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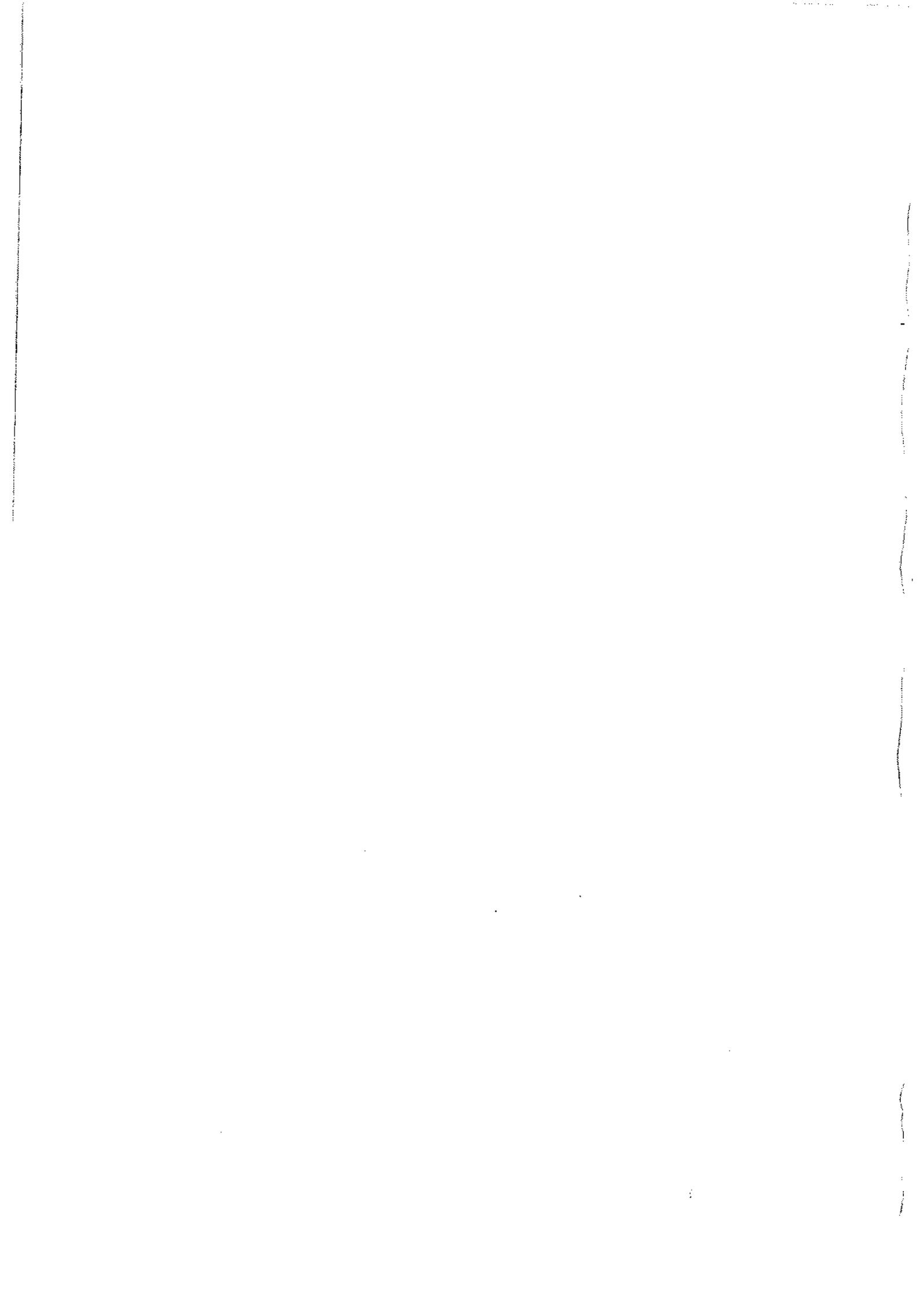
Serie Research Memoranda

The Evolution of Credit in a Revolutionary context:
the case of Nicaragua (1979-1990)

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**THE EVOLUTION OF RURAL CREDIT IN A REVOLUTIONARY CONTEXT:
THE CASE OF NICARAGUA (1979-1990)**

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1. INTRODUCTION

In 1969 the former guerrilla movement Sandinist Front for National Liberation (Frente Sandinista de la Liberación Nacional: FSLN) presented its historical program, and promised *inter alia* 'timely and adequate credit' to small and medium-sized producers in agriculture.¹ Later in 1980, when it held government power and presented its first economic plan, it was stated that the financial system would serve as 'the spine of all government programs to be executed' (BCN/INIES, 1988:12). The first statement refers to access to credit of marginalized farmers and is thus limited to one aspect of the performance of financial system. The second statement shows that eleven years later, attention had shifted to the potential of the financial system as a means to achieve revolutionary development goals.²

A starting point for this article is that the financial system was *deliberately* used by the Sandinists in order to achieve social, economic and political goals associated with their revolution. This is radically different from the assumption of Von Pischke et al. (1981:4), who supposes that policy makers in developing countries wish to create 'a viable farm credit system or intermediary capable of providing an increasingly wider array of services of an acceptable standard to an expanding clientele of farmers.' The case of Nicaragua is not unique; most developing countries have been preoccupied with broader development goals, rather than that they bothered about the performance of the financial system as such.

In this article we will show that notwithstanding the fact that the Sandinist government used the financial system to achieve certain 'revolutionary' goals, his predictions about the performance of such a system, have proven to be partly valid. A central thesis of Von Pischke is that a 'consistent selection of suboptimal alternatives' with respect to loan portfolio management leads to negative cumulative results, because: a. the range of services is not widening; b. the clientele of small farmers is not expanding; and c. the farm credit system is not financially viable in the long run (ibid:2-4). We will demonstrate that similar tendencies have been noticed in Nicaragua with respect to a. and c. The initial result

¹ See: the Historic program of the FSLN, in: Rosset and Vandermeer (1986:181)

² The emphasis on government programs was a result of the Sandinist conviction that the state could act as a promoter of sustained economic development based on different relations in production, in order to abolish the prerevolutionary 'exploitative' model. See: FSLN (1979), Análisis de coyuntura y tareas de la Revolución Popular Sandinista

concerning b. differed sharply from Von Pischke's prediction. The way the third tendency manifested itself in Nicaragua is unique, as will be shown below.

A final evaluation of the Sandinist credit policy should have another base though than these observations. We have to take into account the policy objectives as formulated by the former Nicaraguan government after the revolution of 1979, and estimate the extent to which these goals have been realized. The degree at which resources have been transferred to politically favoured productive sectors, is an example of an indicator which is more suitable to measure the effectiveness of the Sandinist credit policy, which is radically different from the criteria related to the performance of the financial sector itself, as proposed by Von Pischke.

The remaining part of this article is divided in six parts. Section 2 introduces the historical context of the revolutionary credit policy of the eighties, and analyzes the performance of the financial system during the Somoza period. In section 3 we will discuss the policy objectives related to credit policy during the Sandinist era. Section 4 sets out how the institutions of the financial system were altered during the first years of the revolution, and analyzes the causes of inflation, showing what a 'revolutionary context' in practise has meant: internal and external political tensions, war and destruction. In section 5 we discuss the results of the agricultural credit program, in relation to the Sandinist policy goals. In section 6 the sustainability of these results will receive explicit attention, and in section 7 conclusions will be presented.

Throughout this study, we had to deal with problems of scarcity and sometimes poor quality of prevailing secondary studies and data as regards the postrevolutionary financial system and pursued credit policies. This is almost inevitable in a revolutionary context, taking into account the velocity with which changes take place; the scarcity of human resources; strong political opposition (internal and external) seducing the analyst to become more politicised than should be; and the overall political, economic, and social turmoil.

2. NICARAGUA ON THE VERGE OF A REVOLUTION: THE FINANCIAL SYSTEM DURING THE PREREVOLUTIONARY YEARS

Normally, a financial system is divided in a formal and informal sector. In our view, the formal sector comprises all entities which have a legal status and can be controlled by a government. We consider the informal sector as a rest group, outside the sphere of government regulation.

In Nicaragua, there is little information available about the *informal sector* of the financial market. This is true for the pre- and post-1979 period; information is not only scarce but also, and to a certain extent, contradictory. Perceptions of the informal market thus have a speculative character. For example, it has been estimated that in 1978 the informal sector channelled only 4.2 percent of all credit, leaving 95.8% of all funds circulating in the formal sector (BCN/INIES, 1988:1). This appears to be an underestimation of the role of the informal sector.³ On the other hand, it has been emphasized that small producers in the agricultural sector did not have sufficient access to formal credit, and had to recur to informal loans of large producers (see e.g., CIERA, 1989b:78), suggesting that the informal sector was indeed important, although at the same time exploitative in character for the largest group of producers, i.e., small farmers.

The *formal sector* was supervised by the Central Bank of Nicaragua (BCN), and included: 1. a group of commercial banks (collecting savings and disbursing short and medium term credit); 2. state banks, e.g., the investment bank INFONAC and the Banco Nacional de Nicaragua (BNN; both specialized in disbursing long term credit); 3. specialized savings institutes (SNAP and BCP: relending funds to the construction sector and disbursing consumer credit); and 4. a rest group of financial intermediaries, like insurance companies and the -USAID sponsored- small farm credit program INVIERNO. The pre-1979 formal financial market was apparently competitive, with gradually less Central Bank interference but for long term and agricultural credit.

The three most important commercial banks (Banco de América, Banco Nicaraguense

³ In other developing countries a much higher participation of the informal sector was found, from 39 up to 92 percent for India and Nigeria respectively (Hoff and Stiglitz, 1990:6).

(BANIC) and the Banco de Centroamérica (BAMER)) have been considered to serve mainly the interests of new industries producing for the Central American Common Market, the housing/construction sector, the agroexport sector, and enterprises owned by Somoza, his relatives and members of his government (BCN/INIES, 1988:6). According to the authors of the latter study, INFONAC and BNN directed a major part of their funds towards the Somoza clan, financing mostly 'speculative' projects, in which these banks -in turn- participated. The resulting perception was that bankers' interests were closely intertwined with those of the dominant economic classes, leading to a high concentration of loan portfolios.

Data confirm the perceived *bias* of the financial system towards some economic sectors and social classes. In the first place, funds were channelled from agriculture to other economic sectors. While in 1960 agriculture still absorbed 40 percent of all formal credit, twenty years later this percentage had fallen to 20 percent. Consequently, the participation of industry, commerce and construction rose from 60 to 80 percent in the same period. Moreover, during the 1960s and 1970s agricultural credit was disbursed mostly to large producers of export crops. Agroexports absorbed on average 90 percent of agricultural credit during this period, while the area under these crops made up at most half of total arable land. On the other hand, food crops occupied 50-60 percent of total cultivated area, and got only 10 percent of agricultural credit. As small farmers constituted 73 percent of all agricultural production units, cultivating only 13 percent of total arable land with, primarily, food crops, the above data constitute sufficient evidence that most small farmers did not receive formal credit (Carter, 1989).

In this context, a special governmental effort to reverse the marginalised position of small farmers, by means of a fixed quatum of BNN-loans to be disbursed as small loans (a measure taken in 1959), was considered as insufficient from the later revolutionary point of view. The above mentioned programme INVIERNO was considered geographically limited and duplicating the clientele of the BNN (Enriquez and Spalding, 1987:111).⁴ So, in spite of these efforts, in 1978 only 28,000 small farmers received formal credit, constituting

⁴ Of course INVIERNO had its merits too, such as the delivery of 'comprehensive services at the community level, facilitating the diffusion of technology and the reduction of operational costs', and the use of innovative computerized management systems (see Bathrick & Gomez Casco, in: Von Fischke et al., 1983:206-211). The authors reported 8,500 farmers having been reached by the program, which was not sufficient for the Sandinistas.

eighteen percent of their total number (estimate by Barraclough, 1982). This confirms the CIERA-view that credit needs of small farmers had to be met by the informal sector.

The Sandinists had several reasons to perceive this limited access to credit of small food-producing farmers as unjust and producing inequality. Firstly, credit to agriculture was rationed for being risky business while banks *did* finance risky projects in other sectors. Secondly, small farmers were asked for loan guarantees, while producers belonging to one of the mentioned dominant economic sectors were on that ground alone found eligible as a bank client, and not on the basis of normal bank criteria. The Sandinist interpretation was that the financial system was *politicized* (BCN/INIES, 1988:6, 30).

In other words, it could be said that during the prerevolutionary period credit was channelled intensively towards a few eligible producers.³ This kind of rationing is a corollary of imperfect information, a basic characteristic of rural financial markets in developing countries. In turn, imperfect information is a result of the high cost of assessing the risk of default for (classes of) clients, ensuring that a client undertakes those actions which make repayment likely, and even enforcing clients to repay (Hoff and Stiglitz, 1990:237). So a bankmanager may not feel any stimulus to consider the productive and commercial conditions of a farmer group A, which are not favourable enough to compensate the uncertainty about the risk of default, while believing that the opposite is true for group B. In doing so, he will apply simple *rules of thumb* per group: group A will not and group B will receive a loan.

In prerevolutionary Nicaragua this may have occurred simply along the lines of socio-economic classes. Small farmers in the agricultural sector were then excluded from bank credit because they belonged to group A, via the mechanism of requiring guarantees they did not have. Large producers in the same sector, plus those belonging to the industrial, commercial, or construction sector, received large amounts of credit, which did not maintain any relation with the guarantee offered, just because they belonged to group B. In conclusion, during the Somoza-period existed a *thin line* between commercial criteria applied in

³ Von Pischke (1983:178-179) calls this 'intensive rationing', defining the concept as follows: 'intensive credit rationing involves lending to a relatively small target group and providing its members amounts of credit which are large in relation to the existing scope of their operations.' Extensive rationing implies the provision of credit to a 'large number of farmers in broad target groups' and (given the budget constraints of the lender) 'relative small loans per borrower'.

the form of rules of thumb, and political favouritism.

There is more however. The unequal distribution of agricultural credit took place in a context of a dual agrarian structure, with a growing large scale agroexport sector and a marginalized small scale food producing sector, where the rural masses impoverished. As the Sandinists believed that the distribution of credit critically contributed to this situation, rationing rules would be altered as soon as they would come to power.

Another reason for justifying this stance, were the events at the time of the final insurrection (1978-1979), when large amounts of credit were disbursed just to be changed in dollars and join the capital flight. Loans were not repaid, savings were withdrawn, while indebtedness with foreign banks was already relatively high. In the meantime, the Central Bank liberalized interest rates that traditionally had been controlled. But while the policy to simplify (and where possible eliminate) controls and prescriptions was just being implemented, the capital flight obliged the Bank to take restrictive measures. These were not effective due to political unrest and public insecurity which was stronger than any measure or market force. Central Bank policies to increase agricultural and long term credit (special quotas) aimed to correct its traditional neglect, but failed. Industrial and commercial lending continued to increase, and capital flight was not stopped.

These events confirmed the postrevolutionary government in its conviction that the financial system in the Somoza-period was politicized and exclusive. Therefore, it would transform the financial system according to the so called *logic of the majority* (FSLN:1979, economic section). The 'revolutionary' financial system was thus a reaction to its politicized and exclusive predecessor; it would maintain the first characteristic while changing the latter: its exclusivism.

3. OBJECTIVES OF THE SANDINIST ECONOMIC POLICY AND ITS CONSEQUENCES FOR THE SUPPLY OF AGRICULTURAL CREDIT

The foregoing section shows that the distribution of credit among economic sectors and social classes of producers was the central theme in the debate on the performance of the prerevolutionary financial system. For this reason we will focus here on *postrevolutionary* objectives, referring to the credit policy, even though credit is one side of the coin only, and the mobilisation of savings being the other one.

It is not easy at all to determine specific objectives the Sandinist government held with their credit policy, because of its *subordination* to the revolutionary transformation process. The latter was meant to be rather comprehensive, taking into account that the FSLN conceived the logic of the inherited economic model to be based on exploitation and dependence, at the national level as well as internationally. The basic commitment of the Sandinists was to 'initiate a process of structural transformation of the social and economic order, in order to maximize welfare of the poorest people, taking into account the economic reality of the country.' (BCN/INIES, 1988:12; and Spalding, 1987:4). The role of the financial system would be redefined according to this commitment.

FitzGerald (1987:195) distinguishes three fundamental objectives of the structural transformation process: 1) the intention to raise the standard of living of the poor by providing for 'basic needs', via a direct redistribution of income; 2) the aim to initiate a more balanced economic growth centred in the agricultural sector, by means of a redistribution of productive assets; 3) the reduction of the vulnerability of the economy to external factors, especially with respect to dependence on foreign financial resources and uncertain terms of trade. In short, the Sandinists pursued a policy of economic self-determination and redistribution.

The state would have a leading role in the realization of the transformation, and — as stated above — the financial system would serve as the spine of all government programs. A first step to make this possible, was the nationalization of all formal financial institutions one week after the revolution, giving the state direct control over all financial resources. This allowed the government to reorientate the distribution of credit according to redistributive and productive goals. Other reasons to nationalise the financial system were related

to the required reduction of the vulnerability of the economy to external factors, and its state of bankruptcy at the end of the war against Somoza. The new financial system were assigned the following functions:

- 1) create broad access to credit for the peasantry, initially motivated by a political will to compensate them for their traditional marginality and sacrifices made during the 1978/79 war;
- 2) stimulate the process of structural transformation in the agricultural sector, by consolidating and capitalizing the emerging state sector and cooperatives;
- 3) promote production in all economic sectors, and stimulate productivity in the long run. In particular, a quick recuperation of domestic food *and* agroexport production was to be achieved, as production in these sectors had fallen during the 1978/79 war.

This enumeration synthesizes other ones. Spoor (1989:1-2) stated that the credit policy goals were related to the reactivation of postwar production, democratization of credit leading to small scale accumulation and a higher integration in markets, and the transformation of agriculture. Barahona (1989:37) presented the promotion of production, capitalization of the revolutionary productive sectors, and structural transformation of the economy as policy goals. Our synthesis is based on *three leading principles: democratization, agrarian transformation, and promotion of production.*

Note that the three functions of the financial system correspond to the fundamental objectives of the process of structural transformation as listed by FitzGerald,⁶ and that each implies one objective. These three objectives concern primarily the agricultural sector. As the state held control over financial resources, and the major structural transformation was to be realised in agriculture, credit policy could be shifted towards agriculture. So, the volume and distribution of *agricultural credit* is of central interest.

The above stated functions will serve as starting points for an evaluation of the Sandinist agricultural credit policy. In section 5 three criteria will be formulated, each related to one function. First of all, however, the institutional changes following the nationalization of the

⁶ Notice that the first function is related to the first and the second fundamental goal of the revolution; the other two correspond to the identically numbered revolutionary objectives.

financial system are described in the next section (4.1). Subsequently, the operational features of the system, with special reference to agricultural credit, will be dealt with in section 4.2.

4. THE REVOLUTIONARY FINANCIAL SYSTEM

4.1: The institutional reform of the financial system

Two years after the nationalization of the banking system in July 1979, all financial institutions were clustered according to the main economic activities, and *specialised* in lending to the corresponding sector of the economy. The changes can be summarised in the following scheme:

SCHEME 1: the reorganisation of the Nicaraguan banking system in 1981

| fusioning banks/institutions | absorbing bank | specialisation |
|--|------------------------------------|--|
| 1. INFONAC, Bank Calley Degrail | Banco Nacional de Desarrollo (BND) | agricultural credit |
| 2. Finsa, FIDOSA, FIA & Banco Exterior | Banco de América (BAMER) | agroindustry, forestry |
| 3. INDESA, FRANCOFIN, INTERFINANCIERA, CNI & Banco de Centro América | Banco Nicaragüense (BANIC) | industry, commerce |
| 4. FINANCIERA, INMOBILIARIA, CAPSA, NIAPSA | Banco Inmobiliario | construction, tourism |
| 5. -- | Banco Popular | small and medium enterprise, consumption |

Source: Visser, 1990:19

In December 1985, BAMER merged with BANIC. The new cluster would be at the service of the commercial and industrial sector, and left Nicaragua with four banks, each specialised in its own predefined sector. These banks, together with the National Fund for Investments (Fondo Nacional de Inversiones: FNI), constituted the National Financial System (Sistema Financiero Nacional: SFN).

The specialised nature of the SFN combined with a high degree of *centralisation* of the

decision-making process concerning the allocation of credit. A 'financial cabinet supervised the BCN and the SFN, and dictated the financial/economic policies to be applied' (BCN/INIES, 1988:21). By centralizing decisions and creating a sectorally specialized financial system, credit policy was subordinated to overall revolutionary economic policies.

Only the disbursement and administration of credit funds was decentralised. The net result (i.e. of centralised policymaking and decentralised administration) was that a local bank branch had to comply with centrally defined political norms and priorities, in determining who, what, and how much would be financed. These norms were of course related with strategic revolutionary goals, and did not take into account normal commercial banking criteria.

The emerging situation resembles the banking system of Tanzania, as described by Collier and Gunning (1991:534). In Tanzania, so-called 'commercial' banks functioned as 'agencies which channel government funds to meet certain items of recurrent public expenditure', rather than as intermediaries who attract funds on domestic and external capital markets, in order to relend these, at commercial terms, to private or public agents. In the case of Nicaragua, it is indeed possible to think of the resources held by the SFN as central government funds. Both were politically controlled in the same way and used to achieve the same objectives.

4.2: The operational characteristics of the financial system

First of all, one should recognize that the subordination of credit policy to overall revolutionary goals left no room to the local bank manager to take decisions whether or not to issue a loan to a potential client on the basis of confidence, risk and transaction costs. This kind of entrepreneurial expertise — if it had not left Nicaragua before or just after the revolution — was not employed, nor developed. This complete lack of decentralized banking decisions leaves the question how credit was allocated.

In the Nicaraguan revolutionary context, the *sectoral allocation of credit* was largely determined by strategic revolutionary goals. A first political directive was to increase the

share of agricultural and livestock credit in total SFN-credit to productive sectors. In table 1 it can be observed that in 1983, 51 percent of this total went to agriculture, while this percentage had been 20 percent just before the revolution. Secondly, within agriculture certain social groups were to benefit from the political desire to 'democratise' credit and stimulate agrarian transformation. The share of small and medium producers had to rise, and 'revolutionary' productive sectors — the newly formed state sector 'Area Propiedad del Pueblo' (APP) and different types of cooperatives — would get priority in the allocation of credit.

At the level of the borrower, access to credit was equalized and open. *Allocation of credit per client* was only determined by per hectare loan size rules, and the area to be financed. The rules took into account the technological level of production and accordingly calculated production costs per hectare. Though in principle credit should be complementary to farmers' own funds, the full hundred percent of production costs could be financed.

Interest rates were maintained at their prerevolutionary (low) levels, and remained stable until 1985. Starting with the 1980/81 season, interest rates for so-called 'rural credit' would be relatively low, benefitting small and medium farmers and the cooperative sector. Within this credit program, interest rates were especially low for the cooperatives CAS (8%) and CCS (10%), and somewhat higher for individual peasants (13%). This interest rate structure served clearly the goal to organize small and medium producers in cooperatives, and secondly to stimulate its capitalisation.

Although *inflation* clearly is not an 'operational characteristic' of the financial system, it became an important determinant of its performance during the eighties, and must therefore be mentioned here. As is clear from table 1, in the year of the revolution (1979) inflation was high, but afterwards it fluctuated around 30% yearly, until 1985. Starting with the latter year, inflation commenced to accelerate up to 912% in 1987. In section 5, the consequences of the inflationary spiral for the way credit became subsidized, and the distribution of the emerging grants, will be dealt with.

In Nicaragua it was sometimes believed that the above operational features of the SFN was the main factor causing inflation; especially the lack of measures to indexate interest

rates has been a point of criticism. In order to discover to what extent this hypothesis were correct, a first step is to consider the nominal expansion of SFN-credit. An estimate of the latter was presented by BCN/INIES (1988:24); total SFN-credit -to the central government, parastatal enterprises, as well as to productive sectors- rose from 74 percent of GDP in 1979 to 120 percent in 1984. Obviously these levels of credit granting bore no relation to the volume of domestic savings which became even negative in 1985 and 1986 (World Tables, 1989-90), presumably because after 1979 interest rates for deposits had become negative in real terms.

The increasing degree of SFN-reliance on Central Bank funds *initially* was an important source of inflation.⁷ We have to examine the composition of the loan portfolio of the SFN though, and take into account its lending to the central government (CG),⁸ in order to specify which client or sector had a relatively high share in total SFN-lending, and contributed most to its expansion. Moreover, a fact to reconsider is that the CG not only borrowed from the SFN, but also directly from the Central Bank (BCN).

Basically, *two tendencies* may correspond with the rate of inflation; the increase of direct BCN-lending to the CG, and the expansion of SFN-credit. In the following paragraph we will examine if the CGs current budget balance (A) can be treated as a proxy for the increase of direct BCN-lending to the government, and thus as an inflationary factor. Before relating the second mentioned tendency, that of the expansion of SFN-credit (B), to inflation, we have to reconsider whether or not positive productive developments accompanied the credit expansion, and if net returns on SFN-operations have been positive. Net returns on lending can be calculated on the basis of nominal interest rates, the inflation rate, transaction costs and the level of default. That will be done in Section 5.2., while productive records will be subject of Section 5.3. Here we only show the possible magnitude of SFN-credit as a source of inflation, in case of agricultural and livestock credit.

A: Total recurrent government expenditure rose from 12% of GNP in 1977 to 58% of

⁷ Inflation was not excessively high though, during 1979-1985. High levels of development aid just after the revolution took place, were used to finance the increase in public expenditure. Later, after the first postrevolutionary years, aid levels decreased, partly as a result of US-pressure on international development institutions. On the other hand, the former Socialist Block increased its development assistance.

⁸ Therefore, 'financial deepening' in Nicaragua may just be interpreted as fiscal deficit financing.

GNP in 1986. The current budget balance surplus in 1977 became a deficit already before the revolution, as Somoza too had to spend on the military. Subsequently, the yearly deficit became larger in an irregular way during the Sandinist period, rising from 0.2 million 1980 new cordobas in 1980, to 3.3 million in 1985. In absolute terms, the 1985 deficit was sixteen and a half times larger than in 1980. [One would have expected a larger deficit though, contemplating the rise in recurrent government expenditure. The decline in the absolute level of the 1986 deficit has possibly been due to a decreasing level of public expenditure *in real terms* on wages, pensions, and other income transfers from the government to certain groups of citizens; and maybe also to higher nominal tax revenues (as a result of dysfunctions within a progressive tax system, e.g., when all transactions are taxed at the highest rate in an inflationary environment). The burden of inflation was probably borne by those who financially depend on the government, and by taxpayers.']

In table 1, it can be apprehended that the CG became a very important BCN client. The IMF data show that claims on the CG held by 'monetary authorities' increased rapidly in real terms during 1977-1983. This increase not always maintains relation with the current budget balance. In 1980 and 1981 for example, balances were small in comparison with the increase in outstanding CG-debt with monetary authorities; this is probably due to capital payments of the CG, which are not included in current expenditure. So it is probable that *not only* the current budget balance of the CG was financed monetarily. *

- B: As stated, another *possible* cause of inflation may have been the expansion of SFN-operations; those related to agriculture are the subject of this discussion. Table 1 shows that the total flow of agricultural credit fluctuated between 1.9 million new 1980 cordobas in 1979 and 3.5 million in 1986, with an average of 3.1 million during 1980-1986. IMF-data (International Financial Statistics, 1990:542-545) display that claims of monetary authorities on 'deposit money banks' (i.e., the state banks) increased from 1.8 million (new 1980 cordobas) in 1979 to 4.8 million in

* Assuming thus that the monetary inflation-correction was insufficient. Employees working in the public sector received a compensation in kind though. The so-called 'AFA', a package containing sugar, beans, oil, rice and other basic products, was served out monthly to them.

¹⁰ BCN/INIES (1988:28) data concern central bank disbursements of credit to the central government, showing that these were higher than the recurrent public expenditure. The data also indicate little was repaid, suggesting a high proportion of total recurrent expenditure being monetarily financed.

TABLE 1

Production, inflation, government expenditure, and credit in Nicaragua (1977-87)
(millions of new 1980 cordobas,¹
unless indicated otherwise)

| | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 |
|--|------|------|------|-------|-------|-------|-------|-------|-------|--------|---------|
| <i>Production:</i> | | | | | | | | | | | |
| GNP (mln. of current new C\$) | 14.2 | 13.4 | 13.8 | 20.5 | 23.1 | 26.6 | 31.1 | 41.0 | 104.5 | 393.2 | 2327.2 |
| Deflator (overall/GDP) | 52.9 | 54.2 | 72.9 | 100.0 | 111.7 | 130.4 | 144.8 | 201.2 | 537.5 | 2042.3 | 11608.8 |
| GNP (deflated) | 26.8 | 24.6 | 18.5 | 20.5 | 20.7 | 20.5 | 21.6 | 20.4 | 19.4 | 17.6 | 20.1 |
| Annual inflation (CPI) | 12% | 4% | 48% | 35% | 24% | 25% | 31% | 35% | 320% | 681% | 912% |
| <i>Government expenditure (GE):</i> | | | | | | | | | | | |
| Recurrent GE | 3.3 | 4.1 | 3.8 | 5.2 | 6.8 | 8.3 | 9.6 | 10.7 | 11.3 | 10.2 | NA |
| Recurrent GE as a % of GNP | 12% | 17% | 21% | 25% | 33% | 40% | 44% | 52% | 58% | 58% | NA |
| Current budget balance | +0.5 | -0.5 | -0.9 | -0.2 | -0.6 | -2.0 | -1.4 | -1.7 | -3.3 | -2.3 | NA |
| Outst. debt Gov't -> BCN | 0.8 | 2.3 | 2.5 | 3.9 | 6.7 | 8.9 | 10.5 | NA | NA | NA | NA |
| <i>Agricultural-livestock Credit (AC):</i> | | | | | | | | | | | |
| AC | 3.4 | 4.7 | 1.9 | 3.1 | 2.5 | 2.8 | 3.4 | 3.3 | 3.2 | 3.5 | 3.3 |
| AC as % of total SFN-credit (2) | 20% | 20% | ND | ND | 39% | 49% | 51% | 49% | 45% | ND | ND |

Sources: World tables, 1989-90 edition: row 1, 2, 3, 5 and 6 (last two have been calculated);
IMF, International Financial Statistics, Yearbook 1990: row 4 and 7 (calculated);
Enriquez and Spalding, 1987:114 published data about AC disbursements in current C\$, which we used to obtain part of row 8 and 10 (years 1977-1980); the constant values have been calculated using the GDP-deflator;
Visser, 1990:21: row 8 and 10 / years 1981-1987;
BCN/INIES, 1988:26: here, data were presented on total SFN-credit disbursements to the economic sectors mentioned in footnote 2, which together with the data from row 8 led to row 9.

Notes: ¹ = with the monetary reform of february 1988, for every thousand old cordobas one new cordoba was issued;
² = total credit from state banks to the predefined economic sectors agriculture, industry, commerce, tourism (thus excluding SFN-credit to the central government); years 1977/1978 are estimates by Spalding and Enriquez, 1985.

CPI = Consumer Price Index/year averages;
NA = Not Available;
ND = Not at our Disposal

1982. These data suggest that the central bank had to finance the expansion of SFN-operations (including those serving the CG) and possibly also negative net returns on SFNs past loans. BCN/INIES data (1988:28) confirm our notion of a greater SFN-dependence on central bank funds, showing that in 1981 49% of all BCN lending was absorbed by the SFN. It is plausible that its operations fuelled inflation, but we still do not know if this was due to increased lending to the CG, to parastatal enterprises, to productive sectors, and/or negative net returns on these activities.

It is now opportune to make a final remark about the dynamics of the causes of inflation. FitzGerald (1987:203-204) estimates that two-thirds of the 1985 fiscal deficit was attributable to military spending, as a reaction to the US-sponsored contra war. This author argues that without the war, inflation would have been one third of what it actually was in 1985. So he interprets the rise in inflation as a result of increased government military expenditure. In his words 'inflation was used as a means of resource mobilization by the government to pay for the war'.

Our data are -to a certain extent- in line with this observation; indebtedness of the CG with monetary authorities rose quicker than that of 'deposit money banks'; the former increased with 9.7 million 1980 cordobas, the latter with less than one third that amount. Consequently, in 1983 outstanding CG-debt with the BCN was more than two times greater than that of the SFN. Moreover, part of SFN-lending went to the CG, meaning that also a part of SFN-debt with the BCN was a result of obligatory SFN-lending to the CG, and should actually be added to CG-indebtedness with the central bank. Our conclusion is thus that the massive increase of BCN-funds channelled to the CG, be it directly or indirectly, was the main source of inflation.

As more than a half of all recurrent public expenditure concerned defense, inflation was indeed related with the magnitude and nature of the military response of the Sandinist government to the US-sponsored military activities of the contras. In other words, inflation was related with the political tensions between Nicaragua and the USA. It had nevertheless a severe long term impact on the performance of the financial system and the extent to which credit policy goals were achieved (see the next section).

An important lesson to learn from this section is that the international political environment set the terms for the probability of success or failure of the Sandinist credit policy. The link between the two is made up by inflation.

5. AGRICULTURAL CREDIT DURING THE SANDINIST DECADE

In order to assess the effectiveness of the Sandinist credit policy, it is proper to formulate clear criteria that follow directly from the objectives this policy and the functions of the new financial system, as described in Section 3. In that way, we identify the following criteria: 1. the number of small and medium farmers who got formal credit for the first time in their life; 2. the degree at which resources have been transferred to prioritised ('revolutionary') productive sectors; and 3. the productive responses to changes in the volume and distribution of credit.

We will review the operations of the National Development Bank (Banco Nacional de Desarrollo: BND), as to this bank the function to distribute agricultural and livestock credit was assigned. As was noticed before, agriculture would be in the centre of the credit policy because the main structural transformation, i.e., a land reform, would take place there. Furthermore, the Sandinists wanted to compensate certain social groups within agriculture for traditional sufferings and marginalisation, by means of the provision of credit on soft terms.

The BND distinguished two types of agricultural credit; Rural Credit (RC) and Bank Credit (BC). The first comprises credit for small and medium-sized individual producers as well as for cooperatives; the latter refers to credit available to state enterprises and large private producers.

Section 5.1 deals with the number of RC clients in order to discern to what extent the first objective of widening access to formal credit in favour of marginalized social groups (OCP 1), was effected. Section 5.2 addresses the disbursements of credit to prioritized productive sectors, while at the same time identifying possible explicit and/or implicit subsidies; this is discussed in the light of the second objective of the Sandinist credit policy (OCP 2).

Finally, in Section 5.3 the third criterion will be assessed, in order to grasp whether or not its corresponding objective was achieved. As the Sandinist credit policy was based upon the perception that credit be a productive input, the productive record of agriculture will be reviewed."

5.1: Effective access to the Rural Credit program

The first OCP was to *create broad access to credit for the peasant sector, in order to compensate it for its traditional marginality and for its sacrifices made during the anti-Somoza war*. We thus will concentrate on the number of small and medium-sized farmers who became *new RC clients*. It should be recognized that the realisation of OCP 1 was thought to reinforce the achievement of the other two objectives as well (i.e., that of strengthening 'revolutionary' sectors (ccoperatives), and raising productivity).

The initial result concerning OCP 1 was significant: in June 1980, almost 100,000 small farmers (slightly more than half of their total number) received credit, thus increasing the RC clientele with 233% in comparison to 1978. After 1980, however, the clientele decreased slightly but steadily, with temporal recuperations though, e.g. in 1986 when the war obliged the government to assure itself of sufficient popular support in the countryside, which was done by increasing the effort to reach farmers with credit (see table 2).

TABLE 2: the number of Rural Credit clients (1978-1988)
(in thousands of families)

| 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 |
|------|------|-------|------|------|------|------|------|------|------|------|
| 28.0 | 28.2 | 100.7 | 87.6 | 75.0 | 79.3 | 80.9 | 66.4 | 94.0 | 75.1 | 80.0 |

Sources: CIERA 1989a:315 (years 78, 81, 83 and 86), 1989b:328 (year 87, 88); Enriquez and Spalding, 1987:113 (years 79, 80, 82, 84 and 85)

¹¹ Although theoretically and empirically it is difficult to establish a causal relation between a disbursement of credit and its (presumed) productive impact; see Section 5.3.A.

Some comments on the table 2 data are in place. Firstly, in 1988 still 45% of the eligible population was reached with small credit, as follows from relating the 1988 number of small farmers reached to a CIERA-estimate of the total number of rural families: almost 180 thousand (1989b:14). Secondly, the increase of the RC-clientele was exclusively attributable to the organisation of small farmers in cooperatives; some 1,200 credit & services cooperatives and 1,300 production cooperatives were formed, organizing approximately 74,000 farmers. The number of individual clients even decreased from 1982 till 1986, from 28,032 to 15,987 farmers. Thirdly, our own observations in Nueva Guinea, a district in the southeastern part of Nicaragua, indicate that there might have occurred double-counting in these BND-data. The creditmanager of the local BND branch told us that the incredible jump in 1980 to more than a hundred thousand clients may have included farmers who 'received credit twice, once individually and once as a member of a cooperative, by using a relative to get credit for him or even by using a false name.' This was a regular practice in his district during the first year of the rapid expansion of the clientele. It has not been possible to detect the magnitude of this bias in the above statistical data.

Data from a 1981-census concerning farmers who mainly produced food crops, once had been a BND-client, or still received credit, show that 53% had received credit for the first time after April 1980. For small farmers (0-7 ha.) this percentage was even higher: 65.5% (Stanfield, 1982:41). So, disregarding the question how many were double-counted, at least farmers had been reached with formal credit for the *first time*.

Other data show how this was accomplished: firstly, half of the BND-clients had not shown any land title to secure the loan; secondly, some eighty percent had filled in the credit request with the help of a government employee; and thirdly, in 54 percent of all cases this was done at the farm. So, access to credit of small farmers was indeed widened, as a result of the *political will* to do so. Self-selection had become the 'chief rationing criterion' (Carter, 1982:15).

After 1980, however, it proved difficult to maintain this expanded clientele of peasant producers; it even started diminishing slightly. At the district level, in Nueva Guinea, we observed that the existing clientele lived primarily in the more *densely populated* part of the district, in the village of Nueva Guinea and surroundings. Two reasons were given to

explain this. Firstly, bank officers ran too high a physical danger if going to the agrarian frontier to reach atomized small farmers, and secondly, production (and thus repayment) risks were also greater in the latter case. Both arguments are war-related. Presumably these factors have also played a role at the national level, impeding a further expansion of the RC-clientele.

We nevertheless cannot exclude the traditional -and more economic- reasons for the marginalized position of small subsistence farmers in the credit market: technological backwardness, irregular and at times adverse ecological conditions, and transport and marketing problems. In Nicaragua under Sandinist rule, the policy to supply small farmers with credit was partly offset by the necessity to allocate and ration scarce resources in such a way that the highest productive effect was expected. This policy was announced soon after 1980, the year of the 'piñata' (credit rain). At the demand side of the market, some farmers might have been reluctant to make use of their formally greater access, because they feared repayment problems, which in the light of past experiences were associated with expropriations. So, the official political will to widen access to credit for small farmers was confronted with structural problems of insufficient repayment capacity and confidence, and imperfect information, which are all basic attributes of rural financial markets. This combination of problems may have impeded a further increase of the RC clientele. "

Given the increase in the *number* of RC clients, the next question is now what size of loans the expanded clientele received on average. Were loans smaller or larger than before the revolution? We may compare the total amount of agricultural credit with the share of RC in this total, as well as with the number of beneficiaries; see table 3.

¹² On the other hand, where formal institutions are unable to deal with the interrelated problems of small farm production, the informal lender gets an opportunity to act, interlinking transactions in order to reduce risks, offering packages of services and goods (credit, inputs, consumer goods, guaranteed sale, transport, risk-sharing, etcetera).

TABLE 3: the magnitude of small credit-loans before and after the revolution

| | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 |
|--------------------------------|------|------|------|-------|------|------|------|------|------|------|------|------|
| Total AC (mln 1980 C\$) | 3.4 | 4.7 | 1.9 | 3.1 | 2.5 | 2.8 | 3.4 | 3.3 | 3.2 | 3.5 | 3.3 | 2.6 |
| Share of RC in AC | 10% | 4% | 13% | 27% | 23% | 31% | 31% | 34% | 34% | 44% | 34% | 27% |
| # of RC clients (x 1000) | ND | 28.0 | 28.2 | 100.7 | 87.6 | 75.0 | 79.3 | 80.9 | 66.4 | 94.0 | 75.1 | 80.0 |
| average loan size ¹ | — | 6.8 | 8.7 | 8.3 | 6.6 | 11.6 | 13.3 | 13.9 | 16.4 | 16.4 | 14.9 | 8.8 |

Source: table 1 (total AC); table 2 (# of RC clients); Enriquez and Spalding, 1987; and Visser, 1990 (share of RC in AC)

¹: in 1980 cordobas.

As regards the last Somoza years, 1978 in particular is characterized by great political uncertainty, capital flight and abuse of credit; the share of RC was 4% only. The preceding year 1977 was less exceptional; 10% of all AC went to the small farm sector, and assuming that the RC clientele was as high as in 1978, the average loan size would have been C\$ 12.1 (in 1980 cordobas).

For the Sandinist period, 1986 may be earmarked as a special year, because at the national level it was decided to make efforts to gain political support of small farmers, and deprive the contras of their social base. Credit was again used as an instrument to achieve an immediate political goal. Hence, the years 1978 and 1986 are best considered as 'abnormal' years, and will not be taken into consideration here.

We want to have an estimate of the average RC loan size during the postrevolutionary period. Table 3 shows first of all that during 1980-85 the average level of 3.1 millions of 1980 cordobas disbursed as AC was slightly lower than the 1977 level. However, the *share* of small credit (RC) in total agricultural-livestock credit had risen firstly to 27% in 1980 and afterwards to 34% in 1984-85. So, the increase in the number of RC clients was accompanied by a rise in the share of small credit in total agricultural-livestock credit.

Table 3 shows that the average RC loan size was C\$ 16.4 during 1984-85; comparing this with an estimated C\$ 12.1 for 1977, postrevolutionary RC loans were possibly even higher than their predecessors. We may conclude that *a greater number of small farmers received a loan of an average size which at least was as high as before the revolution.* On the medium term, the objective to 'democratise' credit and compensate the peasantry for its

marginality and sacrifices it had made during the anti-Somoza war was effectively reached.

In the long run though, the picture changes. After 1986, the RC share started to fall slightly; in 1988 it was 27%, a level as high as in 1980. This was not so much due to the fact that the small farmer clientele was slightly decreasing. Rather, the result of correcting for inflation was that in real terms less credit was disbursed, reducing the level of AC in 1987 and 1988. Apparently, this affected more the share of RC; the reduction in real terms was differentiated per social group. Large producers absorbed 48% of total AC during the latter year (some 19 percent points higher than during the former seven years, see Visser, 1990:21). The question is if this became a structural trend, and if so, how inflation became an intermediate variable in reversing the pattern of credit distribution. This issue is addressed in the next section.

5.2: Disbursement of credit and transfer of grants to prioritised social groups

The second OCP referred to agricultural credit as an instrument to *consolidate and capitalize the social groups emerging with the process of agrarian transformation.*¹⁵ The credit instrument would be used in two ways. Firstly, both cooperatives and the state sector APP would absorb an increasing part of agricultural credit. Secondly, interest rates would be differentiated by social group. In this subsection, we will see how these two measures were applied, in case of cooperatives, the APP, and individual small farmers.¹⁶

Social allocation of credit and differentiation of interest rates were policy instruments which were consciously used to stimulate and consolidate the agrarian transformation. Two other factors joined the interest rate-instrument in its function to transfer grants to the prioritized social groups: inflation and default rates. These factors were not controlled, so their contribution to the transfer was unintended, and at best accepted on an *ad hoc* basis. The below discussion is thus divided into four parts, each addressing one transfermechanism

¹⁵ Agrarian transformation encompasses more than agrarian reform; it includes technological changes, as well as improvements in the sphere of marketing and credit.

¹⁶ Although the latter were not a new sector emerging with structural transformation; politically, it was preferred that they integrate into the cooperative sector, and if this integration was partial, it was hoped that individual small farmers would integrate more into the market economy.

(in order of appearance).

It should be clear that the ultimate goal of this section is *not* to decide to what extent credit has been an effective instrument contributing to agrarian transformation. As *several* instruments have been implemented in combination to stimulate this complex process, it is impossible to isolate and identify the impact of one particular instrument. The aim we have here is just to see if credit was indeed distributed according to stated political priorities and if differentiated nominal interest rates did have any significance in practise in times of inflation.

A. First unintended mechanism: default

Of all ways in which credit transactions can evolve into transfer of grants, default is the most well-known and feared. Normally, it is unexpected and -if inadequate measures are taken- becomes uncontrolled. In Nicaragua, given the context of a strategy to provide for 'basic needs', to redistribute income, and to compensate peasants for traditional marginality and war sufferings, the supply of small credit was extended initially without control (CIERA, 1989a:259; Enriquez and Spalding, 1987:116). It was even 'flown in' to peasants who could not be reached by road. The delivery of small credit was presumably intended to transfer income to the peasantry, most obviously so in 1980.

During the latter year, delinquency rates were indeed relatively high for the RC program, as well as for APP-credit. Precise data are not available. The SFN-definition of the nominal repayment rate is: total repayments in year t as a percentage of new disbursements (in the same year!). Following this definition at times of inflation and credit expansion, 'repayment' automatically turns out to be low. For example, 'repayment' for the RC program in 1980 was reported to be 26%, and in the two subsequent years 55% only. However, it may well be that farmers waited one year before repaying a *hundred percent* of the loan received in year $[t-1]$, and that the amount repaid in year $[t]$ in relation to disbursements in year $[t]$ was lower than a 100% due to inflation and continued credit expansion during the first revolutionary years. Consequently, the rates of 26 and 55 percent may have been higher using a more conventional definition of nominal repayment.

It is sure however that also in the conventional meaning of the term nominal repayment was low in 1980, as in July 1983 the outstanding debt on loans received in 1980 by individual small farmers had to be remitted. At the same time it was announced that debts of cooperatives were also pardoned, in a discriminatory way, favouring the CAS-type above CCS and both types of cooperatives above individual producers. Cooperatives CAS were forgiven their 1980, 1981 and 1982 debts, while CCS-types still would have to repay their 1982 debts. One year later, in 1984, the APP-debts were restructured by the government (SFN-data indicate a 'repayment' rate of 51 to 60 percent for this sector during 1981-84; Enriquez and Spalding, 1987:117). Mean repayment performance of large farmers was relatively good. In conclusion: during the first years after 1979 the 'default-mechanism' of transfer of resources was relevant above all for the cooperatives CAS and CCS, followed by the individual small farmers and the state sector, and less so for large producers.

Soon after 1980 tolerance towards default became less, at least officially. A first directive for bank employees disbursing credit was to check its recuperability, which as such suggests a return to commercial banking criteria. This was not the case however, because at the same time the importance of (national) productive plans to be financed with credit was emphasized (BCN/INIES, 1988:14-15). Moreover, credit still served as an incentive to organize the peasantry in cooperatives. As was showed in the previous subsection, the net result was that less individual clients and more organized farmers received this type of credit.

There is every reason to think that default of cooperatives continued to be relatively high during the eighties. Expectations were created that it was lucrative to do so, as there was a chance that the government would repeat the 1983-remission of debts. Although we do not have at our disposal national data concerning repayments after 1985, we do have information about Nueva Guinea at the end of the eighties. During the agricultural cycle 1988/89 'repayment' by cooperatives of short-term credit was 18% for corn and 22% for rice, which was less than the average repayment rates: 48 and 55% respectively.¹⁵ The cooperative sector has had more advantage of default than other sectors.

¹⁵ In 1989/90 repayment rates for the cooperative sector were 78 and 65% for corn and beans, while district averages rose to 87 and 81%. We still see a relative difference, which suggests that cooperatives profited more from default. The rise in these figures was a consequence of: a) measures to indexate interest rates after June 1988; b) peace talks between the government and contra-leaders, which reduced military activity in the area.

B. First instrument: interest rates

As was shown earlier, it was intended to lower interest costs for cooperatives and small individual producers (RC clients), while the state and large-scale private sector paid the slightly higher rates. Differentiated nominal interest rates have not been significantly effective though, notwithstanding the fact that e.g. the nominal rate charged to a cooperative CAS was half the one charged to large private producers or state-enterprises. *In real terms*, interest rates became increasingly negative for all sectors, and negative interest costs for all sectors means transfer of grants to all sectors. The nominal difference of four, seven and nine percent between the BC interest rate and the three RC rates was only significant in its implication for how much implicit subsidy a certain client group received (see table 4).

During the first five years of the revolution inflation was moderate, and the difference between real interest rates for BC and RC was not that small. In 1981/82 till 84/85 e.g. a cooperative CAS 'paid' a real interest rate of minus 21%, while large private producers were 'charged' minus 12%. When inflation was as high as 912% in 1987, real interest rates fell to around minus 900% for everyone, elevating implicit subsidies for *all* client groups. Interest rates were not indexed till June 1988.

TABLE 4: interest rates structure for short term credit in Nicaragua (1979-1988)

| | 77/78 | 79/80 | 80/81 | 81/82 - 84/85 | 85/86 - 87/88 |
|--------------------------|-------|-------|-------|---------------|---------------|
| Small Credit: individual | 13% | 13% | 13% | 13% | 20% |
| Small Credit: CAS | - | - | 7% | 8% | 16% |
| Small Credit: CCS | - | - | 8% | 10% | 18% |
| Bank Credit: private | 13% | 14% | 17% | 17% | 30% |
| Bank Credit: APP | - | - | 17% | 17% | 30% |
| Annual inflation * | 12% | 48% | 35% | 29% | 641% |

Source: CIERA, 1989a:261 (till 1984); Spoor, 1989:6 (1985-88); table 1 (IR)

* : inflation rate for 81/82-84/85 and 85/86-87/88 are averages

In conclusion: the policy to differentiate nominal interest rates has not been effective in reducing financial costs for certain favoured sectors, because of inflation. As stated in

section 4, inflation was generated for two-thirds by increased government expenditure on the military. In other words, the interest rate policy could not be effective because there was a war going on, which was financed at the cost of inflation. As a reaction, in June 1988 all interest rates were unified for agricultural, livestock, and industrial production, thus eliminating the instrument.

C. Second unintended mechanism: inflation

In the preceding section it became clear that interest rates have to be regarded in real terms, i.e., correcting for inflation. The series concerning these two factors in table 4 display that starting with 1985 real interest rates for all credit recipients became extremely negative. The principal sum could be regarded in relation to inflation also, in the following way:

$$\text{rate of repayment in real terms (RRR)} = \frac{\text{repaid principal}}{\text{actual (inflated) value of principal}}$$

Any difference between the numerator and the denominator should be compensated by indexing interest rates according to inflation. The difference can become high in an inflationary environment, making the principal sum an important factor engendering implicit subsidies. A farmer has a rationale to stimulate this process without even defaulting, if he simply waits some time before repaying the amount due. The 'inflated value of the principal' calculated at the moment of repayment has become high, the RRR falls, and the implicit subsidy increases.

It has been estimated that in 1987 the RRR of every loaned cordoba on a short term was approximately eight percent, assuming zero default (estimate by Spoor, 1989:11). The resulting implicit subsidy of 92% was *not* differentiated among sectors. Taking into account default, implicit subsidies may have been even higher!

In conclusion, inflation became crucial for the sectoral distribution of the transfer of grants, provoking that resources were transferred to sectors which by no means were given an *a priori* political priority in the context of the agrarian transformation. The 'velocity' of this transfer has possibly been around 92% of every single disbursed cordoba, in 1987.

D. Second instrument: social distribution of credit

In order to estimate the extent of the impact of inflation on the transfer of grants *per social group*, we need to consider the participation of each group in total agricultural credit. We will do this for RC/individual, RC/cooperative, BC/private, and the APP-sector (state enterprises).

In table 5 it can be seen, firstly, that the increased share of RC in total disbursements of agricultural-livestock credit was entirely due to lending to cooperatives CAS and CCS. Second, while in 1977/78 the state sector did not exist, after 1980 it became a major client, absorbing 43 percent of all credit in 1983. Third, large producers belonging to the private sector saw their share steeply falling. With total lending to agriculture in real terms fluctuating but on average constant, all this holds not only in relative terms.

Up to 1985, implicit subsidies due to inflation were moderate as compared to the second half of the Sandinist decade; these amounted to 9% for the state sector, 15% for cooperatives CAS and 16% for the CCS (assuming zero default). As subsequently until 1983 these social sectors increased their share in total AC, they took progressively more advantage of these subsidies. Thus, implicit subsidies were rising for the 'revolutionary' groups, as long as their credit absorption grew in relative terms (APP: till 1983, and CAS/CCS: till 1986).

As regards APP, it can be observed that after 1983 this sector received relatively less credit; in 1990 its share was almost half of what it was in 1983. On the other hand, large producers started to recover, seeing their participation as a group reach nearly fifty percent in 1990. The cooperatives and the individual small farm sector (RC) lost some ground too, although slowly. Not taking into account 1986, its share of 34% in 1984 and 1985 falls to

27% in 1988, the year of the monetary reform.

TABLE 5: agricultural-livestock credit by sectors (1977-1990)
(in percentages of total yearly disbursements)

| year: | '77 | '78 | '79 | '80 | '81 | '82 | '83 | '84 | '85 | '86 | '87 | '88 | '90 |
|------------------------|-----|-----|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Large producers BC: | 90 | 96 | 87 * | 73 * | 43 | 35 | 26 | 26 | 30 | 29 | 34 | 47 | 48 |
| State enterprises APP: | 0 | 0 | -- | -- | 34 | 34 | 43 | 40 | 36 | 27 | 32 | 26 | 24 |
| Small/med. prod. RC: | 10 | 4 | 13 | 27 | 23 | 31 | 31 | 34 | 34 | 44 | 34 | 27 | 28 |
| RC/Individual: | 10 | 4 | NA | NA | 14 | 14 | 10 | 9 | 10 | ND | 11 | ND | ND |
| RC/Cooperative: | 0 | 0 | NA | NA | 9 | 17 | 21 | 23 | 24 | ND | 23 | ND | ND |

Sources: Enriquez and Spalding, 1987:114 (year 1977); CIERA, 1989a:318 (1978-88); data-bank DEA/UNAN, Managua (year 1990)

* = percentage includes two sectors -> BC and APP; NA and ND: see table 1

Meanwhile, implicit subsidies became greater and generalized from 1985 onwards, due to accelerating inflation. All types of BND-clients benefitted, no matter to which social group they belonged and which nominal interest rate they paid. Moreover, large private producers began to recuperate their share in total AC, just as implicit subsidies were as high as 92% or more.

In 1988-1990 this trend was not altered, considering the BC share at a level of 48%, an exceptionally high inflation rate (perhaps 31,000% in 1988 and 1,687% in 1989), and incomplete indexation measures (see Visser, 1990:36-37). The APP-sector benefitted less when potentially the highest implicit subsidy could be attained, because of its relatively lower share in total AC during these two years. It seems that the cooperative sector maintained its participation, and continued to benefit from higher implicit subsidies during the most inflationary years.

With respect to the RC program as a whole (cooperatives + individuals), its share fell to 27 and 28% in 1988 and 1989, respectively. To some extent this was due to the monetary reform (i.e. the indexation measures of June and September 1988), which created insecurity among individual small farmers, who subsequently reduced their demand for credit. After

eight years of low interest rates, high implicit subsidies and (initially) tolerance towards default, the measures provoked anxiety and resentment. In Nueva Guinea, during a meeting between farmers and bank staff willing to explain the measures, the farmers announced it would be the very last time they used bank credit. Thinking that interest rates had become excessively high, small farmers started to avoid the risk of indebtedness.

It has been estimated that nevertheless, and still assuming zero default, the implicit subsidy after June 1988 was about 69% for short term credit (Spoor, 1989:4). It seems that large producers had a better understanding of what happened, as they maintained a high BC-share of 48 percent. In fact these producers had started increasing their demand for credit since the very moment inflation accelerated (1986). We conclude that large producers knew better how to benefit from implicitly subsidized credit.

Although small farmers withdrew from the financial system and large producers did the opposite, the small farmer union UNAG started to protest against the indexation measures. The union had become inured to the compensatory function of credit as a source of income because producer prices had been low from 1980 to 1987 (see Bakker et al., 1987). Subsidized credit was essential when prices of inputs, consumer products, machinery services, and fuel were rocketing (UNAG, 1989). In our view their position was problematic in three ways. It might well have been better to fight for higher producer prices than to defend a compensation in the form of subsidized credit (i.e., a grant). Firstly, because the other half of the peasantry, which did not get any subsidized credit, would have gained from higher prices. Secondly, because subsidized credit in Nicaragua contributed to augment the fiscal deficit, and thus fuelled inflation (which in turn raises implicit subsidies: a vicious circle is created). And thirdly, because large producers responded in a most appropriate manner to inflation by raising their demand for credit above their needs; the subsidies were increasingly enjoyed by the better-off, not by the poorest.

At the end of section 5.1, we asked ourselves if the adverse influence of inflation on the pattern of credit distribution became structural. Here, we have hypothetically stated that inflation was at most an intermediate variable, which influenced the behaviour of large and small producers in a different way. Yet, the tendency for BC-credit to become more important lasted for five years, so the answer is affirmative; inflation was crucial in raising

the magnitude of the implicit subsidy, causing a shift in the distribution of credit, as the response of large producers was more appropriate in taking advantage of the situation.

In assessing the overall effects as regards the sectoral allocation of credit, we have to take into account also the prerevolutionary situation. Above we were commenting on the diminishing share of small farmers and state enterprises in total AC, but this tendency only manifested itself after the first years of the revolution, i.e., after the participation of small farmers and state enterprises had grown. During those years, these groups enjoyed implicit subsidies (be it of a lesser extent than the subsidies after 1986) and even debt cancellation. Considered on a pre/postrevolutionary scale, absorption of agricultural credit by large private producers fell from 90% in 1977 to 48% in 1990.

Summarizing the findings of this section in another terminology, we may say that from a social point of view, initially a redistribution of income took place in favour of small producers, cooperatives, and the state sector. Later on, the transfer of grants was redirected towards large private producers, as they steadily increased their share in total AC when implicit subsidies were as high as 90 percent of each cordoba lent before June 1988, and twothirds of the lump sum after this month.

It is important to note that from an *economic point of view* also inefficient sectors benefitted more from implicit subsidies, e.g., the livestock-sector in Nueva Guinea. Our data collected in this region show that during the period from 1985 to 1988, seventy percent of all agricultural credit was disbursed to the livestock-sector." This did not correspond with the objective of national food security. Moreover, the region's poor soil fertility induced small food producing farmers to sell their plots to cattle-breeders, the latter making an extensive use of land without improving its quality. Small farmers in their turn cut new areas of rain forests, just to stay there a couple of years, till land productivity lowered to such an extent that the time came to sell again. So, the uneven distribution of credit in favour of the livestock-sector reinforced an ecologically harmful development and economi-

¹⁴ Twothirds of livestock-credit in Nueva Guinea was disbursed as long term credit, meaning that the subsidy-component rose up to a hundred percent at times of high inflation. Secondly, we calculated that during those years the average loan for cattle-breeding was 10 times higher than for short term agricultural credit, so in absolute terms subsidies were larger too for an individual. In general, the funding of production logic made that loans disbursed to cattle-breeders and large producers were 10 to 20 times larger than loans to small farmers (Carter, 1982).

cally inefficient productive activities in this district (see for more examples: Spoor, 1991:129).

In conclusion: this section has shown that the four transfer-mechanisms could not but result in a complex and in part unpredictable network of transfers to different groups of beneficiaries, individuals and economic sectors. Seen on a pre/postrevolutionary scale, the social distribution of credit has become more equal and corresponded to revolutionary priorities, notwithstanding the fact that afterwards small individual farmers and state enterprises lost part of their share in the cake, subsequently missing the opportunity to enjoy extremely high implicit subsidies. Large farmers did, at the end of the eighties. Finally, with reference to the economic allocation of funds, it seems to have been far from efficient. Examples confirm that subsidized credit distorts an efficient allocation of scarce resources.

5.3: Productive responses

The third OCP was to *promote production, stimulate productivity, and recuperate levels of pre-war food and agroexport production*. In this section, although we may observe that productivity rose where credit was made available and used where before it was not, we cannot pretend to identify causal relations here. Firstly we will argue why this is so, and secondly we will present a purely descriptive synopsis of the productive record of agriculture in Nicaragua (1980-1990).

A: Theoretical considerations about credit-impact studies

Suppose that small farmers' suboptimal allocative and technical efficiency is primarily a result of financial constraints, and that entrepreneurial qualities and/or productive and commercial conditions are not relevant factors. According to Carter (1989:19), in such a situation credit would relieve the financial pressure and enable a farmer to: 1) purchase all the necessary inputs and improve allocative efficiency; 2) adopt a new (presumably already desired) technological package and raise technical efficiency; and/or 3) intensify the use of

fixed production factors (land, family labour, skills).” The third objective of Sandinist credit policy with respect to small farmers was indeed based on the assumption that mainly financial constraints impeded them to walk down these roads, inhibiting their capitalisation and a greater market integration.

But what if differences between farmers with respect to productive or entrepreneurial qualities, and/or productive/commercial conditions *are* factors contributing to suboptimality? Then if no one receives credit, productive differences exist also. Consequently, if credit access is generalized, the question arises who actually uses it. The borrowers may be the ones facing more favourable productive and commercial circumstances, or be more talented farmers/entrepreneurs, or both. Receiving credit, they may be able to increase productivity and possibly their income, which leads to a process of differentiation in the small farm sector. In the Nicaraguan context, where self-selection was the main rationing principle, and where terms of credit were politically determined, borrowers may have been systematically different from non-borrowers.

Given this setting, *it is next to impossible to determine which part of productive changes could and should be attributed to credit*. Firstly, because in his econometric study Carter (1989) could not identify whether the observed greater productivity of borrowers was due to latent personal attributes or whether it was an effect of credit (that is, a general effect, no matter who borrows).” Secondly, because in general different productive and commercial circumstances may also explain a better production record of borrowers vs. non-borrowers. And third, because a package of services may be delivered to the rural sector at the same time as credit is disbursed (e.g. inputs, technical assistance, literacy campaign). These problems constitute the *attribution problem*, and mutually increase the complexity of the issue at stake.

Two more problems can arise when one tries to determine the productive impact of credit. First, as rural households are both consumption and production units, one cannot ignore

¹⁷ Credit may have the third theoretical impact if used for consumption, improving nutrition and thus raising productivity, or by allowing the farmer to allocate family labour where marginal return is highest in the long run, while credit finances the cost of maintenance in the short run.

¹⁸ He controlled for observable differences in productive and marketing conditions.

changes in consumption. Credit is liquidity," and liquidity is like water. It flows where it can and one can not distinguish one liter of water in a stream, trying to trace where it comes from and where it is heading for. This characteristic of credit is called the *fungibility* of credit, meaning that 'loans may simply substitute for a household's savings or other sources of liquidity' (David and Meyer, 1983:85), and that all resources in principle can be used for consumption and production.

Second, referring again to productive effects only, one should distinguish between agricultural production and non-agricultural activities. The first is already problematic when policymakers disburse credit to food producers in order to increase national food security, while their clients may decide to shift production to non-food staples, e.g., traditional or non-traditional exports. The question is thus: what kind of productive responses are desired (e.g. by policymakers, project staff)? A conflict may arise between policy-makers' preferences and decisions taken at the household level where people face (productive and consumptive) opportunities and risks.

B: Synopsis of the recent productive performance of Nicaraguan agriculture

As relatively more credit was disbursed towards the agricultural sector (at the cost of commercial credit), *first* the productive record of agriculture as a whole will be examined. Table 6 shows that although the value of agricultural production rose till 1983, the then reached highest postrevolutionary level was still about equal to the prewar 1977 value. Afterwards production stagnated, implying that the goal to recuperate production after the revolution was not reached (which, of course, is probably due to other factors than credit alone).

In relative terms, the agricultural sector was equally important in its contribution to GDP in 1983 as in 1978. Given the rapidly increased share of total bank credit absorbed by agriculture (from 20 to 51 percent), this result leaves even less to claim for the productive impact of credit. It may be that: A) a positive effect was offset by the negative influence of

⁹ If it is not disbursed in the form of money, or a money-check, but in kind, it can be made liquid if there is a market for the good.

other factors; or B) that credit simply did not have a productive impact (as concluded by Barahona et al., 1988).

TABLE 6
Agricultural production and credit absorption
(1973-1986)

| | 1973 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 |
|------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Agricultural GDP | 4.638 | 5.673 | 6.167 | 5.922 | 4.947 | 5.286 | 5.436 | 5.749 | 5.442 | 5.181 | 4.901 |
| (index, 1977 = 100) | 82 | 100 | 109 | 104 | 87 | 93 | 96 | 101 | 96 | 91 | 86 |
| (as a % of GDP) | 22% | 21% | 25% | 30% | 18% | 19% | 20% | 25% | 24% | 24% | 23% |
| AC as % of total SFN-credit | NA | 20% | 20% | NA | NA | 39% | 49% | 51% | 49% | 45% | NA |

Sources: World Tables, 1989-90 edition, p. 416-417; table 1

Notes: Agricultural GDP in millions of 1980 Nicaraguan New Cordobas; NA = data not available

A *second* important component of agricultural credit policy was to reach more small farmers, and increase the share of small credit. As has been argued, this was realized by the formation of cooperatives, whose function it was to contribute to national food security. This has been an important objective in Nicaragua under Sandinist rule. Food staples are mainly provided by cooperatives and individual small farmers (Small Production: SP), so here we will examine the food production record. Table 7 displays some important tendencies concerning corn and beans, two crops which are mostly produced within the SP sector.

TABLE 7: Corn and Beans

Cultivated Area, Financed Area, National Production and the contribution of Small Farmers (1978-1988)

| | 197 6 | 197 7 | 1980 | 198 1 | 198 2 | 198 3 | 198 4 | 198 5 | 198 6 | 198 7 | 1988 |
|--------------------------|----------|----------|------|----------|----------|----------|----------|----------|----------|----------|------|
| CORN: | | | | | | | | | | | |
| Cultivated Area (CA) | 369 | 303 | 336 | 286 | 241 | 266 | 270 | 188 | 225 | 261 | 316 |
| Financed Area (FA) | 57 | 61 | 251 | 100 | 115 | 108 | 109 | 103 | 153 | 147 | 179 |
| FA / CA | 15% | 20% | 74% | 35% | 48% | 41% | 40% | 55% | 68% | 56% | 57% |
| CA (index, 1977=100) | 122 | 100 | 76 | 97 | 78 | 88 | 89 | 62 | 74 | 86 | 105 |
| National Production (NP) | 437 1 | 394 2 | 3996 | 420 0 | 400 3 | 508 5 | 458 1 | 424 2 | 470 2 | 616 1 | 6572 |
| NP (index, 1977=100) | 111 | 100 | 99 | 104 | 102 | 129 | 114 | 105 | 117 | 152 | 162 |
| SP as % of NP | NA | NA | 94% | 91% | 91% | 86% | 82% | 81% | 90% | 89% | 93% |
| BEANS: | | | | | | | | | | | |
| Cultivated Area (CA) | 140 | 88 | 78 | 108 | 98 | 126 | 118 | 103 | 142 | 97 | 157 |
| Financed Area (FA) | 18 | 15 | 60 | 58 | 60 | 60 | 51 | 45 | 80 | 63 | 69 |
| FA / CA | 13% | 17% | 77% | 54% | 61% | 48% | 43% | 44% | 56% | 65% | 44% |
| CA (index, 1977=100) | 158 | 100 | 88 | 122 | 112 | 143 | 134 | 117 | 161 | 110 | 178 |
| National Production (NP) | 117 7 | 895 | 625 | 905 | 103 0 | 122 6 | 126 0 | 100 8 | 129 0 | 740 | 1228 |
| NP (index, 1977=100) | 132 | 100 | 70 | 101 | 115 | 137 | 141 | 113 | 144 | 83 | 138 |
| SP as % of NP | NA | NA | 95% | 89% | 95% | 94% | 97% | 97% | 98% | 92% | 98% |

Sources: Bakker et al., 1987; Zalkin, 1986:161, 200

Notes: In the table calendar years refer in fact to the agricultural season of that year and the next;
Area in thousands of manzanas (1 manzana = 0.68 hectare);
Production in thousands of quintales (1 quintal = 46 kilo).

Firstly, the *corn* recuperation record is good, as in 1980/81 and 1981/82 production was at the 1976/77 level, and continued progressing afterwards: moderately until 1985/86, and rapidly after this season. The political wish to reach small farmers with credit led to a rapid extension of the financed area (FA). On average, during the eighties some fifty percent of the cultivated area (CA) was financed by the BND, not taking into account the 1980 'piñata', when more manzanas were financed than actually were cultivated.

With respect to the CA-index, one should notice the drop in cultivated area with corn, probably as a result of war activities in the countryside. The NP-index nevertheless increases slightly, suggesting that overall productivity in corn production increased (with roughly 20%). Two explanations are in place here: 1) up to 1985/86 productivity increased

as a result of widespread experimentation with improved seeds and fertilizers in basic grain production, made possible by the availability of credit (Zalkin, 1986:199); 2) following the 1985 price liberalisation for corn and beans, total production in 1987/88 and 1988/89 was far superior to former levels.

In corn production, small farmers appear to have been more responsive to higher producer prices (Bakker et al., 1987:87) than to increased access to credit. This stance is confirmed by the data on the contribution of the small farmers (SP) to national production, which rose from 81% in 1985/86 to 93% in 1988/89. The reason why farmers did respond less to subsidized credit was that net returns of traditional corn production from 1979/80 to 1984/85 were negative (ibid, p. 61), while only 40 to 50 percent of all small farmers were reached with credit and thus compensated by means of implicit subsidies. The other half reacted elastically to the producer price liberalisation.

It would not be correct to examine the impact of credit on corn production only. As was indicated in section A, credit could be used to change the product mix in favour of more capital intensive crops. Nicaraguan small farmers may have started to grow more beans instead of corn, once credit was made available to them. Indeed, beans became more and more a cash crop for small farmers while corn was still produced mainly for subsistence (ibid, p. 67).

Table 7 also presents data on *bean* production. The prewar level of the cultivated area with beans was soon reached. Production however, only slowly recuperated and hardly surpassed the 1976 level. On the other hand, national production did double during 1980-1988, as a consequence of an equally great expansion of the cultivated area. Productivity did not rise, although the use of modern inputs was encouraged and generalized as in corn production. Still, the greater role of credit at most stimulated an extensive production development (that is, there is a chance that it played this role).

Considering the two crops together, we may conclude that production increased, chiefly as a result of the price liberalisation and an expansion of the cultivated area in case of corn and beans, respectively. Credit may have played an intermediary role though, e.g., by increasing the use of modern inputs in corn production, an effect that appears particularly at

times of a price liberalisation. It has been supposed (Zalkin, 1986:202) that a greater availability of credit to small producers (especially those organized in cooperatives) induced the expansion of the area cultivated with beans.²⁰

In 1988/89 domestic crops occupied 20 percent more of total cultivable acreage, as compared with the last three seasons of the prerevolutionary period an average of 52% was allocated; meanwhile, credit absorption by domestic crop production more than doubled (from 15 to 31 percent: Spoor, 1989:1). Consequently, we have little reason to think that at a macro-level greater credit absorption by domestic crops led to a sufficiently high productive response, taking corn and beans as examples.

Finally, a *third* important component of agricultural credit policy was the priority given to the state sector APP. Some capital-intensive agroindustrial projects have been initiated in this sector; imports of capital goods for agriculture constituted almost 5 percent of GDP, a rate which was two to three times higher than in other countries in Central America (Stahler-Sholk and Spoor, 1989). Most of these imports went to the state sector, but the new enterprises were not capable to raise their productivity to such a degree that debts could be repaid. APP-debts were restructured in 1983, and in 1986 a special credit program ('programa de crédito dirigido') had to be created to improve the productive record of the state sector. From that moment on, a credit request would only be approved if *ex ante* productive norms would be agreed upon. We have no data about productive tendencies within the state sector after 1986, and therefore cannot determine whether the program was successful or a failure. What we do know, however, is that after 1986 the share of APP in total AC fell.

²⁰ If so, still the social costs of this possibly positive productive effect would have to be calculated in order to make a final judgment about its desirability (e.g. opportunity costs of the extensive development of beans production; environmental costs of this expansion and of the adoption of more 'chemical' technological packages; costs of subsidies, etcetera).

6. SUSTAINABILITY OF THE SANDINIST FINANCIAL SYSTEM

The results of section 5 reveal that a higher number of small farmers received (at least) equal amounts of credit than before the revolution; that implicit subsidies have been considerable especially after 1985, accruing more and more to large producers; and that at a first sight the expansionary credit policy was not accompanied by a comparable expansion of output. In section 4 we argued that the SFN-debt with the Central Bank was rising, indicating that the system was not financially viable. Although to a lesser extent than the central government's expenditure, SFN-operations contributed to inflation.

This view contrasts with the position of Barahona et al. (1989) who argued that credit stopped being an inflationary factor after its total value was falling in real terms. Although this argument is incorrect, it does draw attention to an extremely important repercussion of inflation on the performance of the financial system. Inflation induced an erosion of the capital base of the SFN, when BCN lending to the SFN was insufficient to maintain the real value of its capital. This led necessarily to diminishing real values of credit disbursements to bank clients. In table 3 we saw this happen as the average loan size within the RC program fell from 16.4 cordobas in 1986 to 8.8 cordobas in 1988 (in constant 1980 values). Total AC fell from 3.5 millions of 1980-cordobas in 1986 to 2.5 millions of 1980-cordobas in 1988.

In Nueva Guinea, the reduction of real values of agricultural and livestock credit has been impressive. For the period 1985-1989 we observed an overall reduction of 75 percent (60 percent in case of short term credit, and 92 percent for long term credit). Consequently, average amounts of credit disbursed per manzana diminished. In fact, *credit was rationed by inflation*, and this can only be observed on an ad hoc basis, because of the unintended character of this kind of extensive rationing. A perverse effect is that the real value of loans in relation to production costs diminishes. In May 1990, some farmers told us that the amount of credit per manzana was not high enough to take the trouble of going to the bank, in part because of the decreased value of the loan, but also as production costs were rising sharply as a result of the adjustment program initiated in February 1988.

Implicitly this phenomenon at the micro-level gave way to a major change in credit

policy, in the context of an adjustment program. From February 1988, credit policy would serve the macro-economic goal of reducing the global deficit. If the SFN would continue to function as it did during 1980-1988, the system would decapitalize even more and real values of loans would become insignificant. So in the new situation, farmers were expected to depend less on SFN-capital and more on their own, and real repayment rates would have to be higher.

Two instruments were used to realize the latter goal: indexation of interest rates and quantitative restrictions. As was shown in section 5.2, the first measure was not effective in inducing positive real interest rates. The second measure was implemented in February 1988, when short term credit was nominally cut by 10 percent and long term credit by 30 percent. In Nueva Guinea, we observed that above all long term livestock-credit was reduced. This was instigated mainly by the so-called 'Casa Matriz', which approved or disapproved branch requests to disburse amount X of credit for purpose Y. Cuts varied from a hundred percent of the proposal (some cases of long term livestock-credit) to some 30 to 50 percent in case of short term credit (Visser, 1990:46-47).

Inflation in 1988 amounted to 31,000 percent or thereabout. The total real value of short term agricultural credit disbursed in Nueva Guinea in 1989 was just 20 percent of its 1988 level; in case of long term credit the 1989 total value of disbursements in real terms was some 27 percent (*ibid*, p. 28). It may be that the nominal cuts have helped a little, but we suppose that the hyperinflation was mainly responsible for the decreasing real values of credit disbursements by the SFN.

In section 5.2 we have seen that real repayment rates were still low after the implementation of indexation measures. On the other hand, in December 1989 the real value of savings deposits in Nueva Guinea constituted only 9 percent of all credit disbursements in that year (it had been 28 percent in 1985). During the same period the number of deposits decreased by 75 percent; in the light of negative real value of passive interest rates, this is not surprising. In conclusion: savings could not substitute the diminishing flow of funds of the Central Bank. The sustainability of the Sandinist agricultural credit policy was poor, partly because of dysfunctions of the policy itself, but also due to factors outside the sphere of agriculture and credit policy, e.g., government resource mobilisation by means of inflation

in order to increase military spending.

7. SUMMARY AND CONCLUSIONS

The development of a viable formal financial system has not been a high priority in Nicaragua under Sandinist rule. Only after the monetary reform of February 1988 it seemed to gain importance. In this study we examined the problems and results associated with the Sandinist policy goals for the formal agricultural credit system. Basically, the system had to serve the non-financial goals of 'democratization', capitalization of 'revolutionary' productive sectors, and promotion of overall agricultural productivity.

As regards its achievements, we observed first of all that access to credit of small farmers was effectively widened compared with the prerevolutionary situation. This was not done by means of extensive rationing, a frequently applied mechanism of credit delivery to a large number of farmers.²¹ In the Nicaraguan revolutionary context there was enough political will to augment the supply of loan funds when demand for credit increased, at least until 1986. This prevented the size of an average 'small loan' from falling. Furthermore, we noticed that the cooperative sector has enjoyed ample access to credit throughout the eighties. This cannot be said in case of the parastatals (APP), though. Its productive inefficiency caused its absorption of credit to be more and more conditioned.

Considering the 'productive' goal of agricultural credit policy, it seems to have become more dominant throughout the eighties. Nonetheless, no causal relation can be identified between credit as a determinant, and production as a variable to be determined. Comparing the changes over time in these variables we may conclude that the expansion of agricultural credit did not induce a rise in production. This conclusion is valid as regards total value added in agriculture, as well as regarding corn and beans production within the small farm sector.

²¹ See: Von Fischke, 1983:179. Nor did the prevailing low real interest rates lead to loan concentration in the hands of relatively few borrowers, as is to be expected according to Gonzalez-Vega (in: Adams, et al., 1984:78-90). The latter author's work is based on the incidence of decentralized decision making, which makes up the difference.

The crucial factor in the revolutionary context was that credit became heavily subsidized. Four mechanisms played a role in determining the effect of credit policy on the income-distribution: the incidence of default, low nominal interest rates, implicit subsidies, and the social distribution of credit. Analyzing these effects, a rather complex picture emerged of sometimes parallel and in other cases contradictory tendencies. In summary: it seems that cooperatives, individual small farmers and the APP state enterprises were subsidized by tolerating default and formalizing it by officially announced debt cancellation. This mechanism did not apply to large farmers. Low nominal interest rates were significant as a means of transfer of grants, as inflation rates were well above interest rates throughout the eighties.

Inflation became a crucial factor after it surpassed the hundred percent level in 1986. Default lost its importance as a transfer of income-mechanism, and subsidies became mainly implicit. More importantly, they became generalized, so transfer of grants was no longer exclusively relevant for 'revolutionary sectors'. Moreover, after 1986, a shift in the social distribution of agricultural credit took place, in favour of large farmers. Large producers simply responded more rationally to inflation than small farmers. Normally, subsidized credit leads to quantitative rationing *by bank managers* which affects small farmers' access to credit, leading to an increase in the share of large producers in total available credit. In the revolutionary context in Nicaragua though, access remained open; small farmers rationed themselves, while the larger ones did the opposite.

The following sequence may be identified: the inflationary spiral prompted implicit subsidies to be almost equal to the size of the loan. These implicit subsidies effectuated differential behavioural responses, comparing large and small farmers. The first group increased its demand for credit up to the maximum allowed (on the basis of total acreage, technology used, and use of own funds). This had two important consequences: 1. the initial redistribution of credit in favour of small and medium farmers plus the state sector was partly offset; and 2. the share of the large farm sector in total agricultural credit increased as the implicit subsidy per cordoba was highest. As a result of the second tendency, since 1986 a social redistribution of income favouring large farmers took place.

Apart from open access to formal credit, small individual farmers did not gain a lot, considering the above observations. Those who did not organize themselves in cooperatives, remained outside the formal credit system, did not enjoy any subsidy, while producer prices

for corn and beans were below production costs. Those who did, received credit, together with a reduced number of individual peasants. This small farmer clientele started to refrain from the formal system starting in 1986, a tendency that became stronger after the monetary reform. Some were abruptly left without credit as the new Chamorro-government came to power, demanded all amounts due to be repaid before more credit was to be rendered, and started redirecting the BND-loan portfolio towards export crops, especially cotton.

Four mechanisms of transfer of income associated with the delivery of credit contributed, together with increased military expenses due to the contra-war, to inflation. The latter factor made the formal credit system definitely unsustainable. The consequences of an unsustainable system may be severe, as yet credit covered between eighty and a hundred percent of production costs; a technological backwash, a fall in production, as well as lower incomes are probable. If relevant, these effects could be interpreted as boomerang-effects of the Sandinist credit policy. Furthermore, imagine they would be cushioned by the informal sector. That would in fact make up a fourth boomerang-effect, as informal forms of rural finance not only received zero attention in the revolutionary context but were also held to be essentially exploitative in nature.

Even without the war, the agricultural credit system would not have been sustainable. Not only the discouraging effect of inflation on the level of savings, the political use of credit, its highly dirigist nature, but also the total failure to perceive it as a product of financial intermediation, are all of them problematic as such. A view of credit as a financial instrument necessarily leads us to the recognition that a credit transaction comprises a promise to repay in the future, and is thus based upon confidence. Such a transaction presupposes a personal relationship which serves as a basis to build confidence (Yotopoulos, 1991). In its turn, the latter is a means to compensate for the risk of default, i.e., the risk that *credit may not be credible*. The neglect of these features of credit as a financial instrument resulted in high delinquency rates.

Sandinist policy makers saw credit as a productive input. Portfolio decisions were taken at a central level, and were based upon political criteria. These have made the financial system to function in the same way as hypothetically predicted by Von Pischke, although his hypothesis presupposes a 'consistent selection of suboptimal alternatives' within portfolio-management *at the level of the bank branch*. We consider the case of Nicaragua as unique in showing that Von Pischke's hypothesis was based upon a still too narrow view of the

political economy of a financial system.

It is remarkable, however, that even in this revolutionary context (and thus in unpredictable ways) the performance of the Sandinist financial system has coincided more or less with Von Pischke's predictions that: 1. the clientele contracts; 2. the quality of services deteriorates; and 3. the range of services is not expanding. The first prediction has only partly been valid in Nicaragua, but the second and the third were. The case of Nicaragua proves also, however, that his theory does not sufficiently take into account the specific political forces that may shape the use and, indeed, the abuse of the financial system in a developing country, and corresponding policy results.

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