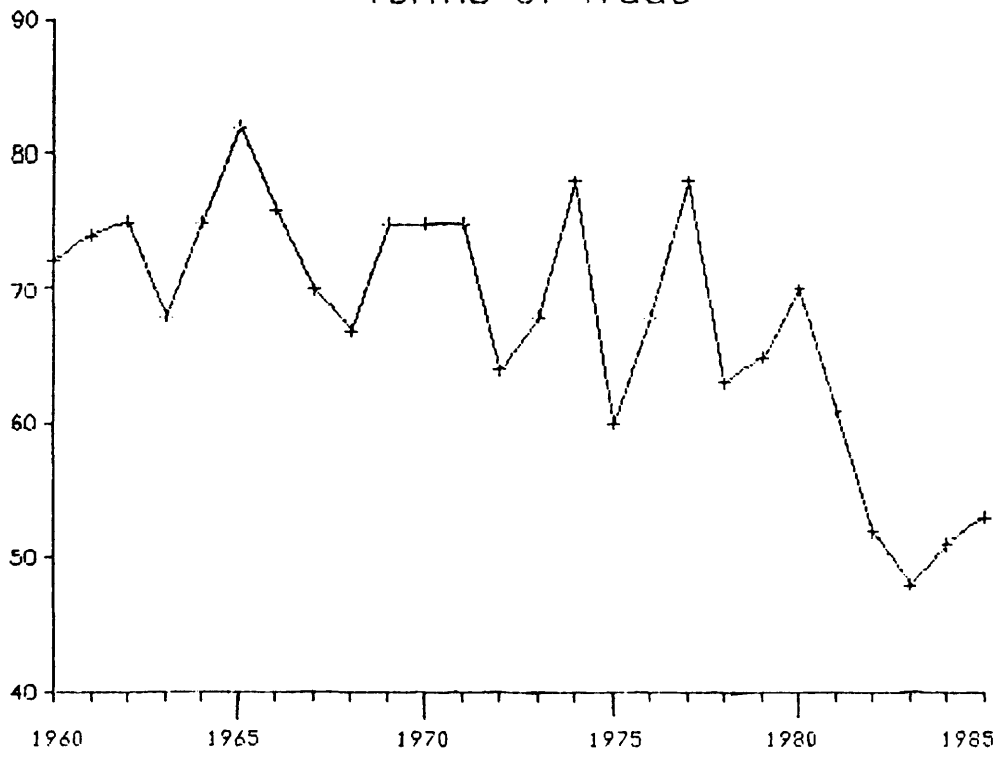
Savings Decomposition (% of GDP)



Source: 1960-78, BCN (1979); 1978-82, CEPAL (1984);
1984-5, MIPLAN (1985).

Figure 3.

Terms of Trade



Source: Mayorga (1986)