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June 1993

Online at <https://mpra.ub.uni-muenchen.de/105427/>  
MPRA Paper No. 105427, posted 22 Jan 2021 05:56 UTC

Natural Resource Management and Policy  
*Ariel Dinar and David Zilberman, Series Editors*

# Privatization of Agriculture in New Market Economies: Lessons from Bulgaria

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Kluwer Academic Publishers

# **17 CREDIT FOR AGRICULTURE DURING THE TRANSITION**

**S. Petranov and K. Roussinov<sup>1</sup>**

## **ABSTRACT**

Since the beginning of the economic reform in Bulgaria, flows of credit to agriculture have decreased. As the farm credit issue has an extremely high profile in the public debate about the crisis in agriculture, the government finds itself under extreme pressure to assist in financing the sector. Some of the difficulties in the credit market for agriculture have the characteristics of market failures. On this basis the case for government intervention is assessed. The conclusion is that government policy measures which have been implemented are not well suited to solving the problems; rather, they deal somewhat haphazardly with the symptoms. Resolution of the problems requires government intervention in the following forms: in the short run, resolution of held-over bad loans and provision of collateral guarantees; in the medium run, significant progress on the restitution of land titles, provision of information and extension services, including financial consultancies for the farmers, and training for bank officials dealing with agricultural lending; and in the long run, creating more competition in both input and output markets.

## **INTRODUCTION**

As a result of economic reforms in Bulgaria, new structures in agriculture are emerging. The changes in agriculture together with the macroeconomic uncertainty have created difficulties in the normal process of financing agricultural activity. At the same time the banking sector is undergoing a major transformation, and so credit markets are underdeveloped, inhibiting the effectiveness of monetary, credit and trade policies (Calvo and Frenkel, 1991).

The difficulties in the credit market for agriculture stem from both demand and supply forces. Lack of collateral and low profitability in agriculture makes banks view the agricultural sector as a high risk customer. Expected declining profitability and macroeconomic uncertainty are discouraging borrowing at the current high nominal interest rates. Immediate plans of farmers are uncertain because of the lack of working capital. There is also the longer-term problem of

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<sup>1</sup>This chapter benefited greatly from the help of Allan Buckwell and Ron Meekhof.

ensuring adequate funds to facilitate structural adjustment and to enable farmers to apply effective technologies.

In this chapter we assess the problems of financing Bulgarian agriculture during the transitional period. We first provide a brief overview of the history of agricultural credit in Bulgaria and then focus on (1) the most important problems in the credit market, on both the demand side and the supply side; (2) market failures caused by the unique transitional period, when the economy is no longer centrally planned but the markets and the market institutions are underdeveloped; (3) Bulgarian government interventions in the credit market (state intervention in short-term credit through the Law for Financing Agriculture in 1993 (LFA) which dominated the agricultural credit market for that year, and state intervention for long-term credit); (4) some alternatives for financing the agricultural sector; and (5) estimates of the potential short-term demand for credit.

## **HISTORICAL OVERVIEW AND INSTITUTIONAL FRAMEWORK**

The development of agricultural credit markets in Bulgaria before the introduction of the Soviet system in 1947 can be separated into two periods. During the first, which lasted until the end of the nineteenth century, loans were extended by informal lenders at usurious interest rates which varied between 100% and 300% per annum. Provision of credit for agriculture from formal lenders was organized in Mutual Benefit Funds (MBFs), founded initially by the Turkish government with state funds. After the liberation from Turkey, MBFs became the basis for credit unions to reduce the level of interest rates charged by informal lenders. By the 1890s the credit unions were reorganized into the Central Administration of Credit Unions. Credit unions reduced interest rates and improved the flow of funds to agriculture (Berov, 1989, 1992).

The second period began in 1903 with the creation of the state-owned Agricultural Bank, which specialized in providing loans to farmers. In 1934 the bank merged with the Bulgarian Central Co-operative Bank and was renamed the Bulgarian Agricultural and Co-operative Bank. According to the legislation the bank was entitled to extend government loans (secured and unsecured). The bank supplied credit to rural co-operatives and associations of wine, timber, tobacco and other producers. This bank operated until 1947, when it was liquidated and thus no longer provided credit to farmers (Berov, 1989).

With the introduction of central planning, banking institutions were nationalized and the property and the functions of former private banks were taken over by the Bulgarian National Bank (BNB) and the, now defunct, Bulgarian Investment Bank. Loan provisions were organized through branches of the BNB. Later, after the structural changes in the late 1960s, two specialized credit institutions were set up for agriculture and for industry. The specialized credit institution for the agricultural sector, the Agricultural and Trade Bank, was linked to branches of the BNB.

In the transition to a market economy, the supply of agricultural credit is organized through the national banking system. There was (by the beginning of 1994) no specialized bank for agricultural credit. During the period of central planning, the branches of the BNB were credit suppliers for the sector and they accumulated the bad debts of the former state cooperative farms. As the process of transition got underway, the government established, with the assistance of the World Bank, a Bank Consolidation Company to provide reform in the financial system. The main purpose of this bank reform was to consolidate commercial banks into nine major institutions in order to provide better services for the whole economy and create a more competitive business environment. After the consolidation of the banks into viable entities the next major task was to deal with the problem of debt.<sup>2</sup>

As the transition process got underway, a strong interest developed in the creation of a specialized lending institution for agriculture. A variety of reasons were given in support, including uncertainty on the part of lenders who have no experience in agriculture. There has been some progress in the development of a cooperative lender: The central Co-operative Bank, established in 1990, had seventeen branches throughout Bulgaria by late 1993. Initially, lending was mainly to consumer cooperatives. However, it is anticipated that the bank will extend lending activities to the entire country and function as an agricultural co-operative bank similar to those found in some West European countries.

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<sup>2</sup>The banks whose names suggest a special involvement with agriculture are the Bank for Agricultural Credit, the Agribusiness Bank, and the Private Agricultural and Investment Bank. Despite their names these banks do not lend mainly to the agricultural sector. For example, the Bulgarian Agriculture Bank has allocated only 5-7% of its total loan capital to the sector. The First Private Bank, which has no special commitment to agriculture, has approximately the same proportion of its loan portfolio devoted to farmers.

## PROBLEMS DURING THE TRANSITIONAL PERIOD

Under the restructured credit market, the commercial banks are still the major credit source for the agricultural sector. To a lesser extent agricultural production is financed by the input suppliers, by traders, and by producers' savings. But the level of activity in commercial credit markets is very low. The obvious question is, Why?

- Lack of clear, well established property rights. By the end of 1993 land reform was still incomplete. There was no legal framework for transferring property rights, and the land market was only in its embryonic stage. As a result farmers could not use their land as collateral. The liquidation councils have no legal right to provide land or other means of production as collateral. Also these councils are temporary, and hence may be nonexistent by the time the loans mature. In the transitional period, when the property rights are not established, the demand for credit is limited compared with what it otherwise would be.
- The low level of farm income. The domestic market for agricultural products is stagnating and foreign markets have shrunk. Given the loss of secured CMEA markets and the difficulties resulting from the international embargo on trade with the former Yugoslavia, many of the traditional trade relations were disrupted and Bulgarian producers faced substantial constraints in external markets. Trade relations with the European Union and the EFTA countries are developing slowly, and uncertainties about future levels and directions of trade remain. Government control of agricultural exports and some food prices put further pressure on farmers' incomes. In addition, incomes are depressed by the monopsony power of wholesalers, many of whom pay producers only several months after the products (livestock, milk, eggs or wool) have been delivered. This gives wholesalers a loan without interest payments, leaving farmers who do not have this market power to pay interest to bridge the cash gap. On the input side, prices rose at a higher rate than agricultural commodity prices. This has led to a low rate of return and makes potential borrowers doubtful that they will be able to service the loans.
- The high level of nominal inflation. The growth rates of agricultural product prices are lower than the general price index. In 1992 average prices increased by 30% in the crop sector and by 55% in the livestock sector, while the CPI increased by 80%.

Although the real interest rates in relation to the general inflation rate were negative, they were strongly positive in relation to the agricultural producers' price index. There is considerable uncertainty about how prices will develop, which makes expenditures and revenue planning uncertain. From the producers' point of view this makes their ability to repay the loans precarious.

- **Indebtedness of producers.** At the end of 1992 the total agricultural producers' outstanding debt was 4.7 billion lv. Most of this was inherited by the liquidation councils from the former collectives. Under the Communist system, loans provided by the national banking system were based on cash flow analyses, without any collateral requirements. Due to the lack of ownership rights and responsibilities, in many cases the state wrote off some of the borrowers' obligations to the banking system. This made the boundary unclear between the economic categories of credit and subsidies. Because of these accumulated debts, commercial banks are reluctant to extend new credit.
- **Difficulties with collateral.** The banks' reluctance to lend to the agricultural sector is due largely to the producers' inability to provide satisfactory collateral. By securing collateral from borrowers an incentive is created for them to repay loans and to avoid default. Because few farmers can offer their land as collateral they usually offer their residential property. But this is an illiquid asset, especially in rural areas. As a result banks accept as collateral 80% of the estimated real estate value in urban areas, but only 50% in rural areas, and often banks in rural areas refuse to accept residences as collateral because it is difficult to find a buyer in the event of a borrower's default.
- **There is also a high collateral risk with respect to the values of assets pledged by borrowers to lenders.** First, under high nominal inflation rates the relative prices of assets might decrease between the time of lending and the time of repayment. Second, residential property in rural areas might be subject to physical damage, imposing a high cost for lenders of monitoring the condition of the collateral. The same argument may be applicable to farm land. Even after the land reform is completed it will take some time before the land market develops and land values can reliably be assessed. In the meantime land might not be considered as satisfactory collateral.
- **New emerging market agents.** As a result of the land reform, many small producers are entering the market. They are potential

borrowers, but they have no well-established, traditional relations with lenders. In many cases they are inexperienced in drawing up business plans and defending them according to bank procedures. On the other side, banks do not have records and reliable information about borrowers' management skills or their ability to service the loans.<sup>3</sup> Given this lack of information, lending decisions are based almost entirely on the availability of secured collateral rather than the profitability of the projects. This creates inefficiency in lending decisions.

For all these reasons commercial banks avoid the high risks associated with agricultural producers, preferring to lend to sectors with higher returns, such as trade and services. Although they may consider agriculture as a future borrower, currently they find better lending opportunities elsewhere.

The World Bank, the European Investment Bank and the European Bank for Reconstruction and Development have all stated their readiness to provide credits for Bulgarian agriculture, with the former expected to provide credit of between US\$30 and US\$90 million to be disbursed through qualified commercial banks. It is expected that these credits will be available for mid-term and long-term lending, but as of the end of 1993 none of the institutions considered that Bulgaria was ready to receive the credits.<sup>4</sup>

## **CAN GOVERNMENT INTERVENTION IMPROVE THE SITUATION?**

The difficulties in the credit market have some characteristics of market failures which denote situations where social and private costs or benefits diverge (these are otherwise known as externalities); or where some market agents have monopoly power; or where there is significant uncertainty and lack of adequate information; or where markets are missing (see for example Layard and Walters, 1987). In such

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<sup>3</sup>The importance of local information about borrowers is emphasized in Guinnane (1993) in a study regarding the success of credit cooperatives in Germany.

<sup>4</sup>On April 11, 1994, the IMF approved a loan of 259 million US\$ (97 million US\$ of which is to be paid now; the remainder will be made available provided restructuring continues).



circumstances markets will not provide the socially "correct," optimal output. There must be institutional change. Normally government actions are suggested to help create efficient markets, with the recognition that, if the market fails, there is no guarantee that government will rescue it. It is quite possible—and unfortunately not uncommon—for government intervention to make matters worse. The potential government actions discussed below are proffered in full knowledge of this possibility:

- **Lack of collateral.** In a developed market economy with established property rights and with developed land and real estate markets, borrowers are able to offer collateral that is satisfactory for the creditors. It is clearly not the situation now in Bulgaria, where market relations are not well developed. Banks are concerned about the high risk and significant possible losses. (They assign more importance to the lending risks than the potential loss of clients.) Given the circumstances, their behavior is rational (at least in the short run) because they can find better lending opportunities.

On the other hand, because producers cannot offer enough collateral to cover the high risk, very few are able to borrow. Even the potentially efficient producers with profitable projects are denied opportunities. Such cases are a result not of the farmers' inability to compete in the market, but of their lack of collateral, caused by the complex and necessarily slow process of determining and issuing legally secure land titles. This situation, therefore, has characteristics of both market failure and missing markets. The political will to create private land ownership is strong; the principal obstacles are administrative and practical. Unavoidably, it takes time to process applications for land, resolve disputes, draw up the land division plans, and issue titles. The missing land market is thus a temporary problem that should be resolved over the next few years as the land restitution proceeds. Temporary loan guarantees provided by the government can fill the gap.

- **Lack of skills and knowledge of newly emerging market agents.** It is unrealistic to expect new farmers to possess the sophisticated financial skills needed for dealing with bank officials. As the quality of the applications for credit depends on the ability and willingness of local bank officials to help applicants, and these officials have discretion over whether to help applicants or not, an inefficient system is created. A possible solution to this

problem is for the government to provide market information and farmer extension services, including financial consultancies, and to encourage education of bank officials.

- Bad debts of producers, inherited from the centrally-planned period. These debts were not accumulated under market conditions and it is obvious that the market cannot solve this historic problem. The debts increase banks' losses and increase uncertainty about whether the banks will be repaid future loans. Many liquidation councils and livestock producers that might be competitive producers have no access to credit because of bad debts for which they were not responsible. Regardless of the origins of the debt, its existence causes a market failure since the market cannot resolve this problem and government intervention is required. One solution is to convert the bad debts into state debt.
- Low level of farm income. This is not entirely a result of market failure. This sector has shrunk significantly due to loss of markets, problems with liquidation councils and land commissions, and producer taxes. Also, both upstream and downstream there is evidence of significant market power. Government should take measures to increase the competitiveness of the input supply and wholesale markets.

## STATE INTERVENTION IN THE CREDIT MARKET

At the end of March 1993 the Parliament adopted the Law for Financing Agriculture (LFA) (Durjaven vestnik, 1993a). This Law obliges state commercial banks to extend short-term credits for working capital to organizations such as liquidation councils, individual farmers, private cooperatives, and to educational and scientific organizations producing agricultural products.<sup>5</sup> The Law, however, excludes vegetable producers. It imposes an interest rate ceiling that is a maximum of three percentage points above the BNB's basic interest rate. It provides credit subsidies which require borrowers to pay only one third of the interest payments. The other two thirds are to be reimbursed by the Ministry of Finance from the state budget. Under this law, banks are obliged to accept future production as collateral, and bank officials who

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<sup>5</sup>Technically, liquidation councils are referred to in law as "Organizations according to Article 12 of the LALOLU."

unreasonably refuse to lend are subject to fines by the BNB. In case of default, 50% of the due payment is covered by the Ministry of Finance and 50% is covered by the commercial bank that has extended the credit.

Which problems are addressed by the LFA and which are not? The LFA has no explicit goal, and there is no clear government agricultural policy framework within which the Law can be assessed. The only available evidence for judging its purpose is the political debate, related to food security, which surrounded its adoption. Thus, it seems that the purpose of the Law is to maintain domestic production in order to secure the country's food supplies.

**The Collateral Problem.** By obliging the banks to accept future production as collateral, the LFA addresses the collateral problem. Banks are obliged to accept future production as collateral and, in order to reduce the high risk, the Regulation for Implementation of the LFA obliges producers to insure their crops (Durjaven vestnik, 1993b). Further, banks have usually required, in addition to the insurance, preliminary contracts between producers and wholesalers. In order to reduce the risk for the banks still further, the government provides 50% guarantees in case of default of the borrower.

Loan guarantees might be an effective incentive to encourage lending where there are unusual risks or the lender is reluctant to make loans to unfamiliar borrowers. Loan guarantees might be effective from a budgetary perspective because government funds can attract significant participation from the banking sector without intervening directly in the credit market. Whether the proportion of the risk shared between the government and the banks is properly chosen to be 50%-50% is another question. At least some of the farmers who benefitted from the Law would have had access to credit without it. Also, because of the asymmetric information in favor of borrowers, some loans actually might not be repaid by opportunistic debtors.

**The Low-Income Problem.** The Law is intended to resolve the low income problem, postulating that the government will subsidize interest payments by two thirds. It implies that producers cannot meet the commercial interest rate unless they are provided with subsidies. The validity of this argument can be tested by comparing farmers' expenditures and revenue for the crop sector (Table 17.1).<sup>6</sup> Producers

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<sup>6</sup>The calculations are done as follows: Working capital-related expenditures are based on norms allowed by the Law. These expenditures are increased by a factor reflecting the commercial interest rate, which is assumed to be 51% per annum (48% basic interest rate of BNB and 3% margin for the commercial bank

of spring crops are not able to cover their variable costs even if they do not have to pay any interest. Obviously there is no way to cover the fixed costs or to rely on any profit. Even though these estimates may be biased, continued production may require some policy interventions.<sup>7</sup>

Table 17.2 presents costs and return estimates for the winter crops. Producers of these crops, especially wheat and barley, will be able to cover their variable costs and make a positive margin even if they borrow at a commercial rate.<sup>8</sup> This is in sharp contrast to spring crops.

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allowed under the Law). The average maturity for different crops varies depending on their technological requirements. Yields per decare and per mt are the reported averages for the country. Revenue per decare is based on yield per decare and price. Revenue is then expressed as a ratio with expenditures and expenditures including interest. The first ratio indicates whether producers are able to cover their variable costs when they do not take loans. The second shows the situation when all variable costs are funded from borrowing.

<sup>7</sup>The estimates may be biased because they are *ex post*. When the Law was adopted, similar estimates (if done) would have been *ex ante*. They should have been based on the expectations in the spring of 1993. It consequently turned out that 1993 brought a severe drought with rainfall much less than the long-run average. This led to a significant drop in the crop yields. Consequently the output and the supply of these commodities decreased and their prices rose. These two factors had opposite effects on revenue, but with inelastic demand the combined effect should have raised revenues. It was not possible to calculate the precise net effect because of a lack of consistent data for previous periods. Another bias might come from the normative expenditures. Although they are supposed to be based on technical norms, in the Law they are given as upper limits. Farmers might have some seed and fertilizer stored as inventories. Although they should consider the opportunity costs for such stocks, their existence would decrease the cash needed for working capital. Also, farmers are likely to respond to the relative price rise for purchased inputs by applying less intensive technologies. This again would bias the estimated ratios upward in the sense that actual expenditures may be less than assumed. This would mean that farmers would be able to cover a larger share of their variable costs.

<sup>8</sup>The biases commented on in the case of spring crops are still possible. Here, the direction of the bias is more predictable. The drought affected yields but not as much as for spring crops. At the same time prices increased significantly compared to what was expected in the spring of 1993. Average yield decreased by approximately 12%, while wheat prices rose at least 25% above the expected level. Hence, the *ex post* estimation of producers' ability to repay the loans should be upward-biased compared to *ex ante* estimations (if done). Part of the variable costs associated with the winter crops were incurred in the autumn of

Table 17.1. Estimated Variable Costs and Revenue, Spring Crops, 1993 Season.

	<i>Maize</i>	<i>Sunflowers</i>	<i>Sugar beets</i>
Normative variable costs (leva/decare)	730	640	1040
Normative costs including commercial interest rate (leva/decare)	854	749	1261
Yield (mt/decare)	0.14	0.1	1.098
Price (leva/mt)	2,800	3,570	0.41
Revenue (leva/decare)	392	357	450
Revenue/variable costs	0.54	0.56	0.43
Revenue/variable costs including commercial interest rate	0.46	0.48	0.36

Source: Law for Financing Agriculture in 1993 and authors' calculations.

The above analysis shows that the Law, while providing support through subsidies for crops that justify support, also subsidizes crops that do not justify the same support. Also, in terms of spatial inefficiency, the above calculations were based on average yields for the country, but the severe drought in 1993 did not affect yields in a uniform way. In the northwestern part of the country yields were much lower than the average, and in the northeastern part of the country they were higher. Credit subsidies are thus too blunt an instrument to deal with financial problems caused partly by climatic factors.

Finally, it is worth examining the areas sown and the output. In 1993 the area planted to the six major crops was up 15% on average, and the grains area was up 12%. Rye and sugar beet acreage decreased, but these are minor crops—occupying less than 2% of the total area for the six major crops. Sugar beets were not commercially attractive at 1993 prices,

1992, which also biases upwards *ex post* calculated margins. Winter crops can stand the cost of commercial credit and perhaps do not justify subsidized interest rates.

which explains the large drop in the area sown. Areas sown with maize increased significantly, and this is to some extent due to the subsidized credit. Despite the rise in area planted, output fell in 1993 (by 15% for grains) because yields were down. This drop is explained by the combined impact of several factors: unfavorable climatic conditions, reduced use of fertilizers and pesticides (because of the cost/price squeeze and in some cases lack of credit), mismanagement both by liquidation councils and by inexperienced private farmers, and a non-optimal scale of production. It is impossible to separate quantitatively the impact of interest rate subsidies on the output. It may only be inferred that if farmers had not had the credit subsidies, the drop in output would have been even larger. The results are heterogeneous across the different crops. Also, the drop in output for other products that were not supported under the Law (for example, tomatoes -23.3%, peppers -26.6%, potatoes -36%), is less than the drop for the spring crops which were subsidized under the Law. This may mean that fundamental factors such as secure markets for the products and attractive prices have played more important roles than the access to credit.

Table 17.2. Estimated Variable Costs and Revenue, Winter Crops, 1993 Season.

	<i>Wheat</i>	<i>Barley</i>	<i>Rye</i>
Normative variable costs (leva/decare)	470	450	320
Normative costs including commercial interest rate (leva/decare)	530	507	347
Yield (mt/decare)	0.307	0.274	0.140
Price (leva/mt)	2560	2430	2400
Revenue (leva/decare)	786	666	336
Revenue/variable costs	1.67	1.48	1.05
Revenue/variable costs including commercial interest rate	1.48	1.31	0.96

Source: Law for Financing Agriculture in 1993 and authors' calculations.

**Other Problems.** The Law was designed as a temporary measure to facilitate the provision of short-term credit for working capital, not as a solution to the problem of bad debt. The debt problem should be approached in the context of a long-run strategy and related to the same problem in other industries. The government announced its intention to write off bad debts accumulated prior to December 1992, but took no action during 1993. Thus the banks found themselves in a situation where they were obliged by the Law to provide credit, but were allowed discretion to refuse to lend to indebted borrowers. As a result, probably most of the liquidation councils with bad loans had no access to subsidized credit.

The Credit Law does not deal with the credit problem of the newly emerging market agents. It can be argued that it is inappropriate for this problem to be tackled through such a law. This should be part of a government agricultural policy aimed at providing extension services, education, and complete information in order to increase the efficiency of borrowers' decisions.

**Social Costs of the Law.** The following are some unresolved issues:

- The total amount of disbursed credit under the Law for April to October 1993 was 3 billion lv. Of this total 2.1 billion lv were reimbursed. The deadline for reimbursement is specified explicitly in the Regulation for Implementation of the Law as ten days after the realization of the production, but not later than December 1, 1993. An exception is the credit related to tobacco, which had to be reimbursed by April 1, 1994. Tobacco producers received about 98 million lv of subsidized credit. If it is assumed that none of this was repaid, about 800 million lv of unpaid debt remains from the old system.<sup>9</sup> In addition to this, 221 million lv were used by the state to subsidize the interest payments. Discussions with bank officials revealed that some fraction of the loans was not repaid because farmers stored part of their production for seed and for feeding animals for the next season. As some of these debts could be subsumed into a new law for 1993–94, the amount of the bad debts might be lower than calculated above. Also, disbursed credits under this Law are outside the credit ceilings imposed on commercial banks by the

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<sup>9</sup>Based on the pattern of repayments in the previous year, up to 200 million lv of this 800 million lv may be repaid.

BNB so that they do not compete with credits for other sectors and no crowding-out effect should be caused by the Law.<sup>10</sup>

- Besides the monetary losses, there are side effects. Subsidized credit creates expectations among agricultural producers that they are entitled to favorable treatment. Many bank officials report that in some cases producers come to banks demanding credit under the Law. If such expectations continue, it will be extremely difficult politically to drop such temporary measures. Producers of commodities that are not treated favorably may also press to be included in the subsidies. If that occurs, international financial institutions will not provide external funding for the development of the sector.
- The very existence of subsidized credit discourages alternative financing. Instead of using their own savings for production, producers will deposit their money in banks to earn the commercial interest rate. If the use of private savings and external financing is discouraged, the funds available for future development of the agriculture sector might in fact be lower rather than higher.
- The Law does not encourage producers to repay their debt; in fact, they lose little in case of default. This is especially true for the liquidation councils. It is acknowledged that the estimated 1993 default of about 22% is not so bad given the circumstances of a bad year in terms of climatic conditions and radical reform. Even so, the administration of the credit provides too little motivation to repay debt, and this might affect the future development of the credit market.
- Subsidized credit is to some extent fungible. According to the Law, subsidized credit should only be used for working capital and purchases should be proven with documents. The lack of

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<sup>10</sup>The estimated monetary cost of providing subsidized credit increases the budget deficit, which is already rather high. The budget deficit in 1993 is expected to exceed significantly the amount that was adopted by the Parliament. It will be well above the level recommended by the international financial institutions. This will have an inflationary effect. The monetary cost for the banks will add to the significant losses that the banking sector has suffered in 1993. Ultimately the cost will be borne by the taxpayers through higher taxes which have to cover the losses. A rough estimate is that this amount is about 10% of the average monthly earnings for the country.



administrative controls and resources make it very difficult to ensure compliance with these rules.

The Law was adopted at the end of March 1993 and the Regulation for Implementation was published in the State Gazette at the end of April. Both documents were prepared in a hurry, and under political pressure, after the beginning of the spring planting season. As a result there were significant gaps in the Law, which increased its administrative inefficiency. For example, it was not clear how to treat loans disbursed at the commercial interest rate before the late adoption of the Law. Also, the Law does not specify in detail the procedure for receiving subsidized credit. There are no specified requirements and instructions for applying, for the rejection or the approval of an application, or for the detailed accounts required. As a result there were complaints from producers that they were refused access to credit apparently for personal reasons. At the same time bankers reported that in many cases liquidation councils presented poorly kept accounts. Also, discussions with bank officials revealed that in many cases part of the loans have been used for other purposes, for example to pay wages. Another weak point is that some services are not supplied by firms but by individuals who cannot provide official documents. Also, without well-established legal structures the contracts between producers and traders that banks require as guarantees might not be reliable.

## **State Intervention in Long-Term Credit**

At the beginning of 1993 the Agricultural Credit Center (ACC) was established to supply medium-term and long-term credit in order to prevent the decapitalization of the agriculture sector. The Center started with a foundation capital of 106 million lv. The shareholders are exclusively public agencies and some state enterprises, with the Agency for Foreign Aid having about 90% of the shares. Other shareholders are Fund "Zarno," the foreign trade company "Agromashinaimpex," and some other state enterprises producing agricultural machinery. Although the ACC is a share-holding company its principal shareholder is a public agency, and it operates with public money received by the Agency for Foreign Aid from foreign donors. This justifies considering the Center's operations as state intervention in the credit market.

The ACC aim is to provide public benefits by promoting a market-oriented agricultural sector. It seeks to cover only the operating and start-up costs. The credit offered, earmarked for agricultural machinery and buildings, is provided only to private farmers and new cooperatives,

based on private ownership of the land. In 1993 the explicit priorities were, first, to promote private farming of grains, sugar beets, oil-bearing crops, fiber crops and essential-oil crops. Before the agricultural reform most of these crops were produced by the state cooperatives. The ACC will supply 75% of its credit for this purpose. The second priority is to promote private livestock production. Twenty percent of the credit resource is earmarked for this area. The remaining 5% will be used for projects relating to agriculture in regions in deep recession, with high unemployment or ethnic problems.

A credit ceiling of 180,000 lv and a floor of 40,000 lv are imposed, but this may be changed if the general price index increases more than 33%. The maximum maturity is seven years. According to the ACC Code, while the interest rate is fixed, the principal is adjusted in accordance with the exchange rate. The interest rate charged by the Credit Center is 1.9 percentage points over the rate at which the ACC borrows.

The required collateral includes agricultural land and other assets having a total value 80% larger than the total amount of the credit. In response to public debate, the ACC announced that, if a special law for agricultural credit is adopted, the Center would accept temporary land titles as collateral. In 1993 the Center disbursed credit on two occasions—in March and in August. The first disbursement was oriented primarily to the crop sector, with maturity up to seven years; the second disbursement was oriented entirely to the livestock sector, with maturity up to three years (see Table 17.3). The ACC thus encourages medium-term and long-term investment outside the commercial banking system. However, the Center may be unable to provide a long-term and sustainable solution to the problems of agricultural finance.

The ACC supplies loans to private farmers and private cooperatives only. However, by the end of 1993 few producers were eligible for such loans. As the land reform is completed, or at least significantly advanced, many more producers will apply for credit. Given the ACC's relatively small resources it will not be able to meet the increased demand for credit, creating the necessity for severe rationing. Pressure on the government to increase the financial resources of the Center might be expected.

The ACC has no branches, but operates on a contract basis through the branches of one of the largest state banks, Balkanbank. The application forms are collected by these branches, and the loans are serviced by them. Although such organization reduces the transaction costs, the relation between the borrower and the creditor is disrupted. Given many borrowers' lack of financial experience, the quality of the

applications depends on the ability and willingness of local Balkanbank officials to help applicants.

Table 17.3. Long-Term Credits Disbursed by the ACC up to August 1993.

	<i>Individual Crop Farmers</i>	<i>Individual Livestock Farmers</i>	<i>Private Crop Co-ops</i>	<i>Private Livestock Co-ops</i>	<i>Total</i>
<----- Million leva ----->					
First Disbursement	58.2	11.0	26.5	11.6	107.3
Second Disbursement		17.0			17.0
Cattle		7.3			
Sheep		3.1			
Pigs		3.4			
Poultry		3.2			
Total	58.2	28.0	26.5	11.6	124.3

Source: Agricultural Credit Center.

Another problem the ACC faces is fluctuations of the exchange rate. The rules of the ACC state that the principal of the loans is adjusted according to changes in the exchange rate. In 1992 and 1993 the Central Bank was able to maintain a fairly stable exchange rate due to the moratorium on the foreign debt payments and the low level of business activity. The depreciation of the nominal leva/US dollar exchange rate in 1992 was about 25%, while consumer price inflation was 80%. It is unlikely that such real appreciation of the leva can be maintained in the future; indeed, a significant depreciation took place at the end of 1993. As reimbursement of payments of the foreign debt commences, the demand for foreign exchange will increase significantly. If the economy starts to recover the demand for foreign exchange will increase further, reflecting increased demand for imports of investment goods and raw materials. If there is a large depreciation of the leva relative to farmgate prices the Center will face high default rate and might bear significant losses.

Another problem for the ACC might be created by its complete orientation to the agricultural sector, which exposes it to the high risk and the fluctuations typical of that sector. Under unfavorable conditions for the sector this will lead to the need for additional financial resources from

government agencies. The Center's code precludes the possibility of risk diversification of the credit portfolio.

## **ALTERNATIVE CREDIT SOURCES**

### **Short-Term Credit Alternatives**

- Input suppliers are typically a source of credit to the agricultural sector but they too face serious problems during transition. State companies supplying inputs have had some bad experience post reform with significant delays in payments. Private companies supplying inputs are only operating on a small scale and they do not have enough working capital to be able to offer credit. In both cases the insecure guarantees have a similar negative impact on their lending decisions as in the case of the commercial banks. Also, input suppliers' behavior depends on their ability to receive credit for working capital from the commercial banks or from their foreign trade partners.
- Although vertical integration between producers and processors or traders might be a good way to channel finance to farmers, this possibility is not well developed yet because the market economy itself is not sufficiently developed. Market structures and agents are not well established, and stable relations have not yet been created between the food industry and marketing companies on the one side and agricultural producers on the other. The high degree of monopsonistic power on the traders' side is another inhibiting factor.
- The use of forward contracts is another means of providing short-term credit. In 1992 several Commodity Exchanges were established, the largest being The Sofia Commodity Exchange. They organized the provision of funds for agricultural producers based on forward contracts between farmers and wholesalers, with fixed prices on fixed dates and payments in advance. Such contracts made it easier for producers to receive money in advance from wholesale companies to the extent of 35% to 38% of the contract value. The Commodity Exchanges also suggested to the banks that contracts between producers and wholesale companies be used as collateral.
- Though forward contracts increase the supply of funds to agriculture, very few producers made use of this option. For example, only 8,600 mt of wheat were traded at The Sofia

Commodity Exchange, which accounts for only 0.25% of total production. Part of the explanation can be found in the lack of experience and psychological barriers on the producers' side, but part lies in the high nominal inflation rate that makes price forecasting almost impossible. In addition, the 1993 drought led to a decrease in the supply of agricultural products and to an increase of prices. As a result some producers refused to deliver their production under the prices fixed in their forward contracts. At The Sofia Commodity Exchange, 30% of the contracts were not fulfilled. Another part of the explanation of the low activity with respect to forward contracts is that producers had access to short-term credits with subsidized interest rates.

- It is very difficult to estimate the potential ability of agricultural producers to finance their own production because of lack of data on farmers' savings. Such estimates should take into account the stocks of inputs as well. A comparison of the growth rates of input and output prices shows that farmers' financial position worsened in 1993.
- Another approach to the credit problem could be through a marketing assistance program for grain. To implement this, the government would establish a grain marketing agency and ensure proper storage procedures for grain held as collateral. Producers would maintain ownership of the crop, would maintain its quality during storage, and could market it in response to economic opportunity rather than necessity. The amount loaned per mt of grain stored as collateral would be a proportion of the market price. Consequently, grain pledged to secure these loans would eventually be marketed rather than delivered to the grain marketing agency under loan default. Marketing assistance loans would be secured by grain pledged as collateral and stored in a government approved storage facility (elevator, flour mill, feed mill or local facilities owned by a producer or affiliated producer group). Producers would deliver official warehouse receipts and inspection certificates for grain stored in commercial facilities when the loan application is made. These documents would be returned to producers when the loans are repaid. If the loans are not repaid within the loan period specified the grain is forfeited at the predetermined rate by the owner to government. Loans would be made directly from funds controlled by the grain marketing agency at a subsidized interest rate. A loan maturity date would be established for each commodity. A loan period not exceeding nine months would suffice to fund most working

capital needs. At loan maturity, producers have two choices. They can repay the loan with interest, paying any accumulated storage charges, and market the grain on the open market. Or, they can deliver (forfeit ownership of) the grain to the marketing agency, surrendering a warehouse receipt.

## **Long-Term Credit Alternatives**

The restructuring of agriculture increases the demand for long-term loans. What kind of assistance can be provided? Two possibilities are deferred interest, and principal and loan guarantees.

A grace period of up to three years for repayment of all or part of a loan is one means for reducing payments when the borrower is establishing a farming operation. Accrued interest payments would be added to the outstanding loan principal at the end of the deferral period, and the loan would be reamortized accordingly. The present value of the loan would be the same as a loan with a standard repayment schedule. Depending on the amount deferred, payments following the grace period could be substantially larger. Whether this alternative would conform to BNB credit standards is not known. The use of such a program could be restricted to primary agricultural production. As agricultural lenders may be reluctant to participate in a program that significantly reduces loan revenues initially, it may be necessary for the government to offset the reduction. The program could be terminated after 3-5 years, when normal credit relationships are expected to develop.

The Ministry of Agriculture has established an extrabudgetary Agricultural Fund that could be used to support the program. Participating banks would show a significant reduction in income for the initial loan period and would be required to adjust capital reserves. Under the proposal, banks would be allowed to accumulate the deferred income as an account receivable as long as the loan is performing. If banking standards require an adjustment in capital reserves, it is proposed that the Agricultural Fund be allowed to support the issuance of bonds by the BNB or other legally authorized entities that would be held in the capital account of the participating bank. The use of the Agricultural Fund in this manner is intended to act as an incentive for the participation of commercial banks.

Loan guarantees are often an effective incentive to encourage lending where there may be unusual risks or the lender is reluctant to make loans. Government funds can be used to attract participation from the private banking sector without intervening directly in the credit market. Guaranteed loans are made by the commercial banks that service the

loans, so their use has a minimal effect on the allocation of the credit. Under such a scheme, the government agrees to compensate the bank for losses resulting from a default, up to a specified percentage of the amount of the loan. For example, up to 80% of the loss, including principal and interest at the time of loan liquidation, will be repaid. The lender must certify the availability of the loan collateral, agree to service the loan and certify that the funds are being used in accordance with the rules. The government should establish means for supervising the use of loan guarantees and periodically review their performance. The Agricultural Fund described above would be used to compensate banks for loan losses.

Such a program would increase the exposure of the banking sector to the risks normally associated with agricultural production. It is essential that risks resulting from changes in agricultural policy that reduce the expected income to the agricultural sector be strongly discouraged. The direct implication is that policy measures such as export bans, quotas, taxes and other interventions that reduce agricultural producer prices and incomes should be avoided.

## **ESTIMATING THE AGGREGATE CASH FLOWS IN AGRICULTURE**

It is instructive to estimate the magnitude of potential credit demand. This is done by using a cash flow approach, where agriculture is treated as a single national farm; as different production cycles in agriculture overlap, expenditures for one activity can be met from income from other activities. The more diversified the farming system, as in the relatively large-scale mixed farming operations still prevalent in Bulgaria, the easier is this internal offsetting of production costs.<sup>11</sup>

The aggregate cash flows were estimated for 1993.<sup>12</sup> The crops

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<sup>11</sup>A more detailed discussion of the applied approach and results are presented in Petranov and Roussinov (1993).

<sup>12</sup>The assumptions on which the model is based were: (1) Producers start with no assets or liabilities. That is, at the beginning of the year, producers have no stored production or inputs and they have not received credit for working capital. (2) All farms are homogeneous (this is the basis for allowing cash inflows and cash outflows from different products to offset each other). This assumption is realistic now, given the dominance of large-scale cooperatives with a wide variety of production, but might be unrealistic when the new farm structure emerges and farms operate on a smaller scale with more specialization. Such

covered were: wheat, maize, barley, rye, alfalfa, forage (maize), sunflower, sugar beets, tobacco (Oriental and Virginia), apples, cherries, plums, and grapes. These accounted for about 77% of total agricultural land in Bulgaria in 1993. The livestock sector covered cattle and sheep production, which accounted for about 58% of the total output of the sector. The calculations were based on costs per unit, yield per unit, and projected output prices. Variable costs per unit in the crop sector were provided by the Ministry of Agriculture, Department of Plant-Growing. Data for variable costs for animals were provided by the Ministry of Agriculture, Department of Livestock-Breeding. Crop and animal yields per unit were averaged for 1985–90 to smooth out climatic factors. The averaging did not include 1991 and 1992 because cost data reflect physical norms for the inputs; these were not relevant for the post-reform years because farmers have used less intensive technologies. Ideally the analysis would focus on the current technical input-output ratios, but the data are unavailable. We assume that returns in agriculture are approximately constant, and the 1985-90 period provides a reasonable reflection of the post-reform results. Output prices for the crop sector were calculated as 150% of the price of each crop in 1992 for the relevant month of harvesting, based on the expected rate of inflation.<sup>13</sup> This is consistent with the expectations formed at the commodity

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structural development emphasizes the need for rural financial institutions which will provide for the transfers from farms with cash surpluses to farms with cash deficits. (3) Expenditures are calculated month-by-month according to the normal production cycle for the different products. Income from crop sales is supposed to be received entirely during the harvest months, with potential income at the moment of harvest being estimated. Actually, some farmers probably store their products and wait for better prices. This is ignored in these calculations, so the results may understate the cash-flow credit demands. Income from the livestock sector (milk, meat) is assumed to be uniformly distributed within the year. The only exception is income received from sales of wool, concentrated in May and June. (4) Working capital requirements are estimated from data on average variable costs per decare in the cropping sector and per head in the livestock sector. The calculations were done only for products having a significant share in total agricultural production and for which reliable cost data were available.

<sup>13</sup>In the state budget adopted by the Parliament for 1993, the projected rate of inflation is 60% per annum. The assumption of 50% increase of output prices for agriculture was based on the observation that farmgate prices increase less than the overall rate of inflation because of price controls and monopoly power of traders.



exchange for wheat.<sup>14</sup> The same approach was applied for the price of wool. Prices for livestock sector production are expected to increase gradually over the year. The overall rate of increase is again 50% per annum but in this case the increase is 4% per month.

Under the assumptions of the model, the estimated maximum level of working capital requirement in the crop sector is 17 billion lv, with an average of about 9 billion lv. Working capital requirement for the livestock sector is 4 billion lv. Of course working capital requirement is not the same as credit demand from the bank because working capital might be financed through producers' resources, or through input suppliers or wholesalers as well as through banks. The source chosen by producers will depend on the relative prices of credit. Also, there is the possibility of offsetting cash flows, which would decrease the cash needed significantly.

The estimated aggregate monthly cash flows for the sector in 1993 are shown in Table 17.4. Total cash outflow varies greatly from month to month with two peaks—in April and July—of about 4.5 billion lv. Total cash inflow is less variable in general but has two very marked peaks in July (harvesting wheat) and in October (harvesting most of the other crops). The total cash inflow peaks in July at 12.4 billion lv.

Net cash flow is almost zero in January and February when expenditures and income from the livestock sector offset each other and there is little activity in the crop sector. It becomes negative in March–June, when income from the livestock sector is not able to offset the expenditures associated with the spring planting. After the wheat is harvested in July, total net flow becomes largely positive. In the next months inflows from the rest of the crops and the livestock sector offset the outflows related to livestock breeding and to expenses associated with the autumn cultivation.

According to the cumulative net flows, a net cash injection is needed for the period March–June. It peaks in June, at about 7 billion lv. This estimated peak cash flow requirement, the basis for estimating the 1993 short-term credit demand, is judged to be a maximum because farmers provide some of their own working capital and because the values are based on input use norms that may overstate actual expenditures. On the other hand, the calculation assumes that cash surpluses in one part of agriculture are available to finance deficits in others and are not invested

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<sup>14</sup>In early April 1993, the first forward contract since the establishment of the commodity exchange was signed. Wheat (delivery August) was sold for 1,800 lv/mt, which is about a 50% increase compared with August 1992.

outside the sector. Also, the demand for short-term credits is not a constant but a function of the interest rate.

These figures put the 3 billion lv subsidized credit scheme into perspective. The scheme clearly provided a significant part of the estimated 7 billion lv total net working capital needs of the sector in 1993. However, it created a sense of injustice among those producers who were denied access to cheaper credit.

Table 17.4. Estimates of Total and Cumulative Net Cash Flows, 1993.

	<i>Total cash outflow</i>	<i>Total cash inflow</i>	<i>Total net flow</i>	<i>Cumulative net flow</i>
<----- Million leva ----->				
January	1,169	1,218	48	48
February	1,169	1,266	97	145
March	3,431	1,317	-2,113	-1,968
April	4,545	1,370	-3,175	-5,143
May	2,705	1,552	-1,154	-6,298
June	2,462	1,702	-760	-7,058
July	4,684	12,465	7,781	723
August	2,157	1,969	-188	535
September	3,758	4,538	780	1,315
October	3,527	8,335	4,807	6,122
November	1,933	3,128	1,196	7,318
December	1,169	1,874	705	8,024

Source: Calculated.

## SUMMARY AND CONCLUSIONS

The unique transitional period from a centrally-planned to a market economy has imposed specific problems on the credit market for the agricultural sector. Due to the uncompleted land reform, both property rights and managerial responsibility are ill-defined in much of the sector. For the same reasons there is almost no market for land purchases and

sales, and only an embryonic rental market operating on a very short-term lease arrangement. Farmers still do not possess property which can be pledged as satisfactory collateral from a banker's point of view. At the same time there is lack of experience in decision-making. Many new producers having no managerial skills or experience are entering the market, and bank officials are equally inexperienced in agricultural lending. High risks are associated with new first-time borrowers dealing with new first-time commercial lenders. In addition many liquidation councils are burdened with past debts. There is also considerable uncertainty about prices and costs due to the high level of nominal inflation and rather erratic price and trade policy. All of this makes farmers' production plans very uncertain.

Some of these problems have the characteristics of temporary market failures. Unless the land reform is completed and a land market develops, farmers will be unable to offer satisfactory collateral. There are also market failures connected with uncertainty, high risk, and lack of experience and information due to the entirely new emerging structure of the agricultural sector. Furthermore, the input supply and wholesale markets surrounding agriculture are imperfect. These are all grounds for doubting whether markets will emerge to provide the socially optimal allocation of resources, and they provide *prima facie* justification for some public interventions.

In 1993 the government intervened in the credit market for agriculture through a special Law providing subsidies for two thirds of the interest payments and obliging the state banks to accept collateral which was considered insecure by the banks. The scale of this intervention was large: it covered an estimated 43% the working capital requirement of the sector for 1993. However, many missing markets and market failures still exist. The Law succeeded in increasing the short-run supply of credit. While it may have helped reduce the fall in output, it has introduced inefficiencies and distortions because the rules for distributing the credit bore no relation to any objective social or economic criterion. For example, crops and regions receiving support were characterized neither as being potentially more productive (and thus worth assisting) nor as being more deserving of assistance (for instance, by suffering more from the drought). Also, the Law provided assistance to all producers, whether they were liquidation councils or private farmers. In this sense it has not encouraged the transition to private agriculture; rather, it may have contributed to maintenance of the status quo. The Law also created societal costs because of the bad loans and may have imposed a further cost to society in that it led to some slowdown of economic reform.

The government also intervened indirectly in the credit market through the ACC. This specialized institution was established to prevent the decapitalization of the sector and to supply start-up capital to private farmers. The Center provides medium-term and long-term investment outside the commercial banking system, charging interest rates lower than the commercial banks but adjusting the principal payments to changes in the exchange rate. This policy has effectively resulted in credit subsidies due to the dynamics of the nominal inflation, the nominal interest rate, and the exchange rate. It is likely that the Center will face problems in the future because of this link with the exchange rate, its small scale of operation, and its small number of branches. It is likely, also, that the Center will face problems in the future because it specializes in the agricultural sector, which often proves too narrow and uncertain a base for sound banking operations. Hence, the ACC cannot be considered as a long-term, sustainable solution to the problems of financing the agricultural sector.

Credit subsidies encourage agricultural production, but the side effects and the cost of such subsidies should not be ignored. Such a policy is not sustainable in the long run because the monetary and nonmonetary costs it imposes on the society are too high for the Bulgarian economy. It should be replaced by well-planned measures to deal with the specific problems of missing markets and market failures. Only in this way can there be created a stable and commercially viable financial system for agriculture. Specifically, in the short run, this involves three actions: First, some form of collateral guarantee should be provided until the land restitution process is completed. Second, there is a desperate need for better information on the actual and likely financial performance of farming under the rapidly changing circumstances. Third, a significant extension effort is needed to educate both borrowers and lenders on how to present and appraise business plans. These activities are legitimate functions of the state in creating an environment in which private businesses can emerge. Also, a short-run resolution of the problem of the heldover bad debt is needed. In the medium term the government should do all it can both to hasten progress in the restitution of land titles and to create the necessary legal and administrative services to encourage the appearance and smooth functioning of land rental and sale markets. At the same time the government should attempt to create more competition at all stages from production to final marketing. All these measures should be consistent with the goals of eliminating existing market gaps and failures and avoiding the creation of new ones. There is a very real danger that broad spectrum solutions, such as untargeted credit subsidy

schemes, would simply transform existing market failures into government failures.

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