

## Chapter 4

# Divergent Approaches to Reform: Changes in Farm Structure

We have seen in Chapter 2 that the large-scale collective and state farms—the backbone of socialist agriculture—were inherently inefficient, and the performance of socialist agriculture lagged behind that of market economies. In the early 1990s, the former socialist countries of Europe and Central Asia embarked on a massive effort to eliminate the constraining institutional arrangements in agriculture and create more productive forms of farming. The complexity of the task has proved immense, and this effort is still ongoing after more than a decade.

The transformation of agriculture starts with two basic processes: transfer and redefinition of property rights in land; and designation of ownership of farm assets. This is the essence of privatization in former socialist agriculture. In CIS, the beneficiaries of both these processes are members and workers who contributed by their labor to accumulation of assets over the years, and property rights are transferred by distributing the collectively held land and assets into individual shares according to various entitlement criteria.. In CEE, the procedure is mixed: land is generally restituted to former owners (although there are some departures from this scheme, see Chapter 3), while non-land production assets are typically shared by members and workers through a distribution process similar to that in CIS. In CEE the land and the assets are allocated to the beneficiaries in physical form, whereas in most CIS countries (with the notable exception of Armenia and Georgia) the distribution starts with “paper shares.” The distribution of paper shares in CIS may be regarded—at least in principle—as an interim mechanism, which will ultimately lead to physical distribution of land plots and farm assets

in kind, as in CEE. In fact, this share-conversion process is under way in Moldova, Azerbaijan, and as of 2002 also in Ukraine.

Transfer of property rights in agriculture goes hand in hand with the development of procedures that allow regrouping of the privatized land and assets according to the preferences of the new owners-operators. Establishment of an individual farm outside the former collectivist framework is one form of extreme regrouping. Other forms of regrouping and reconfiguration take place within a large corporate structure that replaces the former collective, where individuals choose to keep their land and asset shares. Some of this regrouping takes place through individual transactions, such as leasing or sale contracts, if allowed. Much takes place through voting or agreements, in which individuals accept a new role in the existing collective, or create new organizational structures using their shares of land and assets from the former collective. Farm restructuring in all its diversity is thus an inseparable component of the privatization process in agriculture.

In this chapter “farm restructuring” is used in its broadest possible sense. It is not restricted to the legal meaning of organizational changes in an existing entity. Instead, it describes all changes that occur in the organization and structure of farms, including emergence of new farming entities. Farm restructuring, together with land reform, is an agenda for the transformation of the socialist farm structure into something new—hopefully a more efficient farm structure with a clear market orientation.

## **Restructuring Modes**

Different transition countries pursue different farm restructuring strategies. The various restructuring modes of former collective and state farms observed across the region are summarized in Table 4.1.

The most radical restructuring strategy is observed when land and farm assets are distributed in physical form to the beneficiaries. This results in the dismantling of the former collective structure into individual units, each with its own allocation of land and assets. Some of the units created in the process of dismantling may continue operating as independent individual or family farms, while others may forgo the option of independent farming and merge their land and

assets into larger corporate structures. Emergence of independent individual farms and reconfiguration of individual holdings into corporate farms are the two restructuring modes observed throughout CEE and also in some CIS countries (Armenia, Georgia, Azerbaijan, and recently on an increasing scale in Moldova). In a diametrically opposite approach to restructuring, land and farm assets are distributed in the form of “paper shares” representing certificates of entitlement to jointly held property. To create an individual farm, the beneficiaries must make an application to receive their shares in kind and withdraw their entitlement to land and assets from the joint pool. Without actually withdrawing from the former collective, the shareowners can reconfigure their holdings into smaller cooperative or corporate units carved from the former collective. The most conservative option is for the shareowners to keep their shares in a successor farm, leaving the former collective intact, albeit as a new organizational form. Any restructuring in this case will be strictly internal and will occur through the efforts of management. Restructuring modes based on distribution of “paper shares” are practiced in Russia, Ukraine, and other large CIS countries.

**Table 4.1. Restructuring Modes for Collective and State Farms**

Allocation strategy	Immediate outcome	Resulting farm structures	Countries
Physical distribution of land and assets	Dismantling of collective structure	Individual farms	All CEE, Transcaucasia, Moldova
		New corporate units created by reconfiguration of individual holdings	CEE (except Albania), Moldova
Distribution of “paper shares”	Retention of former collective structure as new organizational form	Individual farms established by withdrawal of shareowners	All other CIS
		Corporate units created by reconfiguration of shares inside former collective shell	
		“Stay as is”: Successor farm created by keeping the shares in former collective	

Whatever the actual restructuring strategy, the entities created from the former collective—whether individual farms or new corporate structures—may enter into cooperative arrangements to

overcome the absence of functioning market services and to substitute for the service functions of former collective farms. Service cooperatives may deal with product marketing, input supply, machinery services, credit delivery, or extension. They may be established as new voluntary entities or alternatively the management of the former collective farm, having lost its traditional role in production, may assume the role of a service cooperative for the individual operations in the village (a mode which is observed with increasing frequency in Russia).

### **Individualization of Agriculture**

Individual or family farms are the dominant organizational form in agriculture in market economies, and, among other performance criteria, we evaluate the transition countries against the benchmark of individual farming. Individual agriculture is possible without land privatization, as is demonstrated by the long and successful history of household plots in the former Soviet Union or, in a different context, by agriculture in Israel. On the other hand, land privatization does not necessarily create individual farmers.

In CEE countries, privatization by restitution automatically involves allocation of physical plots of land to beneficiaries. Yet whether or not the physical allocation of plots leads to individualization of farming depends on what the owners decide to do with their newly recovered land. Some landowners may indeed cultivate their holdings individually. Other individuals may lease their land to large corporate farms or invest it in the equity capital of various cooperatives and shareholder structures. This land, although privately owned, is statistically captured as part of non-individual, corporate or cooperative use.

Different motivations are possible for the mutually exclusive decisions to cultivate privately owned land individually or “collectively”. Individual risk preferences provide one explanation: some prefer the safety of the collective or corporate umbrella to the unfamiliar risks of individual farming. Capital endowment—including both physical and human capital—and access to basic market services are also relevant factors explaining the choice between individual and group farming (see Box 4.1; for a theoretical analysis of the effects of

physical assets and land on the decision between individual and corporate farming see also Allen and Lueck (2002, Ch. 9)).

#### Box 4.1. Choice Between Individual and Group Farming

Romania is an interesting case study of the choices between farming individually and joining an association. Romanian landowners exercise a whole spectrum of options, which range from individual cultivation of all land holdings to entrusting all available land to an association (a cooperative) for joint cultivation. There is a continuum of intermediate options with landowners allocating some of their land to association farming and keeping the rest in individual production. The rich data collected by farm-level surveys in Romania provide a unique opportunity for a direct analysis of rural household choices between individual farming and association farming.

The 1996 World Bank survey has shown that 15% of rural households allocate their land between individual farming and association farming; another 15% entrust all their land to associations; and 67% use all their land to farm individually, full- or part-time (the remaining 3% are absentee landowners whose land is leased to others). Marian Rizov has applied a continuous-choice tobit regression model, attempting to explain the share of individually farmed land by a set of human and physical capital endowments (Table B4.1). He has shown that households with insufficient human capital and thus low managerial ability choose association farming; households with a somewhat higher managerial ability choose to contribute only a part of their assets to associations and retain the rest in individual farming; and those with even higher managerial ability choose to operate as full-time individual farmers. At some high levels of human capital off-farm income opportunities become more attractive than farming and part-time farming or absentee-landowner modes are chosen.

**Table B4.1. Determinants of Land Allocation to Individual Farming: Romania\***

Explanatory variables	Effect
I. Human capital	
Education	+
Education (squared)	–
Age	–
Age (squared)	+
Adult members	+
II. Physical capital	
Machinery, buildings	+
Livestock	+
Land title	+
Off-farm income	+
III. Market services	
Access to infrastructure	+
Access to fertilizer	+
Access to machinery services	+

\*Tobit regression; dependent variable: ratio of land farmed individually over total land owned by the household.

**Box 4.1 continued**

The existence of functioning markets (as manifested in access to infrastructure, farm inputs, or machinery services) has been found to increase the tendency toward individual farming at the expense of association farming (Table B4.1). Physical capital endowment also has a positive impact on the tendency to farm individually. However, in conditions of severe capital constraints, such as those characterizing Romania in transition, even individuals with sufficient managerial ability might lack sufficient or suitable physical capital to start an individual farm and will tend to remain in associations.

Similar conclusions have been reached by Raachel Sabates-Wheeler on the basis of her own survey of private farmers in southern Romania. Applying a discrete four-choice probit model adjusted for self-selection, she has found that, at low levels of resource endowment, i.e., when farmers are resource constrained, there are substantial production advantages to participating in an association rather than farming individually. At higher levels of resources—land and labour—it becomes increasingly beneficial in terms of production to move into individual farming strategies.

Both researchers reach basically the same conclusion: in imperfect markets, the optimal choice of farming organization made by rural households depends on their resource endowments—including human and physical capitals.

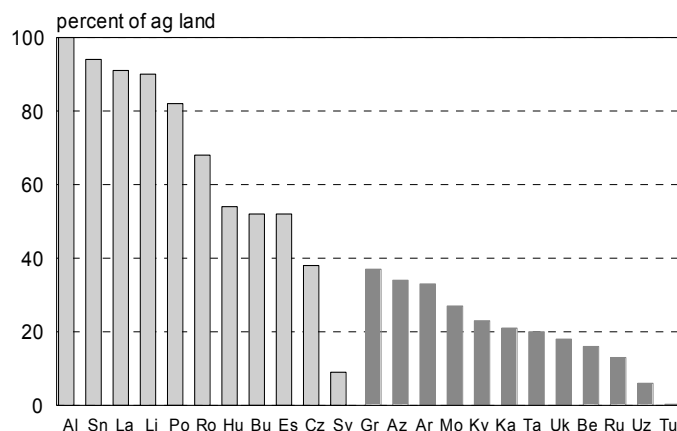
Source: Marian Rizov, “Endogenous Production Organization During Market Liberalization: Farm Level Evidence from Romania,” *Economic Systems* (2003); Rachel Sabates-Wheeler, “Farm Strategy, Self-Selection and Productivity: Can Small Farming Groups Offer Production Benefits to Farmers in Post-Socialist Romania?” *World Development*, 30(10): 1737-1753 (2002).

Another explanation is that many former owners left farming long ago and now have jobs and property in urban areas. They have no immediate personal use for their restituted land, and yet they would like to keep this newly found asset in their ownership rather than sell it. Entrusting the land to a larger corporation or cooperative in return for lease payments makes good economic sense. These new landowners, of course, also have the option of leasing their land to other individuals who are actively engaged in farming and seek to increase their holdings. However, leasing to private individuals may be perceived more risky than leasing to a large organization, which is regarded as a more reliable source of lease payments. To the extent that inactive landowners indeed prefer to lease out their land to corporations and cooperatives, restitution may actually encourage persistence of large-scale non-individual farming, instead of promoting individualization (Mathijs and Swinnen 1998).

Distribution of land to workers in CIS does not necessarily result in individualization of farming either. Land distribution follows two distinct modes. One mode encompassing all of collectively controlled land involves distribution of individual entitlement rights to shares of collective land ("paper shares"). This is the second stage in the two-stage process of transfer of land ownership from the state to individuals described in Chapter 3 (see the section *Disposition of Socialized Land: Restitution versus Distribution*). The share distribution mechanism does not involve allocation of physical plots: the privatized land remains in collective cultivation, until such time that the shareowner decides to leave the collective and withdraw the share of land for the purpose of establishing an independent family farm. Land shares remaining in collective cultivation represent privatized land, but they are not classified as land in individual use. The second mode of land distribution has a direct impact on individualization of agriculture: it involves distribution of physical plots to households in collectives and to independent family farms outside collectives, unrelated to the land-share privatization mechanism. These plots typically come from state reserve land created by expropriating part of the holdings of large collectives. The distributed plots may be privately owned or given in use rights (even in Russia and Ukraine, where private ownership of land is fully recognized), but they always constitute land in individual use.

Only three CIS countries (Armenia, Georgia, and as of 2000 also Azerbaijan) have implemented the extreme policy of dismantling the former collective farms and transferring most arable land to individual cultivation. Considerable progress toward individual farming is reported in Moldova and Kyrgyzstan. New experiments in this direction are beginning in Kazakhstan and Turkmenistan. Ukraine launched in 2000 a conversion program for land shares similar to the conversion program in Moldova, but so far no information is available on the impact of this program on the individual farming sector. Overall, only a relatively small proportion of rural residents in the CIS opt for exit from collectives and establishment of individual farming on land allocated outside the collectivist framework, and the increase of the individual sector is mainly attributable to the growth of household plots assigned to collective farm employees.

Fig. 4.1. Share of Ag Land in Individual Use in CEE and CIS:  
Status in 2000



Individually cultivated land has increased dramatically in all countries of the region since the beginning of transition (Table 4.2). In eight countries—Albania, Slovenia, Poland, Latvia, and Lithuania in CEE; Armenia, Georgia, and Azerbaijan in CIS—most cultivated land (excluding pastures) is in individual use, and virtually no collective farms remain. The change has been particularly striking in Albania, Latvia, Armenia, Georgia, and Azerbaijan, where, prior to 1990, less than 5% of agricultural land was in individual use (Slovenia and Poland never had a large collective farm sector). Overall, the available data show that at the end of the 20th century the average share of land in individual use was 66% across the CEE countries (including the Baltic states) and 21% across the CIS countries. The difference is statistically significant, although the magnitude of the gap between the two blocs may be exaggerated due to differences in specific definitions of agricultural land (e.g., whether pastures are included or not). Despite this qualification, it seems clear that today CEE as a region has a substantially higher proportion of land in individual use than CIS. This is visually illustrated in Figure 4.1, where the CEE countries are depicted by the left-hand group of light-gray bars and the CIS countries by the right-hand group of dark-gray bars.

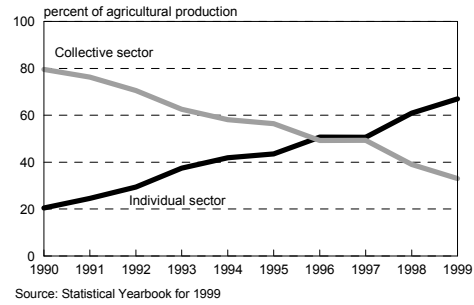


**Table 4.2. Share of Individual Agriculture in Land and Production 1990-2000 (percent)**

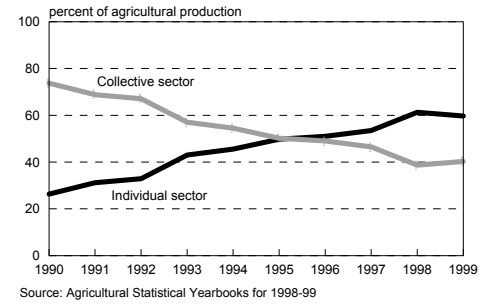
CEE countries	Individual land		CIS countries	Individual land		Individual production	
	1990	2000		1990	2000	1990	2000
Albania	4	100	Armenia	4	33	35	98
Slovenia	92	94	Georgia	7	37	48	94
Poland	77	82	Azerbaijan	3	34	35	98
Romania	12	68	Moldova	9	27	18	73
Hungary	6	54	Ukraine	7	18	27	66
Bulgaria	13	52	Belarus	7	16	25	50
Czech Rep.	5	38	Russia	2	13	24	57
Slovakia	5	9	Kyrgyzstan	1	23	34	88
Latvia	5	91	Kazakhstan	0.2	21	28	75
Lithuania	9	90	Tajikistan	2	20	23	66
Estonia	6	52	Uzbekistan	2	6	28	65
			Turkmenistan	0.2	0.3	16	30
Ave CEE	21	66	Ave CIS	4	21	28	72

Source: Official country statistics.

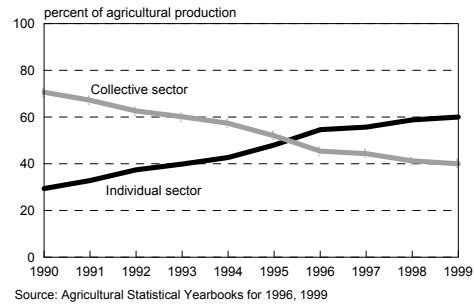
Moldova: Gross Agricultural Product 1990-1999



Russia: Gross Agricultural Product 1990-1999



Ukraine: Gross Agricultural Product 1990-1999



Azerbaijan: Gross Agricultural Product 1990-1999

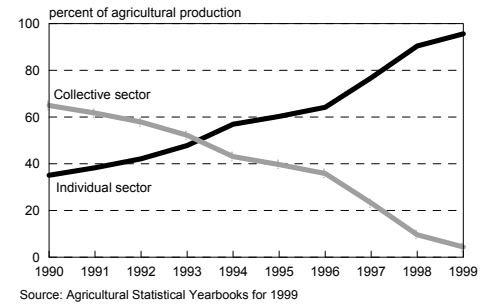


Fig. 4.2. Share of individual and collective sector in agricultural production 1990-99

The increase of land in individual use has been accompanied by an increase in the share of the individual sector in agricultural production since 1990. In most of CIS (the European and Central Asian republics), the share of individual agricultural production doubled from about 30% in 1990 to 60% in 2000 (Table 4.2). In Armenia, Georgia, and as of 1999-2000 also in Azerbaijan, individual farms account for virtually the entire agricultural output. The increase of the share of individual farms in agricultural production is a persistent trend (Figure 4.2). Unfortunately no similar data are available for CEE, but from the pattern of land individualization (Table 4.2) it is clear that in Albania, Latvia, and Lithuania all agricultural production has shifted from the formerly dominant collectives to the individual sector. In Slovenia and Poland the individual sector has always dominated agriculture, and it continues to be the main source of agricultural output today.

### **New Organizational Forms Among Corporate Farms**

Despite reallocation of land to the individual sector in the process of land reform, large collective and corporate farms still play a much more prominent role in the ECA region than in market economies, where agriculture is primarily based on family farms. We have noted in our discussion of the world experience in Chapter 2 that family farms in market economies are not necessarily small, but they are much smaller than the traditional socialist farms and, as we shall see below, they are also generally smaller than the new corporate farms in transition countries—especially CIS. We now proceed to examine the mechanisms of restructuring of large farm enterprises and the actual changes that are observed in the corporate sector.

In CIS, where all land was state-owned prior to 1991, the land privatization mechanism prescribed re-registration of the former collective or state farm in a new organizational form, such as a limited liability partnership, an agricultural cooperative, a joint-stock company, an association, or sometimes even a collective enterprise. In Russia, the re-registration or external restructuring mechanism was basically determined by a series of presidential decrees between December 1991 and March 1992. Similar principles were adopted also by other CIS republics that allow private ownership of land. By

this act of registration, the new organization took over the ownership of former state land, and could proceed to issue land and asset shares to its members. The same mechanism generally applied to both collective and state farms. Contrary to CEE, the reform legislation in CIS did not provide different principles for state farms. These were simply transformed into collective farms following the decision of the general assembly of the workers, and after that the same rules and mechanisms applied to all large-scale enterprises.

Fig. 4.3. Dynamics of Registration of New Organizational Forms in Russia

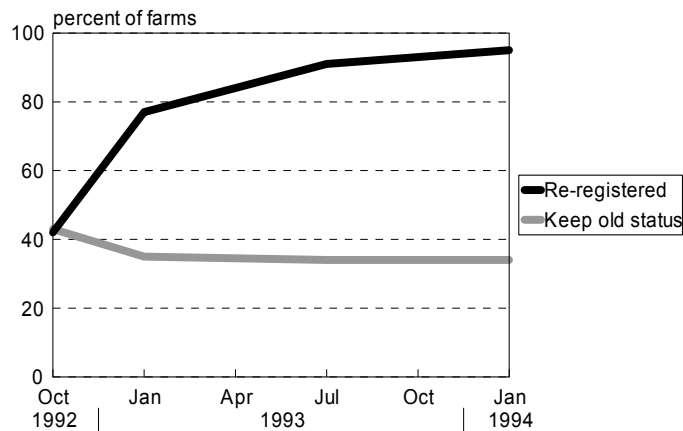


Figure 4.3 shows that in Russia, for instance, the external reorganization of farm enterprises was practically completed as early as the end of 1993: the top curve plotting the percentage of farms that had undergone formal re-registration with the purpose of assuming ownership of land approached 100% in January 1994. The same is true of most other CIS countries, in particular Ukraine, Moldova, and Kazakhstan, where former collectives promptly registered in various shareholder forms in 1992-93. Because of the re-registration requirements, the diversity of large farm structures today is much greater than prior to 1990, when the Soviet kolkhoz, or collective farm, was the universal template for farms in all socialist countries. Table 4.3 shows that more than half the farms in Russia, Ukraine, and Moldova are now registered in new corporate forms, with joint-stock and limited-liability companies enjoying the greatest numerical popularity (brief characterizations of the various

organizational forms are provided in Box 4.2). On the other hand, the same table shows that a large proportion of the farms have retained a traditional organizational form: these farms are now mainly registered as collective enterprises – *kollektivnoye predpriyatiye*, a new legal form that has formally replaced the traditional kolkhoz, or collective farm. Turning back to Figure 4.3 (the lower curve), we see that in Russia the share of traditional forms among farm enterprises has stabilized at about 30% and does not show any tendency to decrease. Collective enterprises (and some state farms) are apparently a permanent feature of the corporate farm scene, alongside joint-stock societies, limited-liability companies, partnerships, and agricultural production cooperatives.

**Table 4.3. Organizational Forms of Farm Enterprises in CIS (in percent)**

	Russia	Ukraine	Moldova	Belarus
<b>Total farm enterprises</b>	<b>27,259</b>	<b>15,984</b>	<b>1,186</b>	<b>2,523</b>
<b>Traditional forms</b>	<b>30</b>	<b>48</b>	<b>14</b>	<b>96</b>
Collective farms	19	23	5	71
State farms	11	25	9	25
<b>New forms</b>	<b>70</b>	<b>52</b>	<b>86</b>	<b>4</b>
Joint-stock companies	20	18	9	NA
Limited-liability companies and partnerships	18	23	60	NA
Agricultural production cooperatives	30	2	10	NA
Farmers' associations	2	2	7	NA
Other forms	--	7	--	NA

Source: *Sel'skoe Khozyaistvo Rossii 2000* for Russia; Computational Center, Department of Statistics for Moldova, 2001; 1998 World Bank/USAID survey for Ukraine; 1999 World Bank Survey for Belarus.

Contrary to Russia, Moldova, or Ukraine, Belarus is a country where practically no attempt has been made so far to restructure the traditional farm enterprises. The difference is clearly apparent in Table 4.3: 96% of farm enterprises in Belarus retain the collective form of organization and only 92 of more than 2,500 farm enterprises have been reorganized in new forms. Since Belarus does not recognize private land ownership (see Chapter 3), members do not get any land shares and reorganization involves only distribution of asset shares by the farm enterprise.

#### Box 4.2. Characterization of Organizational Forms

**Joint-Stock Society (Company):** A business entity created by several investors (physical or legal bodies), who acquire shares in the company by contributing funds or assets to its equity capital. A shareholder wishing to leave a joint-stock company has to find a buyer for his or her share. The company has no obligation to redeem the shares for cash or assets in kind. The shareholder's liability for the company's debt is limited to the investment in share capital. The voting power is proportional to the number of shares held by the shareholder. In a closed joint-stock society, shares are transferable only among members. In an open joint-stock society, shares can be bought by outsiders.

**Limited-Liability Company:** Similar to a joint-stock society, except that when a member chooses to leave, the other members redeem his share of investment for cash.

**Partnership:** The partners bear full, unlimited liability for the obligations assumed by the partnership. When a partner decides to leave, the partnership is usually dissolved and the assets are divided in kind among the partners. The voting power is proportional to the investment of each partner. A limited-liability partnership is essentially a limited-liability company (see above). A mixed-liability partnership or a commandite (known as *komanditnoe tovarishchestvo* in Russian, *Kommanditgesellschaft* in German, *société en commandite* in French) is an intermediate form, in which one or several managing partners bear full liability, as in an ordinary partnership, while other passive partners enjoy limited liability, as in a limited-liability company.

**Agricultural Cooperative:** An entity established voluntarily by several individuals for the pursuit of a common agricultural activity (production or services). The members of a cooperative are its users, not merely investors. Each member makes a contribution to the statutory equity capital of the cooperative in the form of cash, land, or assets. The ownership of the contributed capital passes to the cooperative, as in a joint-stock society. On exit, members receive their share of investment in cash or in kind, as prescribed by the cooperative charter. The liability of the members for the obligations of the cooperative may be unlimited or limited, depending on national cooperative laws and the cooperative charter. The voting power is "one man, one vote," and is not proportional to the invested capital.

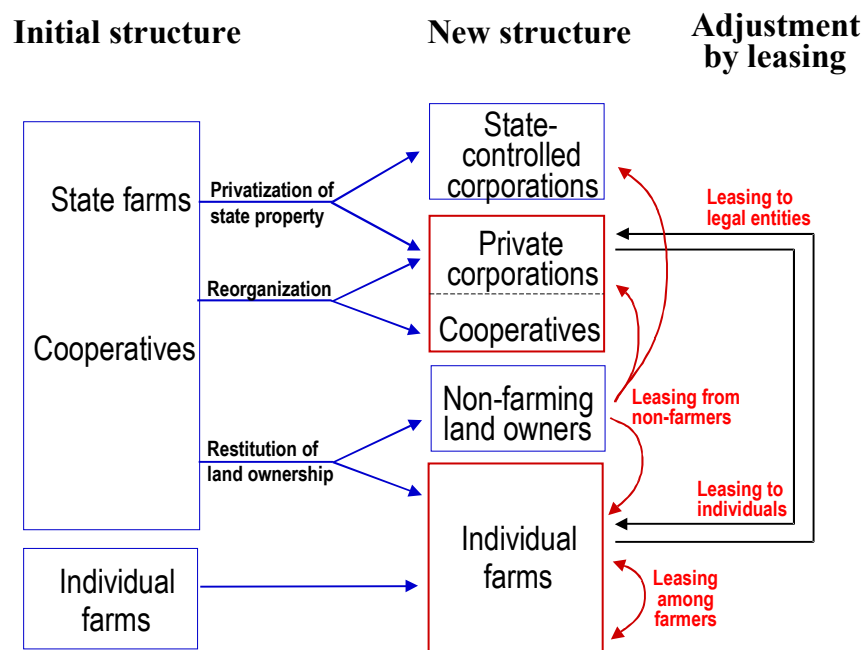
**Farmers Association:** Peasant farms may form associations for the pursuit of common agricultural activities. Unlike members of a cooperative, peasant farms in an association keep their independence of decision-making, their ownership rights over land and assets, and their status as a legal person. Members are allowed to leave the association at will, taking their land and assets with them. Often, the term "farmers association" is used not as intended, to represent a voluntary association of independent peasant farms with a common purpose, but as a different name for a cooperative or a collective enterprise.

**Collective Farm, Collective Enterprise:** A variety of agricultural production cooperative. Typically the successor of a former kolkhoz or sovkhoz with ownership of land and assets transferred from the state to the workers. Workers

become shareholders through distribution of certificates of entitlement to land and assets. Exit of members with land and assets usually requires approval of the general assembly.

**Peasant Farm:** An entity created by a family or a group of families on the basis of privately owned land, possibly augmented with leased land. The land and assets of a peasant farm are the joint property of all its members, and redistribution of assets requires the consent of all members. Farm members bear unlimited liability for all obligations. Peasant farms by assumption rely mainly on family labor and family owned resources, although they may employ hired labor and leased resources within reasonable limits. Peasant farms may register as legal entities or operate as unregistered physical bodies.

Fig. 4.4. Farm Restructuring in CEE



In CEE, the restructuring of farm enterprises—Soviet-style cooperatives and state farms—was triggered by the restitution process. Restitution was the main channel for the growth of the individual sector, shifting land resources from former cooperatives and state farms to new individual owners. As cooperative members regained control of their private land, some of them left to establish new individual farms, while others preferred to keep their resources in a corporate framework. The preference of some landowners for

corporate forms of organization opened a second restructuring channel. The former cooperatives reorganized into new private corporations, such as joint-stock societies, limited-liability companies, and partnerships, or possibly into new, sometimes smaller, cooperatives with updated charters. The third process that contributed to farm restructuring in CEE was privatization of state farms through open auction and sale mechanisms, i.e., through channels other than restitution to former owners. This process is without an analogue in CIS, where state farms are restructured essentially like collectives, by privatization to workers. State-farm privatization in CEE encompassed only the non-land assets and led to creation of new corporations or companies that operate on land leased from the state or from private sources. Depending on the structure of their investors, these new corporations can be classified as state-controlled (with minority private interests) or private (with majority private shareholders). The three farm-restructuring channels in CEE are illustrated in Figure 4.3.

**Table 4.4. Farm Structure in CEE (percent of land use in 1996-97)**

	Traditional forms		New corporate forms	Individual farms
	Pre-transition	1996-97	1996-97	1996-97
Czech Republic	99	45	32	23
Slovakia	95	75	20	5
Hungary	94	32	14	54
Estonia	94	0	37	63
Latvia	95	1	4	95
Poland	23	10	8	82
Slovenia	8	4	--	96
Romania	88	33	--	67
Bulgaria	87	48	--	52
Lithuania	91	33	--	67

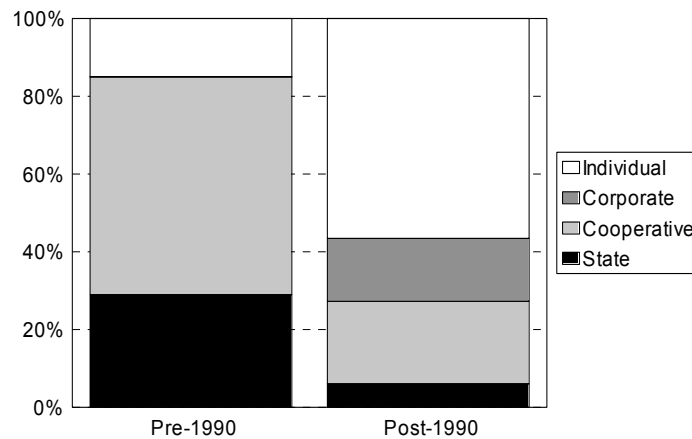
Source: *Agricultural Situation and Prospects in the Central and Eastern European Countries: Summary Report*, European Commission, Directorate General for Agriculture – DGIV, Working Document, June 1998.

Table 4.4 demonstrates the shift from traditional forms to new corporate forms in six CEE countries where this phenomenon is significant. The new corporate forms include joint-stock companies, limited-liability companies, partnerships, and other business entities created from former cooperatives and state farms. The traditional



forms are cooperatives and state-controlled corporations created from former state farms. In the pre-transition era, all land was divided between traditional farms and individual farms. The share of land controlled before 1990 by traditional farms (cooperatives and state farms) is shown in the pre-transition column in Table 4.4; the rest at that time was cultivated in individual farms (including household plots). For traditional organizational forms Table 4.4 shows the decrease in their share of land from pre-transition levels. New organizational forms began to emerge only during the transition, after 1990, and today the total land is divided between three groups of users: traditional farms, new corporate forms, and the individual sector. New corporate forms are prominent in the Czech Republic, Slovakia, Hungary, and Estonia, where they exist alongside the traditional forms. In Romania, Bulgaria, and Lithuania, on the other hand, farm restructuring produced mainly cooperatives with new charters and privatized state-controlled farms. The individual sector increased significantly in most CEE countries (except Slovakia, where it remains very small, and Poland and Slovenia, where it was very large already before 1990).

Fig. 4.5. Distribution of Farmland by Organizational Form in CEE



Prior to 1990, collective and state farms cultivated around 90% of agricultural land in the CEE countries (except Poland and Slovenia). After a decade of transition the share of large farms that succeeded

the traditional socialized farm is down to 40% of agricultural land (Figure 4.5). The decline in the share of land controlled by large farms has been accompanied by significant reorganization and restructuring of the sector. In addition to the significant increase in the amount of individually cultivated land, the process has led to virtual elimination of state farms, drastic reduction in the importance of cooperatives, and creation of a new category of private corporate farms (companies). The farms in all corporate organizational categories are now substantially smaller than the former cooperatives and state farms (see Table 4.5 and Figure 4.6 below).

Land restitution in CEE inevitably produced a group of non-farming landowners—people with established occupations and careers outside agriculture, who had no wish to become farmers. In certain respects, these non-farming landowners in CEE are analogous to pensioners in CIS: both groups are beneficiaries of the land distribution process, and both groups have no desire or no ability to farm their newly found resources. The non-farming landowners in both CEE and CIS provide a pool of land that can be leased to active producers, including individual and corporate farms. In some CEE countries (Estonia, Lithuania, Hungary), corporate farms (“legal bodies”) cannot own land, and they must lease their land resources from physical persons. These include cooperative members, company shareholders, and non-farming outsiders. The state is another source of leased land not only for privatized state farms but also for all corporations and even individual farmers. The right-hand panel in Figure 4.3 shows the flow of land through leasing transactions between farms of various organizational forms in CEE.

The transition from the initial inherited structure to a new structure is just the first stage in the overall process. The changes in farm structure continue as a dynamic adjustment of farm sizes through land transactions. These are mainly leasing transactions, as buying and selling of land is reported seldom. Individual recipients of restituted land who are not interested in farming may lease their allotments to corporations or other individuals. On the other hand, enterprising individuals may seek to increase their holdings by leasing surplus land from cooperatives and corporations (in countries where corporate land ownership is allowed). Land markets thus sustain transfer of land resources to more active and more efficient producers, leading to gradual optimization of the farm sector through restructuring (see Chapter 3).

## **Preference for Corporate Farms**

Experience indicates that in most cases the process of reform does not lead to a fully fragmented farming structure, contrary to initial expectations. This conclusion is valid both in CIS and in CEE, regardless of the difference in restitution and distribution strategies. The dismantling approach (see Table 4.1) has been implemented only in Albania, Romania, and Armenia. In these three countries, all collective farms were rapidly disbanded and divided into very small individual farms during 1991-92. Georgia is often mentioned as another country with a dismantling strategy, as Georgian agriculture today is practically an agriculture of individual smallholders. In fact, the large farms in Georgia have never been formally disbanded: they simply ceased to function during the civil war of 1992-94, in President Gamsakhurdia's time, but they still notionally control large land reserves, which unfortunately are almost completely unutilized. Poland and Slovenia are also two countries where the dominant individual sector is not an outcome of dismantling of large farms: small individual farms were the main organizational form in these countries long before the transition. In other countries, dismantling is a rare phenomenon. In Russia, among 21,000 farm enterprises that reorganized by January 1993, only 268 broke up completely into private farms (Brooks and Lerman 1994), and since then there have been practically no new additions to this group.

The new landowners are not particularly willing to leave the supportive umbrella of the collective structure and risk everything in independent farming. The overwhelming majority of farm workers in Russia, Ukraine, and Moldova prefer to keep their land and asset shares in the former collective, which in the meantime has re-registered as a corporate farm with a new market-sounding name. They waive their right of exit, at least for the time being, and pool their resources to create a corporate structure.

In Russia, a 1997 survey of residents in 49 reorganized enterprises in three Russian provinces showed that the land and asset shares were leased back to the large farm or invested in its equity capital by over 95% of shareholders (IFC 1997). In Ukraine, 90% of recipients of land shares decided not to cultivate their land entitlements individually and most of them leased the shares back to the local farm enterprise (October 2000 national data). Even in Moldova,

where the reforms have sharply accelerated since 1998 and practically all “paper shares” have been converted into physically demarcated and titled land plots (see Chapter 3), about 700,000 out of more than one million beneficiaries of the privatization process decided not to switch to independent farming (results of the 2000 World Bank survey). These shareholders entrusted their shares to “leaders,” i.e., enterprising persons who are willing to manage the land and assets of a whole group of individuals.

#### Box 4.2. Disposition of Land by Households in Moldova

In Moldova, contrary to other CIS countries, practically all the land represented by land shares has been allocated in the form of physical plots to the shareholders. According to a large rural survey conducted by the World Bank in the autumn of 2000, 95% of respondents have received land share entitlements averaging 3 hectares per households, and these households have been physically allocated 3 hectares of land against their land shares. In addition to complete physical distribution of land entitlements, landowners have also received legal title documents covering their land.

**Table B4.2. Disposition of Land by Households in Moldova:  
Who are the Users of Household Land?**

	Percent of households	Other users of household land		
		Large farms	Private farmers	Others
Most land cultivated by household	33%			
Land partly used by others	67%	81% of hh 86% of land	17% of hh 11% of land	2% of hh 3% of land
Leased	62%			
Invested in equity capital	5%			

Source: Rural household survey, autumn 2000.

Although the average household owns 3 hectares of land, it uses only 1.2 hectares. The remaining 1.8 hectares is generally leased out to the local large farm. Rural households thus cultivate themselves only 40% of the land they own, and the remaining 60% is cultivated by operators. In most cases the operator is the local large farm (or one of the local large farms, if several have formed), which leases the land shares from the households (investment of land shares in the large farm's equity capital is reported only in a small proportion of cases). Leasing to private individuals is very rare, and absolutely no selling of land shares has been reported in the survey (Table B4.2).

A similar pattern is observed in CEE, although on the whole the willingness to try independent farming is higher in these countries than in most of CIS. The preference for corporate farming in CEE is

illustrated clearly by Figure 4.1 and Table 4.4 in the previous section, which show that nearly 50% of agricultural land in these countries is cultivated by various non-individual corporate structures (this average excludes Poland and Slovenia—the two countries that never really collectivized on a mass scale). In Romania, where land was rapidly distributed to individuals in the early 1990s, fully 48% of land was re-consolidated in various farmers' associations (Gavrilescu 1993; subsequently some of this land was withdrawn for individual farming, as is clear from Figure 4.1). Half the recipients of land through restitution in Bulgaria and a significant proportion in Hungary also chose to leave their land in a cooperative or entrust it to a new corporate farm (Trendafilov and Ivanov-Gidikova 1993). Surveys in the Czech and Slovak republics consistently reveal lack of enthusiasm for private farming.

The preference for corporate farms in CIS and CEE is a reflection of two different restructuring strategies. What we are witnessing in Russia and to a large extent also in Ukraine is a manifestation of the “stay as is” approach (see Table 4.1), often encouraged—implicitly or even explicitly—by the authorities. Large farms undergo external reorganization by re-registering and distributing land and asset shares to their members; the members simply turn around and “deposit” their shares in the former collective farm, which is now registered as a corporate farm under a new name. This is the easiest solution, because it does not require applying for physical allocation of land and assets. The processes in Romania and to a certain extent in Bulgaria represent “re-consolidation” of individual farms—creation of new corporate entities after dismantling: the large farms broke up, land and assets were physically divided among individuals, and these eventually decided to form new cooperatives or associations. The process in Moldova occupies an intermediate position between “stay as is” and “reconfigure”. Since individuals are actually allocated land and assets in physical form, it is easier for them to leave than in Russia and Ukraine. On the other hand, the old farm enterprise is not dismantled (it only changes its legal form and name), and the individual shareholders still have two options: stay with the former farm manager or shifts their holdings to a new “leader.” Whatever the specific process, the new landowners—most of them members of former collective farms—appear to be voting “with their feet” for perpetuation of the cooperative or corporate framework, at least in the immediate future.

**Box 4.3. How to Dispose of Land Shares: Leasing or Investing?**

Two different courses of action are open to shareowners in CIS who prefer to entrust their resources to a corporate farm: leasing or investing in the farm's equity capital. Shareowners who invest their land in the farm's equity capital give up the ownership rights to a physical plot of land: their plot becomes the property of the corporation. Shareowners who lease their land to the farm enterprise in principle retain their ownership of the underlying plots of land, including the right of ultimate withdrawal. As long as the overall situation in agriculture remains unsettled and the new landowners have no experience with managing their assets, it is of course preferable not to commit their land irrevocably as an investment in the equity capital of a corporation. By leasing, the landowners retain additional degrees of freedom in their future decision-making. The choice between leasing and investing depends to a large extent on the information available to the landowners at the time they join the corporate farm. In Ukraine, leasing is the predominant mode of land-share disposition among individuals participating in farm restructuring projects managed by international donors (IFC, Ronco/USAID, Cargil/UK Know-How Fund). In international-donor projects, 70%-80% of respondents report that they lease their shares to the corporate farm. Among spontaneously reorganizing farms, on the other hand, 60% of land shares is invested in the farm's equity capital and only 20% is leased to the corporate farm. The higher prominence of leasing in the international-donor projects is the result of well thought-out legal strategies and intensive information campaigns, none of which are available to farms that reorganize spontaneously without international assistance.

The observed preference for corporate forms of farm organization has implications for expected changes in performance. Theoretically, it is the individual farms that are expected to achieve highest levels of productivity and efficiency in most agricultural circumstances due to personal involvement and direct accountability of family members. Corporate farms are inherently disadvantaged by various monitoring, transaction, and agency costs, which are unnecessary in family farms and are unavoidable in corporate structures with hired labor and professional managers. To offset these added costs, corporate farms have to achieve substantially greater reductions in operating costs (see, e.g., Allen and Lueck (2002)). Only corporate farms that undergo significant internal restructuring of operations and management are theoretically expected to be competitive with individual farms by measures of productivity and efficiency. Streamlining of farm sizes is one of the measures that may help large corporate farms become more efficient.

## **Downsizing of Farm Enterprises**

We have noted on several occasions that the socialized farms were substantially larger than farms in market economies (see Chapter 2). Downsizing of farms in transition countries is regarded as a desirable objective, because it is expected to move the former socialist farm enterprises in the direction of the generally smaller and more manageable farming units that prevail in market economies.

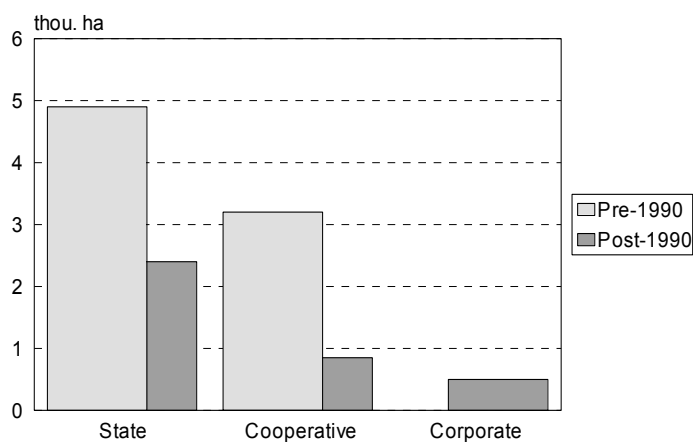
Corporate farms in CEE and CIS tend to reorganize as relatively large units. Although large non-individual farms continue to be highly prominent in many transition economies, a definite downsizing is observed since 1990. The reduction in size is a reflection of two main processes. On the one hand, the large collectives, cooperatives, and state farms have been losing land through restitution in CEE and through distribution to household plots and individual farms in CIS. This is a continuing process that gradually strengthens the individual sector without drastic dismantling of the large former collectives. On the other hand, reconfiguration of individual holdings or internal restructuring of large farms in an attempt to achieve higher efficiency and better market orientation have often led to division of the original enterprise into two or three autonomous units, which are naturally smaller parts of the parent farm. Thus, in Russia, the number of farm enterprises increased from 25.9 thousand in 1991 to 27.3 thousand in 2000. A similar phenomenon is reported in Ukraine and in Hungary.

As a result of these processes, the new corporate farms in CEE are substantially smaller on average than the traditional cooperatives and state farms. A typical corporate farm in CEE today is between 500 hectares and 1,000 hectares, compared with 2,000-4,000 hectares for a typical collective or state farms before 1990 (Table 4.5). There has also been a significant downsizing of cooperatives and especially state farms: cooperatives on average went down from about 3,000 hectares to 1,000 hectares, while the remaining state farms shrank from 5,000 hectares to 2,000-3,000 hectares (Figure 4.6).

**Table 4.5. Downsizing of Corporate Farms in CEE (average size in hectares)**

	Cooperatives		State farms		New corporate forms
	Pre-1990	1997-98	Pre-1990	1997-98	1997-98
Bulgaria	4,000	637	1,615	735	—
Czech Rep.	2,578	1,447	9,443	521	690
Slovakia	2,667	1,509	5,186	3,056	1,191
Hungary	4,179	833	7,138	7,779	204
Poland	335	222	3,140	620	333
Romania	2,374	451	5,001	3,657	—
Estonia	4,060	—	4,206	—	449
Latvia	5,980	—	6,532	340	309
Lithuania	2,380	—	1,880	—	310
Slovenia	—	—	470	371	—

Source: Lithuania based on unpublished OECD data. All other countries from *Agricultural Situation and Prospects in the Central and Eastern European Countries: Summary Report*, European Commission, Directorate-General for Agriculture (DG VI), Brussels, 1998. Unfortunately there has been no sequel to this publication and the data for 1997-98 are the latest systematic and comparable numbers that are currently available from EC or other sources.

**Fig. 4.6. Downsizing of Large Farms in CEE**



A similar, though less pronounced, tendency is observed in CIS. The average collective in Russia and Ukraine has shrunk by about 30% since 1990 (Table 4.6). In Moldova, a larger change is observed due to the acceleration of farm restructuring since 1998. Among the first 72 farms participating in the USAID-directed farm restructuring project in Moldova, the proportion of farms larger than 1,000 ha decreased from 70% to 30%, while the proportion of farms under 500 ha increased from 15% to 45% (Mitchell 1998). Farm reorganization results in three Russian provinces show that the average farm size declined from 3,600 ha and 160 workers before restructuring to 1,900 ha and 85 workers after restructuring, while the number of registered entities increased from 170 to 310 (IFC 1997).

**Table 4.6. Downsizing of Large Farm Enterprises in CIS (average farm size in hectares)**

	1990	2000	Change in size
Russia	8,100	5,400	-33%
Ukraine	2,900	2,100	-28%
Moldova	2,200	950	-57%

Source: Calculated from country statistical yearbooks.

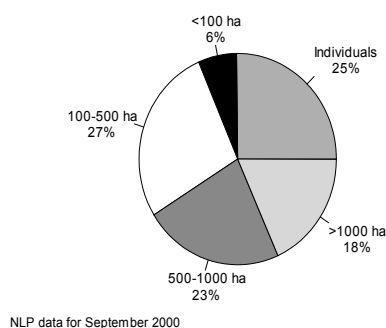
Despite the observed downsizing, however, the corporate farms in CEE and CIS are still large by the standards of market economy (compare with Tables 3.5, 3.6 in Chapter 3). Moreover, the majority of farm enterprises chose to reorganize as whole entities, probably with some internal restructuring into semi-autonomous subdivisions, but without splitting into many fully autonomous smaller units. The available data make it impossible to determine if the downsizing and splitting of large farms is a continuing dynamic phenomenon, or if it was a one-time adjustment. The evidence of farm sizes in market economies definitely suggests that further downsizing of large farm enterprises in CEE and CIS countries is desirable.

#### Box 4.4. Changes of Farm Size in Moldova: Status as of Autumn 2000

In the second half of 2000, the total number of farms of various corporate forms in Moldova was about 1,200, not much different from the number of collective and state farms before the reform. Yet these farms control less than 70% of the land that they controlled previously, which implies that the process of land reform has produced a noticeable downsizing of the corporate (“leader-managed”) farms in Moldova. Farms larger than 1,000 ha currently manage less than 20% of agricultural land, whereas 35% of land has shifted to a new category of medium-sized corporate farms with up to 500 ha (Figure 4.7). The recent land reform efforts in Moldova have smoothed out the sharply dual farm structure that characterized socialist agriculture. Contrary to the Soviet era, when the control of agricultural land was polarized between very small household plots and very large collectives with more than 1,000 ha, there is now a mix of organizational forms in the middle range of farm sizes between 100 and 1,000 ha that did not exist previously.

Nevertheless, some of the joint-stock societies and agricultural cooperatives among the new organizational forms are large farms with several hundred members. The land holdings of these farms can be estimated at more than 1,000 ha, and they are formed by 500-600 shareholders, each contributing a land share of 1.5-2.0 ha. Limited-liability companies and farmers associations appear to be much smaller, with 100-200 members on average, and thus constitute a truly new intermediate form between the traditional large-scale farms and the small peasant farms. The situation is highly dynamic, with rapid shifts in size and organizational structure across the entire sector.

Fig. 4.7. Moldova: Land Managed by Individuals and Leaders



## **The Effect on the Duality of Farm Structure**

While the very large socialist farms in both CEE and CIS have become smaller, the average size of individual holdings, be it household plots or other family farms, has increased substantially across the region. Individual farms in CEE increased through restitution from about 0.5 hectare to 5–20 hectares on average (Table 4.5). Household plots in CIS practically doubled in size to about 1 hectare since 1991 through government programs that distributed land to the rural population, and a new category of peasant farms with sizes of 10–40 ha or even larger has emerged. The individual farming sectors in CEE and CIS are undergoing a process of polarization. The emergence of peasant farms in CIS has created a group of medium-sized individual farms that are quite large compared with the traditional household plots. There is some evidence that the individual farms in CEE are gradually differentiating into two distinct groups: very small units cultivated by part-time farmers (successors of the subsistence-oriented household plots from the pre-1990 era) and larger commercially oriented full-time individual farms, which may reach substantial sizes and are in fact responsible for the observed increase of the average farm size in the individual sector in CEE. As a result of the opposing processes that reduce the size of collectives and augment the individual holdings, while creating a new intermediate layer of larger individual farms, the agriculture in transition economies may gradually lose the sharply dual structure that traditionally characterized the farms in the socialist era. This in itself will be a change in the direction of greater compatibility with farm structures observed in market economies.

To examine the extent of the adjustment in farm structures during transition, it is useful to compare the farm size distribution in CIS and CEE with that observed in market economies. In Figure 4.6, panel (a) shows the land concentration curves for farms in the US, Canada, and the 15 countries of the European Union (EU15). Despite large differences in average farm sizes, the three distribution curves are virtually identical, and the pattern of land concentration in panel (a) may therefore be accepted as representative of market economies. Land concentration is presented by a standard “Lorenz inequality curve” in which the vertical axis gives the cumulative percentage of land in farms and the horizontal axis gives the

cumulative percentage of farms of all types, ranked by size. The straight diagonal line represents the situation of “ideal equality,” when land is uniformly distributed over all farms so that 50% of farms, say, account for 50% of land. The downward-bulging curves reflect the actual farm structure in market economies, with land distributed nonuniformly over small and large farms. From the curves in panel (a), the bottom 50% of farms in market economies (the smallest farms by size) account for about 10% of land, while the top 10% of farms in market economies (the largest farms by size) account for 40% of land.

The CEE land concentration curves are based on available official statistical data on farm size distribution, which are unfortunately weak. In constructing these curves, we always tried to estimate the number of farming units that control all agricultural land in each country. In this way, the distribution curves include household plots, semi-commercial and commercial family farms, and the larger corporate structures. The land concentration curves are based on the actual use of land, and are not directly related to land ownership. We should stress that the land concentration curves define “small” and “large” in strictly relative, and not absolute, terms; nor do they provide an indication of average farm sizes in different countries. The absolute size of farms varies across countries depending on the available land resources and the number of beneficiaries (i.e., the rural population). Land concentration curves abstract from these factors and only present the relative pattern of distribution of farm sizes.

Other panels in Figure 4.6 present land concentration curves for some CIS and CEE countries, which were selected to demonstrate the three main farm structure patterns observed in the transition economies. The first two cases – Russia as a representative of the CIS and Bulgaria from CEE—sharply deviate from the market pattern. Here 90% of farming units—the household plots and the small family farms—control less than 10% of land, and the top 10% of farming units—the largest collective and corporate farms (and in Bulgaria also relatively large individual farms)—control about 90% of land. This pattern is a manifestation of a sharply dual farm structure, with millions or hundreds of thousands of very small farms at the bottom end of the size scale and thousands or merely hundreds of very large farms at the top end.

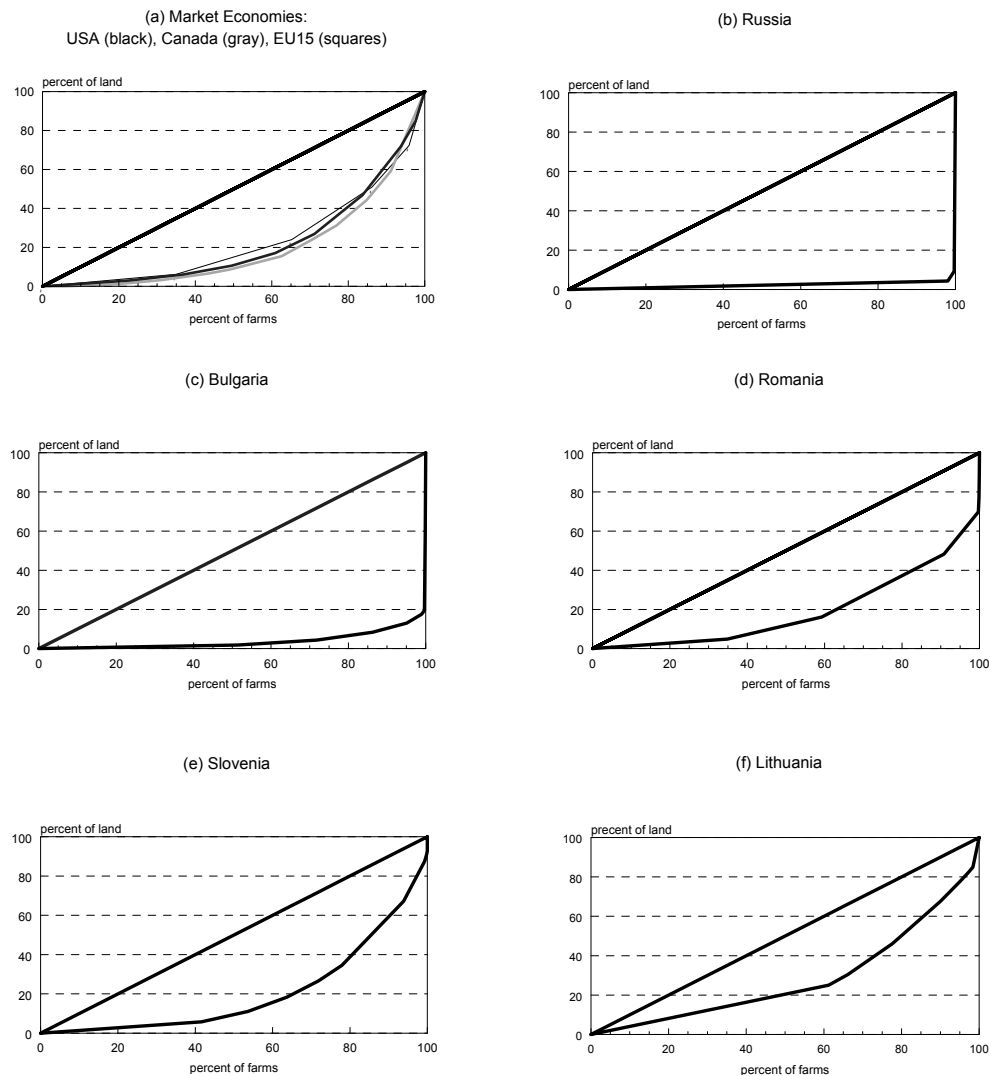


Figure 4.8. Concentration of farmland in market economies (panel a) and in selected countries of CIS and CEE (panels b-f), 1997-99. Source: USDA for US; Statistics Canada for Canada; Eurostat for EU15; official country statistics for Russia and CEE.

The dual pattern is observed for most CIS countries (with the exception of Armenia, Georgia, and possibly Moldova) and four of the 11 CEE countries: Bulgaria, Slovakia, the Czech Republic, and Hungary. The sharply dual farm structure was a dominant feature of

the Soviet model of agriculture in the pre-transition era, with an even more dramatic concentration of land than what we observe today: 98% of Soviet farms (the millions of small household plots in the individual sector) controlled less than 2% of land, while 2% of the largest farm enterprises controlled 98% of land. The changes in farm structures discussed in previous paragraphs have measurably shifted the land concentration curves for Russia, Ukraine, and possibly some other countries as well, but they have been insufficient so far to produce a significant change in the sharply dual structure of traditional socialist agriculture.

Romania and Estonia in CEE are representatives of the second group of land concentration patterns. These two countries, starting with a sharply dual Soviet pattern, have developed in the process of transition farm structures that are close to the market pattern of land concentration. Slovenia and Poland also display “normal” land concentration curves, although this probably is not a result of transition-related adjustment: the farm structure in these countries has always been characterized by predominance of small and medium-size farms and has not changed much since 1990. Latvia and Lithuania, on the other hand, seem to have overshot in the process of adjustment, and their farm structures today are over-fragmented compared with market economies. In CIS, Armenia and Georgia fall in the same category of countries with over-fragmented farm structure.

Table 4.7 summarizes the differences in farm structures across CIS and CEE in terms of our land concentration measure – the percentage of agricultural land controlled by the top 10% of largest farms in each country. If we accept the market pattern in panel (a) of Figure 4.8 as an efficiency-optimizing equilibrium farm structure, then countries with sharply dual farm structures – most CIS countries, Bulgaria, Hungary, Czech Republic, Slovakia – can be expected to undergo further downsizing of large farm enterprises and simultaneous consolidation of the very small farming units. Countries with over-fragmented farm structure—Armenia, Georgia, Latvia, Lithuania—can be expected to go through a phase of farm consolidation, as very small farms adjust their holdings to operationally more efficient sizes and a certain proportion of new large farms are re-created under suitable conditions. In countries in the “normal” group the process of adjustment will probably continue as well, although less dramatically. These countries will probably

gradually move toward stronger presence of mid-sized farms through consolidation of the smallest holdings and further fragmentation of the large successors of state farms and cooperatives. To enable these processes, restrictions on land transactions—whether buying or leasing—have to be eliminated and functioning land markets have to be allowed to develop.

**Table 4.7. Concentration of Land: Percentage of Agricultural Land in Top 10% of Largest Farms**

Country	Percentage of farm land	Characterization of farm structure
Armenia	~10	over-fragmented
Georgia	~10	
Latvia	20	
Lithuania	30	
<b>USA</b>	<b>35</b>	<b>market benchmark</b>
<b>Canada</b>	<b>38</b>	
<b>EU15</b>	<b>40</b>	
Slovenia	40	“normal”
Poland	40	
Romania	50	
Estonia	60	
Czech Republic	82	sharply dual
Bulgaria	90	
Hungary	92	
Slovakia	97	
Russia	95	
Ukraine	90	
Kazakhstan	99	

Source: see Figure 4.8.

### **What Has Changed in Restructured Corporate Farms: Evidence from CIS**

Re-registration of the collective farm in a new legal form accompanied by transfer of ownership to individuals (whether in the form of physical assets or paper certificates of entitlement) constitutes what we call external restructuring. The formal outcome of external restructuring is a corporatized shareholder structure that can be broadly characterized as a corporate farm (to distinguish it from an individual or a family farm). We have previously noted that practically all former collective and state farms in transition countries

have reorganized in various corporate forms. In CIS, the second stage of external restructuring—the distribution of paper entitlements to land and assets—is also very advanced. In Russia and Moldova, the beneficiaries, including active members, local pensioners, and employees of the social sphere, have received their share entitlements in virtually all former collectives, and Ukraine does not lag very far behind (Table 4.8).

Policy makers across the region proudly regard the new corporate farms as private agriculture. Formally, this is perfectly correct. But what about substance? How are these farms organized internally? How is their operation different from that of collectives and cooperatives? Formal external restructuring, including corporatization and distribution of land and asset shares, is intended to be followed by deeper internal restructuring, as individual shareholders voluntarily regroup in new production units with their endowments. The next stage of internal restructuring should encompass production organization, management, and operations, hopefully in line with market-oriented principles. As part of internal restructuring, the direct responsibility for management functions should shift from central collective management to the new groups and subdivisions created through regrouping and reconfiguration.

**Table 4.8. Distribution of Land and Asset Shares in Former Collectives (percent of farms surveyed)**

	Russia	Ukraine	Moldova
Land shares assigned	90	47	99
Asset shares assigned	90	74	80

Source: World Bank surveys 1994-98.

In Chapter 2 we identified the characteristic features of the collective form of organization, which were among the factors responsible for the chronic inefficiency of socialist agriculture, and indicated how they differed from the attributes of farms in market economies. Table 2.5 listed the basic operating decisions of farms in the two economic systems. That table can be used as a guide for evaluating the substantive organizational changes during the transition from collective to corporate agriculture.



### **Internal Organization: Persistence of Centralized Operations**

On the surface, we observe a diversity of farm structures, which is reflected in the new names under which restructured farms are registering: joint-stock societies, limited-liability companies, partnerships, agricultural cooperatives, and of course collective enterprises. But the new market-sounding names often hide an internal structure that is basically unchanged since the Soviet times. Survey data for CIS (Russia, Ukraine, and Moldova) reveal persistence of traditional management and organization features. The restructured farms retain a strong central management apparatus, and the functional subdivisions have only token autonomy beyond general production planning. The functions of central management in the new organization span the whole gamut of traditional management functions in a collective farm, including production planning and management, provision of farm services, input purchasing and marketing, relations with banks, and labor management (Table 4.9). Although some of these functions are consistent with the role of central management as a kind of a service cooperative, other important functions, such as production management, labor management, and relations with banks, are clearly incompatible with the aim of establishing independently functioning market-oriented subdivisions. In a market oriented organization, these functions should be the responsibility of the operating subdivisions, not central management.

The autonomy of the new subdivisions in restructured farms is thus highly conditional: it is subject to pervasive supervision and intervention by central farm management in all spheres of activity. Even farms restructured as part of international donor projects (USAID, IFC, UK Know-How Fund) in CIS often strikingly resemble their collective predecessors (Lerman and Csaki 2000). Hopefully, this situation is not frozen, and sector dynamics will also induce further changes in farm organization. It is revealing that in Moldova, where the reform process in agriculture is now more radical than in Russia and Ukraine, the subdivisions enjoy greater autonomy in various areas, including labor relations, finances, and own administration (Table 4.9). These changes have occurred only since 1997-98, when Moldova entered a new phase of land reform and farm restructuring.

**Table 4.9. Responsibilities of Central Management and Subdivisions  
(percent of farm managers surveyed)**

	Ukraine	Moldova
Farms retain central management	96	72
<i>Central management functions</i>		
Production planning/management	86	60
Coordination of subdivisions	41	62
Provision of farm services	29	57
Provision of professional and administrative services	NA	60
Input purchasing and product sales	10	53
Relations with banks	27	47
Managing labor relations	26	46
<i>Subdivision functions</i>		
Production planning/management	75	76
Input purchasing and product sales	5	35
Hiring and firing	7	47
Own administrative staff	5	32
Own bank account	0	10

Source: World Bank surveys 1996-98.

However, even in Moldova after 1998, three-quarters of corporate farms operate as a single unit and the rest are generally organized as autonomous units under central management. In half the corporate farms, decisions are made by a management group; all decisions are made by the manager alone in 40% of the farms. The role of the highest democratic governance body—the general assembly of member-workers and shareholders—is minor. This is reflected in the low frequency with which the general assembly is convened: on average twice a year. It is difficult to decide on the basis of these data if the corporate farms continue the former tradition of collective structures or emulate the democratic group-management governance of Western organizations. A factor that appears to support the former interpretation is the size of these corporate farms, which remains much larger than the typical size of Western farms that are managed as a single unit.

A basic concept in internal restructuring of large farm enterprises is the exercise of free will by shareholders when forming new functional groupings with their land and asset shares. This principle is strictly observed in the international donor projects in Russia,

Ukraine, and Moldova, where it is operationalized through transparent auctions. Outside these experimental projects, however, the principles of voluntary regrouping of shareholders are less apparent. The new subdivisions in restructuring farm enterprises are typically not formed through voluntary radical regrouping of the shareholders: the evidence from surveys suggests that the new subdivisions are simply mirror reflections of the former brigades that functioned in the collective farm prior to reorganization. Ukrainian survey results indicate that in over 60% of farm enterprises the new units were formed simply on the basis of the old production subdivisions, and in over 80% of cases the new units were allocated the land and assets that they had on the old balance sheet (Lerman and Csaki 1997). The individual shareholders did not exercise their freedom of choice and freedom of association when creating the new units, and the asset base of the new units was not formed by shareholders voluntarily pooling their land and asset shares. Shareholders were simply “assigned” to their old organizational subdivisions.

**Table 4.10. Shareholders’ Assessment of Changes After Reorganization of Farm Enterprise (percent of respondents)**

	Ukraine			Moldova		
	Worse	Better	Unchanged	Worse	Better	Unchanged
General situation in farm enterprise	29	11	41	40	12	48
Relations within collective	15	14	52	31	11	58
Motivation and interest in work	18	14	51	28	19	53
<b>Average score</b>	<b>21</b>	<b>13</b>	<b>48</b>	<b>33</b>	<b>14</b>	<b>58</b>

Source: World Bank surveys 1996-98.

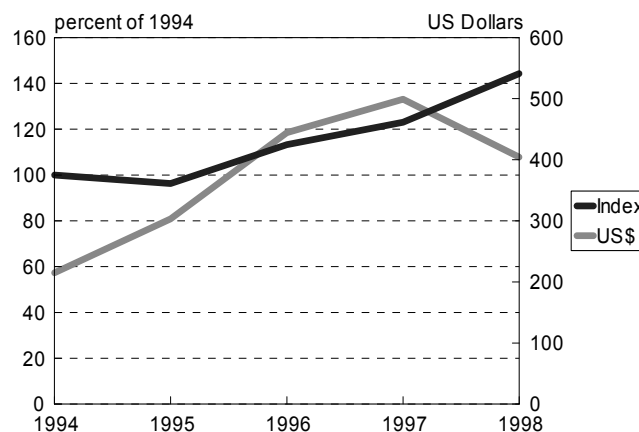
It is not surprising that in this situation members or shareholders of farm enterprises generally fail to discern any significant changes in the way their farms are operated and managed. According to recent surveys in Ukraine and Russia (Lerman and Csaki 1997; IFC 1997), about one-half of individual shareholders report that no real change has so far taken place in their farm enterprises compared to the period before the reforms began (Table 4.10). The majority of member-workers in large-scale farms in CIS thus report that nothing

has really changed in their farm enterprise as a result of restructuring. This assessment of reorganization outcomes by member-employees of farm enterprises strengthens the feeling that so far changes in large farms have been largely superficial, and have not touched on the systemic flaws inherent in the socialist system of agriculture.

### Financial Discipline: Persistence of Soft Budget Constraints

Cost-based accounting practices and soft-budget constraints were among the causes of farm inefficiency. They shielded the inefficient and unsuccessful farms in socialist economies from the ultimate test of the market: punishment by bankruptcy. Transition to hard budget constraints is one of the major components in the transformation to market-oriented agriculture.

Fig. 4.9. Real Debt per Farm in CIS-5:  
Inflation-Adjusted Index and US Dollars



Although we do not have direct survey data on the hardness of budget constraints and the associated changes in financial discipline, indirect evidence has been provided by a 1999 World Bank study of farm debt in five CIS countries—Russia, Ukraine, Moldova, Belarus, and Kazakhstan. The study based on consolidated financial reports of farm enterprises (i.e., large corporate farms) reveals a grim picture of the financial situation of the large-farm sector in CIS in recent years.

The real debt per farm increased sharply between 1994 and 1998 (whether measured in inflation-adjusted domestic currencies or in US dollars; see Figure 4.9, which presents the per-farm debt averaged over the five CIS countries). Standard ratios of debt repayment capacity deteriorated dramatically in the same period (Table 4.13). Yet, farm operations do not generate net income that can be used to repay debt. The proportion of farms reporting losses has increased markedly since 1994, and well over 50% of farm enterprises are deeply unprofitable in recent years. Sales revenue is entirely absorbed by wages and other production costs, and farms are losing on average almost 40% on each ruble of sales revenue.

**Table 4.13. Debt Repayment Capacity of Corporate Farms: Average Financial Ratios for CIS-4\***

Financial ratio	1990	1994	1998
Debt to sales	0.16	0.49	1.20
Debt to current assets	0.28	0.60	0.89
Debt to liquid current assets	0.58	2.27	4.27

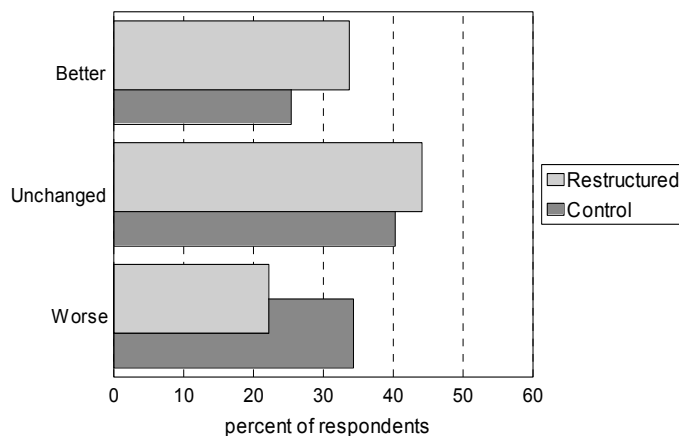
\*Russia, Ukraine, Moldova, Belarus.

The fact that persistently unprofitable farms are allowed to continue existing and accumulating debt is a clear indication that agriculture in CIS continues to operate under soft budget constraints (see Chapter 2). The large farms have not changed their financial practices and continue to expect write-offs and financial support from central government and regional authorities. The persistence of soft budget constraints is generally a reflection of the prevailing attitude in central and regional government, which after a decade of transition continues to view the large corporate farms as a backbone of agriculture. This is certainly so in Russia, Ukraine, Belarus, Kazakhstan, and to some extent even in rapidly changing Moldova. As a result, large farms maintain strong political links with regional authorities, which continue to support them in many ways. This naturally affects how individuals perceive the large farms. Large corporate farms continue to be perceived as a permanent feature in a generally uncertain environment, which in part explains the individual preference for remaining in a corporate framework instead of establishing an independent farm and the tendency to lease land to large corporate farms instead of private farmers.

### Labor Relations: Some Evidence of Positive Change

No radical changes in labor relations are observed in restructured farms. Most managers report that their farm enterprise continues to be committed to a life-time employment policy for its members and do not acknowledge disguised unemployment on their farm (Lerman and Csaki 1997). Yet there is evidence of employee departures in more than half the reorganized enterprises in the Ukrainian survey (Lerman and Csaki 1997), and the percentage of Russian farm employees concerned about the possibility of losing their job in reorganized enterprises is higher than in non-reorganized farms (IFC 1997). Thus, despite the declared commitment of farm managers to the old socialist ideology of labor, reorganized farms appear to be more sensitive to dangers of labor redundancy.

Fig. 4.10. Change in Behavioral Variables:  
Ave score for drinking, pilfering, discipline, conscientiousness



Source: IFC Monitoring Team, Moscow, Feb. 1998.

However limited, restructuring has produced a definite favorable impact on labor relations and workers' behavior. In Russia, some 1,500 member-employees of farm enterprises were asked to assess the changes that took place in the last two years in labor discipline, on-the-job drinking, pilfering, and conscientious use of farm resources. The survey was conducted in two provinces in farms of two distinct categories: farm enterprises restructured according to the

Nizhnii Novgorod model and other “unrestructured” farms. The responses were categorized into three standard levels of “better,” “unchanged,” and “worse.” The frequency of respondents who gave the assessment “worse” by all four variables was consistently higher in unrestructured farms, and the frequency of those who gave the assessment “better” was consistently higher in the restructured farms. The average frequency score of all four behavioral variables is shown in Figure 4.10. In restructured farms, 34% of respondents gave the assessment “better,” compared to 25% in unrestructured farms. On the other hand, only 21% of respondents in restructured farms gave the assessment “worse,” compared to 34% in unrestructured farms. In similar surveys of reorganized and non-reorganized farm enterprises in Ukraine and Belarus (unfortunately based on much smaller samples), managers of reorganized farms gave a much more positive assessment of the behavioral patterns of their workers than managers of non-reorganized farms. Significant deterioration of basic behavioral variables of farm workers is reported much more frequently by managers of non-reorganized farms than by managers of restructured farms in both countries (Table 4.11).

**Table 4.11. Evaluation of Workers' Behavior by Managers of Reorganized and Non-Reorganized Farms in Ukraine and Belarus (percentage of managers in each category)**

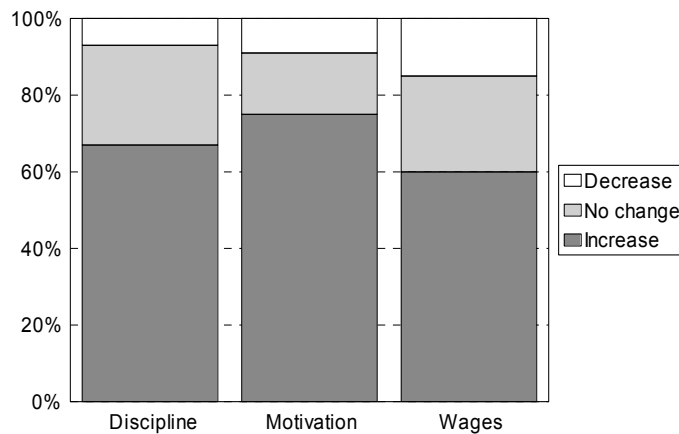
	Ukraine		Belarus	
	Reorganized farms	Non-reorganized farms	Reorganized farms	Non-reorganized farms
Decline in workers satisfaction	24	67	29	58
Decline in workers motivation	11	44	27	42
Decline in workers discipline	NA	NA	23	48
Increase in incidence of theft	44	80	NA	NA

Source: World Bank surveys 1998-99.

A survey carried out in Moldova in the autumn of 2000 focused only on reorganized farms, where both managers and employees were asked to characterize the changes in workers' behavior after reorganization. Over 60% of respondents in corporate farms gave a

positive evaluation of labor-related variables: work discipline, motivation and interest in the results of labor, and even wages were all judged to have increased since reorganization (Figure 4.11). Most of the remaining respondents reported no change, and fewer than 10% gave a negative evaluation of labor relations, reporting a decrease in these variables.

Fig. 4.11. Moldova: Changes in Labor-Related Variables After Reorganization of Corporate Farms



### Changes in Perceived Farm Objectives

Under the former socialist system, farms were expected to produce in accordance with central plans and targets. Considerations of cost minimization or profit maximization were of secondary importance compared with the goal of maximizing production to meet the plan. Surveys in Moldova and Belarus have explored the issue of changes in goals and objectives as perceived by managers of corporate farms.

In Moldova, the farm management strategy as reflected in the perceived goals has changed dramatically since the beginning of reforms (Table 4.12). The emphasis has clearly shifted from fulfilling production plans (which was the main pre-reform goal for 80% of farm managers) to maximizing profits (the main goal at present for 60% of managers). However, the traditional production orientation dies hard, and in the absence of central production plans and targets,



about 20% of respondents still identify maximizing production volume as the main goal.

**Table 4.12. Farm Objectives as Perceived by Farm Managers: Pre-Reform and At Present**

	Moldova		Belarus	
	Before	At present	Before	At present
Fulfill production plan	81	1	50	28
Maximize production volume	12	23	30	32
Maximize profits	3	59	37	60
Ensure full employment	1	3	8	5
Supply local population with food	1	8	13	14

Source: World Bank surveys 1998-99.

The perceived farm objectives in Belarus have generally shifted in the same direction, although the magnitude of the change is smaller than in Moldova. Despite the generally inert reform environment in Belarus, profit maximization is now clearly the most important farm objective. Fulfilling production plans and maximizing production volumes is less important than before the reforms, but it is still quite prominent among farm managers, given that state orders and central controls remain quite stringent in this country.

It is interesting to note the persistent attitude toward social objectives in both countries. Maintaining full employment and ensuring food security were not consciously regarded as very important objectives before reforms, nor are they regarded as very important today.

### **Little Real Change in CIS, More Change in CEE**

We have presented some evidence of beneficial changes in reorganizing farms that affect labor relations and the perception of farm objectives. These changes are induced by the very novelty of market-oriented attitudes fueling the process of reorganization. They are still not quantifiable, but they will probably lead to positive quantitative changes in future performance. Yet these changes are very limited, and the general picture in Russia and Ukraine, which represent most of the agricultural land and rural population in CIS, is

that very little has changed in the organization and operation of farm enterprises in the process of restructuring. These are clear symptoms of the “stay as is” approach, which does not go far beyond formal re-registration and is accordingly referred to in CIS as “changing the sign on the door” (*smena vyveski* in Russian).

Yet not all farm restructuring initiatives in CIS are stagnating. The farm restructuring program in Turkmenistan initially looked like an extreme case of “changing the sign” approach. All large-scale farms were summarily “reorganized” by a presidential decree of June 1995, which changed their name from *kolkhoz* (collective farm) to *daikhan berlesbik* (peasant association). However, further presidential decrees in 1996-97 began to encourage internal restructuring of the large-scale farms through “intrafarm leasing” of land and assets by families or small groups of workers (similarly to what is often observed in Chinese state farms—as distinct from the Chinese collectives, which broke up into household plots back in the 1980s). The former management group continues to exist as a provider of support and control services to the leaseholders, so that Turkmenistan is developing from a “stay as is” situation toward an associative structure in which individual producers are supported by a central service shell. Unfortunately, the almost complete absence of a functioning market environment in Turkmenistan is a serious obstacle to any meaningful change in the outward-directed activities of the leaseholders: they remain bound by fixed-price state orders and the traditional “bear hug” of interlinked state credits and centralized input deliveries.

Interesting changes of farm organization are emerging in Moldova and Azerbaijan. After a long period of indecision and political debate, these countries began in 1998 physical distribution of land and assets in kind, instead of paper shares. In the general typology of Table 4.1, this change radically facilitated the reconfiguration of production resources by individual recipients, and large farms are beginning to break up into independent multi-family units that occupy an intermediate position between individual farms and former collectives.

In CEE, contrary to CIS, farm restructuring has definitely progressed beyond a mere “changing of the sign on the door”. Many large-scale farms actually reorganized into several smaller functionally specialized units, built around the land and asset shares of their member-owners. The shareholders underwent fairly radical voluntary

regrouping in the process of downsizing of the original farms. A degree of separation between ownership and management has been achieved in these new structures, which no longer guarantee employment to their shareholders. The emerging structures are similar to the associative organization described above. The new large farms in the CEE countries appear to be moving away from the traditional syndrome of the “labor-managed firm” that in the past plagued the socialist economies.

Although no systematic data are available on the operation and management of these new entities in CEE, case studies suggest that in Hungary, the Czech Republic, Estonia, and Lithuania many of the large farms today are market-driven corporations. In Romania, at least some of the large farms are new associations or cooperatives created voluntarily by individual landowners after the completion of land privatization. Overall, the CEE corporate farms appear to be developing the basic attributes of market-oriented operation that are still not observed in most large farms in CIS. These emerging differences in farm organization between CEE and CIS are linked to differences in the philosophy of agricultural transition. Policy makers in CIS essentially perceive market agriculture as based on successors of former collective and state farms, which are to be subjected to a “horizontal” transformation toward improved productivity but otherwise remain largely unchanged in scale and scope. Politicians in CEE, on the other hand, appear to have recognized the need for radical changes in the farm-enterprise sector. The large corporate or cooperative farms in CEE are now often forced to operate under hard budget constraints, with a real threat of bankruptcy proceedings in case of default. This radically changes the organizational behavior of farm enterprises in CEE and sharpens their response to market forces. In CIS, neither budget constraints nor bankruptcy laws are enforced, and deeply unprofitable farm enterprises continue to exist through the reluctant financial leniency of the authorities that exercise various debt writeoff and forgiveness schemes. While CIS policies show a definite bias toward successor farm enterprises at all levels of government, CEE policies often favor individual farms and show a negative bias toward large corporate farms, thus forcing them to shift even further toward new market-oriented forms of behavior.

## **How to Explain the Persistence of Large Corporate Farms**

Economies of scale in agriculture are too elusive to provide an economic justification for the persistently high proportion of large corporate farms in ECA countries. We are therefore forced to look for other explanations of their continued prominence in transition economies in general, and in CIS in particular. Families apparently feel that a large-scale farm provides a greater measure of safety in the rapidly changing environment than individual farming. In the new economic environment the large farms will be unable to provide the same range of social services or economic support to their members as in the past, and yet rural residents seem to believe in the safety of numbers, at least at the present stage. Individual choices are always based on tradeoffs between risk and return. Individual farming may provide a promise of higher incomes and a better standard of living. Yet it also involves higher risk due to uncertainty. Some individuals may accordingly settle for lower returns in a former collective, as long as this strategy involves lower exposure to risk.

This explanation based on the “safety umbrella” of joint action (Machnes and Schnytzer 1993) applies to active individuals, who actually earn their income from farming. Another explanation has been previously mentioned in the non-farming context—rural pensioners or landowners with attractive occupations outside agriculture. These non-farming individuals seek to entrust their land to active producers so as to earn a return on their asset, and a large corporate farm may look to them a more reliable and trustworthy lessee than a struggling individual farmer. They may feel that a large farm offers a greater security of receiving a future stream of lease payments, and will accordingly prefer to deal with corporate farms, thus perpetuating their existence.

We have previously noted that lack of physical or human capital and in particular inadequate managerial capability are among the factors that shift the preferences from individual to group farming (see Box 4.1). The corporate successors of former collectives have the benefit of accumulated experience of professional managers. These experienced managers know where to purchase inputs and how to market farm products despite the disruption of traditional state-controlled channels. Over the years they have cultivated close

relationships with regional authorities and by virtue of their political connections remain part of the local power structure. Their farms therefore may be better equipped than small individual units to operate in an environment without fully functioning market services, where political connections still count. In a sense, the corporate farms may provide a natural transition to service cooperatives of the future.

Another factor that must not be ignored is the traditional power of the manager, both as an omniscient community leader who decides everything in the village and as a representative of the outside authorities (regional or federal). In many instances, the manager exercises influence to prevent deep restructuring and preserve the large-scale organization as a way to keep his power and his perquisites. Personal survival is a behavioral factor that influences and motivates the decisions of managers in all corporations, and farm managers in transition economies are not an exception.

An additional political-institutional factor that affects the farm restructuring decisions, especially in CIS, is the involvement and interests of the regional authorities. A definite change is observed in the relations of the farm enterprises with the authorities. Direct dictates from the top—a manifestation of central planning—have ceased almost completely. Farms are allowed considerable independence in their production and marketing decisions. There is no pervasive intervention in the activities of farm enterprises, except in case of strategic commodities, such as cotton in Turkmenistan and Uzbekistan or wheat in Ukraine and Moldova. Yet old habits die hard, and there is a strong informal chain of dependency and ongoing consultation between managers and the district bureaucracy. Managers cannot ignore the goals and interests of district authorities, and in this sense they are not free to adjust their product mix completely in response to market signals. One of the most glaring examples is the relatively slow decrease of livestock production in farm enterprises: although livestock has been unprofitable in recent years, and the new private farmers indeed have changed their orientation to emphasize crop production, managers of large farms cannot afford to ignore the traditional insistence of district authorities on maintaining the herd as “a source of milk and meat for our soldiers and school children.”

The relationships between farm managers and district authorities have been recently studied in two Russian provinces—one

predominantly agricultural (Saratov Oblast) and one with marginal agriculture (Leningrad Oblast). The study (Amelina 2000) has shown that the regional bureaucracy has a stronger tendency to continue with the traditional farm-level interventions (including distribution of soft budgets) in the agriculturally rich region, where the officials expect to extract greater benefits—to the district budget and to themselves personally—from their control of farm enterprises. Regional authorities thus have a vested interest in preventing or obstructing the restructuring of former collectives, because the emergence of new farm structures may endanger their economic power base. In the agriculturally marginal region, the district authorities have much less interest in farm enterprises as an economic power base, and they are more readily willing to reduce outside interventions and allow the former collectives to restructure.

This interesting picture that emerges in two Russian provinces is supported by national-level data. In Russia we find a very strong correlation between reform attitudes and the importance of agriculture. Agriculturally rich regions, i.e., regions with a high share of agriculture in GDP, tend to be the most conservative. They are part of Russia's "Red Belt," consistently voting for conservative candidates and parties, which are opposed to market-reforms in agriculture.

Table 4.14 presents some average characteristics for groups of regions that revealed diametrically opposite political preferences in the 1999 elections to the State Duma: 25 regions that voted predominantly for the bloc of eight conservative parties (non-reform oriented) and 25 regions that voted predominantly for the block of five reform-minded parties. The "conservative" regions are characterized by a higher share of agricultural product in GDP, a higher share of agriculture in labor, and a larger allocation to agriculture from the regional budget. They also have a higher percentage of pensioners (people above working age) in the total population. The "reformist" regions, on the other hand, are characterized by a larger urban population and higher per-capita incomes. The profile of the "conservative" regions is thus the exact reverse of the profile of the "reformist" regions, although these two blocs are only a part of the Russian political arena, representing less than 50% of the national vote. Thus, rural people dependent on agriculture tend to support the conservative parties that continue the traditional policies of intervention through budgets and other tools,

while urban people enjoying higher incomes tend to vote for reform-oriented liberal representatives. This is a vicious circle that defeats the drive for agricultural reforms (and in particular for farm restructuring) in the agriculturally rich regions that need them most.

**Table 4.14. Average Economic Indicators for Regions with Predominantly Conservative and Predominantly Reformist Voting Patterns in Russia's 1999 State Duma Elections**

	Most conservative regions (29.4% of national vote)	Most reformist regions (16.7% of national vote)
% of agriculture in regional GDP	15	6
% of labor in agriculture	17	6
% of budget to agriculture	7	3
Income per capita, rubles/month (1998)	586	1,288
% of urban population	62	80
% of population above working age	21	17

Note: The two political-preference categories include the 25 regions with the highest percent of votes for the bloc of 8 conservative parties and for the bloc of 5 reform-minded liberal parties, respectively. The numbers are averages for the regions in the two categories. All differences are statistically significant at 5%.

Source: Pepijn Schreinemachers 2001 (unpublished analysis).

All these factors contribute to the observed inertia and the slow transition to new farming structures despite availability of enabling legislation. Because the economic environment is still changing and the development of market infrastructure still has a long way to go in the former Soviet Union, options for restructuring should remain open. Thus, recipients of land rights who at this stage choose to remain in collective-type enterprises should retain the right to exit with land and assets at a point in the future. Whether the exit right is protected, or property rights devolve to the enterprise when a shareholding firm is created depends on how the relevant laws are written and how the by-laws of the enterprise treat the issue of withdrawal. A number of laws and decrees in former Soviet republics present severe obstacles to exit from shareholding enterprises with land and assets. When barriers to exit are high, the likelihood is great that the farm structure will be frozen in the form of corporatized large farms created in the first stages of restructuring. Given the world experience, these are not likely to be the dominant forms of farm organization that will allow agriculture in the region to become competitive in relatively open market economies. Flexible exit

mechanisms, on the other hand, will allow the development of a multiplicity of farm structures and enable the mechanism of evolutionary selection to take its course.

### Has Restructuring Improved Farm Performance?

To detect changes in efficiency and productivity during transition, we need to compare the performance of different organizational forms that emerged during the decade of reform. This specifically implies comparison of individual versus corporate farms in different countries, as well as comparison of restructured corporate farms with their socialist predecessors. The feasibility of such comparisons is severely obstructed by lack of cross-section data for farms of different organizational forms and by lack of time-series data for farms before and after reform. The evidence provided by partial productivities is mixed: yields of some crops are higher in individual farms, while yields of other crops are higher in large corporate farms. Work on comparisons of total factor productivity between family farms and corporate farms in transition countries is just beginning.

The IFC farm restructuring project in Russia (the project that started in Nizhnii Novgorod in 1992 and later spread to other provinces and even countries) provides unique, albeit limited, data for a comparative analysis of participating restructured farms and a control group of non-restructured farms. Partial efficiency measures, such as sales per worker, profit per worker, milk yield per cow, or grain yield per hectare, are not better in any way in the restructured farms in three Russian provinces (Table 4.15).

**Table 4.15. Comparative Performance of Restructured and Non-Restructured Farms: IFC Project in Three Russian Provinces**

	Restructured	Non-restructured
Sales per worker, thou. rubles	8,500	12,100
Gross profit per worker, thou. rubles	500	2,100
Milk yield, kg/cow/year	1,600	1,900
Grain yield, kg/ha	1,400	1,500

Source: IFC Monitoring Team, Moscow, February 1998.



Recent World Bank studies of farm restructuring in Ukraine and Belarus present a somewhat different result. A production frontier analysis based on 1998 data for two groups of farms—farms classified as restructured and non-restructured on the basis of on local assessments—produced significantly higher technical efficiency scores for the sample of restructured farms in the two countries (Table 4.16). Cross-section comparisons of restructured and non-restructured farms should be treated with caution, however. The observed superiority of restructured farms is not necessarily an outcome of restructuring: restructured farms may have performed better also under the old regime, as many considerations suggest that better performing farms have a greater incentive and a higher tendency to restructure. The uncertainty that surrounds these results is further compounded by the fact that a different analytical technique—standard production function analysis—corroborates the production frontier results for Ukraine but fails to detect significant performance differences between restructured and non-restructured farms in Belarus.

**Table 4.16. Mean Technical Efficiency Scores for Restructured and Non-Restructured Farms in Ukraine and Belarus (1998 data)**

	Restructured farms	Non-restructured farms
Ukraine	0.66	0.49
Belarus	0.45	0.35

Note: Technical efficiency scores obtained by Data Envelopment Analysis.

Differences for each country are statistically significant at 0.1 level. The numerical values for the two countries are not comparable because the analysis was based on different sets of variables in each country.

Source: Lerman and Csaki (2000) for Ukraine; Csaki, Lerman, and Sotnikov (2000) for Belarus.

A similar production frontier analysis was carried out to estimate the technical efficiency of individual and corporate farms in a number of CIS and CEE countries where appropriate survey data were available for farms of both types (Table 4.17). Experience in market economies suggests that individual farms should be more efficient than collective and corporate farms. The socialist tradition, on the other hand, believes in economies of scale and thus claims that large corporate farms are inherently more efficient than small individual farms. The results of technical efficiency analysis for CIS and CEE

do not support either point of view at this stage. The technical efficiency scores of individual and corporate farms are practically the same across the region. In CIS, both small individual farms and large corporate farms had efficiency scores of 0.5-0.6 relative to the production frontier derived using either Data Envelopment Analysis or Stochastic Frontier Analysis and the differences were not statistically significant. In Turkmenistan, farms of both types had the same the technical efficiency scores (0.72).

**Table 4.17. Mean Technical Efficiency Scores for Individual and Corporate Farms**

	Individual farms	Corporate farms
Belarus	0.54	0.58
Ukraine	0.55	0.59
Moldova	0.54	0.56
Turkmenistan	0.72	0.72
Hungary	0.58	0.50 (new companies) 0.44 (cooperatives)
Bulgaria	0.44	0.44
Czech Republic(a)	0.62	0.57
Czech Republic (b)	0.86	0.88

Notes: Belarus, 1999 World Bank survey, Data Envelopment Analysis (DEA); Ukraine, 1998 World Bank survey, DEA; Moldova, 1997 World Bank survey, Stochastic Frontier (SF); Turkmenistan, 1998 World Bank survey, SF; Hungary, Bulgaria, Czech Republic(a): crop farms, Mathijs and Swinnen (2000), DEA; Czech Republic(b): wheat production, Curtiss (2002), SF.

Equally inconclusive results were obtained for some CEE countries by Mathijs and Swinnen (2000). In Bulgaria, individual and corporate farms achieved the same average technical score (0.44). In the Czech Republic, the individual farms achieved a slightly higher score (0.62 for individual farms, 0.57 for corporate farms), but the difference was not statistically significant: the sample included only six corporate farms, and a more representative sample actually might reverse the result. Indeed, a different study by Jarmila Curtiss (2002) produced a somewhat higher efficiency score for corporate farms than for individual farms (0.88 versus 0.86; no significance tests are reported, but the difference does not look statistically significant).

For Hungary, the corporate farms in the Mathijs and Swinnen study were divided into new companies (the equivalent of restructured farms in CIS) and cooperatives (the equivalent of non-restructured farms in CIS). Here individual farms achieved an average

efficiency score of 0.58, which appeared to be higher than the average scores for cooperatives (0.44) and new companies (0.50). However, only the difference between individual farms and cooperatives was statistically significant; the differences between individual farms and new companies and between new companies and cooperatives were not statistically significant.

There is still no conclusive evidence for CIS or CEE that restructured farms perform better than non-restructured farms or that family farms are significantly more efficient than large collectives or cooperatives. This result may be attributable to underdeveloped market services and other market imperfections in ECA transition countries, which prevent restructured and individual farms from reaching their full economic potential—as they do in a normally functioning market environment. Whatever the reason, as long as the efficiency balance has not shifted clearly toward individual farms, it is not surprising that large corporate farms continue to play a prominent role throughout the ECA region.

On the other hand, the available results clearly show that the large corporate farms certainly do not outperform the newly created individual farms anywhere in the region. This in itself is an important finding in that it refutes the inherited socialist belief in the superiority of large-scale agriculture, a belief which to this day has many supporters in Russia, Ukraine, and other countries in the region.

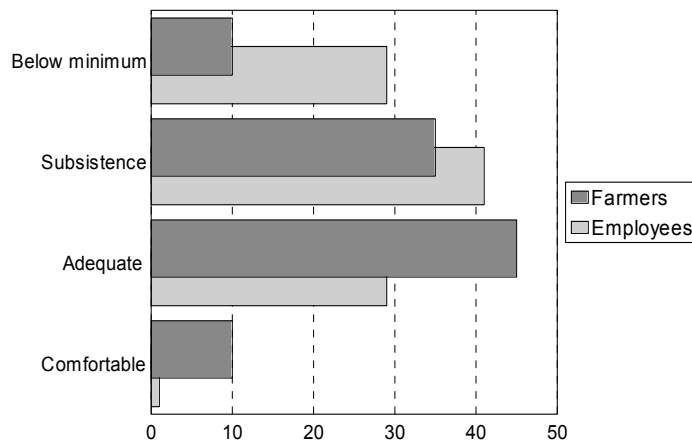
### **Impacts on the Rural Population**

In the absence of adequate farm-level data for performance evaluation during transition, we may try to look at indirect evidence provided by findings on family welfare for two radically different groups of rural residents in CIS—the independent private farmers and the shareholders of large farm enterprises. The well-being of both groups is a direct outcome of the success and profitability of their respective farms. For families of private farmers, the well-being depends on their own family farm. They enjoy very little government support in the form of subsidies or preferential access to credit. For shareholders, the family welfare depends on the performance of the corporate farm in which they live and work and which often enjoys generous government support as part of official agricultural policies.

Family welfare in these two groups thus reflects the comparative performance of individual and corporate farms.

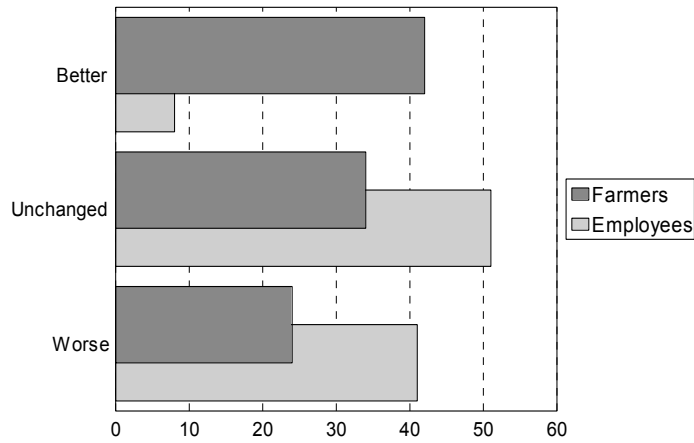
Both groups of families give a fairly low evaluation of the general standard of living in their countries. Yet comparison of their responses shows that on the whole farmers are better off and more optimistic than employees of collective enterprises, although the playing field—certainly in CIS—is tilted against individual farms. The percentage of respondents reporting that the family budget is just sufficient for subsistence is significantly higher among farm-enterprise employees than among private farmers; at the other extreme, a much higher percentage of private farmers report that they can afford more than just the bare subsistence needs, including even the purchase of durables (Figure 4.12; “below minimum” indicates that family income is not sufficient to buy all the food it needs; “subsistence”—family income sufficient to buy food and the bare necessities of life; “adequate”—family can afford clothing, shoes, etc., in addition to food; “comfortable”—family can also afford durable goods and experiences no material difficulties at present).

Fig. 4.12. What the Family Budget Buys



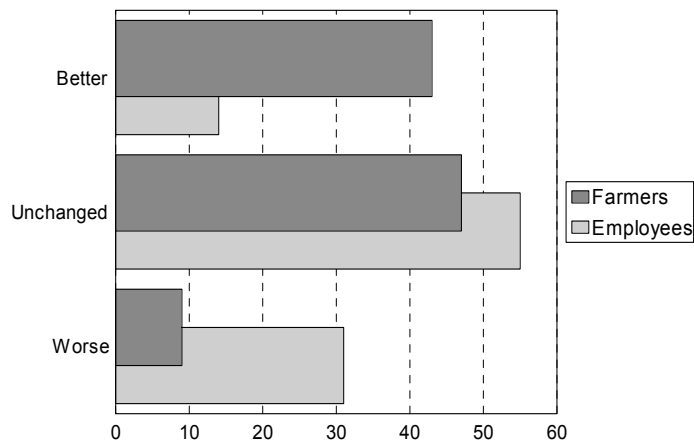
Source: World Bank surveys for Russia, Ukraine, and Moldova

Fig. 4.13. How the Family Situation Has Changed



Source: World Bank surveys for Russia and Moldova

Fig. 4.14. Perception of Family's Future Prospects



Source: World Bank surveys for Russia, Ukraine, and Moldova

Private farmers evaluate the changes during the last few years more positively than farm-enterprise employees: a significantly higher percentage of private farmers judge the situation to have improved, while most farm-enterprise employees at best regard the situation as

unchanged (Figure 4.13). Finally, private farmers face the future with much greater optimism than employees remaining in collective farm enterprises: the percentage of private farmers with positive expectations for the future is much higher than the percentage of farm-enterprise employees; and conversely, the percentage of farm-enterprise employees with negative expectations for the future is much higher than the percentage of private farmers (Figure 4.14).

Private farmers are basically at the leading edge of reform. They are fully exposed to all the risks that producers have to face in an environment prone to extreme economic and legal uncertainty, including the ultimate risk of not infrequent bankruptcy. And yet they appear to be prosperous, happy, and optimistic, if not in absolute terms then at least relatively to the other segment of the rural population, the individuals who have decided to link their fate to that of a corporate farm rather than face the risks of personal initiative. Individual farms create greater benefits for their owners than corporate farms, despite the preferential treatment that corporate farms still enjoy in many transition countries.

Despite the evidence of a higher standard of living for private farmers, rural residents do not rush to exercise the newly found right of leaving the collective with land and assets. Only 6%-7% of respondents in household surveys in Russia and Ukraine indicate that they would like to exit the farm enterprise with their share of land and assets and establish a private farm. Nearly half the respondents in Ukraine (47%) are even opposed in principle to the right of exit with land and asset shares, although this right is protected by existing laws. About one-quarter of respondents support the right of exit, but mostly with qualifying conditions ("later," "when the economy has stabilized," "when the legal framework for private farming is in place," "if machinery is available," "if government provides support programs for machinery and credit," etc.).

The reasons offered by rural residents in Russia, Ukraine, and Moldova for not becoming an independent private farmer outside the collectivist framework are summarized in Table 4.18. The peasants recognize that independent operation requires capital and access to inputs. As long as they remain within the protective shell of a large farm enterprise, their needs for machinery, fuel, and fertilizer are taken care of in one form or another. They believe that it is much easier for the large farm enterprise, with its experienced managers to take care of machinery and inputs than it would be for them as new

independent farmers. Breaking the special supportive links that exist between employee households and the farm enterprise in CIS is a risky and uncertain prospect that deters many despite the promise of higher returns.

**Table 4.18. Reasons Not to Become a Private Farmer (percent of rural households surveyed)**

	Russia	Ukraine	Moldova
Insufficient capital	75	71	52
Difficulties with inputs	59	84	48
Afraid of risk	56	72	33
No wish to change life style	42	58	16
No legal guarantees	40	65	20

Source: Word Bank surveys 1994-98.

Further insight into the reluctance to leave the collective enterprise can be gained by examining the capital and land resources that are needed, in the view of the Ukrainian rural population, for the establishment of a private farm (Table 4.19). Employees of farm enterprises in Ukraine estimate that a private farm can be established on 50 ha of land, with a capital of \$50,000. These estimates are consistent with the numbers provided by private farmers, which indicate that the minimum requirements to start a private farm typically include 50-100 ha of land and a capital of \$25,000-\$100,000. Land requirements of 50 ha per farm exceed by a substantial margin the total family entitlement, which includes the household plot (0.5 ha) and two or three land shares (10-15 ha). Rural residents thus do not envisage any possibility of establishing a private farm without acquiring land from additional sources, which in the absence of land markets are not always readily identifiable or available. The capital requirements cited by the respondents are even a more daunting obstacle: with annual family incomes of \$1,000 and asset shares valued at about \$700 per adult person in the 1996 survey in Ukraine, a capital base of \$50,000 for a new farm is inconceivable. Although the estimates of resource requirements that emerge from the survey probably reflect views shaped by reports in the media and do not represent independent informed estimates by the peasants, they certainly influence the peasants' thinking and decisions, restraining any motivation for change in the traditional organization of farms.

**Table 4.19. Starting a Private Farm in Ukraine: Through the Eyes of Employees and Private Farmers**

	Land	Assets
Minimum resource requirements	50 ha	\$50,000
Available to average family	12 ha	\$3,000

Source: World Bank survey 1996.

These findings concerning the obstacles to the establishment of private farms in Ukraine closely resonate with our previous discussion of individual versus group farming in Romania (see Box 4.1). Shortage of capital, as well as lack of managerial experience, seem to be among the main factors that inhibit the shift to individual farming, despite its income advantages.

\* \* \*

In this chapter, we have reviewed the reorganization of former collectives and cooperatives in new corporate forms, examined some evidence of downsizing and softening of the traditional duality of the socialist farm structure, and discussed the changes in internal organization and labor relations of restructured farm enterprises. Large-scale collective or corporate farms continue to play an important role in CEE and CIS. Agriculture is largely individualized in six transition countries, four in CEE (Albania, Latvia, Poland, and Slovenia) and two in CIS countries (Armenia and Georgia). Outside Latvia, Poland, and Slovenia. In the remaining seven CEE countries (Hungary, Bulgaria, Romania, Czech Republic, Slovakia, Estonia, and Lithuania) about 40% of agricultural land is in large-scale non-individual farms; and in the 10 CIS countries, about 40% of agricultural production originates in large-scale collective farms although Moldova, Azerbaijan, and Kyrgyzstan appear to be moving in recent years toward individualization levels comparable with Armenia and Georgia.

However, the diversity of large farm structures today is much greater than prior to 1990, when the Soviet-style cooperative and state farms were the only two organizational forms in socialist agriculture. While traditional cooperatives and state farms persist (in greatly reduced numbers), new corporate farming structures are registering as joint-stock societies, limited-liability partnerships, and private companies. The new large farms in some CEE countries, certainly those in Hungary and the Czech Republic, are profit-



motivated business corporations with freedom to adjust their labor force to operating needs and to reward labor according to performance. Moreover, these farms operate under hard budget constraints that impose strict financial discipline and rule out reliance on government bailouts. In CIS, on the other hand, large-scale corporate farms demonstrate very little internal change and typically continue to operate like former collectives.

**Table 4.22. Differences in Implementation of Reforms in Transition Countries**

	Potential private land ownership	Allocation strategy	Transferability	Farm organization
<i>CEE</i>				
Rom	All	Plots	Buy/sell, lease	Individual, corporate, associations
Bul	All	Plots	Buy/sell, lease	
Hun	All	Plots	Buy/sell, lease	Individual+corporate
Est	All	Plots	Buy/sell, lease	
Lat	All	Plots	Buy/sell, lease	
Lit	All	Plots	Buy/sell, lease	
Cz	All	Plots	Buy/sell, lease	
Svk	All	Plots	Buy/sell, lease	
Alb	All	Plots	Buy/sell, lease	Individual
<i>CIS</i>				
Arm	All	Plots	Buy/sell, lease	Individual
Gru	All	Plots	Buy/sell, lease	
Mol	All	Plots/shares	Buy/sell, lease	Corporate+individual
Az	All	Plots/shares	Buy/sell, lease	
Kyr	All	Shares	Moratorium	
Rus	All	Shares	Lease	Corporate (renamed collectives)+individual
Ukr	All	Shares	Lease	
Kaz	Household plots only	Shares	Use rights	
Taj	None	Shares	Use rights	
Tur	All	Leasehold	None	
Uzb	None	Leasehold	None	
Bel	Household plots only	None	None	

Table 4.22 briefly summarizes the most prominent differences in the implementation of agrarian reforms in CEE and CIS discussed in Chapters 3 and 4. Differences in land policies include universal recognition of private land ownership in CEE versus continuing emotionally charged debates in CIS; elimination of restrictions on

land transactions in CEE versus rigid constraints on buying and selling of land in CIS; allocation of land in the form of physical plots in all CEE countries versus distribution of “paper shares” in most CIS countries.

The different features of land policy are apparently a reflection of another major conceptual or ideological difference between CEE and CIS, which is evident in the implementation of the farm-restructuring component of the transition agenda. The CEE countries accepted the need for a structural transformation of agriculture to a mix of individual farms and substantially downsized corporate farms with a new profit-motivated orientation. The CIS countries—with the notable exception of Armenia and Georgia—retained the ideology of scale economies and focused their efforts on “horizontal transformation”, i.e., attempts to transform large inefficient collectives into large—and hopefully efficient—corporate farms. Because of this approach, individual agriculture continued to be treated as a marginal phenomenon in CIS, despite its steadily increasing contribution to agricultural output, and government policies continued to focus on salvaging and supporting former large-scale collectives. These attempts did not involve introduction of hard budget constraints or strict changes in internal organization of the large farms. The results can be characterized as “cosmetic” restructuring that involved merely “changing the sign on the door”, without curing the real reasons of inefficiency.

We believe that these differences in land policies and farm restructuring approaches are among the major factors that are directly responsible for the emerging “East/West divide”—the divergence in the performance of agriculture in CEE and CIS that we are witnessing since the early 1990s. This divergence is described in detail in the next chapter.