Title: Decollectivization of Agriculture in Marxist Regimes

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NCSEER NOTE

This is the first of three papers based on the last three chapters (X, XI, XII) of the author's book on collectivized agriculture in some 30 countries. These three deal with the issues of decollectivization, and are being distributed by the Council (and paginated) sequentially to preserve the line of logic. The rapid course of events, especially in the USSR area, has overtaken the text but only in minor particulars while most of the critical issues and the analysis still obtain. The book, THE RED AND THE GREEN: The Rise and Fall (?) of Collectivized Agriculture in Marxist Regimes, Frederic L. Pryor, Princeton University Press, is forthcoming.

ABSTRACT

Chapter X: When is Collectivization Reversible?
Economic Factors
Social Factors
Political Factors
Reflections on Decollectivization

The author argues that collectivization may not be reversible, at least in those communist or formerly communist regimes with high levels of economic development. A major problem is getting the process started, i.e., dividing the land and the assets, developing a reliable and accessible source of agricultural inputs, developing marketing channels for outputs. But there are also a number of risks for the farmers, especially arising from legal uncertainties, the lack of "strong" property, and problems of policy consistency. A number of social problems also arise: entrepreneurship is limited to a small number of the farmers; many farmers do not have the all-around skills necessary to farm individually; the rural population in a number of East European nations is quite old; and there is considerable inertia in the system, at least as long as the collective farms continue to be subsidized. He also specifies a number of political factors which play a much stronger role in those nations which are still ruled by communist parties than in the newly freed nations.
Chapter X

WHEN IS COLLECTIVIZATION REVERSIBLE?

By the reversibility of collectivization or decollectivization I mean the break-up of the large-scale farms organized either as cooperatives or state enterprises farms into individually operated farms. A change of ownership of these farms, e.g., a conversion into a corporation in which the workers or others hold stock but the essential farming operations remain roughly the same, is quite a different matter and can occur with much greater ease.

Clearly, in certain situations agricultural collectivization is reversible, with relatively low short-run costs and considerable long-run benefits. For instance, Yugoslavia and Poland reversed their partial collectivization drives of the late 1940s and early 1950s in the early and mid 1950s. During the early 1980s China essentially decollectivized; and the same process appeared to have occurred in Cambodia, Laos and Vietnam in the late 1980s. Decollectivization in the form of a collapse of collectivized agriculture has also been occurring in some African nations such as Mozambique in the late 1980s as well.

Nevertheless, one major failure of decollectivization must be noted. The Soviet Union took steps toward a partial decollectivization but was unable to achieve any notable success, at least by the late 1980s. Although such an outcome can be blamed in large measure on policy failures, it is also possible that in certain historical situations, collectivization is not reversible so that any large-scale measures taken to return to individual farming are doomed to failure. As some Soviet observers have noted, it is easy to make fish stew out of an aquarium, but impossible to make an aquarium out of fish stew. This raises the prospect that the decollectivization efforts of the East European nations in the early 1990s might also be unsuccessful, at least in the foreseeable future.

To place this possibility in context, consider for a moment why various economies are locked into inefficient technologies or standards. Why, for instance, do many industrial nations use the QWERTY keyboard on typewriters, when other keyboard arrangements such as the Dvorak system allow much faster typing? Why do most industrialized nations use relatively narrow gauges in their railroads when wider gauges are better and safer? Several answers have been given to these questions (e.g., David, 1985, 1988; Puffert, 1987), mainly revolving around network externalities and embeddedness. These refer to the benefits gained by a given user when others use the same technology; to the interrelatedness of production technologies, so that one depends upon another; to the high short-run costs of breaking webs
of interaction in comparison to the benefits; and to the imperfect information of the individual economic agents with regard to the intentions of others, not daring to bear the costs of being out-of-step with others although all would benefit if all decided together to take a particular action.

Some evidence from Chapter IX suggests that agriculture in Marxist regimes is inefficient, particularly in a dynamic sense; and that such inefficiency arises not just from the collectivized farms, but from the institutions surrounding it. Now if nations can be locked into inefficient technologies and standards, then surely they can also be locked into inefficient institutions. Few economic historians, for instance, are willing to defend the economic efficiency of certain aspects of feudal agriculture such as the lack of factor movement or the system of labor dues; and yet such aspects of feudalism lasted many centuries after initial causes underlying such feudal agricultural institutions appeared to wane. The same may be said for slave agriculture as well, although the inefficiency of this institution is open to more controversy.

In some cases the long-term benefits of change to the system as a whole far outweigh the overall short-run costs, but to individual farmers or local officials overseeing the farms who are making such calculations to guide their own decisions, the specific costs to that individual outweigh the benefits for several possible reasons: First, the lack of certainty that others will take similar actions (so that, for instance, the power of the collective farm chairmen will be reduced) or complementary actions (so that, for instance, alternative sources of agricultural inputs will be available to them) means that their expected private net benefits of change will lie below the social benefits of changing the entire system; it's difficult to be an oasis of capitalism in a desert of central planning with scarce inputs. Second, even if they are certain that others may take similar steps, it may be impossible for them to take into account in their calculations the benefits accruing to them if others take a similar and complementary actions. Third, the benefits to society may outweigh the costs, but local officials who must implement the program may end up worse off, either economically or politically and have good reason to sabotage the program, for instance, by assigning infertile land to those wishing to lease land, charging them high rents, and withholding agricultural inputs to them.

The purpose of this discussion is to consider more specifically the most important economic, sociological, and political factors making decollectivization difficult. The major thesis is that collectivization is more likely to be irreversible in two types of situations: where the level of agricultural technology in the country is relatively high; and where collectivized agriculture has been the dominant form
of production for many decades. In short, the examples of successful decollectivization briefly noted above are not random.

**ECONOMIC FACTORS**

Decollectivization is most appealing to the hard-working farmer whose income is not commensurate to the effort he would be willing to expend. From this simple idea we can predict that those farmers would adopt household farming the most quickly if given the option where it is difficult to monitor performance so that shirking is easy (e.g., where the accounting unit is large), an hypothesis confirmed in some interesting statistical analyses by Lin (1987, 1988, 1989) for China. Decollectivization also requires, however, the creation of an entirely new institutional structure in agriculture to support individualized farming. This new system must provide the household farm with a certain level of economic return that makes such a venture a viable economic choice at a particular level of risk; moreover, such a program must be consistent with other goals of the government so that it has some semblance of permanency.

**A New Institutional Network in the Agricultural Sector**

What exactly do individual farmers need that cannot be provided by the existing institutions in centrally administered economies? Most of these problems are clearly of a short-run nature and can be solved over time; nevertheless, the short-run costs and time-constraints may be too high to permit a decollectivization program to be followed by a leader facing considerable internal opposition.

* A Reliable and Accessible Source of Inputs: A chronic problem for collective farms within centrally planned economies has been obtaining the proper equipment, inputs (e.g., seeds, fertilizers, and insecticides, spare parts), and farm services (e.g., repairs, storage, or transportation) at the right time and in the proper amount. Collective and state farms have devoted considerable manpower in developing elaborate networks for solving such supply problems, especially since the Stalinist agricultural model featured the sales of such goods and services to the farms by large units, usually urban based, that were far from the users.

Such input supply problems are compounded for the small contract units for three reasons:

(a) Contacts: Since they can not afford the labor to maintain such networks, either institutions such as special retail outlets would have to be developed or else the administrative remnants of the original collective farms would have to be maintained to fulfill this function. If the latter strategy is followed, then the leader of the remnant would have to be elected by the members since the existing farm director may have strong incentives for the system of individualized farming to fail, i.e., the network
externality problems are compounded by active opposition of those gaining power from control over the existing network. In the Soviet press one finds many instances of collective farm chairmen reneging on their commitments to provide farmers using the various land leasing systems with the proper inputs and such farmers being unable to obtain needed inputs by themselves. As Zhores A. Medvedev has noted for the Soviet Union, "Small operators can't easily separate from the network a parent farm provides. A hundred difficult problems would come up daily. There are no sacks of fertilizer, only railroad cars full. The smallest normal tractor is 150 horsepower," (cited by Kramer, 1989).

It should be noted that even within the framework of a centrally administered economy, many measures are possible to relieve this agricultural input problem. For instance, in China Mao encouraged the formation of rural industries producing many of the necessary farm inputs, as well as consumer goods used by the rural population (American Rural Small-Scale Industry Delegation, 1977; Travers, 1986). Although many of these local industries failed and many had high costs, many lasted so that around 1980 virtually all hand tools and farm machinery with less than 20 horsepower, 80 to 90 percent of phosphorus fertilizer, and 54 percent of nitrogen fertilizers came from such rural enterprises (Wong, forthcoming). Perkins and Yusef (1984, p. 61) declare: "One of the unique features of China's efforts to increase agricultural production has been the degree to which required inputs have been supplied by small-scale enterprises located in the countryside near those who use their products." Although the successes of Chinese rural industry have often been overdrawn, this effort created a capacity for manufacturing in the countryside and the potential for responsiveness to local needs. After the reforms rural industry continued to grown at roughly the same rapid rate; by 1986 the gross value of output from rural enterprises exceeded the gross value of agricultural output for the first time (Wong, 1988); much of this, however, went to urban rather than rural producers and consumers.

Such local industries not only simplify the supply system but help to keep the system responsive to local demands, especially for small-scale equipment and tools. Few other Marxist regimes have such a network of rural supplies; Hungary is the most notable exception. In the late 1950s in North Korea the county-level (kun) management committees were encouraged to develop rural industries which would aid the collective farms under their supervision; and by the mid 1960s about half of total consumer goods came from such factories (Chung, 1974, p. 70). In the mid 1980s Vietnam also started to move in this direction by creating various "agro-industrial districts," but whether this experiment works remains to be seen. It must be added that the more input-intensive the agricultural technology that is employed, the
more serious is this supply problem.

These types of problems are examples of the conditions of "strong complementarity" and of interrelatedness, which underlie the existence of positive feedback mechanisms producing lock-in effects. Such conditions also explain the lock-in of certain inefficient technologies (David, 1985, 1988).

(b) Small equipment: Large-scale mechanical equipment can not be easily divided among the farmers of a collective farm that is being dissolved. The Chinese solution of leasing the equipment to competing groups, which sell mechanical services to the individual farmers is quite possible for a highly labor intensive type of agriculture using relatively little large-scale equipment; the difficulties involved must not be underestimated and it is noteworthy that the more mechanized farms were the last to adopt the system of household farming in China (Lin, 1987, 1988). Creating equipment cooperatives or competing machine tractor stations is another option. Nevertheless, for the farms in Eastern Europe, which are much more highly mechanized, the newly individual farmers would need to buy services to prepare the land, seed, weed, fertilize, and harvest the crop.\(^1\) The negotiation to coordinate these services might be time-consuming and difficult, especially since these services must be carried out in a particular time sequence and a relatively short time period to be effective.\(^4\)

Whether or not this division of equipment is a problem depends not just upon the general level of mechanization, but the type of major crop on a particular farm. Clearly the grape growing collectives in Georgia SSR, would be easier to decollectivize than the large wheat farms in Kazakh SSR. Similarly certain types of animal raising farms, especially small animals such as pigs or sheep, would be easier to decollectivize than highly mechanized dairy operations. Decollectivization would also be easier where the newly private farmer could substitute his own labor for these various farm services, as well as the input supplies. This change in factor proportions represents, of course, a technological regression and farm production in such situations might fall unless offset by much greater individual effort.\(^3\) It is also possible to begin production of farm equipment more appropriate to small-scale individual agriculture, as certain countries such as Czechoslovakia (or Zimbabwe) have been doing.\(^6\) Again, this solution takes time and resources.

(c) Suitable infrastructure: The problems of dividing the assets among the members of a collective farm or the workers on a state farm are more serious with farm infrastructure, much of which was constructed for large-scale production and not for individual farming. The barns are built to house large herds of dairy cattle (in East Germany, for instance, barns housing over 2000 cows are common);
the material handling equipment is designed for massive amounts of supplies, the silos hold a large volume of crops. Again, sharing or leasing arrangements can be made; and in Bulgaria livestock have been distributed through a lottery (Anon, 1990). The former arrangements take time and effort; and the intervening period can be disastrous for the newly established individualized farmers. Certain kinds of infrastructure, particularly a rural road network, would have be created since they are inadequate now and would be even more unsuitable if each individual farmer had transportation requirements.

Several aspects of the administrative context in the division of land, equipment and capital deserve mention. Clearly in situations where the collectives are merely nominal, decollectivization can be carried out without much difficulty. Decollectivization is also easier to carry out in the case where the ownership unit on the farm is the team, rather than the farm itself; and where the internal organization of labor on the farm is land-centered (a group of workers carry out all farm tasks on a given piece of land). In this case (exemplified by China), a small group can divide the land which all know well in a manner perceived as fair. The opposite case (exemplified by the USSR) where the ownership unit is the entire farm and where the internal organization is not land-centered (but rather structured around products and functions) gives rise to problems. The group is too large to make such decisions, the individual farm members are not well acquainted with specific pieces of land, and the farm manager must make the key decisions about the division of land. This state of affairs both increases the possibility that decollectivization measures promulgated by the top can be resisted by the local cadre and also increases the likelihood of serious inequities, either inadvertent or deliberate. Both possibilities raise the risk to individual farmers.

Another complicating factor is that in some of these countries, land claims by previous owners who have left the farm raise difficulties. In Czechoslovakia, East Germany, and Hungary, for instance, considerable controversy has raged over which postwar land reform is to be considered the "base line" for settling land disputes. I discuss this problem in greater detail in the next chapter.

* Profitable Sale of Outputs: This refers not only to the "official" prices of agricultural produce, whether determined by the market or by the central government, but also to the structure of agricultural procurement. Unless the government either allows marketization to occur at the same time as decollectivization or raises the official prices paid to the farmers, the farmers may have no price incentive to sell their crops to monopsonistic state procurement offices. For instance, in the summer of 1988 the government of São Tomé attempted to assign some of its state farm lands to individual farmers. Since the state farms processed the cocoa produced by these farmers and paid very low prices, the
incentive structure was not favorable for the aims of the reform; and the decollectivization failed.

* Credit Other measures must also be taken such as the creation of credit facilities and financial instruments to allow individual farms to obtain bank credit or to buy, sell, or rent farm assets. Without such financial institutions and the availability of credit, of course, risk to farmers increases, multiplied by the difficulties where orderly bankruptcy procedures have not been established. The Soviet Union has not taken many of these steps (Kramer, 1989) or has taken them in a purely formal manner, e.g., creating an agricultural bank without very many local branches. On the other hand in 1979 the Chinese government resuscitated the former Agricultural Bank, an institution whose special function is to supply credit to the agricultural sector at the local level, and encouraged credit cooperatives. Although little of the activities of these institutions are known (the general impression is that they supply more credit to rural industry than to farmers), it seems clear that the problems of supporting the smaller work units by credit were seriously considered during the reorganization of agriculture.

* Supply of Consumer Goods: The ready availability of consumer goods is an important incentive for individual farming. In the Soviet Union cases have been reported in the press where hard-working, high productivity contract groups have dissolved because they had nothing in the local shops on which to spend their money and, without such goods, they preferred more leisure (Laird and Laird, 1988; Kramer, 1989; Vorobyev, 1989). Of course, in a rural sector with a low population density, it is difficult to maintain a varied consumer goods market that is easily reachable by a sizable number of people. By way of contrast, the Chinese government has encouraged the rise of rural traders and retail outlets. Moreover, the older marketing centers were never completely suppressed and, with a high population density, it is easier to create (or resuscitate) a varied consumer goods market accessible to a large number of rural workers. In sum, although the development of a retail network servicing the rural population is not conceptually difficult, especially where the population density is high or where such markets exist in embryo, it is a task requiring both time and commercial talents. The latter in rare supply in a long-term bureaucratized economy or a nation where the population has negative attitudes toward commerce and trade.

Problems Facing the Individual Farmers

The return/risk facing individual farmers must be sufficient to induce farmers to participate in individual agriculture. Three major problems arise:

* Risk: The first step toward decollectivization is usually the development of a "contract
system" for agricultural output, but many farmers are reluctant to accept such contracts. For instance, a 1987 poll of Soviet farm specialists reported by Vorobyev (1989) indicated that only 10 percent would unconditionally accept to work a farm under the contract system. A later poll of collective farm chairmen from the same source revealed that only 30 percent would be willing to take up such a contract; but they also reported considerable resistance to the system. Many voiced the fear that after expending considerable energy and resources on such an individual farm, "in one beautiful moment government policies could turn 180 degrees and the [individual] farmer could lose everything." A 1990 poll (Izvestiya, March 1, 1990, Morning edition) showed roughly 40 percent of the rural population interested in taking up private farming, but only 10 to 14 percent actually ready to do so, in part because of the lack of laws providing legal protection to such activities (which were at that time under consideration). A poll of Moscow residents in May revealed that 60 percent thought it "possible" or "quite likely" that in the next few years the government would nationalize most private businesses (Shiller and others, 1990). By the fall of 1990 even Gorbachev (Gorbachev, 1990) was complaining that economic contracts were becoming difficult to enforce. In sum, property rights are not believed to be "strong" or stable.

Even some years after the effective decollectivization in China, people were concerned about policy reversals. According to Bernstein (forthcoming), a 1987 survey of 100 households showed that 80 percent still worried about whether "the party's policy that enables people to become rich will change" and rumors periodically sweep the countryside the recollectivization is occurring. The evidence on such uncertainty is mixed, however, and depends on local circumstances. For instance, a much larger 1988 survey covering four counties by Feder and others (1990) showed that only 17 to 24 percent of the farmers in three of the counties believed that a contract disruption would occur before the expiration date of their lease; in the fourth county, however, 75 percent of the farmers had such a belief because at that time there had been several well-publicized incidents of forced consolidation of small farms. More important, perhaps, in three of these counties between 76 land 86 percent believed that they had a low likelihood of being reassigned the same farms after the contract had expired, i.e., they were pessimistic in the long run. In a more informal study at about the same time that was based on interviews with 81 farm families, Prosterman and Hanstad (1990) argue that farmers were not undertaking the investments needed to increase production because of general uncertainties of tenure; the current leases lack credibility because the collective still owns the land and has the power to take it back or violate the contractual conditions without much recourse available to the farmers. Productive investment by individual farmers
was also not encouraged in the late 1980s by governmental nullification of lease contracts in some areas under the guise of enlarging operational size to exploit returns to scale (Lin and others, 1990); or by its elimination in 1990 of the responsibility system on the state farm and by its return to traditional management practices, even though such state farms produce only a small share of total agricultural output.

Decollectivization may not, of course, reduce risk, especially in the first few years. Not only are incomes more uncertain, but also, in dealing with the new farm markets, the farmers are facing a situation in which they have few "historical" experiences on which to analyze the situation in order to make decisions. Moreover, because of such lack of knowledge, the expectations of the various participants are also less similar, and as a result, under certain situations prices may be more variable than in more established markets.

Moreover, every inconsistency of government policy, every conflicting statement by different government leaders about the future of agriculture, every broken promise by the government to the farmers increases the risks farmers face in investing their resources in some type of individual farming arrangement. Of course, any general political or economic difficulties facing the government that would raise the possibility that it could be replaced (e.g., ethnic unrest; inflation or shortages, or political dissen – tion) would, of course, aggravate such fears.

On a deeper level, the problem of confidence lies in the creation of "strong" property rights, i.e., rights which can be enforced and which can not be suddenly taken away by the government. In past centuries neither China nor the Soviet Union nor a number (but not all) of other Marxist regimes had objective law; rather, property rights were determined by current policies of the government or ruler. The tradition of "weak" property rights, as Karl Wittfogel (1957) described it, continued through the Marxist era in many of these countries. For instance, for the USSR Nove (1967) notes the constant upward pressure on agricultural cadre which led to the "repeated dishonoring of pledges about the size of the delivery quota, or promises to return 'borrowed grain' or the removal even of seed grain...and grain for livestock."

This, of course, creates considerable risks for any household with a lease contract with the government because the lessor may use such excuses as "state interests" (or "overriding farm interest") to annul a particular clause in the contract, or to intervene in the operations of the contract unit, or to raise the rent. The problem is much more important in the Soviet Union, where the leaser is the collective farm chairman, than in China, where the leasers are the local governmental units whose careers are no longer tied to increases of agricultural production.
The creation of strong and stable property rights can not be accomplished quickly and a series of measures must be taken. For instance, The Polish government took the step in 1983 of introducing into the constitution a paragraph proclaiming and guaranteeing the permanency of individual landholding. As Kolankiewicz and Lewis (1988, p. 34) point out, however, it is "individual," rather than "private" landownership that is mentioned (individual property rights include the right to land by collective farmers), so that the uses to which such land may be put are still limited. Property rights might also become more believable if a non-Marxist party takes over leadership of the government, which occurred in Czechoslovakia, East Germany, Hungary, Nicaragua, and Poland in 1989 and 1990. The severity of problems of creating strong property differ from country to country; some, such as the Soviet Union or East Germany, downgraded the legal profession so that there are relatively few lawyers; this increases difficulties in creating a functioning legal system.

It is sometimes argued that without a cadastral survey after decollectivization has taken place, the property rights of the farmer in a particular piece of land will be too uncertain to induce the farmer to invest in the land. Such surveys are difficult and often are accompanied by considerable violence. China, however, appears to have decollectivized without such a survey; apparently the various households in the team had a strong understanding about which land "belonged" to which household.

A different kind of risk and property rights problem arises with the form of contract received by the farmer. In most Marxist regimes most contracts specify fixed, rather than share rents, although a number of countries have experimented with contracts combining fixed and share elements, such as the Romanian or Soviet wage systems reviewed in Chapter VII. The most notable exception was Hungary in the 1960s, which used share contracts on a large-scale; contradictory reports suggest that Laos also introduced such a system in the late 1980s. Share elements were also important in several of the many transitional contracts in China during the period 1979 - 83; and in some of the forms of lease contracts in the USSR there is a share element (Brooks, 1990a), although such a contract has not been widely adopted for other reasons.

Share rents, of course, are much less risky for the household since the government shares some of the risk of production. Moreover, such a contract would place some of the risk of late inputs on the government as well, which might encourage the input suppliers to act more effectively. Nevertheless, Marx's belief that share rents represent a less advanced form of rental agreement appears to have guided policy.
Decollectivization can include not only a division of farm assets but also farm liabilities. If the collective farms are highly indebted, many individuals may be unwilling to engage in individual farming if they must assume their share of this farm debt. In such cases the government may have to write off this debt to provide sufficient incentives to make the system work. In the case of the Soviet Union and a number of East European nations, it must be noted, farm indebtedness has soared, especially after cooperative farms began paying minimum wages. In the USSR, for instance, between 1970 and 1980 short and long-term farm indebtedness increased five times, and between 1980 and 1984 such debt more than doubled, even while the government began to write off some of this debt. (Laird and Laird, 1988; Medvedev, 1987, p. 349). To place the magnitudes in perspective, such farm indebtedness is roughly equal to total annual agricultural output. In China, such farm indebtedness was very much less so that this was less of a problem. In Bulgaria and Romania in 1990 all farm debts were written off; and in March 1990 a partial debt write-off occurred in East Germany. The Czechoslovaks and the Hungarians see such a process as initiating a dangerous precedent and have not followed suit.

One last personal type of risk must also be mentioned. In a number of the economically more advanced Marxist regimes, collective farmers belong to the social insurance system. If leasehold farming implies the loss of social security, then many older farmers may be unwilling to accept the risks of providing for their old age through farming activities. In countries such as China, where a certain type of social insurance was offered by the commune or collective farm, decollectivization resulted in a reduction in scope of such social benefits. Market risks are also compounded because few of the Marxist regimes have an adequate social safety net in the rural areas for those unable to judge market conditions correctly and receive an inadequate income.

Consistency Problems Facing the Government

In carrying out a decollectivization program, the government must take into account not only the problems of supplying the nation with sufficient food in the short-run and of obtaining agricultural products for export, but also of integrating such a program into its macro-economic policies.

Suppose, for a moment, that the government wishes to decollectivize agriculture only after certain reforms have been carried out in other sectors. If the micro-economic disequilibrium that exists in most Marxist regimes, whereby a basic minimum of food is sold inexpensively in state stores while the remainder is sold at much higher prices on farmers markets, is continued, then any shortfalls in the urban plans will, unless the taxing system is extremely flexible, be reflected in a rising gap between official and
farmer market prices. As the gap rises, farmers will have an increasingly greater incentive to withdraw their labor from collective or state farm work and work on their individual plots, a mechanism which has been important in a number of Marxist regimes such as Vietnam (Fforde, Chpt. 10) and which can be countered effectively only by force and coercion. Such a mechanism can lead to an informal decollectivization, but of a type which leaves the remaining cooperatives permanently enfeebled.

If the government attempts to decollective and yet, at the same time, continues to subsidize producers so that some foodstuffs can be sold at low prices in the city, then producer prices paid to the farmers must be higher than free-market prices; otherwise, the government will find it troublesome to obtain agricultural products from the farmer. Given the fiscal crisis facing most formerly centrally planned economies in moving to a market economy, such extra-high agricultural subsidies are hardly feasible.

Generally decollectivization will lead to higher food prices for the consumer unless the government is willing to use its precious foreign exchange to import foodstuffs in order to moderate price increases. This means that decollectivization must be accompanied by a series of measures in the urban sector to modify some of the worst social impacts of such higher prices. If the agricultural sector relies heavily on industrial inputs produced in urban factories, then other policies must be directed to resolve the supply problem; otherwise, the newly created private farms may experience difficulties, either because of their inability to obtain such inputs or because of the high prices which such monopolies charge them. Inconsistencies between policies toward agriculture and industry can have seriously adverse impacts on both sectors.

SOCIAL FACTORS

Sociological evidence is delicate because the emphasis on norms and values is often too easy an explanation to have any verifiable meaning. In comparing disciplines many have pointed out that economists explain why individuals make certain choices, while sociologists explain why society sees to it that individuals are not left with any choices to make. The methodological pitfalls should be readily apparent.

Peasant Entrepreneurship

A common argument to explain the success of the Chinese agricultural reforms and the failure of the Soviet changes is that the Chinese farmers are more entrepreneurial than Soviet farmers. The former have been fiercely individualistic for millennia, cooperating only with fellow clan members or in projects
such as irrigation in which individual benefits were manifest. In contrast, since the feudalization of Russia in the 16th century the Russian village has had strong communal elements, reinforced after the emancipation of the serfs in the 1860s by the designation of the rural community, not the individual peasant, as the primary legal subject of Tsarist law. Although the shoots of individualistic farming began to bloom for a few decades in the early part of the 20th century, they were crushed by collectivization.

Convincing evidence to demonstrate such a conjecture is, however, difficult to provide, especially for countries as large and heterogeneous as China and the USSR (an interesting attempt is made by Goldman and Goldman, 1988). Although such macro-sociological factors may well be true, they are also difficult to apply to the other 31 Marxist regimes except in a superficial fashion and it seems more useful to focus attention on the specific social impact of the system of collectivized farming.

Individual farming and peasant markets were widespread in certain East European nations with centrally planned agricultural sectors such as Bulgaria, Hungary, and the USSR. Although it seems likely that such legal and semi-legal activities provide good entrepreneurial training, I have found no systematic evidence on the matter.

**Time Factor**

According to a common conjecture, a system of collectivized agriculture becomes increasingly irreversible with the passage of time as farmers forget to operate in a full scale market economy. The hyper-industrialization of agriculture gradually transforms active peasants and farmers into passive proletarians, i.e., rural workers who have neither the initiative nor the desire to work as independent farmers and take individual responsibility for the results of their efforts. The individual plot production which is sold on the farmers markets provides some training, but management and investment decisions are very small-scale; and many of the required skills are less than those of capitalist farming, but rather are skills of semi-legal manipulation of state bureaucracies (Hedlund, 1989). Full scale farming, according to this argument, requires a different mentality.

Collectivized farming is also said to breed certain attitudes toward the land and the farming occupation which are said to be hostile to individual farming. In China, the system of collectivized farming lasted only for roughly 25 years before the 1979 reforms began and, according to this argument, this meant that a generation still lived which remembered the former system and carried the attitudes necessary for functioning successfully in such a system. In the Soviet Union, the system of collectivized farming lasted more than 50 years before Gorbachev began his reforms, so that few such memories
existed in the current generation of farmers.

Following this approach some Soviet observers claim that the rural population had lost its traditional love of the land and ability to act as responsible farmers operating successful, individual farms; and that the hyper-industrialization of agriculture has led to a proletarianization of the farmer so that they want to work only a certain number of regular hours, they are unwilling to take initiative, and only await orders, and they treat the land simply as any other means of production that does not need to be preserved for future generations. For instance, a well known Soviet writer interested in village life, Fyodor Abramov (cited by Nove, 1988, p. 13 from Pravda, 11/17/79), has observed:

When was it known that able-bodied peasants go away [to market] at the time of the harvest rush? ... The old pride in a well-ploughed field, in a well-sown crop, in well-looked-after livestock is vanishing. Love for the land, for work, even self-respect is disappearing. Is all this not the curse of absenteeism, lateness, drunkenness?

More directly related to concerns about decollectivization, Tatiana Zaslavskaya, a leading sociologist has noted (cited by Hedlund, 1990):

I do not know...of any people who are interested in this [FP breaking up of the collective farm]. I have been to many kolkhozy and talked to many people and those who would give me that chance, who dream of working individually, they just do not exist."

I find these kinds of easy generalizations difficult to take at face value, in part because the type of question framing the investigation is unclear and, as a result, the conclusions are ambiguous. More specifically, the alleged laziness of the current period may simply reflect a lack of proper incentives in the current system; and the lack of interest in individual farming may reflect a rational evaluation of its costs and benefits only under present conditions. In Bulgaria, Czechoslovakia East Germany and Hungary during the spring of 1990, I was struck by the amount of entrepreneurial activity underway in the farms I visited: to overcome underemployment in its repair facilities, one East German collective farm I visited is planning to buy used cars in Hamburg, letting their tractor repairmen fix them up, and selling such cars to East Germans; one Czechoslovak collective farm is raising chickens according to special ecological rules to tap a special niche market in West Germany for "eco-chickens"; and farms in all four countries are reorganizing themselves and also changing their methods of compensation of workers in order to lower costs (Pryor, 1990).

Recently a joint team of Soviet and American scholars attempted to investigate this problem more systematically by carrying out a sample survey on attitudes toward free markets in the two countries (Shiller and others, 1990). The preliminary results showed few important differences between the two
countries with regard to feelings about the unfairness of price increases, income inequality, belief in the importance of providing material incentives for hard work, or even in their understandings of the workings of markets. The authors conclude that the problems of transition facing the USSR are political and institutional in nature, rather than a result of basic attitudes of the population. Although the sample consisted of residents of Moscow and New York, it does not seem likely to me that rural attitudes toward markets would be much different.

Another alleged impact of time is that the centralization of political power has acted to discourage independent thinking of any kind, which is reinforced by certain types of bureaucratic behavior. For instance, one Soviet author, Yu. Chernichenko, comments: "Crude shouting and directives [to the farm officials] engendered a reluctance to think. Reluctance to think engendered stereotyped methods. Stereotyped methods make the harvest the helpless victim of weather conditions, weeds, and pests. The official who deprives himself of the right to act according to circumstances deprives himself of the right to make demands upon others. There arises a vicious circle of irresponsibility." It is difficult to believe that this would be a long-term problem under a system of individual farming, but rather is an artifact of the present system.

**Composition of the Rural Labor Force**

Much more serious sociological evidence can be found in the composition of the rural labor force. If the rural population is aged, decollectivization is unlikely to succeed because few farmers would be willing or able to invest the time and energy to make such a system work. Moreover, on the collective or state farm they have security in their old age; in the few years remaining for them to engage in individual farming, they do not.

During the 1960s and 1970s, the Soviet rural population appeared to be rapidly aging and, moreover, to be composed predominantly of women, a consequence of the demographic impact of World War II (Goodman, Hughes, and Schroeder, 1987) and a flight to the urban areas of many of the young people in the rural areas. As I provide evidence in Chapter IX, this phenomenon of an aging population can be found in both East and West Europe; in the East the situation seems especially serious in Bulgaria and Yugoslavia. In part such migration is due to considerable income differentials between urban and rural areas and the more inferior housing and other conditions (Nechemias, 1990); the narrowing of such differentials has reduced such migration in such countries as Czechoslovakia and Hungary. In some socialist countries where the urban bias or the bias against individual farming by the planners is most evident,
as in Yugoslavia, this migration has occurred in part because farm youth see no future for private farming (Horvat, 1976, pp. 78-9).\textsuperscript{17}

In some East European nations where collective farmers do receive social benefits from the state and have incomes roughly equal to urban workers, still other reasons appear at work to explain the urban emigration of young people growing up in rural areas, despite the (ineffectual) attempts by certain governments such as the USSR or Romania to stem such a population movement. Peter Bell (1984), an anthropologist who has carried out field work in Hungary, has argued that in the individual farming system, the peasants were aware of the status difference between them and urban workers, but they had their independence, their farms, and their much more varied work. After collectivization the urban-rural status differences still remained; but the peasants lost their independence and their work became more specialized and monotonous. Moreover, as farm consolidation proceeded, status differences within the farm widened between farm officials and workers (Holli s and Maday, 1983, p. 18; Szelenyi, 1988) and the peasants increasingly lost control over their destinies. In essence, the farmers became employees, but with lower prestige and more arduous work to perform than urban blue collar workers. The free education provided by the state was the avenue of mobility off the farm and into city jobs for young people, especially the more capable children of the former rural middle class who have provided the major source of rural entrepreneurs (Szelenyi, 1988). According to a controversial thesis of Gábor Havas (interview), such "counter-selection" has left behind a farm population primarily of former land workers and their children, who have only specialized knowledge of particular aspects of farming and who, as a result, have little desire or ability (see below) to become independent farmers. Similar mechanism seem to operates in some other socialist countries such as Czechoslovakia (Salzmann and Scheufler, 1974). For the Soviet Union, shards of evidence suggest the same phenomenon is occurring, e.g., the difficulty in keeping specialists on the farm suggests that many of the most entrepreneurial farmers have left.\textsuperscript{18}

In China, by way of contrast, there is little evidence for the aging of the farm sector, where until recently political authorities were able to enforce regulations preventing massive migrations to the cities. As a result, most of the youth and also most of the entrepreneurial minded men and women have remained in the rural areas (not necessarily as farmers). These would welcome any opportunity to increase production of their traditional crops, to plant new crops, and to engage in new economic activities on the side in order to improve their income. Moreover, in any rural/non-industrialized nation, the aging of the farm population is slower than in urban/industrialized nations simply because the possibilities of absorp-
tion of a given share of an age cohort of rural youth are smaller.

It is possible that the government can take measures to increase rural incomes sufficiently over urban incomes so as to encourage an in-migration back to the rural sector by entrepreneurial-minded ex-peasants to take over the newly created individual farms or, if they had been commuting to the city, to take up farming activities again. Several problems would, however, occur. The higher urban food prices or the higher urban taxes to finance such a program would be strongly resisted. Furthermore, since peasants generally have a lower social status than industrial workers, the latter might find it politically unpalatable for the former to have considerably higher incomes. Of course, professional economists are not worried about such "compensating differentials"; but the phenomenon is often difficult for those concerned to accept. Finally, such migration would represent a moving down the social scale, so that the additional income might have to be very much higher.

Some rural sociologists such as Ivan Szelenyi (1988) have also argued that the industrialization of farm work on collective and state farms has made the average farm worker incapable of running an independent farm. That is, on such farms a given individual may carry out only a few tasks so that the rural labor force has become, in an important sense, deskilled. I tried this argument out with a number of collective farm directors whom I interviewed and found considerable disagreement. In any case, such a problem is, of course, much less severe in a relatively backward agricultural sector than in a modern, highly productive sector where running a modern farm takes an enormous number of different skills.

Finally, it should be added that although most Marxist regimes provide vocational farm education for the rural youth, such education does not provide the skills to run an independent farm. As far as can be determined, no Marxist regime has the type of training program provided for farm youth in the United States by the 4-H or the Future Farmers of America clubs, which provide monetary and prestige awards to farm youth for successful efforts in stockraising and other skills necessary for independent farming.

Risk, Social Inertia and Individual Effort

In recent years anthropologists and sociologists have carried out village studies of cooperative farms, particularly in Hungary but also in China, Czechoslovakia, Romania, Vietnam, and the USSR. In these studies the members of the collective farms exhibit considerable social inertia, as illustrated in such claims that not even older members of the Hungarian collective farms want a return to traditional farming (Vasary, 1987, p. 129). Clearly decollectivization would sufficiently disturb a functioning system of production to the extent that many would prefer a continuation of the old system, rather than undertake
a total revision of farming practices that have become habitual.

Some public opinion data are available supporting this notion. For instance, during the Czechoslovak spring of 1968, about two thirds of all farmers polled saw more advantages to collective than individual farming (Piekalkiewicz, 1972, p. 310) and that roughly the same percentage believed that collectivization increased the cultural level and standard of living of the countryside. In Hungary, one anthropologist provided evidence that a positive disposition toward the collective farm system was closely tied to the success of the cooperative to which the person belonged (Hollos, 1983). The issue has become more current with legislation in most of the East European nations allowing farmers to take their land out of the collectives and to begin private farming. In 1990 public opinion pollsters began surveying the rural population about their intentions. In East Germany, less than 5 percent of the current farmers intended to undertake such a step; in Czechoslovakia, less than 10 percent; in Bulgaria and Hungary, which have a less mechanized farming system, less than 30 percent. In some countries such as Bulgaria, where the communist party opposed a full-scale decollectivization, they received a higher percentage of votes than in the urban areas (Anon, 1990). Of course, any such poll or election results must be interpreted cautiously, because it is unclear exactly what the respondents were assuming about the future economic environment so that the support such data provide for my thesis is limited.

Some of this problem of social inertia can be traced to evaluations of the ratio of effort and risk versus economic return of the two systems of agriculture. In Slovakia about three quarters of the farmers polled agreed that the work of collective farmers was easier than that of individual farmers. In East Germany over half of the 453 farmers polled noted that cooperative farmers had more free time than individual farmers (McCardle and Boenau, 1984) and, moreover, between 55 and 65 percent stressed that in comparison to capitalist farmers, they had no market worries, material or social insecurity, or anxieties over their own economic existence. In Hungary this sentiment was stated more bluntly to me in individual conversations by several specialists: farmers on collective and state farms have too easy a life ever to want to return to individual farming. Of course, if subsidies to collective or state farms were removed, such ideas might change.

Some of the social inertia must also be traced to the social benefits which have been given to collective farmers and the personal risks the farmers would face in a environment of individual farms where such benefits might not be available. Along these lines one Byelorussian peasant is quoted as saying: "They drove us into collectivization. Let them drive us into perestroika." (cited by Gellner, 1990,
POLITICAL FACTORS

A number of political problems must be mentioned in connection with the economic and social factors discussed above. The problems discussed below, I must emphasize, are much more severe in countries with Marxist governments than in countries which have voted Marxist governments out of power. For those Marxist regimes where the Marxist parties are still in power, five factors deserve special emphasis.

The Problem of Recognition

For decollectivization to occur, two types of recognition must occur:

First, there must be a general recognition of a serious crisis in agricultural production. In China, for instance, the low level of economic development (and the high labor/land ratio) meant that the constraints on the growth of the entire economy arising from the agricultural sector were taken much more seriously than in the USSR; and some observers have argued that in the 1960s and 1970s unfulfilled demand for agricultural products increased more than in the Soviet Union, which made the Chinese agricultural situation more severe (Wadekin, 1988, provides estimates of such excess agricultural demand). In the Soviet Union the per capita level of agricultural production was higher and, at least in terms of aggregate growth, per capita agricultural production was respectable during the 1960s and 1970s, even if that growth was accompanied by very high investment costs. As a result, the recognition of a crisis was less generalized and the political leaders were less likely to take radical steps.

The extent to which an agricultural crisis is recognized varies in the different Marxist regimes. In some of these nations such as Albania, Cuba, and North Korea, agricultural growth has been quite respectable so that there is little popular pressure for decollectivization, despite such "secondary problems" as shortages of particular foods and assortment problems.

Second, there must be a recognition that the agricultural problems arise not from exogenous forces (weather or machination by foreign enemies), not from simple mismanagement by the administrators and sloth by the workers, not from imperfect plan indicators and misplaced incentives, but rather from the system of agriculture itself. Understanding of this last causal element, in turn, requires accepting that the agricultural sector must have greater autonomy from the political sector, that agricultural institutions and policies need serious restructuring, and that a different environment for decision-making in agricultural production must be created. This is a long intellectual road to travel and it would be
immeasurably aided by frank and public discussion of the various problems, both of which characteristics of debate are in short supply in many Marxist regimes.27

The Problem of Ideology

The ideals of socialism are noble and to many political leaders in the Marxist regimes, as I point out in Chapter II, socialism implies agricultural collectivization. More specifically, collectivization is not only an end of socialism, but a means to achieve socialism as well.28 A decollectivization program requires either a crisis of faith in the entire socialist program or else a reordering of beliefs so that the institutional change is rationalized in terms of tactical manoeuver that will be reversed sometime in the future when the advantages of large-scale mechanized agriculture can be more easily realized. Indeed, the more advanced the economy, the sooner such recollectivization will occur. If such a justification becomes public or if the party continues to stress certain ideological themes which are associated with collectivized agriculture (as in China, according to Bernstein, forthcoming), farmers will be reluctant to invest their time and resources into individual farming and the decollectivization program will not achieve its goals.

The Problem of Political Will

At a number of points this discussion has mentioned measures that could be taken by the government to offset a particular difficulty in decollectivization. Most of these are either economically costly, politically painful, or both, and this raises some problems for the top political leadership.

If the top leadership is not fully unified so that they are able to pay this high price and to follow a set of consistent policies leading toward decollectivization, then risks facing any would-be individual farmer rise. If this political leadership has other goals that conflict with decollectivization or if decollectivization is relatively low on their priorities, the risks to private farming also increase.

These upper-level political factors have been quite different in the various countries. A detailed discussion of such issues for China, Hungary, and the Soviet Union is presented in Chapter XII.

Political will also implies the willingness to establish a court system and other means to enforce property rights, mechanisms which are lacking in a system of weak property (Wittfogel, 1957). The relative strength of rules of law over administrative orders from governmental organs at different levels is a crucial determinant of the risk of private farming.

The Problem of Cadre Resistance

Decollectivization reduces the number of positions, the income, and the direct power of many party
and state cadre in the agricultural sector. At the very top, Fidel Castro (quoted by Meso-Lago, 1988, p. 86) summed up the problem at the most general level: "If [economic] mechanisms [in agriculture] were to solve everything, what would be then left for the Party to do? ... These ideas involve a negation of the party." The resistance of local (and higher) state and party cadre to such measures can be expected; and in order to enforce its political will, the top level political leaders face several options:

The government can, of course, crack heads and purge the recalcitrant local officials; but this raises the possibility that its entire authority in the rural sector may crumble. It can redefine criteria for evaluation of such cadre so that they are no longer judged by production in their district. It can also buy off the resistance of such cadre by placing them in a position to enrich themselves in the decollectivized system, which happened in China (Oi, 1986, 1989a, 1989b). Further discussion on the overcoming of cadre resistance in the specific context of China, Hungary, and the Soviet Union is presented in Chapter XII.

The Problem of Recollectivization

Decollectivization is not necessarily the answer to all agricultural problems and certain problems can arise that encourage more governmental intervention in the countryside. If such problems are important and can not be resolved, even a recollectivization is conceivable.

In China, for instance, decollectivization has led to a neglect of communal facilities such as irrigation; deforestation has become a problem (Ross, 1987); agricultural productivity growth is now beginning to level off again; grain production did not significantly increase in the late 1980s (although other types of agriculture did); the reintroduction of the market brought about a type of "hog cycle" (Wiens, 1987); population growth in the countryside is beginning to rise (White, 1987); income differentiation has proceeded to the point that many rural families unable to operate in the new environment are alleged to have a standard of living far below the socially acceptable norm; and rural violence, although not a major problem, increased, at least up to the middle 1980s (Perry, 1985). Although I believe that all of these can be resolved in the present decentralized system, other problems may arise that are not so tractable. If collectivization may be reversible, so may decollectivization.

REFLECTIONS ON DECOLLECTIVIZATION

The collectivization of agriculture has probably been the most radical institutional change in the economy undertaken by the various Marxist regimes. It has required considerable coercion and violence, great administrative efforts, and enormous personal dedication on the part of the political leaders, all in
the name of a formal doctrine which did not offer much support for introducing such changes, particularly at low levels of economic development.

Once the process was completed, however, it has not proven simple to reverse such changes. The discussion above suggests that it may be much easier to decollectivize in a relatively poor country where farming is not highly input intensive or mechanized, than in an economically more advanced nation. Such a conclusion is reinforced by the case of Hungary, a nation which was able to marketize its agricultural sector but which has lacked the desire, apparently both on the side of the government and the farmers, to decollectivize. This proposition is merely the reverse side of the approach toward collectivization of Nicolai Bukharin (of the USSR) in the 1920s or Edvard Kardelj (of Yugoslavia) in the early 1950s that successful collectivization can occur only when the labor force in agriculture is relatively small and production is relatively mechanized.

Most of the economic difficulties arising from decollectivization - the creation of a reliable and accessible source of inputs, the provision for the profitable sale of outputs, the establishment of outlets for credit and consumer goods - fall into the category of network externalities and thus have parallels with the factors locking nations into inefficient technologies or standards, in particular costs external to the farm itself (pecuniary externalities), rather than classic production externalities. Most of the sociological difficulties are rather different and reflect the long-term consequences of self-reinforcing demographic and social-structural factors of the system of collectivized agriculture. Most of the political factors are the outcome of particular power configurations that differ considerably from nation to nation, so that few generalizations can be made.

In the long run collectivized agriculture faces a major problem: As a certain amount of private farming becomes established and increase their productivity, agricultural prices may eventually fall below the average costs of the collectivized sector. The government can, of course, let such farms go bankrupt so that private farmers can pick up the pieces. But over the last half century few governments have shown such hard-headedness over the collapse of an entire sector. Such political factors are, however, difficult to predict.

Underlying this study of collectivization are several simple messages: Some major institutional changes may occur in the short run only with difficulty, if at all, even if the institutions to be changed are dysfunctional or highly inefficient. The costs of decollectivization are high, particularly in the short run. Further, as the Hungarian case has shown, most systems of collectivized agriculture can be improved
considerably by measures short of decollectivization, e.g., structural improvements within the farms, marketization, and the development of an effective infra-structure aiding agriculture.

This study has been carried on at too high a level of abstraction to be able to make detailed predictions about the course of decollectivization in particular nations. It seems likely, however, that most of the third world Marxist regimes will not greatly increase the relative importance of their state and collective farms, given the administrative difficulties which such farms are experiencing. By the same token, in such nations as Cuba and North Korea, where collectivized agriculture appears relatively successful and firmly entrenched, decollectivization also does not appear likely unless some unexpectedly dramatic political changes occur. In Eastern Europe, after the events of 1989, marketization reforms or changes in the incentives facing farmers appear considerably more likely than decollectivization; indeed, even though communist parties have been dethroned in many of these countries, the calls for decollectivization have not been sufficiently strong to receive attention in the Western press; indeed the only country in 1989 where reporters noted that demonstrators made such demands was Mongolia. As noted above, the immediate response of the farmers to an increased ability to begin private farming was limited.

In brief, the system of collectivized agriculture introduced by Stalin in the USSR in the late 1920s and implanted by Marxist parties in other nations is difficult to reverse where the system has been existence for several decades and where the level of agricultural technology used on the farms has become relatively high. Large-scale farming is far from a closed episode in the economic history of the world; and this is a major reason why I have questioned in the subtitle of this book whether collectivize agriculture will "fall." Indeed, such large scale farming, albeit not as extensive as in the 1980s, may prove to be one of Stalin's legacies that will last at least for the next half century.
Footnotes

1. Included in my definition of decollectivization are cases where private farming includes many different types of group activities, e.g., when a rice field is irrigated by a single system maintained by a group, while the fields are subdivided into a number of strips, each farmed by a different household) still remain. Decollectivization can also occur without full marketization, especially of factor markets; and it can also take place without a developed system of contract enforcement (as in China), although it is likely that such a system would soon evolve.

2. Hedlund (1989, pp. 91 - 96 chronicles an interesting Soviet schizophrenia: the economic authorities recognize the importance of such small-scale equipment; but they seem unable to produce such equipment for the farmers in any volume commensurate with the need. Another example is found in Poland, where the government paid considerable money to purchase a license to produce giant Massey-Ferguson tractors suitable only for the large fields of the state farms. Of course, most of Polish land was farmed in smallholdings for which such tractors were quite unsuitable.

3. If the farm is mechanized, it is also important to take into account whether such farm equipment was actually used. In some countries such as Romania, much of the equipment "on paper" was inoperable because of lack of spare parts so that the division of the equipment is not such a problem.

4. David (1971, pp. 212 - 4; 1975, p. 208) considers in a quite different context why farmers in the 19th century were willing to form cooperatives to joint use of plowing equipment or equipment for post-harvest tasks such as corn shellers, threshers, and other equipment, but were unwilling to form such cooperatives for reaping, mowing, or harvesting machinery. He conjectures that harvesting has a much greater time constraint and the problems of deciding who would have priority of use of such equipment would have required the users to form some type of compensation arrangement, which would have been difficult to negotiate. Given the relatively short growing season in most of the USSR, such problems would be even more severe. This is, however, controversial and Olmstead (1975) has pointed out that in the newly settled states (but not the developed states), sharing of reaping equipment was common in the mid 1800s; problems of risk sharing were solved by moving the shared reaper around in a manner so that poor weather conditions occurred, all of the co-owners suffered roughly the same percentage loss. This solution to the problem might
not hold for equipment where considerable economies of scale could be gained by using it completely on one
farm at a time.

5. Wierzbicki (1968) has some interesting examples of technological regression following the breakup
of Polish collective farms, where the farmers began to use hand-methods of farming because machinery was
not available. Production increased and, as one farmer noted to the author, "If we had worked as hard on the
collective farm as we do now, we would have been millionaires." In China, farm machinery sales declined
after the reforms and sales of small tractors did not recover until 1983/84 (Wong, forthcoming). Some foreign
observers of the Chinese countryside have reported a decline in farm mechanization during the 1980s.

6. Goodman, Hughes, and Schroeder (1987) point out that in the USSR, both the 11th Five Year Plan
(1981-85) and the 1982 "Food Program" stressed the importance of increasing production of small-scale
agricultural equipment. The major emphasis still lay, however, in the production of large-scale equipment.
Timofeev (1985, pp. 80 ff.) notes that even such farm tools as shovels and rakes are poorly designed and
too heavy for easy use by children and older people, who generally work the personal plots.

7. By "ownership unit" I mean the group that has effective control over the land, equipment, and tools.
In China, the farm could not transfer equipment from one team to another; in the USSR, it could.

8. This does not mean that division of the land was easy in China because the teams still had 20 to 40
households. In Laos, Nicaragua, and Vietnam the apparent ownership unit was the small farm (a subunit of
a larger state farm) or team, usually with a land-centered labor organization. This eased the processes of
decollectivization that occurred in each country.

Such a division of land must also be constrained by certain guidelines about equality of division which
are set and enforced by the central government. Otherwise, the process may be stymied by conflict between
those households who brought (or whose forefathers brought) into the collective considerable land and others
who brought little or no land into the collective.

9. The situation also existed in China in the early years of the reform. Nee (1989) cites one farmer
saying: "My family has made considerable investment on contracted land...But we always fear that some day
the policy will be changed, and the land will be taken away from us, and our efforts will be wasted." Pros-
teraman and Hanstad (forthcoming) present survey data revealing the same fears.

10. In a regression analysis, Feder and his associates explore, but do not find, a statistically significant
relationship between feelings of short-term and long-term insecurity of the individual farmers and the capital
stock of their farms. This counter-intuitive result could arise, however, from two aspects of their specification of the regression: 1) their choice of the capital stock, rather than investment, as the dependent variable; and 2) their use of the short and long-term uncertainty variables separately, rather than in some type of joint index. Since they also do not present a correlation matrix, it is impossible to know whether other types of multi-collinearity between the independent variables may be influencing the results.

11. In some East European nations there is a considerable lack of knowledge about creating a system of strong property rights with detailed and enforceable property rights. In a talk with a Bulgarian professor of law and economics, he expressed surprise at my idea that a market economy has a greater demand for legal services, in contrast to a planned economy, because contracts are more detailed and must be adjudicated more quickly.

12. In the Soviet Union the Presidium of the Council of Ministers announced in December 1989 that farm debts would be cancelled in proportion to the degree to which such farms shifted to a lease system.

13. To encourage household leasing, the Soviet Union in December 1989 offered the farms contracting out a portion of their assets to households the opportunity to write off its debts in the same proportion (Brooks, 1990). In China many collective farm debts were written off when they transferred the land to individual households.

14. The law stated that all debts arising from uneconomic tasks assigned to the farm by the Central Authorities would be cancelled. Of course, every farm will try to make this claim so that enforcement will be difficult. A second kind of write-off occurred with the currency union, when all debts over a specified amount were written down 50 percent (i.e., were revalued at a ratio of 2:1).


16. Unfortunately, the Soviet government has not released census data to provide detailed evidence on this point. According to data from Danilov (1988, p. 42) and USSR, Goskomstat (1988, p. 50-1), the average age of adults (those 20 or over) in the rural sector as a whole (including non-agricultural jobs) increased from 40.6 in 1926 to 43.3 in 1959 to 47.4 in 1987. In the latter year women constituted 56 percent of the rural population. A rapid aging of the farm population has occurred in other East European nations as well; Salzmann (1983) and Argyres (1988) have some interesting comments on the process respectively in Czechoslovakia and Romania; and a number of observers have commented on this fact in Hungary.
17. Until the late 1980s, private farmers found it difficult to obtain credit; in previous decades they were not able to obtain modern equipment; they could farm only a maximum of 10 hectares; and they faced lower prices from monopsonistic crop purchasers than collective farms.

18. Bill Keller [1990] quotes a Soviet collective farm chairman saying: "Here we have lost the tradition of farming. It's gotten so bad that in school they warn children: "If you don't study hard, you will stay on the collective farm to work."

In Poland the aging of the private farm population is attributable to a different mechanism; in the early 1980s, however, out-migration from the farm appears to have been markedly reduced.

19. Political means such as discrimination in schools and housing can also be used either to keep people in the farming sector or to encourage them to leave the urban areas where they have moved.

20. The account of a year in the life of an American farmer by Rhodes (1989) provides a superb account of the number of different skills that a given farmer must master. Of course, in some countries the family farms are too autarkic so that many of the skills acquired by the farmers are really unnecessary to learn if the farmers took greater advantage of the opportunities for specialization offered by the market.

21. Of course, as Timofeev (1985) points out, rural youth in the Soviet Union carry out a considerable amount of farm work, but this is work for others, not themselves. He also reports (p. 112) of an instance where pre-school children were playing at stealing milk from the collective farm, which is a useful skill to learn for socialist, but not private farming.


23. The sample includes 165 farmers in Slovakia. Piekalkiewicz (1972) also includes data for 886 non-farmers in Slovakia to the same questions and, with the exception of a question about the rural areas subsidizing the urban areas, the two samples were in rough agreement.

24. These results were cited to me in interviews with economists in the four countries. I was, unfortunately, unable to see the actual poll results.
It would be aesthetically pleasing if there were some symmetry between the processes of collectivization and decollectivization, e.g., the more coercion used in collectivization, the greater the degree of voluntary decollectivization. Such public opinion data suggest, however, that the degree of decollectivization is roughly related to the capital intensiveness of agriculture.

25. These comparisons are made with regard to the entire agricultural population. If, however, the denominator were the number of farm families with a household head between 20 and 55 who would really be capable of taking over a family farm, then the relative number of applicants for such farms would appear more impressive and such numbers would be more useful in predicting future developments.

26. Regarding the problem of individual effort Bill Keller [1990] cites a Soviet joke: "Which is better, individual sex or group sex? Group sex, of course, because it leaves you time to goof off."

27. Judy Batt (1988) provides a fascinating account of this type of intellectual evolution for the 1968 reforms in Czechoslovakia and Hungary. Although she focuses primarily on reforms in the industrial sector, her general conclusions are equally valid for agriculture.

28. The strength of the idea that land can not be sold and must be used only by those whom the government determines are the most capable farmers dies slowly. Bill Keller [1990] quotes a Soviet local party official contending "From the point of view of morality and ethics, selling land is blasphemy. The land should not be treated as some prostitute who goes with the guy who pays the highest price."