Land Policies and Evolving Farm Structures in Transition Countries

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ABSTRACT

The study reviews the role of land policies in the evolving farm structures of the transition economies in Central and Eastern Europe (CEE) and the Commonwealth of Independent States (CIS). It demonstrates how different policies with regard to private property rights in land, degrees of control of land rental and sale markets, and procedures for restructuring of former collective or state farms resulted in significantly different farm structures in CEE countries as compared to most of the CIS. In particular, more secure land rights, greater emphasis on individualization of land, and more liberal land market policies in CEE generated a farming sector with a relatively large share of family farms (which are not necessarily small) and viable corporate farms. On the other hand, limited tenure security, ineffective individualization of land rights, and restrictive land market policies in most CIS countries produced a farming structure dominated by large and generally non-viable jointly-owned farms that continue to function much like the old inefficient collectives. Family farms are slow to emerge in transition countries with inadequate land policies. The agricultural sector in countries dominated by inefficient farm organizations is characterized by low productivity and misallocation of resources.

Introduction

The Iron Curtain lifted in 1989, and more than twenty nations spanning half the globe broke out of the isolation that had largely hidden them from the rest of the world for more than four decades. And yet despite the momentous political and social changes that swept the entire region in the wake of this event, there is sometimes a feeling that the old Iron Curtain has been replaced by another "East/West divide", which now lies further east and extends along the borders of what has become known as the Commonwealth of Independent States, or CIS, a political entity comprising the 12 successor republics of the former Soviet Union (excluding the Baltic states).

The divide is felt both in politics and in the media. On the political arena, the countries west of the divide, which include the former Comecon members in Central Eastern Europe (CEE) and the Baltic states, are applying for accession to the European Union and are making plans to join their former adversaries in modified NATO frameworks. The CIS countries east of the divide are more inward-oriented and relatively isolated from the rest of Europe. In the media, Western journalists paint the events in CEE in rosy, optimistic colors, writing of great successes and encouraging achievements. In contrast, the colors used to describe the events in CIS are dark, bleak, and pessimistic: the tone in the Western media is gloomy, depressing, sometimes apocalyptic.

This striking difference in the popular Western perception of the two components of the former "communist" bloc in Europe—CEE (including the Baltic states) and CIS—has prompted us to explore the possible existence of a similar divide in agriculture, a traditionally prominent sector in most countries in the region and thus an important component of their transition strategies. The post-World War II regimes imposed far-reaching commonalities on the societies and economies of all these countries in general, and on their agriculture in particular. Yet deep cultural, social, and economic differences remained, even if hidden under the surface. While starting from a common heritage and

aspiring for a common goal of a marked improvement in their economies, different countries adopted different implementation strategies and in fact reached very different outcomes. The study examines the factors that have shaped the divergent transition paths from plan to market in these countries since the early 1990s.

Setting the Stage: What the Study Did and What It Did Not Do

The study is primarily about land policies and farming structures as components of institutional change in the rural sector in transition countries. The transition countries in this study are the former socialist countries of Europe and Central Asia (conveniently abbreviated as the ECA region), many of which embarked between 1989 and 1991 on a transition from a centrally planned command economy to a more market-oriented economy. Worldwide, transition from plan to market is also taking place in a number of Asian countries, including Mongolia, China, Vietnam, Cambodia, and Mynamar. These "other" transition economies remain outside the scope of our study.

The ECA transition countries span eleven time zones from Prague in the west to Vladivostok in the east and stretch from the shores of the Arctic Ocean and the Baltic Sea in the north to the Adriatic Sea, the Black Sea, and the borders of Iran, Afghanistan, and China in the south. Geopolitically, these are the former Soviet republics, the former Comecon countries in Central and Eastern Europe, plus Albania and the components of the former Socialist Federal Republic of Yugoslavia in the Balkans (**Table 1**). The main focus of our story is on a large subset of 22 transition countries: the twelve former Soviet republics that are today members of the Commonwealth of Independent States (CIS countries) and ten countries in Central, Eastern, and South-Eastern Europe (CEE countries) that include six of the former Comecon members (Poland, Romania, Bulgaria, Hungary, Czech Republic, Slovakia), Albania, and the Baltic states (which are former Soviet republics, but are not part of the CIS). East Germany—the former German Democratic Republic—and the components of former Yugoslavia are discussed only in passing: the former because its present fate is totally different from the rest of the region, and the latter because its past always deviated from the common patterns characterizing

the rest of the region (and to a certain extent also because political instability throughout most of the 1990s was not conducive to data collection and analysis).

Transition from plan to market is driven by a mixture of political and economic objectives. The desire to declare independence and to break with the Soviet past has shaped much of the transition agenda in Central Eastern Europe and even in parts of the former Soviet Union. Yet, despite the strong politicization of the process, politics cannot overshadow the importance of the economic objective of transition. After all, the trigger for the disintegration of the Soviet bloc—the real launch of the transition—came when Mikhail Gorbachev realized the unsustainability of the economic policies, subsidies, and transfers within the empire he had inherited. The socialist economic system in general, and socialist agriculture in particular, were notoriously inefficient, and the transition to a market-oriented system, emulating the economic order of the more successful capitalist countries, was regarded by many as a strategy to cure the chronic inefficiency.

Table 1. Transition Countries in Europe and Central Asia

	Country	Geographic location	Pre-1990 geopolitical affiliation
CEE: Central Eastern Europe			
1	Albania	Balkans	Non-Comecon
2	Croatia	Balkans	Non-Comecon (Former Yugoslavia)
3	Macedonia	Balkans	
4	Slovenia	Balkans	
5	East Germany	Central Europe	Comecon (DDR—German Democratic Republic)
6	Hungary	Central Europe	Comecon
7	Czech Republic	Central Europe	Comecon (Czechoslovakia)
8	Slovakia	Central Europe	
9	Bulgaria	Eastern Europe	Comecon
10	Poland	Eastern Europe	Comecon
11	Romania	Eastern Europe	Comecon
12	Estonia	Baltics	USSR
13	Latvia	Baltics	USSR
14	Lithuania	Baltics	USSR
CIS: Commonwealth of Independent State			
15	Belarus	"Russian" Europe	USSR
16	Moldova	"Russian" Europe	USSR
17	Russia	"Russian" Europe	USSR
18	Ukraine	"Russian" Europe	USSR
19	Armenia	Transcaucasia	USSR
20	Azerbaijan	Transcaucasia	USSR
21	Georgia	Transcaucasia	USSR
22	Kazakhstan	Central Asia	USSR
23	Kyrgyzstan	Central Asia	USSR
24	Tajikistan	Central Asia	USSR
25	Turkmenistan	Central Asia	USSR
26	Uzbekistan	Central Asia	USSR

In this study, we focus primarily on the economic objectives, and the systematic treatment of political factors is left to authors who are more qualified to discuss them. We moreover concentrate on transition in the rural sector, in agriculture, and not in the national economy as a whole. This choice of focus is justified in view of the exceptional importance of the rural and agricultural sectors in CEE and CIS before the beginning of transition. In the 1980s, the rural population in the transition countries averaged nearly

45% of the total population, while the share of agriculture in gross domestic product and in employment exceeded 20% on average. In the USA and the European Union, agriculture's share of the economy is much smaller: about 2-3% of GDP and employment in the USA, about 5% in the EU.

Transition to market is a multifaceted, multidimensional process. Essential dimensions of transition in agriculture include abolition of central planning, reduction of government intervention, elimination of price controls, development of functioning market services (both upstream for input supply and downstream for product marketing and processing), emergence of rural credit institutions, technological improvement, new capital investment patterns, agricultural labor adjustment. Yet the most visible and widely debated components of this process are land reform, i.e., establishment of private property rights in land, and restructuring of the traditional socialist farms, i.e., their transformation to operations based on market-oriented principles. The processes of land reform and farm restructuring are both affected by, and impact on, all other dimensions of transition. They are moreover interrelated with political forces, democratization of society, and other profound adjustments that accompany the transition from the pre-1990 reality to the world of the 21st century. This study will not attempt to cover all these factors and dimensions. Its main goal is to analyze the land reform and farm restructuring components of rural transition.

The Organization of the Study

To understand the substance of land reform and farm restructuring in transition countries, we need to understand the common structure of socialist agriculture that dominated the region for decades. The study accordingly starts with a description of the common heritage in former socialist countries—centrally planned agriculture with a sharply dual structure based on very large commercially oriented collective farms and very small subsistence oriented household plots. We then recall evidence of the persistent inefficiency of this agriculture—inefficiency that burst out periodically in annoying manifestations of food shortages and long lines for food, and that in countries that

controlled some of the most fertile soils in the world. We try to understand the sources of this inefficiency by setting the structure of socialist agriculture in the context of the world experience: could it be that the socialist model of agriculture, so different from the market agriculture in its main attributes, was inherently inefficient, thus ultimately leading to its own collapse? Finally, we combine the features of common heritage with the evidence from the rest of the world to explain the conceptual framework for transition that crystallized for most countries in the region at the beginning of the 1990s.

Having set the stage for transition, we proceed to discuss the inseparable twin topics of land reform and farm restructuring. Transition from plan to market is a multidimensional process whose objective is to improve the notoriously poor productivity and efficiency of socialist agriculture. Relevant components of this process involve changes in the macroeconomic environment (such as elimination of central controls, price and trade liberalization, and economic stabilization), as well as sectoral changes in agriculture. To make restructured farms truly productive and efficient, land reform and farm restructuring must be supported by appropriate sectoral policies that include privatization and demonopolization of farm services, development of competitive marketing and supply channels, establishment of rural credit facilities, and creation of alternative employment opportunities to allow out-migration of redundant labor from agriculture. Most of these topics are only touched upon in passing as we focus on the two most visible components of sectoral change – policies relating to privatization and individualization of land and restructuring of traditional socialist farms in line with market principles.

Privatization of land is the natural starting point for land reform in countries with decades of state ownership and collectivized farming. But is land privatization sufficient to create an efficient farming structure? The evidence of market economies suggests that farmers do not always own all the land that they cultivate and that successful agriculture can even evolve in countries with state ownership of land. What additional elements, beyond privatization, are necessary to achieve improved agricultural performance? The discussion of land policies in transition countries accordingly advances to issues of

transferability of ownership and use rights and their impact on the development of land markets. It is through land markets that land resources can flow from less efficient to more efficient users, allowing farmers to adjust their holdings to optimum size subject to their managerial capabilities.

Because of the heritage of collectivization throughout the region, all productive resources – including land and other assets – had been locked for decades in large-scale farm enterprises, and use rights had primacy over ownership rights even in countries that had never nationalized land and property. Collective agriculture was characterized by high levels of mechanization and high use of technology and purchased inputs. Land reform therefore could not be restricted to mere privatization or distribution of land use rights to the rural population, as had been done in the much less mechanized communes in China. Land reform in CEE and CIS had to be combined with a thorough program of farm restructuring designed to distribute all productive resources, and not only land, to new market-oriented users. Our discussion of land reform and land policies is accordingly followed by a discussion of farm restructuring efforts in transition countries. The crucial issue here is to determine what really constitutes market-oriented restructuring. The old collective and state farms have practically disappeared throughout the region, to be replaced by joint-stock companies, limited liability partnerships, and other corporate forms with market-sounding names. But has this been more than just a change of name? What real internal changes have been implemented to transform the organization of production from the old collective mode to a new business-oriented mode? Is it surprising that in many empirical studies the new "restructured" farms do not come out as more efficient than their "non-restructured" counterparts? Perhaps much of the restructuring effort has been largely misguided and misplaced?

Having reviewed the land reform and farm restructuring attempts during the 1990s, we focus on their impact on the well-being of the rural population and on agricultural performance. Sociologists and anthropologists working on transition issues have a tendency to stress the dramatic deterioration in the standard of living and the level of provision of social services throughout the region. This is inarguably so. But has there

been an alternative? After all, the Soviet system was living beyond its means for decades, as Gorbachev realized with stark clarity in the second half of the 1980s. We must not forget that the high level of social services and standard of living for the rural population was maintained through budgetary transfers that masked the gross lack of profitability and inefficiency in collective agriculture. The transition was supposed to change the economic context, and the damage to social conditions was probably an unavoidable price that had to be paid. But is the situation in the countryside uniformly bleak and bad in transition countries? Or are there perhaps glimmers of change that signal future improvement? And finally, are there signs that the long decade of transition is beginning to have a positive effect on growth, which is the ultimate recipe for improvement in standards of living and poverty alleviation? In addition to the impacts of reform on the micro level, focusing on farms and rural households, we also examine the changes in agricultural output during the transition period and their relation to land policies.

Our study leads to a clear conclusion: despite the common heritage, the common starting point, and the common aspirations for a transition to a more efficient economic system, the transition countries adopted different implementation strategies for their land reform and farm restructuring programs. As a result there has been a significant divergence between “leaders” and “laggards”, which is quite obvious at the end of the first decade of transition.

The Approach and the Data

The study draws on the actual work of the authors in the transition countries, work that began in November-December 1991 with the first World Bank agricultural mission to what then was still Gorbachev’s USSR. It is primarily a synthesis of the authors’ experiences during a decade of transition. The issues are treated in a broad regional perspective, and readers interested in more specific country details are referred to the country monographs listed in a separate section in references.

The data used to illustrate the discussion derive primarily from two kinds of sources. General country data were obtained, whenever possible, from official statistical yearbooks of the various countries. Comparative data for market economies were usually taken from the World Bank's World Development Indicators database, which also provided some general indicators for the transition countries (such as per-capita GNP in dollars). For USA and Canada, the latest agricultural census data were used when appropriate. Eurostat yearbooks were the main source for the countries of the European Union.

In addition to general country data, we have relied extensively on micro-level data for farms and households. These data are unique in the sense that they derive from a long series of farm surveys in transition countries. The World Bank began conducting such surveys as early as 1991-1992 in an attempt to monitor the progress of land reform and farm restructuring across the region. Later, the World Bank was joined in these efforts by the European Union, which has been financing farm surveys in CEE through the Policy Research Group at the Catholic University of Leuven, Belgium. The results of these surveys, as well as empirical data from other survey-based sources, fill the gaps in official statistics and often provide unique insights into the micro-functioning of farms and households during transition.

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Chapter 1. The Arena and the Common Heritage

The transition countries in Europe and Central Asia (the ECA countries) stretch over 11 time zones from Prague in the West to Vladivostok in the East and from the shores of the Arctic Ocean and the Baltic Sea in the North to the Adriatic Sea, the Black Sea, and the borders of Iran and Afghanistan in the South. Although much of this gigantic space is uncultivatable tundra and taiga, the ECA countries account for 19% of the world=s arable land resources and 7% of the population (FAO, 1994). Controlling some of the most fertile soils in the world, this region has a clear potential to generate agricultural surplus beyond the needs of its population, which can be exported to feed poorer nations.

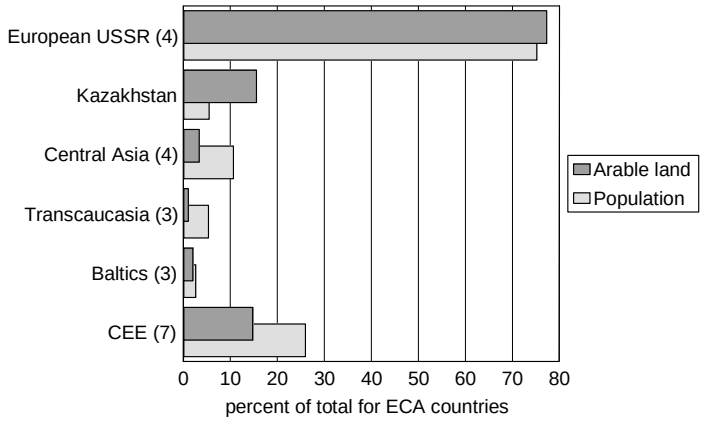
The 22 ECA countries consist of 12 former Soviet republics that are currently members of the Commonwealth of Independent States (CIS), three Baltic states that formerly were part of the Soviet Union and are now regarded as components of Central Eastern Europe, five former Comecon countries in Central Eastern Europe (which became six when Czechoslovakia split into two), and Albania in the Balkans. In the context of transition, the 12 former Soviet republics are described as the CIS bloc, and the other 11 countries constitute the CEE bloc (CEE actually stands for Central Eastern Europe, but also includes Albania). In this chapter we review the situation in the pre-transition decades, when the three Baltic states were part of the Soviet Union. We accordingly refer to all 15 former Soviet republics (the 12 CIS countries and the three Baltic states) as USSR, and retain the term CEE for the remaining seven countries in Central Eastern Europe and the Balkans. The reader should note that in the later chapters that deal with the transition decade in the 1990s the term CEE encompasses 10 countries (including the three Baltic states), the term CIS refers to the 12 CIS members, and the term USSR is generally not used.

Although the two new "blocs"—CEE and CIS—are evenly matched by the number of countries, CIS in aggregate is much larger than CEE. The CEE countries account for about 15% of agricultural land and less than 20% of rural population in the ECA region. On the other hand, just four of the 12 CIS countries—Russia, Ukraine and Belarus in Europe and Kazakhstan in Central Asia—represent 75% of agricultural land and 55% of rural population in the entire region. Table 1.1 and Figure 1.1 highlight the extremely uneven distribution of land and rural population among different groups of ECA countries. This view of the countries does not account for agro-climatic and soil-quality differences, which are quite extreme on their own, but given the sheer magnitude of agriculture in the four large CIS countries, its fate may have strong global implications, both economic and social, much stronger than the fate of agriculture in all other ECA countries.

Table 1.1. Regional Shares in Land, Population, and Employment in 1980s (percent of total for ECA countries)

	Agricultural land	Arable land	Population	Rural population	Agricultural employment
All ECA countries	614.8 thou. ha	267.4 thou. ha	375.5 million	139.7 million	37.4 million
USSR (15)	90.5%	85.1%	73.9%	70.3%	69.5%
European (4)	44.2%	65.8%	55.6%	46.0%	47.0%
Kazakhstan	31.8%	13.4%	4.1%	4.9%	4.3%
Central Asia (4)	11.8%	3.0%	8.0%	12.9%	11.5%
Transcaucasia (3)	1.4%	1.0%	4.1%	4.7%	5.1%
Baltics (3)	1.3%	1.9%	2.1%	1.8%	1.6%
CEE (7)	9.5%	14.9%	26.1%	29.7%	30.4%

Fig. 1.1. Population and Arable Land in ECA Countries: 1980s



Agricultural Profile of the Region

The ECA countries comprise a large and diverse agricultural region. In the northern tier, stretching across Russia, Belarus, the Baltics, Poland, and former Czechoslovakia, grains (except for maize), and roots dominate the field crops, while imports augment domestic production of feed to sustain a large livestock industry. In Ukraine, Moldova, Hungary, and Romania moisture and warmth are adequate for maize and oilseeds, and mixed grain/livestock farming predominates. The mountainous southern tier stretching from the Caspian across the Black Sea to the Adriatic (Transcaucasia, Bulgaria, Albania) is rich in orchards, vineyards, and tobacco plantations, which often have to rely on irrigation to supplement relatively scant rainfalls. Still further south and inland, the Soviet Central Asia on the southeastern border with Iran and Afghanistan is the largest area of irrigated agriculture in the world, where cotton and wheat fields cling to the banks of rivers and canals, quickly blending into desert pastures that can only support special hardy species of sheep and camels.

Table 1.2. Agrarian Characteristics and National Income in Socialist Economies in the 1980s

	Share of rural population*	Share of employed in agriculture*	Share of ag in GDP**	Share of livestock in ag output**	Share of arable land in ag land**	GNP per capita#, $	GNP per capita#, % of Middle Income group
CEE (7)	44.9	24.8	14.6	48.5	64.6	3075	105.3
CEE West (3)	40.8	14.1	10.2	55.7	64.6	4755	162.9
CEE East (4)	47.9	32.9	17.8	43.1	64.7	1815	62.2
USSR (15)	44.4	27.4	23.8	50.7	43.8	2266	77.6
Baltics	31.7	18.1	21.6	69.3	68.7	3242	111.0
European USSR	39.5	24.8	22.7	52.3	69.8	2544	87.2
Transcaucasia	42.1	27.3	18.0	41.1	32.4	1727	59.2
Central Asia	57.2	35.0	28.4	44.1	14.8	1662	56.9
ECA countries (22)	44.5	26.6	20.6	50.0	50.4	2536	86.9
Market economies	25.1	5.5	2.8	47.4	52.4	B	719.1
USA	25.1	3.2	2.0	47.4	43.5	B	850.4
Canada	23.8	5.0	3.0	41.2	61.2	B	633.3
European Union	25.9	8.4	3.5	53.9	52.6	B	674.6

*Average 1980B1989; ** 1987; # Average 1987-89.

Overall, the entire ECA region could be characterized as relatively rural and agrarian even during the 1980s. The share of rural population exceeded 40% both in the USSR and in CEE (Table 1.2; for detailed country data see Table A1.1 in Annex 1 at the end of the chapter). Russia was the only country with less than 30% of the population living in rural areas, and the three Baltic republics on average were also somewhat less rural than the rest of the region. In Central Asia, on the other hand, the share of rural population reached 60%. Rural people in socialist countries suffered from low mobility, and were typically restricted to working in agriculture. The share of agriculture in total employment was accordingly fairly high, approaching 30% for the USSR and 25% for the CEE countries. The agrarian gap between the USSR and CEE broadened when measured by the share of agriculture in GDP: agriculture contributed 24% of GDP in the 15 Soviet republics and only 15% of GDP in CEE. The aggregate ratio of agricultural output to labor was thus higher in the USSR than in CEE.

There was, and still is, a significant difference in the structure of agricultural land resources between the USSR and CEE. The CEE countries have a relatively low proportion of pastures and hay meadows: 65% of their agricultural land is arable. In the USSR, on the other hand, less than 45% of agricultural land is arable, and without the Baltics (where the share of arable land approaches 70%, as in the CEE countries) the proportion dips below 40%. Central Asia and Transcaucasia are particularly well endowed with pastures: the share of arable land is less than 15% in the Central Asian countries and about 30% in Transcaucasia.

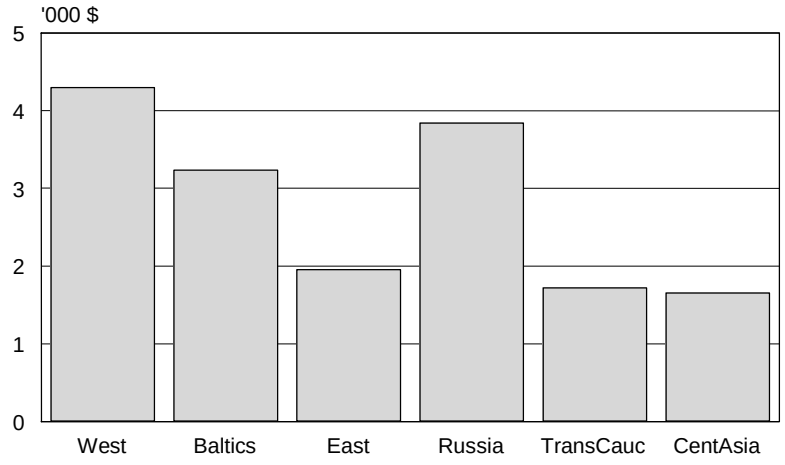
One would tend to think that a higher share of pastures would lead to greater specialization in livestock production. Yet this was definitely not the case in socialist agriculture. A strong positive correlation is observed between the share of agricultural product derived from livestock and the share of arable land in countries across the region. Countries with a high share of arable land (and a low share of pastures) were in fact characterized by high livestock specialization. This phenomenon is particularly vivid for the Baltic republics, where 70% of agricultural land was arable and 70% of agricultural product was from livestock production. Outside the Baltics, the phenomenon is clearly traced in Russia, Ukraine, Belarus, Bulgaria, Hungary, and Czechoslovakia. This is probably a reflection of central planning and large-scale industrialization tendencies that characterized the socialist agriculture. In the interest of intensive production, livestock was preferably fed on grain and concentrated feed, rather than allowed to graze in natural pastures. Arable land was thus an important source of animal feed in socialist agriculture, and pastures did not play a role in determining the specialization in crops or livestock.

Relative Wealth Across the Region: Per-Capita GNP

Although the aggregate ratio of agricultural output to labor was higher in the USSR than in CEE, the standard of living in CEE, and especially in the western countries (Hungary and Czechoslovakia), was generally higher than in the USSR. This was primarily due to the

contribution from more developed non-agricultural sectors of the economy. One of the "east-west gradients" often discussed informally among scholars is the national wealth gradient: the per-capita GNP increases as one gradually moves westward from Central Asia to Transcaucasia, thence to the European USSR with the neighboring eastern CEE countries, the Baltic republics, and finally the western CEE countries. Figure 1.2 demonstrates the general existence of this "east-west gradient" in per-capita GNP in the 1980s, with Russia an obvious exception to the rule: the per-capita GNP in Russia was much closer to that in the western CEE countries (Czechoslovakia, Hungary, Poland) than to its more easterly neighbors (Belarus, Ukraine, Moldova, Bulgaria, and Romania). Russia's special political position in the Soviet bloc, and its mineral wealth, obviously had tremendous economic benefits for its population.

Fig. 1.2. Per-capita GNP: east-west gradient



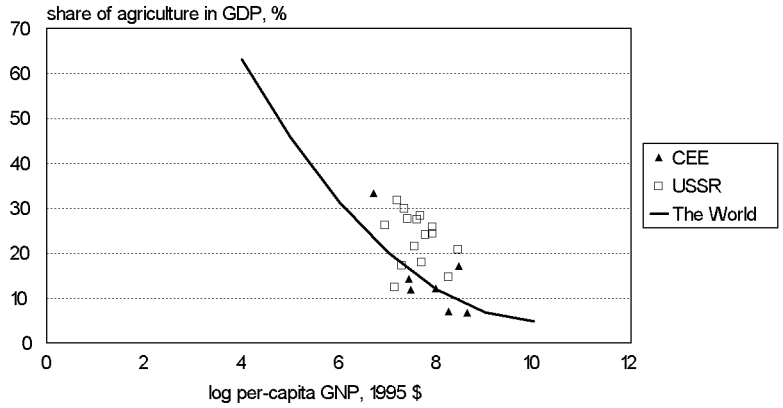
ECA Countries and the World Compared by Agriculture=s Share in GDP

We have stated several times that agriculture was an important sector in the economy of pre-transition countries in the ECA region. Indeed, the share of agriculture in GDP and in employment in these countries was much higher than in market economies (see Table 1.2).

But the market economies were represented by USA, Canada, and the European Union—very rich and highly industrialized countries with high levels of GNP per capita. The per-capita GNP in these high-income market economies was 7 times the average level for Middle Income Countries, whereas the ECA countries in the 1980s bracketed the Middle Income Countries, with per-capita GNP levels ranging from 0.5 to 1.6 times the Middle Income Countries average. Since agriculture is always more important in countries with a lower level of GNP per capita, the ECA countries should properly be compared to countries in the same range of per-capita GNP instead of the richest market economies.

In Figure 1.3 the scattergram of points plots the share of agriculture in GDP for the ECA countries in the second half of the 1980s. The downward sloping curve represents "the World": it is based on the analysis of Chenery and Syrquin for more than 200 countries from all income categories. Of the 22 ECA countries, 15 lie above the "World Curve". Of these 15 countries, only two are from CEE and the rest are Soviet republics. There was a clear tendency for the ECA countries, and especially for the Soviet republics, to operate with higher shares of agriculture in GDP than in countries with comparable levels of GNP per capita in the rest of the world. The mean share of agriculture in GDP for the ECA countries is 20.6%, whereas the predicted share from the "World curve" is 14.5% (the difference is statistically significant at $p < 0.01$). ECA countries in the pre-transition period were indeed characterized by relatively large agriculture whose contribution to the national economy was higher than in the average country with the same per-capita GNP.

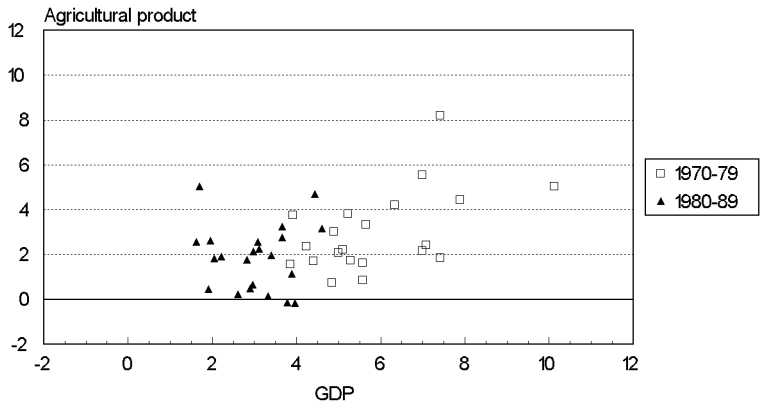
Fig. 1.3. ECA Countries and the World:
Agriculture's Shares in 1980s



Growth, Employment, and Productivity of Labor

The 1980s was a decade of moderate growth in the pre-transition countries: GDP increased on average by about 3% annually and agricultural output grew by about 2% annually. This growth was much slower than in the previous decade of the 1970s, when GDP increased by 6% annually and agricultural output by 3%. Figure 1.4 clearly shows how the growth rates of the ECA countries as a group in the decade of the 1970s were generally higher than the growth rates in the 1980s, the last decade before the transition. This pattern explains why Gorbachev in the mid-1980s began stressing the unsatisfactory performance of agriculture in terms of "return on investment": in his public speeches he decried the negative gap between the volume of investment in agriculture and agricultural growth.

Fig. 1.4. Pre-Transition Growth: Two Decades
(annual growth rate in percent)

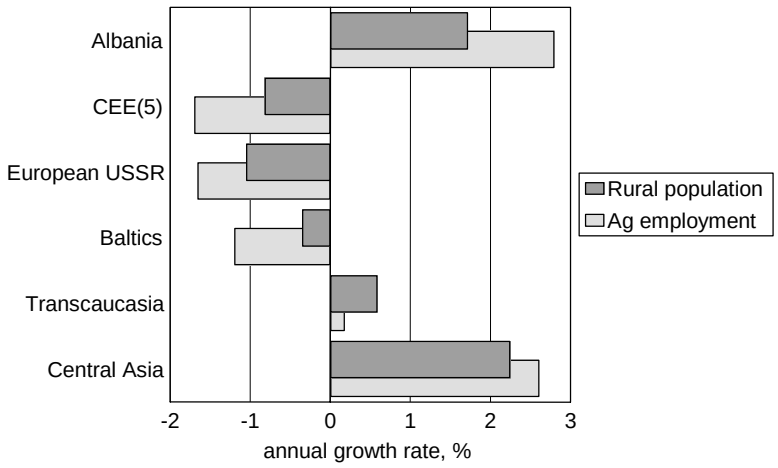


There was relatively little variability in growth rates across the socialist countries in the 1980s, although in this particular decade the Soviet republics (including the Baltic states) showed faster growth in GDP than the CEE countries: 3.3% annually for the USSR compared with 2.2% for CEE (the difference in GDP growth rates is statistically significant, while the difference in agricultural product growth is not). Agricultural employment, on the other hand, showed substantial differences across the region.

In most countries, agricultural employment declined over time, probably because the overall economic growth was creating new job opportunities and the agricultural population responded by shifting to alternative occupations (CEE, the Baltics, and the European USSR; for detailed country data see Table A1.2 and Figure A1.1 in Annex 1). Indeed, a fairly strong correlation is observed between changes in agricultural employment and changes in GDP in the 12 countries with declining agricultural employment: a 1% increase in GDP is associated with a 0.2% decrease in the number of employed in agriculture (the result is significant at $p < 0.1$). However, in the other nine countries (Central Asia, Transcaucasia, and Albania) the number of employed in agriculture increased over time despite a healthy growth in GDP. This was due to the relatively fast population growth in these countries. The rural population

increased faster than the rate of creation of new employment opportunities in the economy, and rural residents who could not find other jobs simply stayed in agriculture. Figure 1.5 demonstrates the very strong positive correlation between the growth rate of the rural population and the change in agricultural employment across the region. This correlation provides a better explanation of the changes in agricultural employment than GDP growth in all CEE and CIS countries, probably because of the low mobility of the rural population in the socialist era.

Fig. 1.5. Rural Population and Agricultural Employment in the 1980s



Since agricultural output generally increased in all the countries across the region, the different patterns of change in agricultural employment are reflected in changes in the productivity of agricultural labor. The productivity of agricultural labor, calculated as the ratio of agricultural output to agricultural employment, increased in all the countries where the number of employed in agriculture was decreasing. As noted previously, this group included all CEE countries (except Albania), the Baltic republics, and the European USSR. Central Asia, Transcaucasia, and Albania, on the other hand, showed generally declining (or at best unchanged) productivity of agricultural labor in the 1980s.

There was thus a clear separation of the pre-transition countries into two large groups by the four development or growth variables, the "western" countries and the "southeastern" countries. All countries achieved fairly high growth in GDP and lower but still respectable growth in agricultural output in the pre-transition decade (Table 1.3; for detailed country data see Table A1.2 and Figure A1.1 in Annex 1). The "western group" (including five CEE countries, the Baltics, and the European USSR) showed declining agricultural employment and increasing labor productivity in agriculture, while the "southeastern" group (primarily Central Asia and Transcaucasia in the USSR, plus Albania in CEE) showed increasing agricultural employment and declining or unchanged labor productivity.

Table 1.3. Clustering of socialist countries by four development variables (1980=100)

	GDP	Agricultural output	Agricultural employment	Agricultural labor productivity
All socialist countries	128.8	116.6	100.5	120.1
CEE (5, excluding Albania)	117.2*	117.2	86.7	135.0
Albania	124.8	130.6	126.5	103.3
USSR (15)	132.8*	115.4	103.4	116.3
Baltics (3)	128.3	126.4	89.2	142.1
European USSR (4)	137.7	126.0	86.5	146.3
Transcaucasia (3)	132.8	95.4	99.8	97.0
Central Asia (5)	131.7	112.4	127.6	88.4

Organization of Agriculture in the Soviet Period: The Common Heritage

The countries of CEE and CIS entered the transition in 1989-91 with a common institutional and organizational heritage in agriculture: most land, regardless of its ownership, was cultivated collectively in large-scale collective and state farms that managed thousands of hectares and employed hundreds of member-workers; the commercial production from the collective and state sector was supplemented by subsistence-oriented individual agriculture based on rural household plots of less than one hectare; product markets and input supply channels were largely controlled by state organizations within an administrative command framework; production targets were set centrally; budget constraints to penalize under-

performers virtually did not exist. This, in effect, was the Soviet model of socialist agriculture. It was introduced in the USSR in the early 1930s as a result of Stalin=s forceful collectivization drive, and spread to dominate all other countries in the region by the 1950s, following the emergence of communist regimes in Central and Eastern Europe after World War II. Poland and the former Yugoslavia partially deviated from this common pattern: their agriculture remained largely based on small individual farms throughout the decades following World War II, and yet central controls plagued farmers in Poland and Yugoslavia exactly as in all other socialist economies.

Despite pervasive collectivization, individual or private agriculture never disappeared in the socialist countries. The so-called socialized farm sector coexisted with the individual sector in a distinctly dual or bimodal farm structure. Most agricultural land, regardless of ownership, was cultivated in socialized, or "public-sector" farms. A relatively small number of socialized farms (about 60,000 in total over the entire ECA region) controlled about 95% of agricultural land and produced most of the commercially marketed output. The average socialized farm cultivated 2,000-3,000 hectares of land with 300-500 workers. Alongside these large-scale farms, millions of households cultivated small plots averaging less than 0.5 hectare, which in aggregate controlled about 5% of agricultural land. The household plots relied on part-time family labor and produced mainly for subsistence, although part of the output always found its way to farmers= markets in nearby towns. Despite their small size and their small share in agricultural land, household plots always achieved relatively high levels of productivity. In the Soviet Union, where output data for household plots are available over long periods of time, the individual sector produced 20% of gross agricultural output on 2% of land, achieving a relative productivity factor of 10.

In terms of the legal form of organization, the socialized farms were organized as state farms and as collective farms (Soviet terminology) or cooperatives (East European terminology). In state farms, all productive assets were owned by the state and the farm workers were salaried

state employees, basically not different from workers in state-owned industrial enterprises. In collectives and cooperatives, the productive assets were jointly owned by the members, who provided the labor and in principle were compensated through distribution of farm earnings instead of receiving salaries. Whether identified as collectives or cooperatives, the socialized farm structures were very far from the Western model of a cooperative: the main attribute of cooperation—the principle of voluntary association for mutual benefit—was abandoned during Stalin's forced collectivization campaign in 1929-1930. Instead, the creation of all collective and cooperative farms in the former socialist countries (both before and after World War II) relied on political and psychological coercion and was often associated with considerable brutality against the rural population. As a consequence, members in collectives and cooperatives never enjoyed another basic attribute of Western-style cooperation—the freedom of exit.

The organizational differences between collective and state farms are summarized in Table 1.4. These differences, however, were often very blurred. In the Soviet Union, collective farm members in reality did not have to rely on the uncertain stream of farm earnings, as they were guaranteed a minimum wage since Khrushchev=s time in the 1960s. If farm earnings proved insufficient to meet the minimum wage, the missing funds were remitted from the state budget. In Bulgaria, on the other hand, state-farm employees were compensated like collective farm members since the 1960s: 90% of the annual salary was paid out monthly, while 10% was held back until the end of the year, when the payment was adjusted for the actual farm earnings (this formula was obviously adopted to increase the motivation of state-farm employees for better performance). As a result of such blurring of differences, collective and state farms were often transformed from one organizational form to another by central fiat. This phenomenon of arbitrary transformation between collective and state farms was not restricted to the Soviet Union: it was widely practiced also in Central Eastern Europe, especially in Albania, Bulgaria, and Romania. We generally do not make any distinction between collective and state farms in our analysis, using interchangeably the

terms “farm enterprises,” “large farms,” “socialized farms,” or “socialist farms” to designate the organizational forms in collectivized socialist agriculture.

Table 1.4. Prototype Features of Sovkhozes and Kolkhozes in the USSR

	Kolkhoz	Sovkhoz
Ownership of land	State, with collective user status	State
Ownership of non-land assets	Collective with relatively less capital*	State
Financing of capital investment	Long-term loans from the government	New equity from the state
Status of residents	Collective members	Sovkhoz employees
Individual income	Distribution of residual collective income	Salaries and wages
Subsidiary income	From household plots	From household plots
State pension	None before 1960s	Always
Internal passport	None before 1960s	Always
Management	Chairman: formally elected but candidates restricted to nomenklatura	Director: appointed
Responsibility for rural social infrastructure	Yes	Yes

Kolkhozes were often converted to sovkhozes if a major capital investment was necessary.

Responsibility for the rural social services and village infrastructure was an important task of the socialized farms in the USSR (in many CEE countries, village councils and municipalities, not cooperatives, remained responsible for social infrastructure). The socialized farms were never pure business operations. In addition to agricultural production, they were directly entrusted with maintaining the entire range of social services in the village. The salaries of teachers, doctors, and postal personnel were paid by the government, but the actual disbursement was carried out by the local farm enterprise, which was subsequently reimbursed by transfers from the state budget. School buildings, clinics, shops, and other public facilities in the village were maintained and often built by the farm enterprise, with or without reimbursement from the government. Housing, power, water, and heat were provided in the villages by local farm enterprises, generally free of charge to the workers. It is hard to overestimate the role that socialized farms played in developing and maintaining the rural social infrastructure. In effect, they were directly responsible for the standard of living of the rural population: the rural population looked to the local farm

enterprise to answer all the daily needs and the government expected the farm enterprise to act as its willing and dedicated agent in these matters.

How was all this paid for? This is one of the mysteries of opaque Soviet accounting. The socialized farms were simply doing the state=s bidding—in food production as well as in maintenance of social infrastructure. The costs of maintaining the social sphere in the village were generally absorbed into overall production and operating costs. It was the state's responsibility to make sure that the socialized farms survived and continued to function. This was accomplished through a wide range of financial instruments, which extended far beyond direct payment for products delivered. Price subsidies for inputs and products, financial transfers to weak or loss-making farms, central redistribution of funds from profitable to unprofitable farms, generous allocation of long-term government credits, usually interest-free—all these were capital injections from the government that enabled the farm enterprises to continuing fulfilling their mission, i.e., producing food for the cities and taking care of the rural population.

Ignoring for the moment the economic disadvantages of the system in which business operations are intermixed with responsibility for the social sphere, this is the place to state that under the prevailing system the rural population was well taken care of and apparently quite satisfied with its standard of living. The availability of various consumer services and consumer goods in the village was always on a lower level than in the cities, but the rural population enjoyed the luxury of more spacious housing, while rural incomes did not lag substantially behind the incomes of urban families. Thus, the level of wages in agriculture was on a par with the average wage, while rural families had the additional benefit of production from their household plot, which supplied much of the domestic food needs and also provided some cash from sales of surplus. While the large collective and state farms were economically inefficient (see below), they certainly provided a comfortable work environment and an adequate standard of living for the rural population. This was largely

made possible by significant transfers of subsidies from the government to agriculture, often at the expense of other less-favored sectors of the economy.

We now proceed to consider two sets of attributes that always sharply distinguished socialist farms from farms in a market economy. These attributes concern the operating structure of farms and the size of farms as measured by land and labor.

Operating Structure of Socialist Farms

The socialist collectives and state farms operated in a centrally planned environment. Their objectives were determined by the central plan: the highest priority was attached to meeting the production targets. Considerations of efficiency and profitability were of secondary importance.

Table 1.5 summarizes the main operating decisions of a farm in a market economy and contrasts them with the operating decisions of a collective or state farm in a centrally planned economy. Market-oriented farms are profit maximizers. To achieve maximum profit, they maximize sales by producing in response to consumer demand and minimize costs by controlling labor, input purchases, capital investment, and borrowing. Centrally controlled farms focus on physical output, not sales. They have no levers to control costs, because they are committed to lifetime employment of their members, their inputs are push-delivered at non-negotiable prices by state planning authorities, their capital investments are dictated by the production plan, and their credit is supplied by the government from residual cash-flow considerations, without any regard to repayment capacity. As a result, profit and cost-efficiency did not play any role in the decision-making process of farms in a centrally planned environment. Farms essentially operated on a “cost-plus” basis, with all cost overruns guaranteed by the state—a very poor prescription for efficiency.

Table 1.5. Operating Decisions of Farms in Socialist and Market Economies

Business component	Decisions in a market economy	Decisions in a socialist economy
Sales	Produce in response to consumer demand	Produce to meet centrally imposed targets
Costs	Institute cost controls	"Cost-plus" accounting
Labor	Adjust labor force to changing production volume/mix	Labor force fixed: workers guaranteed lifetime employment
Purchased inputs	Seek best suppliers, control purchase quantities	Inputs push-delivered at state-fixed prices and in quantities determined by production quotas
Depreciation	Acquire new equipment only if added depreciation is justified by increased volume or by savings in other costs	New equipment deliveries determined by central planning; depreciation treated as an active source of cash
Credit/financial expenses	Borrowing limited by risk of bankruptcy (hard budget constraints)	Credit allocated centrally to cover deficits (soft budget constraints)
Profit	Maximize profit by controlling sales and costs	Profit uncontrollable

Productivity and efficiency were also adversely affected by labor policies. The socialist farms could fire a worker only in exceptional circumstances (a serious crime, uncontrollable drunkenness). The guarantee of lifetime employment introduced a strong element of moral hazard in labor relations in farm enterprises. Workers felt they did not have to exert a maximum effort, because there was no punishment for under-performance. This led to low productivity of labor, as workers in socialist farms were allowed to produce less per unit of time or unit of wages than their counterparts in organizations with a strictly enforced labor discipline. These negative effects of lack of discipline enforcement are well known in labor-managed farms and production cooperatives everywhere in the world.

In a market economy, debt and borrowing have implications that reach far beyond the impact of financing expenses on the profit account. The borrowing decision of a market entity always balances the benefits of debt (ready availability to support growth, relatively low cost and tax shield to increase profitability) with the associated risks (inability to repay the loan

and the potential for bankruptcy). This is the essence of the hard budget constraint: a market-oriented entity will not borrow indefinitely to satisfy all its cash needs, because excessive borrowing eventually leads to ultimate failure through bankruptcy. In a market environment, hard budget constraints are enforced by a combination of internal discipline and the practices of the commercial banking system. Banks impose a system of checks and balances on the borrowers (both existing and potential) with the understandable motive of safeguarding their loans against default. Complex credit-check systems, requests for cash-flow projections, profit forecasts—all are part of the normal banking practices in market economies, designed to minimize the incidence of default. Lending and borrowing are not automatic: the borrower has to pass certain creditworthiness thresholds before being allowed to borrow.

In a centrally planned environment, banks did not have this role. They were used by the government as a fiscal tool. Farms did not have to apply for debt. Debt was used by government to cover the farm's cash-flow deficits and accounting losses. There was an implicit understanding that this debt had no potential to bankrupt the farms whatsoever. In other words, the state implicitly relieved the farms of the responsibility for repayment and assumed the full risks that under market conditions may lead to bankruptcy. Centrally planned farms essentially operated under soft budget constraints: they could (and did) receive as much credit as was necessary to meet their cash-flow requirements, without any regard to risks of non-repayment. Collective and state farms thus operated with very few restraints on their costs and investments, because any overruns would automatically be covered with credit channeled by banks on instructions from the government.

Farm Sizes

Table 1.6 presents information about the average size of socialized farms (for detailed country data see Table A1.3 in Annex 1). In the 1980s, the average farm enterprise in the USSR had over 4,000 hectares of sown land and employed 500 workers. The average farm

enterprise in Central Eastern Europe had 2,000 hectares of sown land and employed 560 workers. The farms look much larger if the entire endowment of agricultural land is taken into account. Including pastures and hay meadows, in addition to sown land, the average socialized farm controlled more than 10,000 hectares of agricultural land in the USSR and nearly 3,000 hectares in CEE. The gap in farm sizes measured by sown land and total agricultural land was substantially greater in the USSR than in CEE because of the greater extent of pastures in the Soviet republics, especially in Central Asia and Transcaucasia.

Table 1.6. Farm Characteristics in Socialist and Market Economies in the 1980s (per farm averages)

	Agricultural land, ha	Sown land, ha	Workers	Tractors	Tractors and combines
Socialist economies (21)	9,791	3,514	512	54	68
USSR (15)	10,899	4,133	498	55	71
European USSR (4)	6,820	4,085	462	53	69
Kazakhstan	75,555	14,153	664	95	140
Central Asia (4)	42,096	2,098	933	80	86
Transcaucasia	2,297	656	407	22	25
Baltics	3,598	2,378	370	54	66
Central Europe (6)	2,778	1,962	563	47	55
Market economies	225	77	2.0	1.7	2.8
USA	187	97	1.4	2.5	3.7
Canada	231	126	1.6	2.7	3.9
Argentina	469	N.A.	3.9	0.6	0.7
European Union (12)	13	7	1.1	0.8	N.A.

Source: USSR Statistical Yearbooks for the Soviet republics and Comecon Statistical Yearbooks for CEE; labor data for CEE from country statistical yearbooks.

To get a sense of how large the socialized farms were it is useful to compare the average farm size in socialist countries with the benchmarks in some market economies. The average farm size in a particular country depends on the available resources, in total and per capita of rural population. Differences in average farm sizes across countries are therefore a natural outcome of differences in natural conditions, and as with any comparison care must be exercised to compare like with like. We have chosen for comparison the farms in USA, Canada, Argentina, and the European Union. While the population density in the European Union was much higher than in the USSR, it was not much different from that in CEE. The agricultural areas in the other three countries—USA, Canada, Argentina—are as sparsely

populated as in the USSR, and their climates and soils are fairly similar. Unlike Western Europe, these are land-rich countries with grain and livestock producing agricultures, similar in many respects to the agriculture that prevailed in the USSR in the 1980s. Table 1.6 presents the comparison of the average farm sizes in socialist and market economies. While the average socialized farm in the USSR had 11,000 hectares of agricultural land and 4,000 hectares of sown land, farms in USA and Canada averaged about 200 hectares of total land and 100 hectares of cropped land. Farms in Argentina were larger than in North America, but even here the average was about 500 hectares. On the whole, USSR farms were one-two orders of magnitude larger than the farms in market economies with comparable agricultures. Farms in CEE were smaller than in the USSR, but they were nevertheless an order of magnitude larger than in USA, Canada, and Argentina, despite the much smaller endowment of land per capita in CEE. The CEE farms were two orders of magnitude larger than farms in the European Union, where the land endowment was similar.

The positive evidence of market economies thus suggests that socialist farms were much larger than the norms observed in market agriculture. The farm sizes in socialist countries were determined by socialist ideology, which emphasized industrialized and mechanized agriculture as a development path for relatively backward agrarian societies. On a political level, a relatively small number of large farms were easier to control in a centrally planned environment than hundreds of thousands and millions of small family farms. Specifically, central procurement of grain and other food commodities for the growing urban populations was much easier to enforce among large farms than among scattered multitudes of individual peasants, as Soviet politicians were reminded by the memories of the 1918-21 famine in Russia and Ukraine. This mixture of ideological and political considerations led to collectivization and ultimately the creation of very large farms.

Socialist farms were large by all three main factors of production: land, labor, and machinery. The average socialized farm had nearly 70 pieces of farm machinery (counting tractors and

combines, regardless of their horsepower rating), compared with 4 (three tractors and one combine) for the average farm in USA or Canada (the average EU farm had less than one tractor). The managers of socialized farms thus had to contend with considerable difficulties scheduling and monitoring hundreds of workers and tens of pieces of machinery.

Table 1.7. Pre-Transition: Labor and Machine Intensity

	Workers per 1000 ha	Tractors per 1000 ha	Tractors per 100 workers
Socialist economies (21)	369	20	10
USSR (15)	346.1	29	10
Baltics (3)	151.0	23	15
European USSR (4)	221.4	22	10
Transcaucasia (3)	652.3	36	6
Central Asia (5)	379.1	33	10
CEE (5)	264.1	24	9
Albania	1228.2	39	3
Market economies			
USA	14	26	182
Canada	13	22	169
EU12	144	104	72

Source: For socialist economies: USSR Statistical Yearbooks and Comecon Statistical Yearbooks; labor data for CEE from various country statistical yearbooks. For market economies: Eurostat 1999, US Census of Agriculture 1987, US Agricultural Statistics 1998, Canada Census of Agriculture 1986, Historical Labor Force Statistics 1997; EU tractors from World Bank.

Our discussion of farm sizes is not intended to advocate one optimal farm size, and it is certainly not to be construed as suggesting that small farms are best. Yet the world experience indicates very clearly that, on average, the socialist farms are too large and the optimum size (however elusive the concept) is in all probability substantially smaller. As we have noted previously, farm sizes vary depending on the resource endowment in each country. In market economies, farms grow through the medium of land markets, which allow resources to flow from inactive or less efficient owners to more efficient active farmers. The maximum size in each particular case depends on the managerial capacity of the operator. Our interpretation of the world experience with farm sizes suggests that, instead of deciding a priori that large farms are best, as dictated by the socialist ideology, we should allow market

forces—in particular land markets—to adjust farm sizes and determine the optimal size in each individual case depending on human and physical capital.

Intensity of Factor Use

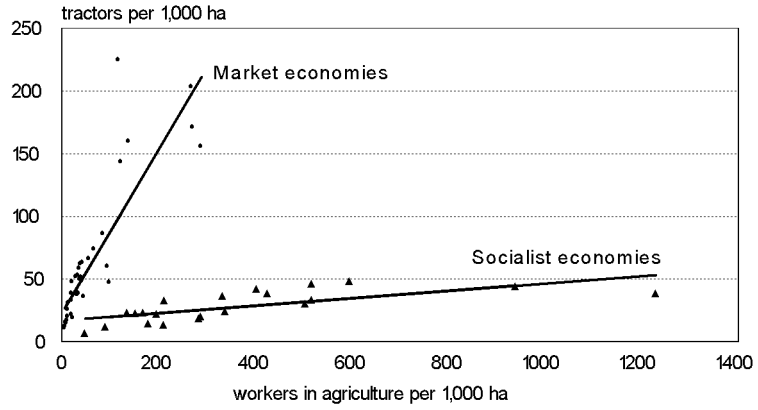
Since socialized farms had so much more land than farms in market economies, it is relevant to examine the intensity of labor and farm machinery per unit of land in socialist agriculture. Table 1.7 clearly shows that socialized farms were much more labor intensive than farms in USA and Canada. They operated with a work force of more than 300 people per 1,000 ha, while North American farms employed less than 15 workers per 1,000 ha. The CEE farms used 250 workers per 1,000 ha (excluding Albania, which had an exceptionally high labor intensity even by socialist standards—more than 1,200 workers per 1,000 ha), while the much smaller farms in the neighboring countries of the European Union operated with half that number.

The level of mechanization, on the other hand, shows a different picture. Socialized farms appear to have been under-mechanized despite the persistent mechanization efforts in all socialist countries. The use of machinery per 1,000 ha in both CEE and USSR ran at about the same level as in USA and Canada (although roughly at one-quarter of the level in the European Union), but there was a sharp mechanization gap between socialist and market economies in terms of the ratio of machinery to labor. Socialized farms operated with about 10 tractors per 100 workers. Farms in USA and Canada had more than 150 tractors per 100 workers, and European Union farms about 70 tractors per 100 workers. These numbers characterizing the pre-transition decade of the 1980s are consistent with the findings of Johnson and Brooks (1983), who have analyzed the two previous decades 1960-79. During that twenty-year period, farms in the USSR operated at mechanization levels of 40 horsepower per agricultural worker, while farms in market economies (as represented by ten

mid-western and south-western states in the USA and four central provinces in Canada) operated with 1,100 horsepower per worker.

Data for three decades convincingly show that, compared to farms in market economies, the large socialized farms were overstaffed and at the same time under-mechanized, despite the large absolute size of their machine park. This point is clearly illustrated in Figure 1.6, where the relationship between mechanization and labor intensity is described by two distinct regression lines for socialist and market economies. Farms in market economies used less labor and more machinery per unit of land, while farms in socialist economies used more labor and less machinery per unit of land. This was not necessarily a bad tradeoff for socialist agriculture, as labor was plentiful and cheap (due to government policies), while machinery was scarce and thus relatively expensive (due to the vagaries of centrally planned industry). Unfortunately, the a priori reasonable substitution of labor for machinery failed to produce an efficient agriculture, as we shall see in the next section.

Fig. 1.6. Machinery and Labor in Market and Socialist Economies



Inefficiency of Socialist Agriculture

Visible manifestations of the inefficiency of socialist agriculture began to be felt with particular clarity in the late 1980s. Despite decades of centrally planned growth, urban consumers in the USSR were experiencing food shortages, extensive rationing had to be instituted, and long queues for food became a routine phenomenon. As a result, the free prices in collective farm markets (where Soviet farmers were allowed to sell directly to consumers) rose by about 50% in 1989-1990, while the official state prices for food remained fixed (Cook 1992).

These dramatic events were actually a cumulative outcome of a long process of development that characterized Soviet agriculture and Soviet economy in general. We have noted previously that the growth rates (for both GDP and agricultural output) were significantly lower in the 1980s than in 1970s. This was a continuation of a trend that began to be observed in the 1960s: the annual growth rates of agricultural production in the USSR as a whole dropped from 4% in 1966-1970 to 1% in 1981-1985 (Cook 1992). This was a particularly alarming trend because investments in agriculture continued at a relatively high and increasing level: Soviet agriculture=s share in total investment rose from 21% in 1966-1970 to 24% in 1981-1985. New investments in agriculture were thus producing decreasing marginal returns and failed to sustain sectoral growth. The Soviet leadership was aware of this phenomenon: Gorbachev began referring to the specific difficulties with return on investment in agriculture in his public speeches in 1985, while the scientific community had been providing evidence of this effect since the early 1960s.

This situation was not unique to Soviet agriculture. It was replicated throughout the entire Soviet economy, where capital investments were not producing sufficient output growth. The marginal product of capital in the USSR dropped dramatically from 25% in 1960 to 3% in 1986, as the capital-to-output ratio increased monotonically from 2.5 in 1960 to 5.0 in 1986

(Fischer and Easterly 1995). Since the capital-to-output ratio in industry increased only from 2.5 to 3.0 during the same period, other sectors of the Soviet economy—agriculture included—were much more inefficient in the utilization of new investment than industry.

Soviet economic growth, and with it growth in agriculture, was accomplished mainly through increasing the use of inputs and capital, and not through productivity increases (Ofer 1987). Such extensive growth must eventually hit the barrier of decreasing marginal returns in any economy, but in the Soviet Union growth was declining while investment was rising since 1950—primarily due to inefficient use of resources.

Johnson and Brooks (1983) analyzed the technical efficiency of Soviet agriculture using data for all fifteen republics of the USSR during the twenty-year period 1960-1979. Their results indicate that the productivity level of Soviet agriculture was substantially lower than that for market economies, which were represented by a number of geographically comparable states in the USA and the central provinces of Canada. The gap between the productivity levels of Soviet agriculture and agriculture in market economies reached 100%-150% depending on the particular estimation scheme used by Johnson and Brooks. In other words, the productivity level of agriculture in market economies was found to be about 2-2.5 times the productivity level of Soviet agriculture.

The partial productivity of land in Soviet agriculture, as measured by the gross output of agricultural products per hectare, was somewhat higher than the partial productivity of land in market economies during the twenty-year period studied by Johnson and Brooks (Table 1.8). This is consistent with the observed yields of various crops, which generally were not much different from the yields in Western countries (milk yields were always much lower in the USSR than in Western agricultures). Soviet and market agricultures differed primarily by the productivity of agricultural labor. Labor productivity was lower by a factor of ten or more in the Soviet republics compared with the US and Canada (Table 1.8). This low productivity

of agricultural labor is clearly a reflection of the very high labor intensity of Soviet agriculture—the Soviet farming sector employed too many people in relation to the output it produced. In support of this observation, we should note the very low ratio of farm machinery to labor in Soviet farms. Mechanization of agriculture was the pride of Soviet agricultural policy, and yet Soviet farms operated with less than 50 horsepower per worker, compared with more than 1,000 horsepower per worker in US and Canada (see the discussion of the intensity of factor use in the preceding section). Even allowing for the lower horsepower rating of Soviet farm machinery, a difference of nearly two orders of magnitude in the mechanization rate definitely suggests over-employment of labor in Soviet agriculture.

Table 1.8. Productivity and Input Use in Socialist and Market Economies#

	Output per hectare of land	Output per worker
1960-1979 (Johnson and Brooks 1983)		
Soviet republics	6.76	105
Market economies*	4.62	1215
1985 (USDA 1997)**		
Soviet republics	237	4962
CEE (w/out Baltics)	622	4582
Market economies:		
USA	433	43248
Canada	210	23142
EC-12	803	13854

*Ten states in the USA and four provinces in Canada. The averages do not include Finland, which is the fifteenth country included by Johnson and Brooks in their analysis.
** USDA(1997). World Agriculture: Trends and Indicators, 1970-91, Agriculture and Trade Analysis Division, Economic Research Service, U.S. Department of Agriculture, Statistical Bulletin number 861.
#Units of measurement: Johnson and Brooks—tons of wheat per cultivated hectare and per thousand days worked; USDA—dollars (crop production per hectare and agricultural output per agricultural worker).

Econometric analysis of gross agricultural product in the fifteen Soviet republics as a function of various factors of production (such as land, livestock, capital, labor, and fertilizer use) was carried out by Kriss (1994) for the period 1965-1990—a full quarter-century of Soviet agricultural data. The results of this analysis are reproduced in Table 1.9, which in addition to the agricultural output per worker (in constant 1983 rubles) and the annual growth rate of agricultural output also gives the gap in the productivity level of each Soviet republic

relative to Russia. The analysis of productivity levels clearly divides the Soviet republics into two groups. The high-productivity republics include the core group of Russia, Ukraine, Belarus, Moldova, and Kazakhstan, plus two of the Baltic states (except Latvia). The low-productivity group includes the four Central Asian republics and the Transcaucasian states (plus Latvia). The productivity of these republics was 20%-30% below the level of Russia, other core republics, and the Baltic states. Thus, even if we assume that the productivity in the European part of the USSR was on a par with market economies (a highly dubious assumption given the findings of Johnson and Brooks), half the Soviet Union—seven out of fifteen republics—grossly under-performed the developed world.

Table 1.9. Productivity Indicators of Agriculture in Soviet Republics: Pre-Transition Period 1965-1990

	Agricultural output per worker, thou. rubles	Average growth rate of agricultural output per worker, %/year	Deviation of productivity level in agriculture from Russia=s average level, %
Central Asia			
Turkmenistan	5.4	1.4	!29.2
Kyrgyzstan	6.1	1.5	!20.5
Uzbekistan	5.4	0.75	!27.5
Tajikistan	5.6	0.8	!25.8
Transcaucasia			
Azerbaijan	6	1.9	!20.5
Georgia	4.9	2	!16.8
Armenia	5.4	1	!18.7
Core Republics			
Kazakhstan	8.4	1.7	+9.6
Russia	7.7	2.3	0
Ukraine	7.1	2.8	+2.3
Belarus	7.4	3.2	+2.2
Moldova	5.5	2.4	+3.2
Baltic Republics			
Lithuania	9.7	2.2	+11.4
Latvia	9.6	1.3	!2.2
Estonia	12.8	1.4	+18.8

Source: Kriss (1994); based on official published data of the USSR State Committee on Statistics.

Box 1.1. How to Measure Differences in Productivity Levels?

Productivity is defined by the amount or value of output produced by a given bundle of inputs. If only a single input is considered, the result is partial productivity, such as partial productivity of land (output per hectare) or the partial productivity of labor (output per worker). If all inputs are bundled in the analysis, the result is total factor productivityCthe productivity of all factors of production used to generate the output. Productivity levels are derived by constructing or estimating production functions, which are multiple regression models relating output to all relevant inputs or factors of production (land, labor, farm machinery, fertilizer, water, etc.). To reflect differences in productivity levels between different units of analysis (regions, countries, organizational forms), the multiple regression model is modified to include a dummy variable that represents the type or category of each unit. Thus, in the analysis of Soviet republics carried out by Kriss, the dummy variable had values (levels) from 1 to 15 corresponding to the fifteen Soviet republics. In the Johnson and Brooks analysis, the dummy variable had only two values identifying Soviet republics and non-Soviet countries.

The production function is usually estimated in logarithmic form (the so-called CobbBDouglas model), and for different levels of the dummy variable 1, 2, ... (i.e., for different countries or regions) we get separate equations of the form

$$\log(\text{Output}_1) = a_1 + b * \log(\text{Factor}_1) + c * \log(\text{Factor}_2) + d * \log(\text{Factor}_3) + ...$$

$$\log(\text{Output}_2) = a_2 + b * \log(\text{Factor}_1) + c * \log(\text{Factor}_2) + d * \log(\text{Factor}_3) + ...$$

These equations differ only by the intercept term a1 or a2, which determines the Alevel@ of the production function for country 1 or 2. The Aslope@ coefficients b, c, d are usually assumed homogeneous, or equal, for each level of the dummy variable. When the equations are differenced, all the terms corresponding to the production factors cancel out, and after taking the antilog of the difference we are left with the ratio

$$\text{Output}_1/\text{Output}_2 = \exp(a_1 \text{ B } a_2)$$

The gap between the output in region or country 1 (Output_1) and the output in region or country 2 (Output_2) is thus determined by the difference (a_1 B a_2) of the intercept terms of the production functions for regions 1 and 2. Exponentiating this difference and subtracting 1 we obtain the productivity gap in percent. Johnson and Brooks in one of their estimations, obtained $a_1 = 4.31$ in the production function of the non-Soviet countries and $a_2 = 3.45$ in the production function of the Soviet republics. This gave (a_1 B a_2) = 0.86, or $\text{Output}_1/\text{Output}_2 = \exp(0.86) = 2.36$. The output level in the non-Soviet countries was thus 136% higher than the output level in Soviet republics for the same bundle of factors of production.

Table 1.10. Impact of Producer Price Subsidies on Farm Profitability (percent of sales)

Year	Novgorod Oblast		Leningrad Oblast	
	Profitability as reported	Profitability without subsidies	Profitability as reported	Profitability without subsidies
1985	7	B13	C	C
1986	7	B13	21	14.4
1987	1	B19	22	14.9
1988	22	B12	21	9.5
1989	21	B13	18	7.2
1990	19	B17	21	11.4

Farm entitlement status: share of price subsidies in total transfers	Voronezh Oblast	
	Profitability with price subsidies	Profitability without subsidies
Under 10%	8	3
11-20%	10	B5
21-30%	16	B10
31-40%	21	B17

Source: Novgorod and Leningrad oblasts from Rabinovich (2000); Voronezh Oblast from Cook (1992).

The inefficiency of socialist agriculture finds a reflection both in farm accounts and in public finance. The traditional policy in all socialist countries was to maintain low and stable retail food prices for the benefit of the consumers. These prices were insufficient to cover the production costs. In other words, socialist farms were making losses given the level of food prices and the level of production costs. In a market economy, the danger of bankruptcy inherent in such a situation provides a stimulus for farms to improve their cost efficiency and return to profitability. In a centrally controlled economy, on the other hand, farms rely on cost-recovery principles and their losses are made up by transfers from the state budget. Profitability at the farm level was sustained through injection of generous producer subsidies by the government. Data from the USSR in the second half of the 1980s —Voronezh Oblast (Cook 1992) and Novgorod Oblast (Rabinovich 2000)—show that, without subsidies paid in the form of price supplements to producers, most farm enterprises would report losses instead of profits in their annual financial statements (Table 1.10). Data for the generally profitable Leningrad Oblast indicate that, without price subsidies, the profit margins would

be cut by one-half. The various subsidies and transfers to agricultural producers naturally imposed a heavy burden on the budget, especially since 1985. Net transfers from the budget to the entire agro-industrial complex (including primary agriculture, processing, and other agricultural services) exceeded 40 billion rubles annually since 1985, contributing between 50% and 90% of the budget deficit (the exact percentage varied from year to year; see Cook 1992). Although the specific numbers are based on two provinces in the USSR, the general pattern is valid for agriculture in most socialist countries.

Why Socialist Agriculture was Inefficient

Table 1.11 summarizes the inherited features of socialist agriculture that have been discussed in previous sections and highlights the aspects of each feature that could be responsible for inefficiency. The centrally planned environment, which insulated the farms from market signals, imposed central targets as a substitute for consumer preferences, and allowed farms to function indefinitely under soft budget constraints without proper profit accountability, was of course the main cause of inefficiency of socialist agriculture. Efficiency was never an objective in socialist agriculture: meeting production targets at any cost was the main priority. Yet the inefficiency of socialist agriculture also can be attributed to two "micro-level" factors, which sharply distinguished socialist agriculture from agriculture in market economies: exceptionally large farm sizes and collective organization of production. This section reviews some of the theoretical reasons for inefficiency of large farms and collectives. It also shows that Russian scientists (and politicians) had been aware of these factors for several decades before the beginning of transition.

Why large farms are relatively inefficient

The typical farm size in socialist countries was an order of magnitude larger than the average in land-rich market economies, such as the USA or Canada. The excessive size was reflected not only in large land endowments, but also in the large number of workers employed (in

absolute terms and per hectare of land). Such large farms are a rarity in market economies, because they are relatively inefficient due to high transaction costs (including the cost of monitoring labor and various agency costs associated with hired management) and can survive in a competitive environment only under special circumstances. As to the other micro-level factor, collective farms—in the form of production cooperatives or communes—are very rare in market economies today, also apparently because of their inherent inefficiency stemming from a variety of behavioral and governance features.

Table 1.11. Inherited Features of Socialist Agriculture

Attribute	Shortcomings
Centrally prescribed production targets	Inefficient due to lack of consumer orientation, insensitivity to market signals
Soft budget constraints	Inefficient due to lack of profit orientation, reliance on writeoffs and subsidies
Collective organization of production	Inefficient due to free riding, moral hazard, lack of individual incentives: remuneration does not depend on effort
Large farms (2,000 ha, 500 workers)	Inefficient due to high monitoring costs, anonymity, lack of transparency
Lifetime employment policy for farm members	Inefficient due to inability to control costs by adjusting labor
No effective individual ownership of land and production assets	Inefficient due to non-transferability of land and assets and lack of incentives associated with property rights: "workers do not own the fruits of their labor"

The Soviet ideology and policy always emphasized large industrialized and capital-intensive farms. In principle, industrialization and mechanization is economically justified if there are economies of scale. Such economies exist in some branches of agriculture, and do not exist in other branches. For instance, livestock enterprises that rely on industrially manufactured feed easily grow to industrial-scale operations even in market economies. Large pig and poultry "factories" have evolved with major capital investments all over Maryland and Delaware in the USA, and they appear to be more profitable than smaller livestock operations, at least if we are willing to ignore the serious damage they cause to the

environment. But economies of scale appear to be much more elusive in primary agriculture, i.e., crop production and pasture-based livestock breeding.

Lumpiness or fixity of assets is one of the main factors contributing to economies of scale. To justify the purchase of a tractor or automatic milking equipment, the farmer must have more than a certain minimum amount of land or a certain minimum number of cows. However, in a market economy, machinery need not be purchased, as it always can be rented when needed (Binswanger et al., 1995). There is no need to maintain a permanent labor force of 300 or 500 workers to meet the seasonal peak demand for labor, as workers always can be hired in the labor market when needed and for as long as needed. These considerations, however, were not valid in the socialist centrally controlled environment. Lack of machinery leasing services, labor exchanges, and other factor markets encouraged the development of large-scale farms, supplying an economic rationale, in a strictly non-market setting, for the ideological and political agenda. In a market setting, however, the farm sizes achieved in the former socialist countries are far too large compared with the "best practice" farm sizes observed in market economies, and their sheer size probably renders them uncompetitive in a market-oriented environment.

Agency theory introduced the concept of transaction costs into the analysis of economies of scale. As farms become larger, the costs of monitoring the operations and enforcing labor discipline increase, eventually offsetting the benefits from economies of scale, even if they exist. Livestock "factories", where production is concentrated in a single relatively small locale, are easier to monitor than livestock grazing in mountain pastures or cotton harvesting over thousands of hectares. The transaction costs are lower, and these enterprises can effectively grow to a larger maximum size. There were only two examples of very large farms in USA history. One was the case of Southern cotton plantations before the Civil War and the other the case of so-called "bonanza" farms in the wheat-growing Mid-West in the second half of 19th century. Each of these large-farm categories owed its existence to a very

special and distinct set of circumstances. Both were highly profitable in their time, but they disappeared when the environment changed. The large cotton plantations disappeared with the abolition of slavery in the Southern states after the Civil War. The wheat-growing "bonanza" farms, created on free land grants to railroad executives along the newly constructed railroads in the Mid-West, disappeared after less than a decade as the absentee landlords exhausted the fertility of the soil and moved on to other more lucrative and managerially less demanding business projects.

Today, the only example of large farms in market economies is provided by plantations of perishable crops that require close coordination between harvesting, packing, and shipping, such as bananas and pineapples. These crops must be delivered to the market within a minimum time after they are harvested, as otherwise they will spoil and become unsaleable. The compressed delivery schedule requires investment in packing, refrigeration, and shipping facilities, which is usually achieved through vertical integration with non-farming corporations. The advantages of timely delivery of these crops to the markets are sufficient to offset the monitoring and other transaction costs associated with the large scale of the operation. Perishability is not a factor for cotton, grain, potatoes, or even apples, and economies of scale are not sufficiently pronounced to justify large farms for these typical crops grown in the former Soviet Union.

Why production cooperatives are relatively inefficient

The inefficiency of socialist agriculture was also strongly influenced by labor behavior. Workers in large farm enterprises did not feel it necessary to exert the maximum effort in their work. First, the policy of lifetime employment shielded them from the ultimate sanction—firing—by which effort is enforced in market economies. Second, the large size of the labor force and the enormous span of the fields made it very difficult to monitor the worker behavior at the actual work place. Without monitoring, enforcement of effort through basic persuasion and example also becomes impossible. Third, the socialist-collective

organization of production ensured practically equal remuneration for everybody and broke the link between what workers received and the amount of effort they put into their work. These factors, dependent as they were both on large size and on collective organization, combined to reduce the workers' incentives to exert sufficient effort. The input of effort per unit of time or unit of wages was relatively low in large collectives, and this adversely affected productivity and profits.

These phenomena are known weaknesses of production cooperatives everywhere in the world. All production cooperatives based on member labor suffer from shirking and free riding behavior among the members. In socialist agriculture, these weaknesses were further aggravated by monitoring and enforcement difficulties associated with size (also a well-known universal factor) and by the evils of the administrative command system (a unique feature in the socialist countries).

Causes of inefficiency as viewed by socialist scientists

Politically and ideologically, the socialist world was committed to the Soviet model of agriculture. Yet politicians and scientists were aware of the shortcomings and inefficiencies of their system, and significant reform attempts continued all through the years, especially after Stalin's death in 1953. The reforms generally dealt with technical symptoms (e.g., optimal production planning) and did not treat the root of the problem – central command, large size, and collective organization, which remained sacrosanct. And yet recognition of the true organizational causes of inefficiency began to emerge already in the early 1960s, especially in the scientific community. A group of researchers around Vladimir Tikhonov, who in 1965 was appointed the head of the newly established Institute of Organization and Incentives of Labor in Agriculture, forcefully advocated the transition to small work units ("up to 6-8 members" instead of the traditional 100-200 in a typical collective farm) with freedom to decide both on production techniques and on product mix and with payment based on actual effort and quality of output ("Green volume", Bashmachnikov). The

advantages of the small work unit were identified as stemming from its closeness to the family unit, which these scientists acknowledged as the best natural form of organization for farming. In their view, the large farm enterprises had to fulfill a support role, providing the full range of farm services to the small work units—in other words, act as service cooperatives supporting nearly individual producers.

Research into the function and role of the household plots, representing the individual farming sector in the socialist countries, also began in the 1960s. This "individual farming" school (associated with the name of G. Shmelev) changed the traditional view of household plots as a decaying remnant of the anti-revolutionary peasant mentality. It focused the attention on their high productivity and major contributions to gross product, while stressing the complex symbiotic relationships with the collective farms. Shmelev's work in the USSR was later reflected in the West in the large body of work on "Soviet private agriculture" by Karl Eugen Waedekin.

In the best tradition of Soviet science, these schools vocally promoted their findings and conclusions in the political establishment and in the press. Their views certainly influenced the agricultural policies in the 1960s and the 1970s, as is clear, for instance, from the gradually relaxing official attitude toward household plots. Yet ideology and politics precluded more radical reforms based on their teaching. Hungary was the only socialist country that, in the aftermath of the 1956 events, gradually introduced significant changes in the organization of agriculture. Large farm enterprises were encouraged to operate with greater profit orientation, subject to central planning constraints. Individual farming (mainly household plots, but also some small farmers outside cooperative frameworks) received official recognition and were often treated as a formal production sector in large cooperatives, with all that this implied for allocation of resources and product marketing. The Hungarian experience was vigorously studied by Soviet scientists and agricultural policy makers. Unfortunately, there has been no systematic research to compare the performance of

Hungarian socialist agriculture to other countries following the Soviet model, and we can only speculate today that perhaps the relative success of Hungary during transition is attributable to a certain extent to the changes that it introduced already in the 1960s and the 1970s.

Transition Desiderata: A Conceptual Framework

Catching up with market economies (and perhaps even overtaking them) was always an important consideration for Soviet planners. The transition to a market-oriented system, emulating the economic order of the more successful capitalist countries, was regarded in the early 1990s as a new strategy to cure the chronic inefficiency of the socialist economic system in general, and socialist agriculture in particular. Because of the broadly common organizational and institutional heritage in agriculture, efficiency considerations suggested a fairly uniform conceptual framework for agricultural reform in all transition countries. On the macroeconomic level, the reform framework called for elimination of central controls, price liberalization, and introduction of hard budget constraints. On the sectoral micro-level, it included a shift from collective to individual agriculture and business-like corporate farms and general downsizing of farms, all in line with the established experience of market economies. The abolition of collective agriculture was naturally to be accompanied by privatization of land rights, which in Western thinking automatically implies transferable property rights and functioning land markets. Alongside land, all other movable and immovable property—livestock, machinery, farm buildings—had to be privatized as part of the transfer of all factors of production from collective to individual responsibility. Ultimately, such actions could change the entire system of producer incentives, leading to a more efficient and competitive agriculture.

Without in any way detracting from the importance of actions on the macroeconomic level, progress on sectoral micro-level of this conceptual framework had the potential for

significant impact on the agrarian rural population. As theory suggests, individual responsibility and direct accountability would cure free riding, shirking, and moral hazard that make collective organizations generally inefficient. Smaller farm sizes would be more manageable and less wasteful, reducing the level of monitoring and other transaction costs between managers and workers that are typically high in large organizations. Property rights associated with private ownership of land (or with secure tenure) would induce farmers to put a greater effort into production. Finally, transferability of use rights would facilitate the flow of land from less efficient to more efficient producers, or more concretely from passive landowners (such as pensioners in an aging population) to energetic active operators.

Table 1.12. Ideal Transition Desiderata

Area	Pre-transition situation	Required action
Production	Centrally prescribed targets	Allow free decisions
Prices	Centrally controlled	Liberalize
Finances	State support, writeoffs	Hard budget constraints
Inputs, sales, processing:	State-owned monopolies	(a) Privatize (b) Demonopolize
Ownership of resources	State, collective	Privatize
Farming structure	(a) Large size (b) Collective organization	(a) Downsize (b) Individualize

A strategy of agricultural transition aimed to improve the efficiency and productivity of agriculture in CEE and CIS required the replacement of institutional and organizational features of the former command economy with attributes borrowed from the practice of market economies. Table 1.12 summarizes the ideal transition desiderata. The conceptual framework for transition envisaged a transformation from collective to individual agriculture as the ultimate goal, although it was recognized that some agricultural activities and some subsectors would be characterized by a mixture of individual and corporate forms of organization due to economies of scale and scope. Individual farmers, once established as independent entities, would engage in land-market transactions to optimize the size of the holdings given their management skills and availability of resources. They would form

associations to ensure efficient provision of farm services or patronize private commercial suppliers. Pragmatic considerations suggested an intermediate stage involving transition to downsized but still relatively large corporate or cooperative farms based on private ownership of land and assets, with radically modified, profit-motivated management showing significant accountability to individual members and shareholders. Unlike the traditional collectives, these corporate agricultural producers would neither be subject to pervasive intervention of the state nor rely on its largess. It was expected that such a transition framework would lead to market-oriented agriculture with dramatically improved productivity and efficiency.

Although the common institutional and organizational heritage in agriculture prescribed a conceptually common framework for transition, the adherence to these ideal concepts varied across the region. The implementation in different countries differed in specifics due to differences in political, cultural, social, and also natural conditions. In turn, different implementation strategies have produced dramatically different outcomes and we are actually witnessing the emergence of a sharp "East/West divide" between the agricultural sectors in CEE and CIS—the two subblocs in the formerly Soviet-dominated region. The details of this emerging "East/West divide" in transition agriculture are discussed in the chapters that follow.

Annex 1

Table A1.1. Agrarian Characteristics and National Income in Socialist Economies in the 1980s

State	Share of rural population*	Share of employed in agriculture*	Share of ag in GDP**	Share of livestock in ag output**	Share of arable land in ag land**	GNP per capita#, $	GNP per capita#, % of Middle Income group
Belarus	38.5	23.0	24.5	56.9	64.2	2817	96.5
Moldova	56.6	38.5	30.0	37.7	72.0	1567	53.7
Russia	28.3	15.0	14.8	61.4	61.3	3849	131.8
Ukraine	34.8	22.6	21.7	53.1	81.8	1944	66.6
European USSR							
Armenia	33.5	19.5	17.4	54.6	35.7	1475	50.5
Azerbaijan	46.5	33.0	12.5	35.4	36.6	1292	44.2
Georgia	46.3	29.4	24.2	33.2	25.0	2414	82.7
Transcaucasia	42.1	27.3	18.0	41.1	32.4	1727	59.2
Kazakhstan	44.4	23.4	28.5	59.5	18.2	2196	75.2
Kyrgyzstan	62.0	33.0	31.8	60.0	13.9	1359	46.5
Tajikistan	66.7	42.8	26.3	34.2	21.4	1055	36.1
Turkmenistan	53.9	38.2	27.6	32.7	3.4	2037	69.8
Uzbekistan	59.0	37.7	27.8	34.0	17.0	1662	57.0
Central Asia							
Estonia	29.3	14.9	20.9	71.1	71.4	4699	161.0
Latvia	30.4	16.1	18.0	69.9	68.0	2220	76.0
Lithuania	35.3	23.4	25.8	66.8	66.7	2806	96.1
Baltics	31.7	18.1	21.6	69.3	68.7	3242	111.0
USSR (15)	44.4	27.4	23.8	50.7	43.8	2266	77.6
Aklbania	65.3	56.1	33.2	31.6	53.1	820	28.1
Bulgaria	36.0	17.0	11.8	55.5	62.0	1778	60.9
Czech Republic	35.6	12.3	6.6	57.7	54.7	5639	193.2
Hungary	40.8	17.0	17.0	51.6	77.5	4770	163.4
Poland	40.3	28.8	12.1	44.4	76.7	2958	101.3
Romania	50.0	29.7	14.2	40.8	66.8	1703	58.3
Slovakia	46.0	13.0	6.9	57.7	61.5	3856	132.1
CEE (7)	44.9	24.8	14.6	48.5	64.6	3075	105.3
All ECA countries (22)	44.5	26.6	20.6	50.0	50.4	2536	86.9

*Average 1980в1989; ** 1987; # Average 1987-89,

Table A1.2.Growth, Agricultural Employment, and Labor Productivity in Socialist Countries in the 1980s (1980=100)

	Change in GDP 1980-89	Change in ag output 1980-89	Change in ag labor 1980-89	Change in productivity of ag labor 1980-89
Albania	124.8	130.6	126.5	103.3
Bulgaria	138.7	103.3	73.4	140.7
Czechoslovakia	117.0	116.4	85.1	136.8
Hungary	116.4	105.6	88.3	119.7
Poland	108.3	119.4	87.9	135.8
Romania	108.00	141.00	98.83	142.11
Average CEE	118.85	119.40	93.34	129.72
Estonia	129.3	110.6	89.8	123.1
Latvia	119.2	126.9	92.4	137.3
Lithuania	136.4	141.8	85.4	165.9
Average Baltics	128.30	126.41	89.22	142.12
Average CEE	122.00	121.74	91.97	133.85
Moldova	139.3	121	89.4	135.4
Russia	130.3	123	91.5	134.5
Ukraine	130.4	123	83.7	146.9
Belarus	150.7	137	81.3	168.6
Average core USSR	137.68	126.00	86.46	146.33
Kazakhstan	127.2	104	107.6	96.7
Kyrgyzstan	139.2	126	126.9	99.3
Tajikistan	126.1	99	128.3	77.2
Turkmenistan	134.3	129	142.3	90.7
Uzbekistan	131.6	104	132.9	78.3
Average Central Asia	131.68	112.40	127.60	88.40
Azerbaijan	123.4	99.1	119.6	82.8
Armenia	143.6	93	92.6	100.4
Georgia	131.5	94	87.3	107.7
Average Transcaucasia	132.83	95.37	99.84	96.98
Average USSR	131.1	119.6	97.0	121.5

Figure A1.1. Patterns of Growth and Productivity in the Pre-Transition Decade

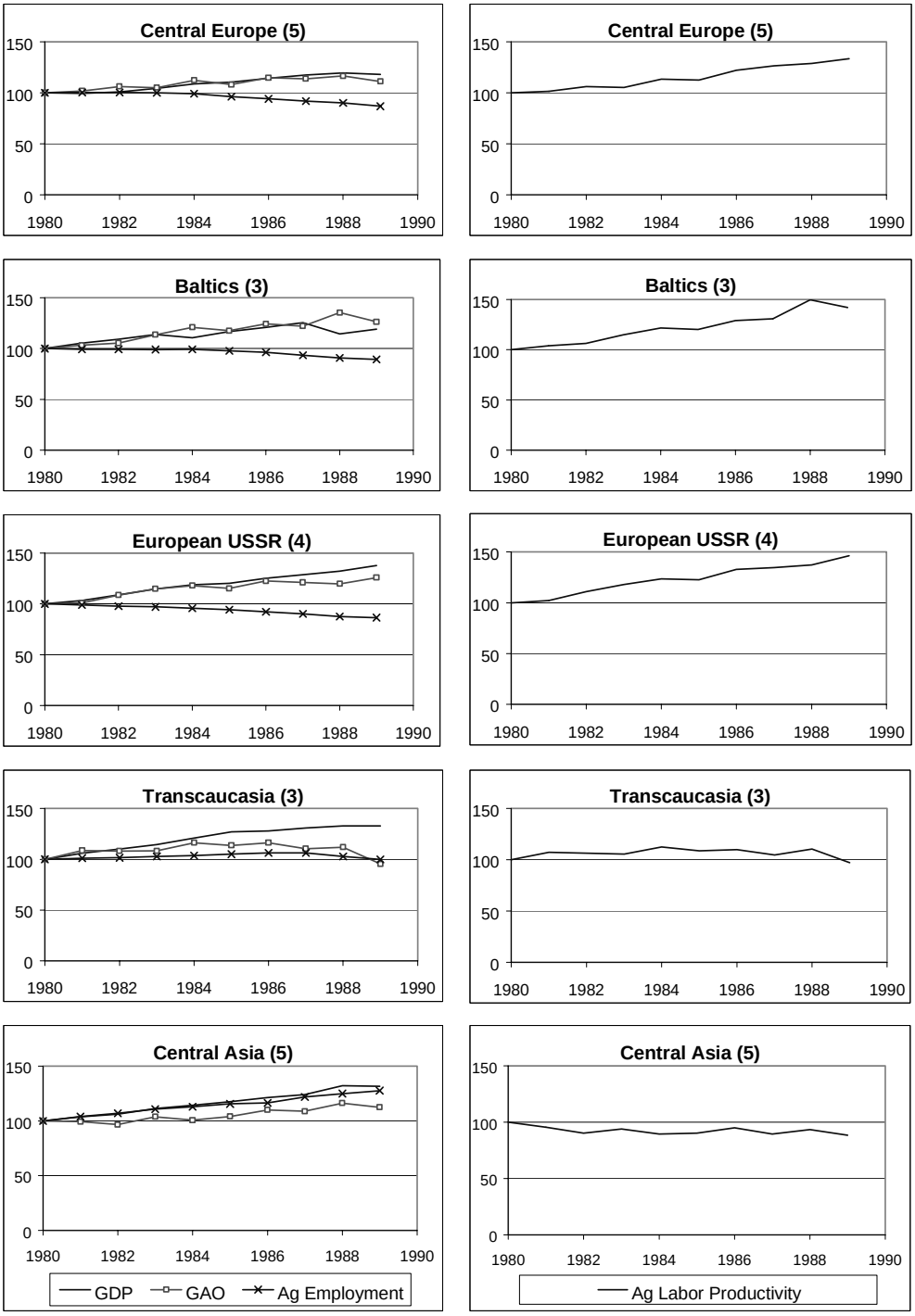


Table A1.3. Farm Sizes in Socialist Agriculture: Land, Workers, and Machinery per Socialized Farm in the 1980s (10 year averages, per farm)

	Number of socialized farms	Agricultural land, ha	Sown land, ha	Workers	Tractors	Tractors and combines
Belarus	2,611	3,417	2,190	428	48	60
Moldova	835	2,519	1,718	702	63	68
Russia	24,520	8,473	4,756	421	57	77
Ukraine	9,763	3,930	3,199	569	45	55
Core USSR	37,728	6,820	4,085	462	53	69
Armenia	781	1,621	525	271	17	19
Azerbaijan	1,387	2,765	905	453	27	30
Georgia	1,294	2,148	478	449	21	22
Transcaucasia	3,463	2,297	656	407	22	25
Kazakhstan	2,513	75,555	14,153	664	95	140
Kyrgyzstan	449	21,626	2,613	882	62	73
Tajikistan	448	8,352	1,606	948	77	80
Turkmenistan	468	124,770	2,146	855	90	93
Uzbekistan	1,902	13,637	2,027	1,045	93	99
Central Asia	5,780	50,139	7,312	843	90	112
Estonia	293	4,490	3,085	412	71	83
Latvia	570	4,041	2,731	414	61	74
Lithuania	1,057	3,094	2,022	338	46	57
Baltics	1,921	3,598	2,378	370	54	66
USSR	48,856	10,906	4,136	499	55	71
Albania	589	1,907	975	1,197	38	NA
Bulgaria	286	19,464	10,744	3,035	200	230
Czechoslovakia	1,908	2,988	2,199	466	72	82
Hungary	1,544	3,559	2,692	563	35	43
Poland	3,467	1,157	903	300	33	38
Romania	4,116	2,696	1,998	564	41	52
Central Europe	11,910	2,770	1,956	560	46	56
Total socialist agriculture	60,802	9,785	3,725	511	53	68

Chapter 2. Divergent Approaches to Reform: Land Policies

In the conceptual framework outlined above, transition to the market should involve radical reconfiguration of the land resources and other productive assets in former socialist countries, including changes in both property rights and use patterns. These issues are usually classified under the twin rubric of land reform and farm restructuring. Most of the attention is typically devoted to ownership and use of land, because of the emotionally charged and politically sensitive nature of this asset in all countries, but collective farms cannot be properly restructured into market-oriented entities unless policy-makers deal with ownership and use of non-land assets as well. The following two chapters discuss these topics. We first examine the land policies in transition countries, which lay the foundation for farm restructuring, and then proceed to consider the changes in farm structure.

The land policies of transition countries should be evaluated against the basic attributes of market agriculture, namely private land ownership, transferability of use rights, security of tenure, and individual or non-collective organization of production. An examination of these attributes reveals that, despite far-reaching commonalities imposed by the communist regimes on societies and economies, the agricultural sectors in CEE and CIS are in fact following divergent paths of market reforms, which gradually create a sharp "East/West divide" between the two subblocs in the formerly Soviet-dominated region. Since the common institutional and organizational heritage and the common objective of an efficiently functioning farm sector suggest a conceptually common framework for transition in all these countries, the divergence appears to be associated with differences in the specifics of the policies actually adopted and the implementation procedures. These differences stem from inherent cultural, social, and political differences that persisted throughout the Soviet era, even if hidden under the surface by the common political and economic system.

Legal Attitudes Toward Land Ownership

The Soviet Union recognized only one form of land ownership between 1917 and 1990: all land was owned by the state, while farm enterprises and individuals were given land in use rights. The CEE countries, on the other hand, recognized three forms of land ownership after World War II: state land, cooperative land, and private (individually owned) land.

The first step in market-oriented land reform in the former Soviet Union therefore required a very fundamental decision: should the state give up its exclusive ownership of land and transfer agricultural land into private ownership? This difficult decision had to be taken separately by each of 15 former Soviet republics, which became sovereign states after 1991, and in Russia alone by more than twenty autonomous federation members, which in the new era had constitutional freedom of action on the issue of land ownership.

Among the CEE countries, Albania was the only one that nationalized all agricultural land by its 1976 constitution and faced the same legal decision as the former Soviet Union. In all other CEE countries, private ownership of land did not cease after World War II. State land was typically created by confiscating the estates of socially and politically unfavored elements, or by expropriating the holdings of relatively large farmers that exceeded the legal minimum (fixed fairly arbitrarily in each country based on local considerations). The property of most individual landowners remained untouched. Individuals entering the socialized cooperatives and collectives during the collectivization drive of the 1950s and the 1960s retained ownership of their land, and, however nominal this ownership became under the new socialist regime, their title was actually recorded in the cooperative's books and in the district land registry. Eventually, as some cooperative members or their heirs left the cooperatives and migrated to the city, their ownership rights in land were taken over by the cooperative or the state. Cooperative ownership of land, similar in a sense to joint ownership of household assets by members of one family, was a unique CEE phenomenon, and even there it was observed only in Hungary (where it apparently contradicted the constitution) and in Romania (where it was explicitly introduced in the 1965 constitution). The 1960

constitution of Czechoslovakia, on the other hand, specifically stated that "Land joined for the purpose of joint cooperative cultivation shall be in the *joint use* of ... agricultural cooperatives" (Article 8(3); emphasis supplied: use, not ownership). The decision concerning post-1990 land ownership in CEE was thus fundamentally different from that in the former Soviet Union. There was no need to legislate for private ownership of land (except in Albania). It was only necessary to decide what to do with the ownership of state and cooperative lands.

Table 2.1 Legal attitudes to land ownership in the sixteen countries where all land was state owned before 1990

Country	Potential private ownership	Relevant legislation
Albania	All land	Land Law, July 1991
Estonia	All land	Law on Land Reform, Oct. 1991
Latvia	All land	Land Reform in Rural Areas Act, Nov. 1990
Lithuania	All land	Law on Land Reform, June 1991
Armenia	All land	Land Law, Jan. 1991 Law on Peasant and Peasant Collective Farms, Jan. 1991
Georgia	All land	Law of Agricultural Land Ownership, Feb. 1996
Azerbaijan	All land	Constitution, Nov. 1995; Land Reform Law, July 1996
Moldova	All land	Law on Property, Jan. 1991; Constitutional Court Rulings on Amendments to the Land Code, Jan. 1996, Oct. 1996
Russia	All land	Law on Land Reform, Nov. 1990 Constitution, Dec. 1993
Ukraine	All land	Supreme Soviet Resolution on Land Reform, Dec. 1990 Law on Forms of Land Ownership, Jan. 1992
Kyrgyzstan	All land	Presidential Decree on Deepening Land and Agrarian Reform, Feb. 1994 Referendum, June 1998; Presidential Decree on Private Land Ownership, Oct. 1998
Kazakhstan	Household plots only	Presidential Decree on Land Reform, Feb. 1994
Belarus	Household plots only	Law on Land Ownership, June 1993
Tajikistan	None	Land code, Dec. 1996; amended 1999
Uzbekistan	None	
Turkmenistan	All land	Constitution, May 1992

Table 2.1 summarizes the land-ownership decisions of all the countries in which the state was the sole legal owner of land prior to 1990 (for a more detailed listing OF land-related legislation in all transition countries see Annex 1 at the end of the chapter). Albania is the

only country outside the former Soviet Union that had to switch from exclusive state ownership to private ownership of land. The other 15 countries in Table 2.1—the Baltic states and the CIS members—are all former Soviet republics. In CEE countries not listed in Table 2.1 (i.e., Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia, and Slovenia), private ownership of land was allowed before 1990 and is of course allowed today.

In the CIS, the legal efforts to allow private land ownership began before the dissolution of the Soviet Union in December 1991 and the transition of its former republics to full independence. The beginning of the current phase of land reform in the former Soviet Union is traceable to the adoption of *Principles of Legislation of the USSR and Union Republics on Land* in February 1990, nearly two years before the final breakup of the Soviet Union (Nikonov 1995). Like all "principles of legislation" in the USSR, this law empowered the republics to adopt their own specific laws on land, which in fact constituted its main contribution to the beginning of the process of land reform.

Russia was the trailblazer in adopting a range of new laws, which included the Law on Land Reform and the Law on Peasant Farms in November 1990, the Law on Property and the Law on Enterprises in December 1990, and the Land Code in April 1991 (Lerman and Brooks, 1996). Other republics soon followed with their own land codes and peasant farming laws. Russia legalized ownership of land by individual citizens, in addition to state ownership, in November 1990, more than a year before the dissolution of the Soviet Union. The 1993 Constitution of the Russian Federation reaffirmed that "land and other natural resources may be in private, state, and other forms of ownership". Yet even within the Russian Federation, ten constituent republics originally did not recognize private ownership of land within their territories (Tatarstan, Bashkiriya, Dagestan, Komi, Mari El, Kabardino-Balkariya, North Osetiya, Tuva, Yakutiya-Sakha, and Koryakiya). These republics based their position on article 72 of the Constitution, which affirms that questions regarding ownership, use, and disposition of land, mineral deposits, water and other natural resources will be decided jointly by the Russian Federation and its constituent members. Some of these republics have

since bowed to the winds of change and passed land reform legislation that recognizes private ownership of land. Others (e.g., Bashkiriya, Dagestan, and Tuva) remain in the dissenting minority, which appears to be shrinking all over the CIS.

Following Russia, Ukraine and Moldova legalized private ownership of land in 1991-1992 (Table 2.1). Belarus, however, persisted with exclusive state ownership of land until June 1993, when a special Law on Land Ownership allowed household plots of up to 1 hectare to be in private ownership: additional land had to be leased from the state. Among the Transcaucasian countries, Armenia was the first to recognize private ownership of land in January 1991 and swiftly distributed most of its arable and perennial land to individual farmers. The neighboring Georgia delayed legal recognition of private ownership of land until February 1996, although a large proportion of arable and perennial land had been transferred by presidential decree to the individual sector back in 1992. Azerbaijan, the third Transcaucasian state, also passed legislation recognizing private land ownership in 1995-1996, but unlike Georgia most of its land resources at that time were still managed by large collective farms and the new legal attitude only signaled intentions of decollectivization. Kyrgyzstan was the latest among the former Soviet republics to allow private land ownership following a referendum held in June 1998 (however, the corresponding legislation was still not in place as of the year 2000).

As of the year 2000, the legality of private land ownership is less than universal only in Belarus and in three Central Asian states. Belarus and Kazakhstan restrict private ownership to household plots of up to 1 hectare, whereas Uzbekistan and Tajikistan retain full state ownership of land. In these four countries, land for commercial-scale farming must be obtained in use rights from the state. The last Central Asian country, Turkmenistan, is an anomaly among the CIS countries. Its post-Soviet constitution (adopted in May 1992) recognized private ownership of land. But in fact, the property rights of private land owners in Turkmenistan are limited to the most basic rights to usufruct: privately owned land may not be sold, given away as a gift, or exchanged. The rights of private landowners in

Turkmenistan are thus no different from the rights of state tenants in Belarus and Uzbekistan, who do not own the land they cultivate.

Private ownership of land is an emotionally charged issue in all CIS countries. Contentious attitudes are not restricted to the countries that still do not allow private ownership of land. Russia legalized private land ownership back in 1990, and put it in the new constitution in 1993. Yet there is a permanent ongoing debate in the Russian parliament between conservative and reform-oriented factions on the nature and scope of private ownership of land. The parliament periodically has come up with a land code that severely restricts the scope of private land ownership (as in Belarus and Kazakhstan, for instance), and this land code in turn has been periodically vetoed by the president, whose decrees since 1991 have shaped the prevailing concept of private land ownership in Russia. Ukraine similarly failed to adopt a market-oriented land code under two presidents during the 1990s, whereas Moldova took until 1996 to overcome the political and legal obstacles to the concept of unrestricted private ownership of land.

The legislative uncertainty in CIS has created a sense of lack of consistent progress. While Western experts are heatedly debating the success or failure of land privatization in CIS, there can be no doubt that the process so far has achieved at least one major goal: in most countries, it has eliminated the monopoly of the state in land ownership and produced a dramatic reduction in the share of agricultural land directly owned or managed by the state (Table 2.2). In Moldova, the share of the state in agricultural land ownership is down to 17%; in Russia and Ukraine, less than 40% of agricultural land remains in state ownership; in Armenia, the state owns about one-third of cultivable land (mountain pastures are still not privatized, and Armenia is just embarking on a unique program to sell land from state reserves to the rural population); and in Georgia, about half the arable land is in state ownership (mainly due to the decision not to privatize mountain pastures and because of obstacles to privatization in areas with continuing civil unrest). The situation is radically different in Belarus and Kazakhstan, where only the small household plots may be privately owned. In Belarus, 16% of agricultural land is in potentially privatizable household plots, and

less than half of it (7%) has been actually transferred to private ownership; the remaining 9% is expected to be privatized in the near future, when administrative bottlenecks are overcome, bringing the total stake of the state in land ownership down to 83%. In Kazakhstan, the potentially privatizable household plots account for about 0.5% of agricultural land (mainly arable land, without desert pastures). The share of state-owned land in Kazakhstan thus remains over 99%, even excluding pastures.

Table 2.2. Share of State-Owned Agricultural Land in CIS Countries that Recognize Private Land Ownership, 1998 (in percent)

	Pre-1990	1998	Legal attitude to private land ownership
Russia	100	40 (estimated)*	Potentially all land
Ukraine	100	31	
Moldova	100	17	
Georgia	100	78 (54 excluding pastures)	
Armenia	100	67 (35 excluding pastures)	
Belarus	100	93#	Household plots only
Kazakhstan	100	>99	

* As of Jan. 1998, 38% of agricultural land was actually in state use; of the remaining 62%, some land may be held in use rights from the state by collective farms and especially private farms and household plots. The actual share of privately owned land is thus less than 62%, and the number in the table may be biased upward by up to 10%.
# As of Jan. 1998, nearly 17% of agricultural land is in household plots and other individual farms. The declared intention is to transfer all this land to private property, thus potentially reducing the state owned share to 83%.

Transferability of Land and Security of Tenure

Private ownership of agricultural land is the norm in market economies, and incentives associated with property rights in privately owned land are usually regarded as one of the factors conducive to efficient agriculture. Privatization of land is therefore a major component of the transition agenda. Yet another important source of productivity gains in agriculture is associated with the flow of resources to more efficient producers through the medium of the land market. This flow is enabled by a variety of land transactions, which include buying and selling of land, as well as various leasing and renting arrangements, which many farmers substitute for outright purchase. Transferability of land and development of land markets are as important as privatization of land in analyzing the impact

of land policies on productivity and efficiency in transition countries. If land transactions, be it sale or leasing, are restricted, there are no mechanisms for transfer of land to better, more efficient operators and farmers are prevented from adjusting their operations to a more efficient scale. The Polish experience after World War II has proved that restriction of transfer rights in land is an obstacle to efficiency improvement, regardless of the legal form of land ownership.

We have seen that most transition countries allow private ownership of potentially all farmland, and agricultural land remains largely state-owned only in Belarus and parts of Central Asia. However, as we discuss private ownership of land in transition economies, we should bear in mind that the semantics of private ownership in these countries has a distinctly different shading from the usual meaning of this concept in the West, and especially in North America. Most notably, private ownership in transition countries is not synonymous with the right to transfer land among users: some transition countries circumscribe the right of land owners to engage in transactions in privately owned land, while other countries ensure full transferability of use rights although the land remains state-owned (Table 2.3). [A detailed discussion of legal restrictions on property rights in land in CEE and CIS is provided by Prosterman and Hanstad (1999).]

Table 2.3. Characteristics of Land Relations in Transition Countries

	Region	Potential private ownership	Transferability
Poland	CEE	All land	Buy-and-sell, leasing
Romania	CEE	All land	Buy-and-sell, leasing
Bulgaria	CEE	All land	Buy-and-sell, leasing
Estonia	CEE	All land	Buy-and-sell, leasing
Latvia	CEE	All land	Buy-and-sell, leasing
Lithuania	CEE	All land	Buy-and-sell, leasing
Czech Rep.	CEE	All land	Buy-and-sell, leasing
Slovakia	CEE	All land	Buy-and-sell, leasing
Hungary	CEE	All land	Buy-and-sell, leasing
Albania	CEE	All land	Buy-and-sell, leasing
Armenia	CIS	All land	Buy-and-sell, leasing
Georgia	CIS	All land	Buy-and-sell, leasing
Moldova	CIS	All land	Buy-and-sell, leasing
Azerbaijan	CIS	All land	Buy-and-sell, leasing
Russia	CIS	All land	Leasing, buy-and-sell dubious
Ukraine	CIS	All land	Leasing, buy-and-sell dubious
Kyrgyzstan	CIS	All land	5-year moratorium on land transactions
Kazakhstan	CIS	Household plots only	Use rights transferable; buy-and-sell of private plots dubious
Tajikistan	CIS	None	Use rights transferable
Turkmenistan	CIS	All land	Use rights nontransferable
Uzbekistan	CIS	None	Use rights nontransferable
Belarus	CIS	Household plots only	Use rights nontransferable; buy-and-sell of private plots dubious

The ten CEE countries and the four "small" CIS countries (Armenia, Georgia, Moldova, and Azerbaijan) recognize private ownership of land and have no legal barriers to land transactions. In this respect, these 14 countries have the most liberal land policies, although various pre-emptive conditions (specifying that land must first be offered for sale to particular interest groups) may make it difficult to sell one's private land in the open market). Russia and Ukraine, which control the bulk of farmland resources in the region, legally recognize private land ownership, but buying and selling of land is restricted in practice, and transactions involving farmland are mainly limited to leasing. Nevertheless, there is evidence of a brisk trade in household plots, but primarily as part of a package that involves also the sale of the house standing on the plot.

At the other extreme, Belarus and three Central Asian states—Kazakhstan, Uzbekistan, Tajikistan—generally do not recognize private land ownership, but they differ in their attitude toward land transactions. Land use rights are secure and transferable in Kazakhstan and as of very recently also in Tajikistan. Uzbekistan and Belarus, on the other hand, prohibit any transactions in land. The two remaining Central Asian states—Kyrgyzstan and Turkmenistan—both recognize private land ownership, but severely restrict transactions in land. Kyrgyzstan recognized private land ownership in the June 1998 referendum, but immediately following imposed a 5-year moratorium on all transactions in privately owned land. It moved backward by measures of transferability compared with the pre-referendum period, when land was state-owned but use rights were secure for 99 years and fully transferable. Turkmenistan is a special case: its post-Soviet constitution (adopted in May 1992) specifically recognizes private ownership of land, yet land owners are not allowed to transfer their holdings in any way, not even by subleasing.

It is important to note that despite different attitudes toward land ownership and transferability, the use rights in all CEE and CIS countries are characterized by a high degree of formal security of tenure (which, of course, does not guarantee against sudden reversals of policy by the state). The security-shattering "redistribution" mechanism, as applied periodically in Chinese villages, is unknown in CEE and CIS: once allocated in ownership or usufruct, land remains in permanent possession of the beneficiary, at least as long as it is actively farmed. Use rights in land are universally inheritable, even in countries where land is otherwise non-transferable.

Successful market agriculture can develop on state-owned land (it suffices to recall the case of Israel, where most land is leased by the state to farmers for terms of 49 or 99 years). Security and transferability of tenure appear to be more important determinants of productivity and efficiency gains than legal ownership rights. The experience in developed market economies indicates that many farmers are "operators" and not "landowners"; they cultivate land that they do not own. Thus, farmers in Belgium, France, and Germany rent more than 60% of the land they cultivate, while the overall "tenancy rate" in the 15 countries

of the European Union is 40% (Table 2.4, Figure 2.1). In Canada, 30% of farmed land is not owned by the farmers, and in the US, only one-third of farmed land is fully owner operated: another 55% is a mixture of own land with land leased from others and 10% is cultivated by farmers who do not own any land (Table 2.5).

Table 2.4. Share of tenant farmed land and average farm size in EU countries

Country	Owner farmed land, %	enant farmed land, %	Average farm size, ha
Belgium	32	68	19
France	37	63	39
Germany	38	62	30
Luxemburg	47	53	40
Sweden	55	45	34
United Kingdom	65	35	70
Countries with more than 30% tenant-farmed land	**46**	**54**	**39**
Netherlands	71	29	18
Portugal	72	28	9
Greece	75	25	5
Spain	77	23	20
Denmark	77	23	40
Finland	78	22	22
Italy	78	22	6
Austria	80	20	15
Ireland	88	12	28
Countries with less than 30% of tenant-farmed land	**77**	**23**	**18**
EU 15	61	39	18

Source: Eurostat.

Fig. 2. 1. Share of Owner-Farmed Land in EU Countries (in percent)

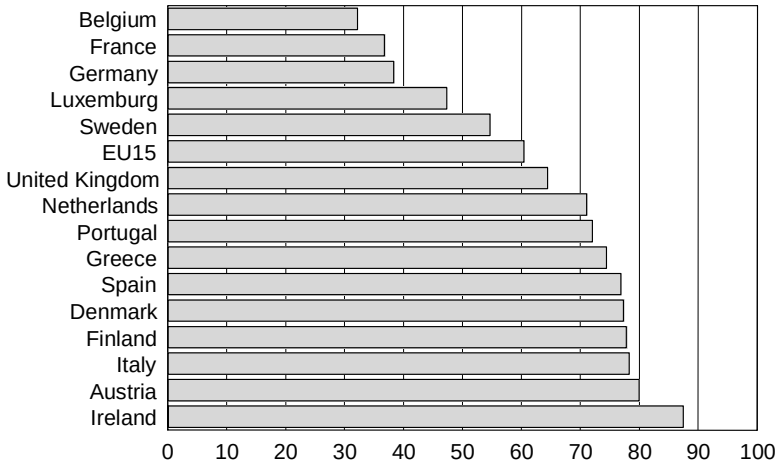
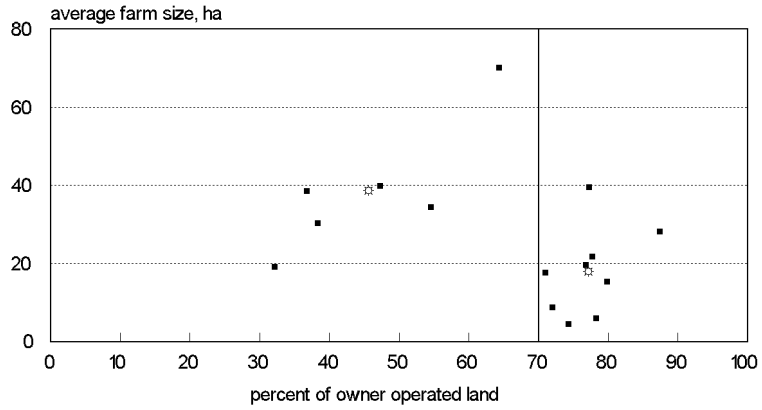


Fig. 2.2. Farm Size vs. Share of Owner Operated Land



An important conclusion regarding farm sizes emerges from the data for both the European and the North American countries: land leasing is definitely conducive to larger farms (Tables 2.4, 2.5, Figure 2.2). In Europe, the average farm size is almost 40 hectares in countries where farms operate with more than 30% of leased land, compared with 18 hectares in countries where farms have less than 30% of leased land; in Canada farms with leased land are 40% larger than farms operating with own land; and in the USA farms operating with a mixture of own and leased land are more than three times as large as farms that use own land only. Transferability is important no less, and perhaps even more, than private ownership for the development of land markets that enable the farmers to adjust the size of their holdings and allocate resources to the most efficient producers.

Table 2.5. Share of Tenant-Farmed Land in Canada and USA

	Percent of farm area	Percent of farms	Average farm size, ha
Canada			
Farm area owned	70		164
Farm area rented or leased from others	30		224
USA			
Operated by full owners	34	60	112
Operated by part owners	55	30	358
Operated by tenants	12	10	229

Source: For Canada, Historical Overview of Canadian Agriculture, Statistics Canada (1997); for USA, 1997 Census of Agriculture, United States Summary and State Data, USDA (1999).

While restrictions on land transferability are a real barrier to flow of resources from less efficient to more efficient users and thus an obstacle to overall efficiency improvement in agriculture, pragmatic considerations suggest that temporary moratoria on buying and selling of land in transition countries may be necessary from political or social considerations. Policy makers in CIS and CEE are often concerned that immediate exposure of the new landowners to the full range of land market transactions after decades of collectivism may lead to negative social consequences, which may involve excessive concentration of land in the hands of speculators and foreign owners. Thus, Kyrgyzstan motivated the moratorium imposed simultaneously with the introduction of private land ownership in 1998 by the need to let the new landowners get used to the entire set of their property rights and fully recognize the implications of their decisions. Psychologically, people need a delay period to adjust to the new reality before making irrevocable decisions. To borrow an example from an area outside of agriculture, many recipients of mass privatization vouchers in Russia in the early 1990s blindly rushed to sell them to speculators and professional investors. They did not recognize the long-term value of the new asset and precipitously converted it into something familiar—cash. These early "voucher sellers" understood the implication of their irrevocable decision only much later, when gradual normalization had led to steep increases in the value of stock of the privatized companies, which they could have owned had they only avoided selling the vouchers. In Kazakhstan, managers of farm enterprises took advantage of the total lack of asset management experience among the rural population to entice the new shareholders to sell their land shares. Large segments of the rural population hastily gave up their main asset, and land was concentrated in the hands of a small number of farm bosses. This negative effect probably could have been avoided had the government of Kazakhstan temporarily restricted buying and selling of land and instead limited transferability to short- or perhaps medium-term lease transactions. Such approach to transferability of land would allow rural people to postpone irrevocable decisions to a later stage, when the economic situation has normalized and individuals have become more cognizant of the implications of land transactions. To ensure that the temporary moratorium quickly achieves the intended educational effect, it should be accompanied by appropriate information campaigns explaining property rights and land market transactions to the new landowners.

Emergence of Land Transactions

As a result of the various restrictions that prevail in one form or another in many CEE and CIS countries, land markets have not really developed across the region during the decade of transition. The frequency of buying and selling of land is very low. Only 5% of Polish farmers participating in the 2000 World Bank survey report buying or selling land in the last five years. According to very rough (and probably highly subjective) estimates prepared for the European Union (Baldwin 1998), the frequency of land transactions is around 2.5% in Hungary and around 1% in the Czech and Slovak Republics, Latvia, Poland, and Slovenia (the frequency of transactions is measured by the transfer rate, defined as the ratio of the number of titles transferred to the total number of titles in cadastral registry). These estimates of transaction frequencies are substantially lower than the EU average transfer rate of 7%.

In CIS countries, farmers interviewed in numerous World Bank surveys have so far failed to provide indication of significant numbers of buy-and-sell transactions in farm land. Even in Armenia, where buying and selling of land has been completely legal since 1992, two large surveys covering 6,000 farms in 1996 and 1998 did not detect any significant transfers of land ownership through market mechanisms. In Russia, Ukraine, Moldova, and probably other parts of the CIS buy-and-sell transactions usually involve the household plot, which is basically purchased together with the house, and not as a separate piece of farmland.

As in market economies, it is the leasing of land from various sources and in various guises that emerges is AS the main practical mechanism for adjustment of farm sizes in both CIS and CEE (Table 2.6). Although the percentage of individual farms that lease in land is relatively small, farms reporting some leased land are significantly larger than farms that rely entirely on own land. An interesting phenomenon is observed in Georgia, where a substantial share of agricultural land is still controlled by the state, while large collective and state farms ceased to function. The average individual farm in Georgia is very small (less than 1 ha), and yet a painstaking search through district-level land registries conducted by a World Bank team has recently unearthed some 3,000 farms (about 1% of all farming households in the

country) with more than 10 ha of land. Most of this land is leased from the state on terms of 1 or 2 years, although Georgian law of land leasing allows much longer lease terms.

Table 2.6. Leasing of Land by Individual Farmers in Transition Countries

	Percent of farms	Total size, ha	Leased land, ha	Farms without leased land, ha
Armenia	14	2.6	1.0	1.3
Georgia	2	8.7	7.8	0.7
Moldova 1996	6	16.9	13.5	2.8
2000	51	196.0	191.0	3.7
Romania	7	4.1	1.7	3.0
Bulgaria	9	4.8	3.3	1.1
Hungary	8	19.6	8.8	3.4
Poland	17	25.7	11.9	7.3

Source: World Bank surveys for Armenia, Georgia, Moldova, Romania, and Poland; Phare ACE surveys conducted by the Catholic University in Leuven for Bulgaria and Hungary.

After a decade of transition in CEE and CIS, we can schematically divide the 23 countries into three groups by their attitude to ownership and transferability of land (see Table 2.3). The first group includes countries that legally allow private ownership of potentially all land. These are the CEE countries, Russia, Ukraine, Moldova, the three Transcaucasia states (Armenia, Georgia, Azerbaijan), and since very recently Kyrgyzstan—a large majority of 18. In principle, private ownership in these countries implies freedom to transfer the ownership rights to others, although in practice this freedom is circumscribed (one hopes temporarily). At the other extreme, there are the hard-core countries that retain exclusive state ownership of farmland (all or most of it) and do not allow the individual use rights to be transferred (other than by inheritance). These are Belarus, Uzbekistan, and actually also Turkmenistan, as the notion of private ownership in this country looks like a semantic misunderstanding. Finally, there is an intermediate group of countries (Kazakhstan, Tajikistan) that retain exclusive state ownership of practically all farmland, and yet allow the use rights to be freely transferable, like standard property rights in a market economy. Unfortunately, no statistical information is available at this stage on actual land transfers in these countries.

Disposition of Socialized Land: Restitution Versus Distribution

While the former Soviet republics (and Albania) had to decide in 1990 whether or not to allow private land ownership in parallel with state ownership, the rest of the CEE countries—Bulgaria, Czechoslovakia, Hungary, Romania, and to a certain extent Poland—had to decide the fate of land held in state and cooperative ownership. Because of this difference in the starting decision, privatization of land in CEE and CIS followed two fundamentally different procedures: restitution to former owners and distribution to workers.

Restitution to former owners is the procedure adopted by most CEE countries (except Albania) and by the Baltic states among the former Soviet republics. The CIS countries and Albania adopted the "land to the tiller" strategy: land ownership was distributed to workers without any payment and in an equitable manner. Hungary and Romania are two CEE countries that used a mixed strategy: land was restituted to former owners and some of it was also distributed to agricultural workers in the interest of social equity. Landless workers in Romania and Hungary received relatively small plots of 0.5–1 hectare, but they received them for free, without any payment. In other CEE countries, agricultural workers have priority in acquiring land, but they must purchase it for a full payment. The restitution vs. distribution dichotomy of land privatization in transition economies is summarized in Table 2.7.

Poland is an exception to the restitution strategy among the CEE countries, as the previous post-World War II land reform in this country distributed most of the estate land to smallholders. Any demand for the Polish smallholders to give up their allotments in favor of former large estate owners would be politically and socially difficult, and the state accordingly focused on privatizing, through auctions and sale, the 20% of land that had been nationalized and transferred to state farms. For similar social reasons, the CEE countries did not extend their restitution programs to ownership rights before World War II and accepted the outcomes of the land reform that was implemented by the new regimes immediately after World War II.

Table 2.7. Distribution vs. Restitution

	Distribution to workers	Restitution to former owners
CIS (12 states)	•	
Albania	•	
Hungary Romania	•	•
Bulgaria Czech/Slovak Republics		•
Baltics (3 states)		•
Poland Slovenia	Mainly individual land holdings pre-1990	

The common explanation attributes the restitution/distribution dichotomy to the different length of time since nationalization or collectivization—80 years in CIS and 50 years in CEE. This explanation, however, is not easy to accept due to the existence of obvious counter-examples. Three CIS countries—Moldova, Ukraine, and Belarus—rejected the concept of restitution, although their western parts were integrated into the Soviet Union after World War II, at the same time as the Baltic states, and the memory of private land ownership was much fresher than in Russia. In CEE, Albania deviated from the general practice of its neighbors and opted for equitable distribution instead of restitution.

Under the restitution strategy, title to land was returned to the original pre-collectivization owners or their heirs. Cooperative members who over the years retained private ownership of their collectively cultivated land got their plots re-surveyed and received updated title documents reaffirming their ownership rights. Restitution in general applied to land cultivated by cooperatives, and not state farms. State farms were typically created on land expropriated from large estates during the land reform that was implemented immediately after the end of World War II. There was no intention to return this land to former owners of large estates. The CEE countries did not extend their restitution programs to ownership rights before World War II, and the restitution laws set the relevant date of land ownership after the completion of the post-war land reform in each country. The Hungarian Compensation Law prescribed restitution of property lost after June 1949; the Czech restitution rules applied to property lost after February 1948; Bulgaria chose to return to the land ownership pattern of

1946. In this way, the restitution programs in CEE countries effectively exempted the state land that was being used by state farms since the post-war land reform and at the same time covered the land that was absorbed for cooperative use during the collectivization phase of the 1950s and 1960s. Only the Baltic states set the starting date for restitution in August 1940, the date when they had been annexed by the Soviet Union and all land had been nationalized. In these three countries no distinction was made between the land of state and collective farms: all nationalized land was subject to restitution claims.

Different restitution mechanisms were devised in different CEE countries. Hungary based its restitution on a quasi-money mechanism: former land owners received value-denominated certificates which could be used to bid for plots of land anywhere in the country through a market-driven auction process, or even purchase non-land assets in privatization auctions. This mechanism is sometimes characterized as a compensation mechanism rather than a restitution mechanism, and the Hungarian restitution law is appropriately known as Compensation Law (or in full "Law on Partial Compensation for Damages Unlawfully Caused by the State to Properties Owned by Citizens in the Interest of Settling Ownership Relations"). Estonia and Lithuania gave beneficiaries the choice between receiving land or money-denominated vouchers that could participate in privatization of urban land or various assets. Romania generally returned land in the original location, but not in the original boundaries. Bulgaria attempted to return land in the exact former boundaries or to substitute quality-equivalent plots in other locations. Poland and Slovenia did not have to devise full-scale restitution schemes, because state and cooperative land ownership had always been marginal in these countries.

The land restituted to a single former owner was usually fragmented into several parcels in different places in the fields of one village. In Estonia and Bulgaria, which adhered to restitution in old boundaries, a former owner would receive anywhere between five and ten scattered plots. But even in Hungary, where the national auction-based process was not linked to the old boundaries, the restitution procedures produced a highly fragmented pattern of long and thin strips, and a single former owner would typically end up with several such strips in different places in the village. Cooperative land was set aside for restitution in large

contiguous tracts of several tens or hundreds of hectares. These tracts were then split mechanically by computer into individual strips running the full width of the field. A one-hectare parcel might consist of a very long and narrow strip of land. An individual realizing his or her entitlement for two—three hectares in a public auction would typically end up with several such strips in different places.

Restitution proved to be a long and tortuous process plagued by difficulties with establishing the rights of claimants and dealing with properties fragmented into noncontiguous parcels and strips. The purely technical tasks of registering the privatized plots and issuing titles to beneficiaries also were a cause for considerable delays. Political indecisiveness and frequent course changes in some of the countries (e.g., Bulgaria) were not conducive to smooth progress of restitution either. In retrospect, the Hungarian strategy of transferable value-denominated certificates allowing the beneficiaries considerable freedom of choice among a wide range of assets other than land appears to have been the most successful: Hungary was the first among the CEE countries to reach successful completion of the restitution process. At the end of the decade, the restitution process has been largely completed in practice, although final ownership titles have been issued to a relatively small proportion of claimants. In some cases, much of the state-owned land has not been claimed by former owners, and governments have targets for further reduction of state land reserves through continuing privatization (Table 2.8). Even in Poland, where more than three-quarters of land remained privately owned after World War II and only about 20% in total had to be privatized, the progress with privatization has been less than satisfactory and the state still owns 15% of land.

Table 2.8. Privatization of Agricultural Land in Selected CEE Countries (1997-1998 status)

	Privatized (final title)	State-owned
Lithuania	37%	63%
Estonia	57%	43% (target 36%)
Romania	71%	29%
Czech Rep.	81%	19% (target 9%)
Poland	85%	15%

Despite the lack of formal titles and deficiencies in registration of ownership, all countries have procedures that allow users to lease plots from the large pool of state-owned land. Many corporations take advantage of this option by leasing land from the state. Many individuals use land that they have received through the restitution process although they still do not have a final title to this land and it is not counted as privatized in the official statistics. The available figures for privatization of agricultural land (Table 2.8) therefore understate the actual use of land by private producers. It is quite clear that, at present, state-owned land is not cultivated by the state. Most of the land still registered as state-owned is in fact cultivated by private individuals and private corporate farms (companies), because the formerly powerful state farms have been dismantled or transformed into private organizations.

The land used by cooperatives was intended for restitution to former owners who had left agriculture and for restoration of ownership rights to cooperative members who had remained active in agriculture. A different fate was envisaged for land in state farms, which was not subject to direct restitution claims. Basically, the governments in CEE countries were planning to privatize the state farms as going concerns, possibly splitting them into several autonomous units in the process. There was no intention, however, to sell the land of the state farms. Only the non-land assets would be sold to the highest bidder, while the land would be leased by the new entrepreneurs from the state. The implementation of these privatization plans for state farms was delayed for a number of years, because all countries kept the state-farm land in a contingency reserve for the eventuality that the cooperative land resources would not be sufficient to meet the restitution claims. The CEE governments moved ahead with the privatization of state farms only when the restitution process had advanced sufficiently and the extent of potential contingency claims on state-farm land had been clarified.

Poland did not have a restitution program, because collectivization efforts had largely failed in this country after World War II and Polish agriculture had remained an agriculture of individual farms all through the decades. The state focused on privatizing, through auctions and sale, the 20% of land that had been expropriated in 1945-1946 and used to create state

farms. The efforts to privatize the Polish state farms as going concerns ran into difficulties because of their debt burden. The government transferred the ownership of the former state farms to a special agency—Agricultural Property Agency, or APA—whose responsibility was to sell or lease the land and the assets of the state farms with the objective of repaying the old debt from the proceeds. The process was long and cumbersome, but APA's activities, however inefficient, definitely expedited the release of state-owned land to the private market in Poland.

Albania departed from the CEE pattern and did not opt for formal restitution to former owners. It adopted a strategy of direct distribution of ownership to all rural residents. Land previously cultivated by collective farms in use rights from the state was directly privatized to all rural residents without payment. Many of the beneficiaries simply happened to be former owners who had never left the village, but the land they received through the distribution process was not in the original location and probably not in the original amount. Absentee former owners who had moved from their villages and did not get any land in the distribution process were compensated with state bonds. The land in state farms (as distinct from collective farms) was not subject to distribution: similar to all CEE countries, it had originated through confiscation in 1944 of large estates owned by foreigners (Italian and German investors) or by the church and monasteries. The fate of this land—about 20% of agricultural land in the country—had to await special legislation, but eventually state farms ceased to function and their land was also distributed among all rural residents (or simply remained in an unclaimed reserve because of very poor quality).

The CIS countries did not recognize the rights of former landowners. In most of the former Soviet Union land had been nationalized more than 70 years before the beginning of transition, and the search for former owners was not a realistic proposition. Yet the concept of restitution was rejected (after some national debate) even in regions that were absorbed into the Soviet Union after World War II (Moldova, western Ukraine). In CIS countries that allow private ownership of land, the first step was to transfer land from exclusive state ownership to collective ownership of the peasants living and working in collective farms.

State farms were generally transformed into collective farms, which then became part of this general "privatization" pattern. The entire process was conducted without requiring beneficiaries to make any payment: land and state-owned assets were transferred freely to the collective. This procedure resulted in large scale "privatization" of land, but to collectives and not individual owners. It therefore had to be followed by a second stage, in which individuals received certificates of entitlement to land in collective ownership (in practice, the two stages often occurred simultaneously). These certificates are usually called "land shares", but they are basically "paper shares", and not physical plots of land.

Land Allocation Strategy

Another dimension of land policy in transition countries is the land allocation strategy. Privatized land can be allocated to beneficiaries directly in the form of physical plots or in the form of paper certificates of ownership that may eventually be converted into physical plots.

In Russia, Ukraine, Kazakhstan, and other CIS countries, beneficiaries usually receive paper shares that certify their entitlement to a certain amount of land, without specifying a concrete physical plot (in addition to paper shares, rural families in CIS cultivate small household plots of less than 1 hectare—a long-standing tradition in the former Soviet Union that dates back to the 1930s). Individuals wishing to take physical possession of their land generally have to declare their intention to become an independent private farmer and leave the collective. The land laws in CIS provide explicit mechanisms for the conversion of a paper land share into a physical plot in such cases.

Two CIS countries—Armenia and Georgia—deviate from the general two-stage allocation procedure. The land privatization mechanism in Armenia was formally similar to that in Albania. By special legislation of January 1991, the state directly transferred the ownership of land to individuals. In Georgia, the collective and state farms largely ceased functioning during the first years of independence, which were a time of civil war and social unrest, and

much of their land was effectively given in use, although not in ownership, to the rural population. These use rights are now being converted into individual private ownership under the 1996 legislation.

Moldova and Azerbaijan initially adopted the strategy of Russia and Ukraine, issuing paper land shares to rural households. These countries are now in the process of converting the paper certificates of entitlement into physical plots on a mass scale.

Although the distribution of land-share certificates does not endow individuals with specific land plots, it is a prerequisite for further adjustments in former socialist farms. It opens the way for internal restructuring of the large collectives by allowing the newly divided resources to be regrouped by shareholders in smaller autonomous and, hopefully, market-oriented functional units. It may also ultimately lead to allotment of physical plots of land to individual shareholders. Initially, the individual shareholders prefer to keep their land shares in collective cultivation, because allocation of a physical land plot under existing legislation typically requires withdrawal from the collective, a drastic break with the past for which many rural residents are not yet ready. To avoid a situation in which all the privatized land remains locked in collectives, some CIS countries, in parallel with privatization of land to collective ownership, have created a reserve of state-owned land intended for privatization to individuals “by application”. This reserve generally provides a pool of land for creation of family farms outside the collectivist framework. Given the potential importance of individual land share certificates as a starting point for further organizational changes in agriculture, it is encouraging to note that, according to World Bank surveys and official statistics, the process of distribution of land shares to individual beneficiaries is virtually complete in Russia, Ukraine, and Moldova, and the stage is now set for meaningful restructuring of large farms in these countries.

While most CIS countries chose to distribute paper certificates of entitlement, allocation of physical plots is the common practice in all CEE countries. The Albanian process was similar to that in Armenia and Georgia: collective land was swiftly and equitably distributed in

physical plots to rural households. The restitution process in other CEE countries generally started with the submission of a claim by a former owner or an heir and ended with allocation of a physical plot of land to the successful claimant. Under the Hungarian procedure, the successful claimants received a certificate of entitlement denominated in "gold crowns", i.e., units of basic land value, and these certificates were then redeemed for land (or traded for other assets) in public auctions organized by the state. Although the Hungarian "gold crowns" were paper certificates, they were completely different from the paper land shares in CIS: they existed only in the interim stage until the official land auctions were held, and they had to be unconditionally converted into land (or other assets) at one of the auctions.

Allocation of physical land plots is clearly a better option in terms of the impact on potential transferability and land markets. The owner of a physical plot of land can directly decide on the preferred course of action: farm the plot individually, sell the plot and give up the property rights in return for a one-time lump sum, or perhaps lease the plot to somebody who can farm more efficiently, thus retaining the property rights "just in case" while earning a stream of future returns. A paper land share, on the other hand, represents fractional ownership in a large tract of jointly owned land, which in reality is managed and controlled by somebody else (typically the former collective farm in the village). The options of a shareholder are much more difficult than the options of a plot owner. The easiest way is simply to leave the land share in the large farm that is already cultivating the land (as it always did in the past). Any other alternative will require negotiating with the current operator to identify, survey, and mark a physical plot of land that can be withdrawn for individual use from the jointly shared tract. Eventually, if the negotiations go well, the shareholder will end up in the same place as a person in a country that allocated land plots to beneficiaries from the start. Only this will have taken much longer and may have involved considerable uncertainty as to the final outcome.

If, on the other hand, we look at the impacts of restitution versus distribution, we do not discern anything that recommends one strategy over the other. Both are guided by clear justice and equity principles, although the beneficiaries turn out to be different (former

owners under restitution, "the tiller" under distribution). True, restitution typically ends with allocation of physical plots of land, which is the preferred allocation strategy according to our reasoning. But distribution is not necessarily restricted to paper shares either. Albania, Armenia, and Georgia followed a strict "land to the tiller" strategy, and yet it took the form of distribution of physical plots to individuals. Moldova is currently in the middle of a large-scale "share conversion" process that allocates physical plots to shareholders, and Azerbaijan is preparing to launch a similar procedure. Whether a country adopts restitution to former owners or distribution to agricultural workers, the major determinants remain the allocation strategy (plots or paper shares), the legal status of private ownership, and the transferability or tradability of use rights and property rights.

Ranking the Land Policies of Transition Countries

We have examined the land policies in CEE and CIS in a framework based on the standard concepts of land policy in market economies. The ECA countries show considerable diversity in their major land-policy characteristics, which in our analysis fall into four categories: the attitude toward private ownership of land, transferability of property and use rights, allocation of land in the form of physical plots or paper shares, privatization by restitution or distribution. In this section we try to derive a composite land-policy score based on these four categories of characteristics and to rank the countries in CEE and CIS by the resulting index. To this end, we start with a table of 22 transition countries that contains the "profile" of each country by these four attributes (Table 2.9).

The ideal model of agriculture in market economies assumes private ownership of land with full transferability of use rights. These two attributes are the first two components of the land-policy profile, and the land policies of each country should be evaluated in relation to the market ideal. Countries in which potentially all land can be privately owned, as in market economies, get the highest score (2); countries that do not recognize private land ownership at all get the lowest score (0); countries that partially recognize private land ownership (i.e., only household plots can be privately owned, while the rest of farmland is in state ownership)

get an intermediate score (1). Similarly for the transferability component: the highest score (2) is assigned to countries that approach market-type transferability of land by allowing leasing as well as buying and selling without special restrictions; the lowest score (0) is assigned to countries in which ownership or use rights are non-transferable, either permanently or by virtue of an ad-hoc moratorium; countries that allow leasing of land while restricting buy-and-sell transactions or countries that only allow transfer of use rights (as distinct from ownership rights) get an intermediate score (1). These scores are entered in the country profiles next to the descriptive attributes for the first two components, attitude to private ownership and transferability.

The other two attributes—the allocation strategy and the privatization strategy—are unique to the transition environment, and have no direct analogs in market economies. Yet these attributes can have a direct impact on transferability and development of land markets, and this impact may be used for ranking. As discussed in the section on *Land Allocation Strategy*, allocation of physical land plots is a better option in terms of the impact on potential transferability and land market development. The owner of a physical plot of land has substantially greater flexibility and immediacy in decisions concerning the disposition of property than the owner of a paper share. We accordingly assign a higher score to countries that allocate physical plots of land and a lower score to countries that allocate paper land shares. Examination of the different options under land allocation strategy in Table 2.9 shows that we actually have five distinct levels of this attribute: allocation in physical plots is the highest of the five levels and it gets the score 4; the next best option involves allocation of shares followed by mass conversion of paper certificates into plots of land— and this option gets the score 3; the standard option of allocating shares without accelerated conversion into plots is assigned the score 2; and the option of giving people land in leasehold instead of shares is assigned the score 1; finally the worst option is the one does not involve any allocation of land or use rights and it gets the lowest score 0.

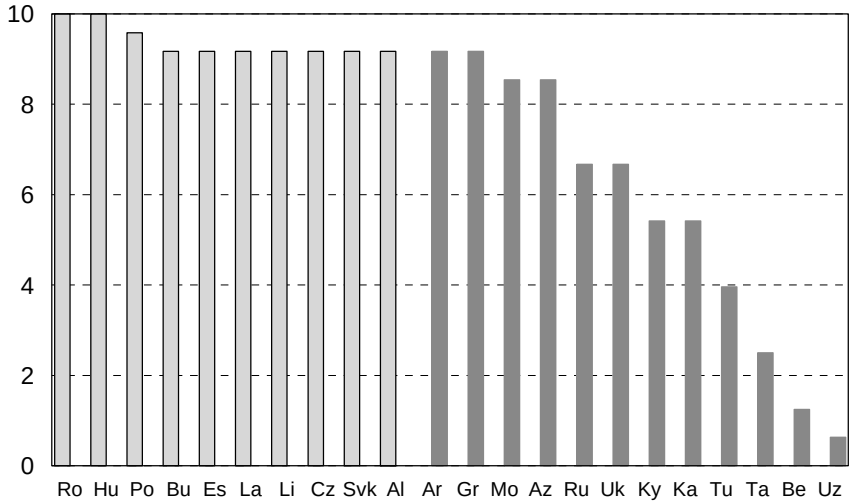
Table 2.9. Land-Policy Scores in Transition Countries

	Private ownership		Privatization strategy		Allocation strategy		Transferability		Composite land policy index*
Rom	All	2	Restitution+distribution	3	Plots	4	Buy/sell, lease	2	10.0
Hun	All	2	Restitution+distribution	3	Plots	4	Buy/sell, lease	2	10.0
Bul	All	2	Restitution	2	Plots	4	Buy/sell, lease	2	9.2
Est	All	2	Restitution	2	Plots	4	Buy/sell, lease	2	9.2
Lat	All	2	Restitution	2	Plots	4	Buy/sell, lease	2	9.2
Lit	All	2	Restitution	2	Plots	4	Buy/sell, lease	2	9.2
Cz	All	2	Restitution	2	Plots	4	Buy/sell, lease	2	9.2
Svk	All	2	Restitution	2	Plots	4	Buy/sell, lease	2	9.2
Alb	All	2	Distribution	2	Plots	4	Buy/sell, lease	2	9.2
Arm	All	2	Distribution	2	Plots	4	Buy/sell, lease	2	9.2
Gru	All	2	Distribution	2	Plots	4	Buy/sell, lease	2	9.2
Mol	All	2	Distribution	2	Plots/shares	3	Buy/sell, lease	2	8.5
Az	All	2	Distribution	2	Plots/shares	3	Buy/sell, lease	2	8.5
Rus	All	2	Distribution	2	Shares	2	Lease	1	6.7
Ukr	All	2	Distribution	2	Shares	2	Lease	1	6.7
Kyr	All	2	Distribution/conversion	2	Shares	2	Moratorium	0	5.4
Kaz	Household plots only	1	None	2	Shares	2	Use rights	1	5.4
Taj	None	0	None	0	Shares	2	Use rights	1	2.5
Tur	All	2	None; virgin land to farmers	1	Leasehold	1	None	0	4.0
Uzb	None	0	None	0	Leasehold	1	None	0	0.6
Bel	Household plots only	1	None	0	None	0	None	0	1.3
Pol	All	2	Sell state land	1	Plots	4	Buy/sell, lease	3	9.6

* On a scale of 0 to 10: land policy index 10 corresponds to ideal market attributes, 0 to no market attributes. See text for computational details.

It now remains to score the privatization strategy, which is characterized by four descriptive levels: restitution, distribution, restitution with distribution, and no privatization strategy. As discussed in the previous section, there is really nothing between restitution and distribution that recommends one strategy over the other in terms of its impacts on land holding and transferability. Restitution and distribution accordingly get the same mark on our scorecard (2). The countries that adopted a strategy involving both restitution to former owners and distribution to workers have obviously achieved a higher level of social equity than countries that used only restitution, and this strategy accordingly gets a higher score than pure restitution (3). Countries that implement a partial privatization strategy, such as Poland that only sells the state-farm land or Turkmenistan that only allocates non-irrigated virgin land in private ownership to peasant farmers, score lower than countries that implement full-scale restitution or distribution (1). Finally, countries without any privatization strategy score 0.

Fig. 2.3. Land Policy Index: Private Ownership, Transferability, Privatization, and Allocation Strategy



The scores assigned to the four attributes are used to construct a composite land policy index that reflect private ownership, transferability, privatization strategy, and land allocation procedures. Since the four attributes are scored on different scales reflecting the different number of qualitative levels for each attribute (for instance, from 0 to 2 for private ownership and from 0 to 4 for allocation strategy), the component scores are first normalized on a scale of 0 to 10 and then summed and averaged (with equal weights) within each country profile. The normalized average score is a land-policy index on a scale of 0 to 10, where 10 corresponds to the ideal attributes: private land ownership, full transferability, allocation in the form of physical plots, and equitable privatization that combines both restitution and distribution. In this ranking of land policies, the CEE countries as a group get a score of 9 out of 10 and the CIS countries a score of 6. Four of the 12 CIS countries—Armenia, Georgia, Moldova, and Azerbaijan—are clearly closer to the group of CEE countries than to the rest of the CIS by their land policy scores. There is indeed significant divergence in land policies, which is visually demonstrated in Figure 2.3.

Annex 1. Land Reform and Farm Restructuring Legislation

I. Countries that recognize private land ownership	
Albania	Law on Land (July 1991) Distribution of Property of Agricultural Cooperatives (Aug. 1991) Distribution of State Farm Land (Oct. 1992)
Bulgaria	Law on Ownership and Use of Land (Jan. 1991, March 1992)
Czechoslovakia	Land Law (May 1991, Feb. 1992) Law on Transformation of Cooperatives (Dec. 1991)
East Germany	Agricultural Adjustment Law (June 1990, April 1991) Establishment of privatization trust (June 1990)
Hungary	Constitutional Court rules against immediate restitution (Oct. 1990) Compensation Law (April 1991) Law of Transformation of Cooperatives (Jan. 1992) Law of Cooperatives (April 1992) Land Law (April 1994)
Romania	Land Fund Law (No. 18) (Feb. 1991) Law on Agricultural Companies and Other Types of Agricultural Associations (No. 36) (April 1991)
Estonia	Law on Principles of Property Reform (June 1991) Law on Land Reform (Oct. 1991) Law on Agricultural Reform (March 1992) Law on Land Leasing (June 1992)
Latvia	Law on Land Reform (Nov. 1990) Law on Privatization of Assets in Collective Farms (June 1991) Law on Land Reform (June 1992)
Lithuania	Law on Land Reform (1991, 1993)
Russia	Law on Land Reform (Nov. 1990) Law on Private Farms (Nov. 1990) Land Code (April 1991) Decree on Implementation of Land Reform (Dec. 1991) New Constitution (Dec. 1993) Decree on Regulation of Land Relations and Development of Agrarian Reform (Oct. 1993) On the Practice of Agrarian Transformations in Nizhnii Novogord Province (April 1994) On Reforming of Agricultural Enterprises in the Light of the Experience in Nizhnii Novgorod Province (July 1994) New Civil Code (Oct. 1994) Resolution No. 96 on Procedure for Realization of the Rights of Owners of Land and Asset Shares (Feb. 1995)
Moldova	Law on Property (Jan. 1991) Law on Priority Social Development of the Village and the Agro-Industrial Complex (Feb. 1991) Land Code (Dec. 1991, Feb. 1995) Law on Peasant Farms (Jan. 1992) Law on Cooperation (Jan. 1992) Law on Standard Price of Land (Dec. 1994)

Kyrgyzstan	Law on Peasant Farms (Feb. 1991) Law of Land Reform (Apr. 1991) Land Code (June 1991) Measures for Continuing Implementation of Land and Agrarian Reform (Dec. 1992) New Constitution (May 1993) Measures on Deepening Land and Agrarian Reform (Feb. 1994) Referendum (June 1998) Presidential Decree on Private Land Ownership (Oct. 1998)
Turkmenistan	Land Code (1991) Law on Destatization and Privatization of Property (Feb. 1992) New Constitution (May 1992) Law on Peasant Farms (March 1994) Law on Peasant Amalgamations (June 1995)

II. Countries that do not recognize private land ownership	
Belarus	Land Code (1990) Decree on Conducting Land Reform (1991) Law on Peasant Farms (1991) Law on Land Ownership (June 1993)
Kazakhstan	Law of Land Reform (1991) New Constitution (Jan. 1993) Law on Peasant Farms (April 1993) Presidential Decree on Land Reform (February 1994)
Kyrgyzstan	Law on Peasant Farms (Feb. 1991) Law of Land Reform (Apr. 1991) Land Code (June 1991) Measures for Continuing Implementation of Land and Agrarian Reform (Dec. 1992) New Constitution (May 1993) Measures on Deepening Land and Agrarian Reform (Feb. 1994)
Tadjikistan	Law on Property (Dec. 1990) New Constitution (Nov. 1994)
Uzbekistan	Allocation of Land for Subsidiary Household Plots (Aug. 1989) Land Law (June 1990, May 1993) Law of Property (Oct. 1990, May 1993) Law of Entrepreneurship (Feb. 1991) Law of Cooperatives (June 1991, Dec. 1993) Further Strengthening of Peasant Farms (Nov. 1991) Law of Peasant Farms (July 1992)

Chapter 3. Divergent Approaches to Reform: Changes in Farm Structure

We have seen in Chapter 1 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. A massive effort is now under way in the former socialist countries of Europe and Central Asia to eliminate the constraining institutional arrangements and create more productive forms of farming.

The transformation 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 agriculture. In CIS, the beneficiaries of these processes are members and workers who contributed by their labor to accumulation of assets over the years. In CEE, the process is mixed: land is generally restituted to former owners (although there are some departures from this scheme, see Chapter 2), while non-land production assets are typically shared by members and workers through a distribution process similar to that in CIS. Property rights are typically transferred to members and employees by distributing the collectively held land and assets into individual shares according to various entitlement criteria. 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 may ultimately lead to physical distribution of land plots and farm assets in kind, as in CEE.

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.

Farm restructuring in this chapter 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 farm structure with a clear market orientation.

Restructuring Modes

Different transition countries pursue different farm restructuring strategies. The various restructuring modes of collective and state farms observed in the region are summarized in Table 3.1.

Table 3.1. 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, Armenia, Georgia, Moldova
		New corporate units created by reconfiguration of individual holdings	CEE (except Albania), Moldova
Distribution of "paper shares"	Retention of former collective structure as a new organizational form	Individual farms established by withdrawal of shareowners	All other CIS
		Corporate units created by reconfiguration of shares inside the former collective shell	
		"Stay as is": Successor farm created by keeping the shares in the former collective	

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, 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.

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, on a different level, 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. 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. Leasing to private individuals, however, may look 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 2. The share distribution mechanism does not involve allocation of physical plots: the privatized land remains in collective cultivation, until such time that the share owner 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 two CIS countries (Armenia and Georgia) 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 Azerbaijan, Kazakhstan, and Turkmenistan. Overall, however, 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.

Individually cultivated land has increased dramatically in all countries of the region since the beginning of transition (Table 3.2). In six countries—Albania, Slovenia, Poland, and

Latvia in CEE; Armenia and Georgia in CIS—most cultivated land is in individual use, and virtually no collective farms remain. The change has been particularly striking in Albania, Latvia, Armenia, and Georgia, 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 the average share of land in individual use in 1997 is 66% of agricultural land across the CEE countries (including the Baltic states) and 16% 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 land. Despite this qualification, it seems clear that today CEE has a substantially higher proportion of land in individual use than CIS. This is visually illustrated in Figure3.1, 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 3.2. Share of Land in Individual Use in CEE and CIS (percent of agricultural land) and Share of Individual Production in CIS (percent of gross agricultural product), 1990 and 1997

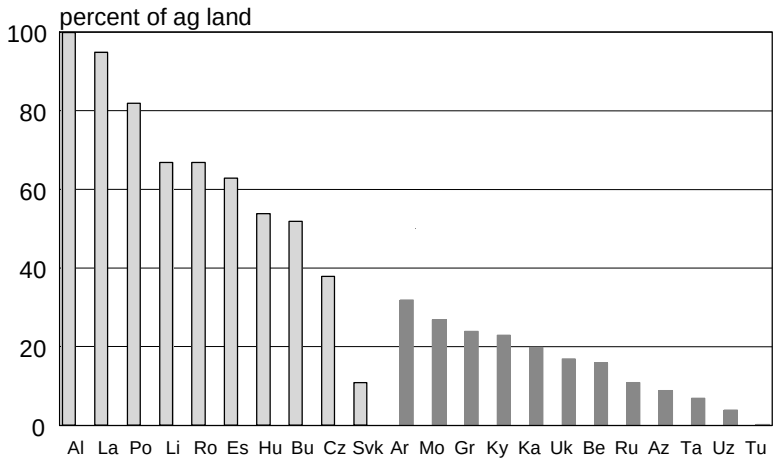
CEE countries	Individual land		CIS countries	Individual land		Individual production	
	1990	1997		1990	1997	1990	1997
Albania	4	100	Armenia	4	33	35	98
Slovenia	92	96	Georgia	7	24	48	76
Poland	77	82	Ukraine	7	17	27	53
Romania	12	67	Moldova	9	27	18	51
Hungary	6	54	Belarus	7	12	25	45
Bulgaria	13	52	Russia	2	11	24	55
Czech Rep.	5	38	Kyrgizstan	1	23	34	59
Slovakia	5	11	Kazakhstan	0.2	20	28	38
Latvia	5	95	Azerbaijan	3	9	35	63
Lithuania	9	67	Tajikistan	2	7	23	39
Estonia	6	63	Uzbekistan	2	4	28	52
			Turkmenistan	0.2	0.3	16	30
Ave CEE	21	66	Ave CIS	4	16	28	55

Source: EC (1998) for CEE (except Albania); Albania (1998) for Albania; CIS (1999) for CIS (except Moldova); Lerman et al. (1998) for Moldova.

The increase of land in individual use has been accompanied by an increase in the share of the individual sector in agricultural production between 1990 and 1997. In most of CIS (the European and Central Asian republics), the share of individual agricultural

production doubled from about 30% in 1990 to almost 60% in 1997 (Table 3.2). In Armenia and Georgia, individual farms now account for virtually the entire agricultural output. Unfortunately no similar data are available for CEE, but from the pattern of land individualization (Table 3.2) it is clear that in Albania and Latvia 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.

Fig. 3.1. Share of Ag Land in Individual Use in CEE and CIS: 1997



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 (which are not necessarily small, although much smaller than the corporate farms in transition countries). 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 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 (see the section on the status of state farms below).

Fig. 3.2. Dynamics of Registration of New Organizational Forms in Russia

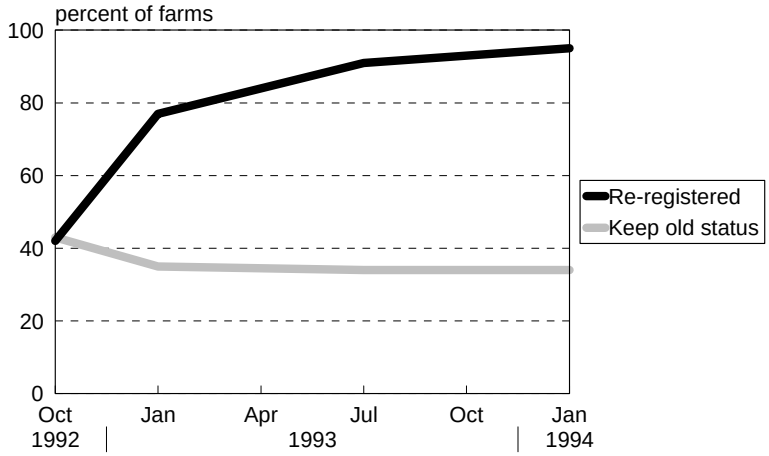


Figure 3.2 shows that in Russia, for instance, the external reorganization of farm enterprises was practically completed as early as the end of 1993: the top curve plotting the percentage of farms that had undergone formal re-registration with the purpose of assuming ownership of land approached 100% 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 1992-1993. 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 3.3 shows that more than half the farms in Russia, Ukraine, and Moldova are now registered in new corporate forms, with limited-liability companies and partnerships enjoying the greatest numerical popularity (brief characterizations of the various organizational forms are provided in Box 3.1). On the other hand, the same table shows that up to half 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 3.2 (the lower curve), we see that in Russia the share of traditional forms among farm enterprises has stabilized at about 35% 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 3.3. Organizational Forms of Farm Enterprises in CIS

	Russia, Jan. 1997	Moldova, Jan. 2000	Ukraine, 1998	Belarus, 1998
Total farm enterprises	**26,999**	**1,264**	**15,984?**	**2,523**
Traditional forms	**37%**	**17%**	**48%**	**96%**
Collective farms	26%	8%	23%	71%
State farms	11%	9%	25%?	25%
New forms	**63%**	**83%**	**52%**	**4%**
Joint-stock companies	20%	15%	18%	NA
Limited-liability companies and partnerships	25%	31%	23%	NA
Agricultural production cooperatives	15%	25%	2%	NA
Farmers' associations	3%	12%	2%	NA
Other forms	--	--	7%	NA

Source: Sel'skoe Khozyaistvo Rossii 1998 for Russia; Computational Center, Department of Statistics for Moldova; 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 3.3: 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 2), members do not get any land shares and reorganization involves only distribution of asset shares by the farm enterprise.

Box 3.1. 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 (*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.

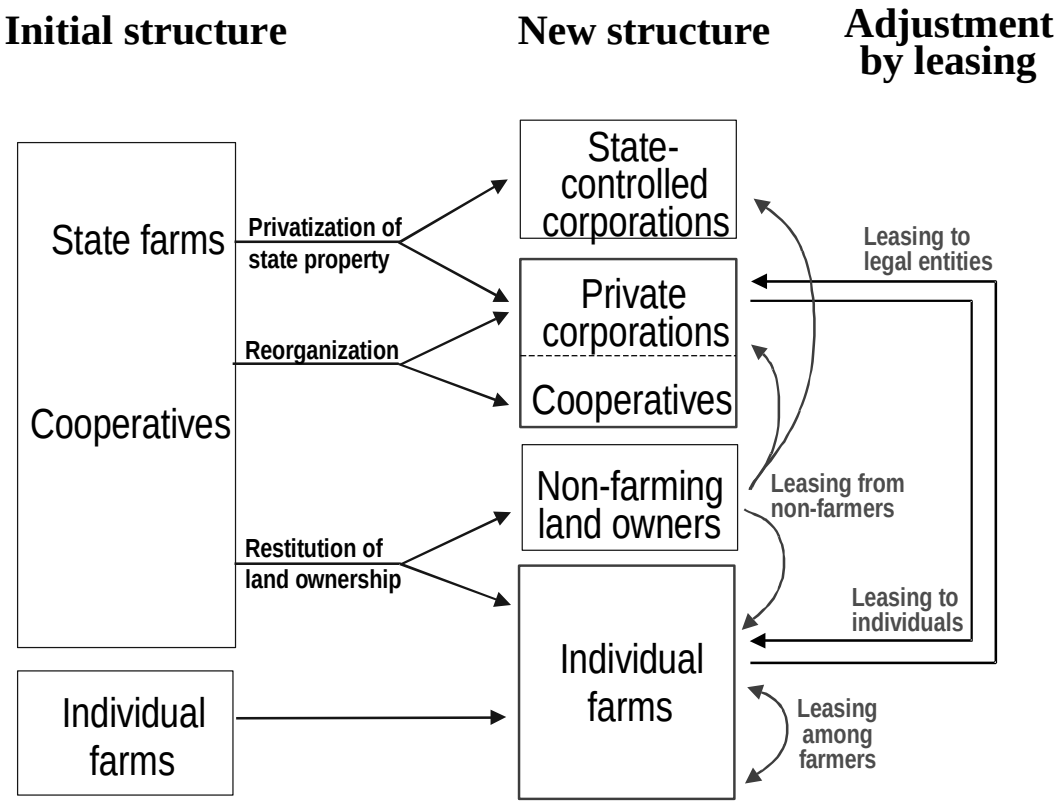
Agricultural Cooperative: An entity established voluntarily by several individuals for the pursuit of a common agricultural activity (production or services). The members of a cooperative are its users, not merely investors. Each member makes a contribution to the statutory equity capital of the cooperative 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. 3.3. 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 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 3.3.

Table 3.4. 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

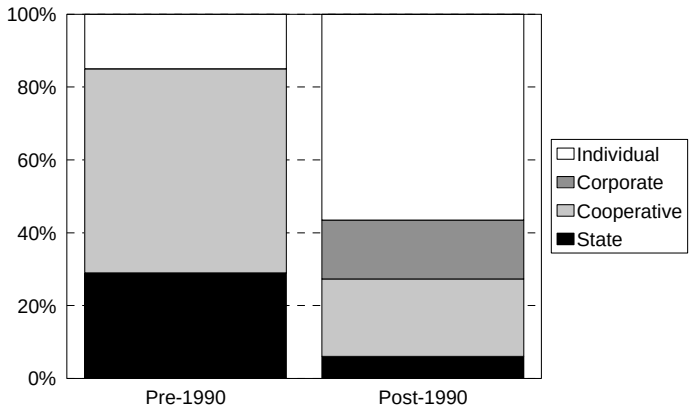
Source: *Agricultural Situation and Prospects in the Central and Eastern European Countries: Summary Report*, European Commission, Directorate General for Agriculture – DGIV, Working Document, June 1998.

Table 3.4 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 3.4; the rest at that time was controlled by individual farms (including household plots). For traditional organizational forms Table 3.4 shows the decrease in their share of land before 1990 (pre-transition) and today (1996-97). 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).

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 3.4). 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 organizational categories are now substantially smaller than the former cooperatives and state farms. The individual farms, on the other hand, are larger (see Table 3.5 below).

Fig. 3.4. Distribution of Farm Land by Organizational Form



Land restitution in CEE inevitably produced a group of non-farming landowners—people with established careers and occupations 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 3.3 shows schematically 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 fairly 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.

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 3.1) 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. 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 1992-1994, 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 2), about 700,000 out of more than one million beneficiaries of the privatization process decided not to switch to independent farming (results of 2000 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 3.2. 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.

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 A).

Table A. 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.

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 Table 3.4 in the previous section, which shows 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 has been re-consolidated in various farmers' associations (Gavrilescu, 1993). Half the recipients of land through restitution in Bulgaria and a significant proportion in Hungary have also chosen 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 3.1), 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. Some of them are simply too old to farm, or perhaps have alternative careers and occupations (mainly in CEE). For these non-farming landowners, entrusting their land to active producers makes good economic sense, and a large corporate farm may look like a more reliable and trustworthy lessee than a struggling individual farmer. Others are reluctant to take advantage of their newly found rights of exit, probably because of the sense of security joint action affords to individuals in a highly uncertain and rapidly changing environment (Machnes and Schnytzer, 1993).

Box 3.3. 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 many (but not all) 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. 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. 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 efficiently 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 farms 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 26.7 thousand in 1998. A similar phenomenon is reported in Ukraine and in Hungary.

Table 3.5. Average Farm Sizes by Organizational Form in CEE Countries (in hectares)

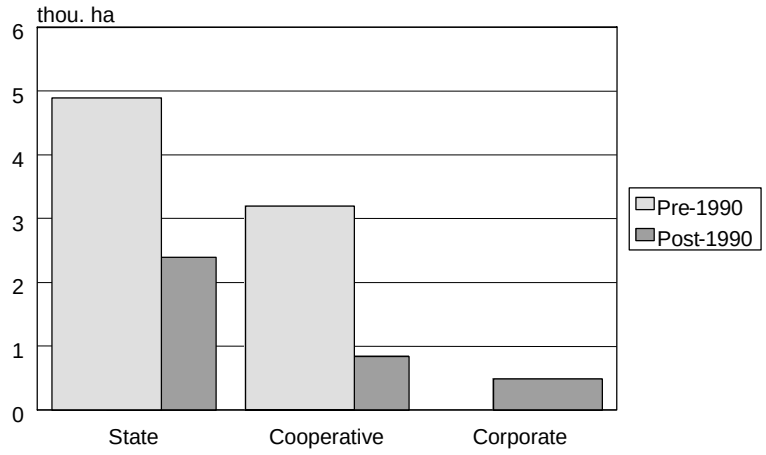
	Collective/cooperative farms		State farms		New corporate forms	Individual farms	
	Pre-1990	Current	Pre-1990	Current	Current	Pre-1990	Current
Bulgaria	4,000	637	1,615	735	–	0.4	1.4
Czech Rep.	2,578	1,447	9,443	521	690	5.0	34.0
Slovakia	2,667	1,509	5,186	3,056	1,191	0.3	7.7
Hungary	4,179	833	7,138	7,779	204	0.3	3.0
Poland	335	222	3,140	620	333	6.6	7.0
Romania	2,374	451	5,001	3,657	–	0.5	2.7
Estonia	4,060	–	4,206	–	449	0.2	19.8
Latvia	5,980	–	6,532	340	309	0.4	23.6
Lithuania #	2,380	–	1,880	–	310	0.5	7.6
Slovenia	–	–	470	371	–	3.2	4.8

Average size of collective, state, and corporate farms in Lithuania is based on unpublished OECD data.
Source: *Agricultural Situation and Prospects in the Central and Eastern European Countries: Summary Report*, European Commission, Directorate-General for Agriculture (DG VI), Brussels, 1998.

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 ha and 1,000 ha, compared with 2,000 ha to 4,000 ha for a

typical collective or state farms before 1990 (Table 3.5). There has also been a significant downsizing of cooperatives and especially state farms: cooperatives went down from about 3,000 ha to 1,000 ha, while the remaining state farms shrank from 5,000 ha to 2,000-3,000 ha (Figure 3.5).

Fig. 3.5. Downsizing of Large Farms in CEE



A similar, though much less pronounced, tendency is observed in the CIS. The average collective in Russia, Ukraine, or Moldova has shrunk by about 30% since 1991 (this is evident from official statistics in these countries, Table 3.6). 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). 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).

Table 3.6. Downsizing of Large Farm Enterprises in the FSU (average farm size in hectares)

	1990	1997	Change in size
Russia	8,100	6,100	-25%
Ukraine	2,900	2,100	-28%
Moldova	2,200	1,400	-36%

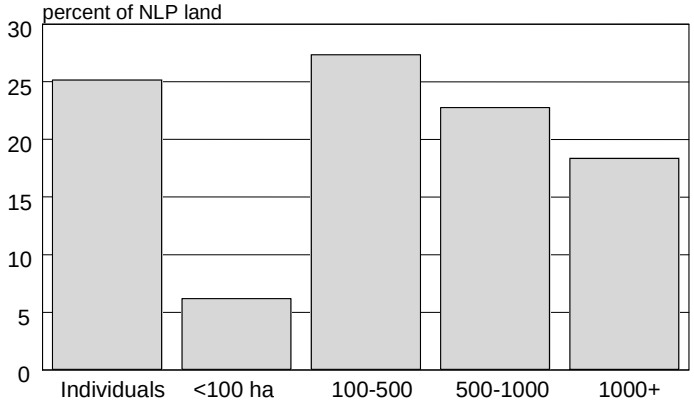
Source: Country statistical yearbooks.

Despite the observed downsizing, however, the corporate farms in CEE and CIS are still large by the standards of market economy. 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 3.4. Changes of Farm Size in Moldova: The Status as of Fall 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 A). 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.

Fig. A: Land Managed by Leaders: September 2000



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.

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 3.5). 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 3.6, 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

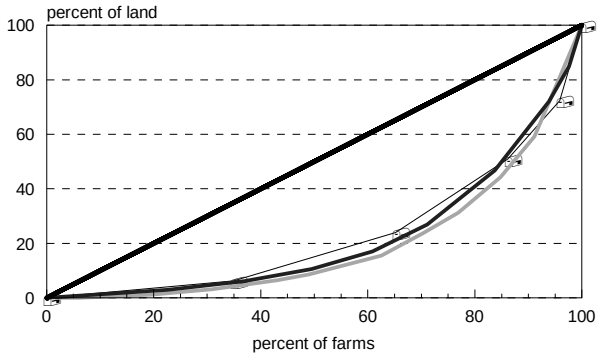
curve" in which the vertical axis gives the cumulative percentage of land in farms and the horizontal axis gives the cumulative percentage of farms of all types, ranked by size. The straight diagonal line represents the situation of "ideal equality," when land is uniformly distributed over all farms 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.

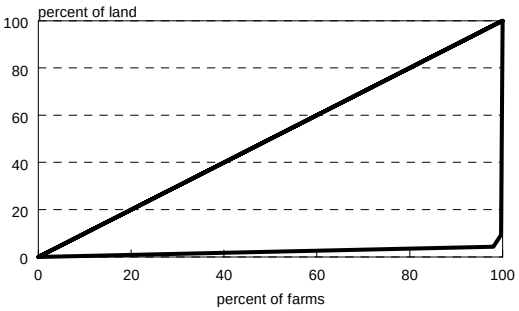
Other panels in Figure 3.6 present land concentration curves for some CIS and CEE countries, which were selected to demonstrate the three main farm structure patterns observed in the transition economies. The first two cases—Russia as a representative of the CIS and Bulgaria from CEE—sharply deviate 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. 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.

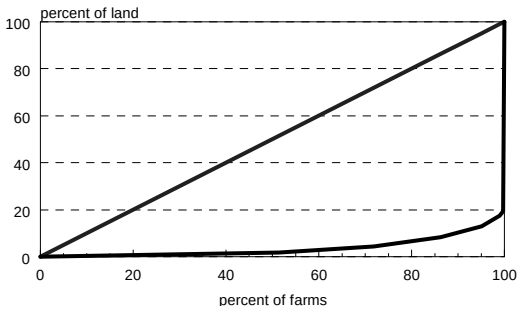
(a) Market Economies:
USA (black), Canada (gray), EU15 (squares)



(b) Russia

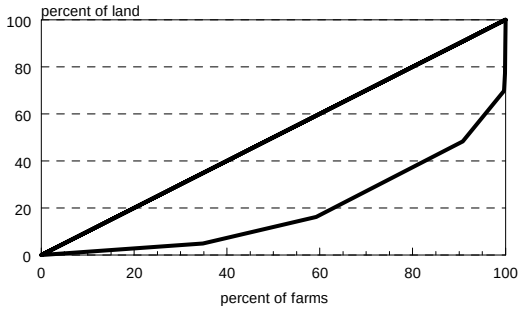


(c) Bulgaria

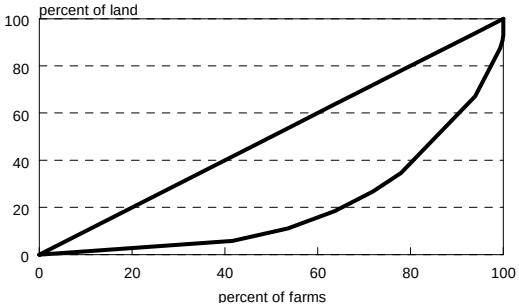


(d) Romania

(e) Slovenia



(f) Lithuania



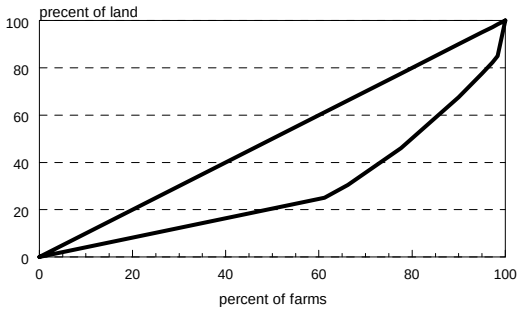


Figure 3.6. Concentration of farmland in 15 countries of the European Union (panel a) and in selected countries of CIS and CEE (panels b-f), 1996-1997. *Source*: USDA for US; Statistics Canada for Canada; Eurostat for EU15; official country statistics for Russia and CEE.

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 an over-fragmented farm structure.

Table 3.7. 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	
USA	**35**	
Canada	**38**	
EU15	**40**	
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: Official country statistics.

Table 3.7 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 1 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.

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 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 3.8).

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 3.8. 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.

In Chapter 1 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 1.5 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 3.9). 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.

Table 3.9. Responsibilities of Central Management and Subdivisions (percent of farm managers surveyed)

	Ukraine	Moldova
Farms retain central management	96	72
Central management functions		
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
Subdivision functions		
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

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 9). These changes have occurred only since 1997-98, when Moldova entered a new phase of land reform and farm restructuring.

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.

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 3.10). 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.

Table 3.10. 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
Average frequency score	**21**	**13**	**48**	**33**	**14**	**58**

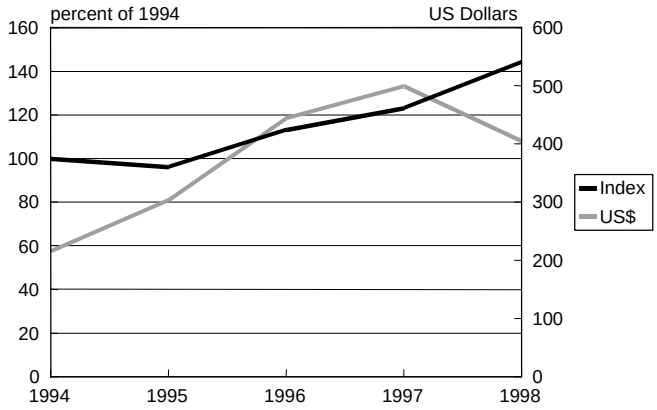
Source: World Bank surveys.

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. 3.9. Real Debt per Farm in CIS: 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 recent 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 3.9, 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 3.13). 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 3.11. 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.

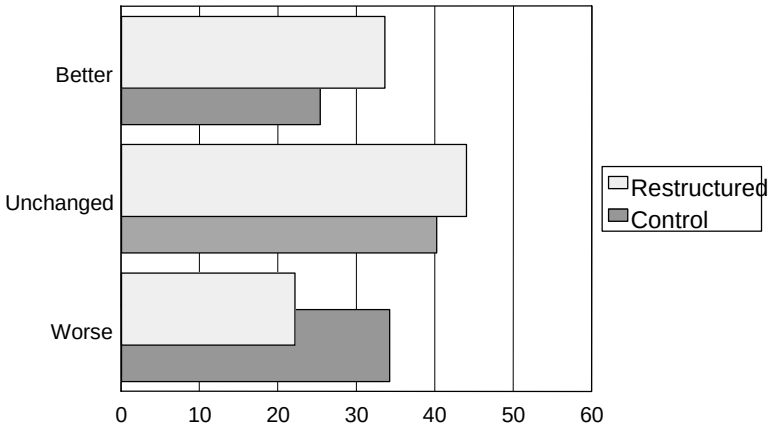
The fact that persistently unprofitable farms are allowed to continue existing and accumulating debt is a clear indication that agriculture in CIS continues to operate under soft budget constraints. The large farms have not changed their financial practices and continue to expect write-offs and financial 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 have 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 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 mangers to the old socialist ideology of labor, reorganized farms appear to be more sensitive to dangers of labor redundancy.

Fig. 3.7. 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 3.7. 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 or 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 3.11).

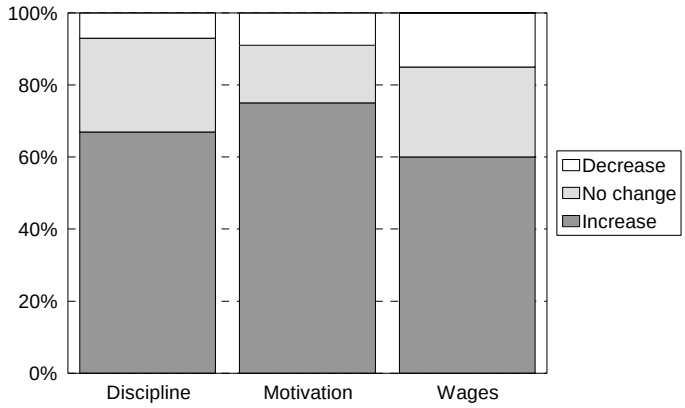
Table 3.11. Evaluation of Workers' Behavior by Managers of Reorganized and Non-Reorganized Farms in Ukraine and Belarus (percentage of managers in each category)

	Ukraine 1998		Belarus 1999	
	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.

A recent survey in Moldova (autumn 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 3.8). 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. 3.8. 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. Recent surveys in Moldova and Belarus have explored the issue of changes in goals and objectives as perceived by managers of corporate farms.

Table 3.12. 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.

In Moldova, the farm management strategy as reflected in the perceived goals has changed dramatically since the beginning of reforms (Table 3.12). 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.

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”.

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 berleshik" (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 that 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 3.1, 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?

Since economies of scale in agriculture are too elusive to provide an economic justification for the persistently high proportion of large corporate farms, we are 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 context of non-farming—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 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.

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 in order to keep his power and his perquisites.

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 the local consumers.

The relationships between farm managers and district authorities have been recently studied in two Russian provinces—one predominantly agricultural (Saratov) and one with marginal agriculture (Leningrad). 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 3.14. Average Economic Indicators per 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.

Table 3.14 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.

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 3.15).

Table 3.15. 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 3.16). 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.

A similar production frontier analysis was carried out to estimate the technical efficiency of individual and corporate farms in Belarus. 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 Belarus do not support either point of view at this stage. Both small individual farms and large corporate farms had efficiency scores of 0.5-0.6 relative to the production frontier derived using Data Envelopment Analysis, and the differences were not statistically significant.

Table 3.16. 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.

The results available for CEE countries are equally inconclusive. Mathijs and Swinnen (2000) estimated the technical efficiency of specialized crop farms in three countries—Hungary, the Czech Republic, and Bulgaria (Table 3.17). The analysis was conducted basically for two categories of farms—individual farms and corporate farms, as in

Belarus. For Hungary, the corporate farms were divided into new companies (the equivalent of restructured farms in CIS) and cooperatives (the equivalent of non-restructured farms in CIS). 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, which means that a more representative sample may actually reverse the result). In Hungary, individual farms achieved an average technical 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.

Table 3.17. Mean Technical Efficiency Scores for Crop Farms in CEE

	Individual farms	New companies	Cooperatives
Hungary	0.58	0.50	0.44
Czech Republic	0.62	0.57	
Bulgaria	0.44	0.44	

Source: Mathijs and Swinnen (2000).

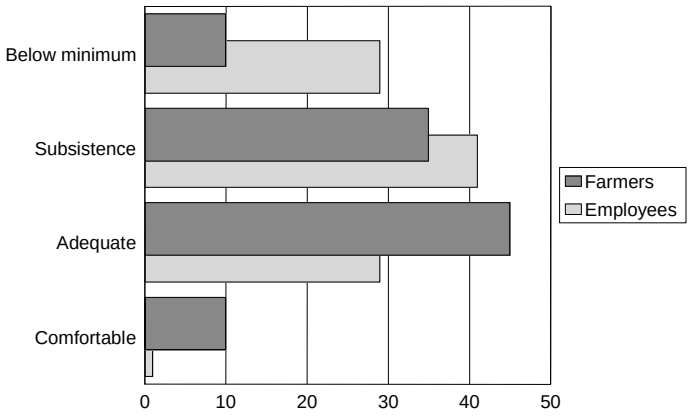
There is still no conclusive evidence for CIS or CEE that restructured farms perform better than non-restructured farms or that family farms are significantly more efficient than large collectives or cooperatives. Yet the available results clearly show that the large corporate farms certainly do not outperform the newly created individual farms anywhere in the region. This in itself is an important finding in that it contradicts 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.

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.

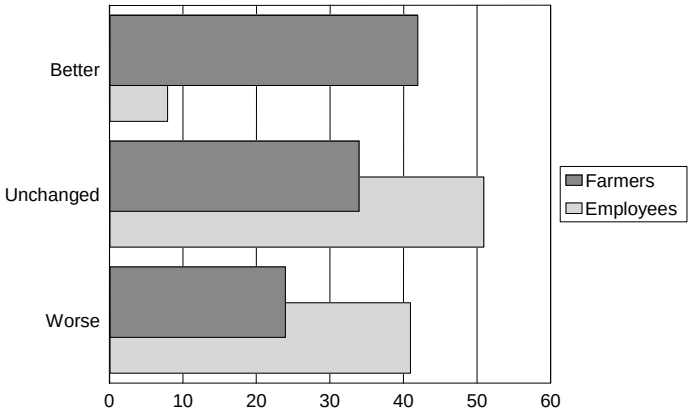
Both groups of families give a fairly low evaluation of the general standard of living in their countries. Yet comparison of their responses shows that on the whole farmers are better off and more optimistic than employees of collective enterprises, although the playing field is definitely tilted against 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 3.10; "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). 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 3.11). 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 3.12).

Fig. 3.10. What the Family Budget Buys



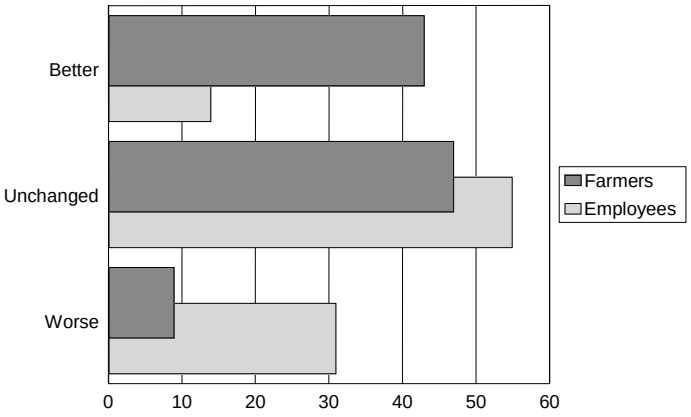
Source: World Bank surveys for Russia, Ukraine, and Moldova

Fig. 3.11. How the Family Situation Has Changed



Source: World Bank surveys for Russia and Moldova

Fig. 3.12. Perception of Family's Future Prospects



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

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 3.18. 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 of 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 3.18. Reasons Not to Become a Private Farmer (percent of rural households surveyed)

	Russia (1994)	Ukraine (1996)	Moldova (1998)
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

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 3.19). 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 may not represent independent estimates by the peasants, they certainly influence their thinking and their decisions, restraining any motivation for change in the traditional organization of farms.

Table 3.19. 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.

Sectoral Impacts of Land and Farm Restructuring Policies

The first years of transition (1989-1992) were characterized by a marked decline in agricultural production across the region. By 1992, gross agricultural product had dropped to about 80% of its level in 1990. This is the average decline over all transition countries, and in some cases (most notably, the Baltic states and the war-torn Georgia) agricultural output was halved between 1990 and 1992.

The decline during the first years of transition was probably an inevitable outcome of the general economic and political disruption. The economic activity in the socialist world was traditionally embedded in a centrally managed command environment, which controlled supply of inputs and sale of outputs. The almost instantaneous elimination of the command system in 1989-1990 unavoidably depressed production, as producers had to adjust their operating mode and switch to independent functioning. While previously producers enjoyed an assured flow of inputs, now they had to start looking on their own for sources of input supply. While previously they only had to produce and could rely on state procurement to take care of distribution, now they also had to worry about sales and marketing of their products. These changes in the operating environment hit all the

producers in the economy, but perhaps agriculture was hit harder because of the traditionally greater emphasis of command organs on food production and the perishable nature of many farm products.

There was also another factor that made the initial decline in agricultural production unavoidable. Under the socialist regime, agriculture was heavily subsidized in the interest of keeping food prices to consumers at a persistently low level (Johnson and Brooks). Farm subsidies included direct budget transfers from the government to farms (e.g., various debt write-offs or investment grants); price controls keeping the prices of farm inputs below production costs; and price support keeping the prices received by farms above world prices. These subsidies evaporated, or at least were drastically curtailed, at the very beginning of transition. Agriculture's terms of trade deteriorated, while at the same time food prices to consumers increased. These factors naturally combined to depress farm production. The chain of collapse thus started with elimination of subsidies, which led to deterioration in terms of trade and reduced use of inputs. Decrease in consumption of fertilizers, herbicides, and other farm inputs adversely affected yields and total agricultural output declined.

Politicians and farmers in transition countries, conditioned as they are by decades of production-oriented planning, regard the decline in agricultural output as a major crisis. Western media, taking their cue from local populist sentiments, also describe the drop in farm production in very dark colors. The uninitiated observer is presented with an overall picture of a catastrophe in transition agriculture. And yet, as we discuss above, initial decline of agricultural production is a concomitant of reform. Liefert and Swinnen (2001) actually argue that the absence of a decline in agricultural output more likely reflects failure to reform, rather than failure of reform.

In this interpretation, the decline of agricultural production in 1990-1992 is the inevitable result of an initial shock of transition. By their very nature, shocks are transient phenomena and their effects have a tendency to play out over time. Some shocks produce a temporary impact, and eventually the system returns to its initial pre-shock level. Other shocks have a more permanent impact, and the system eventually resumes normal

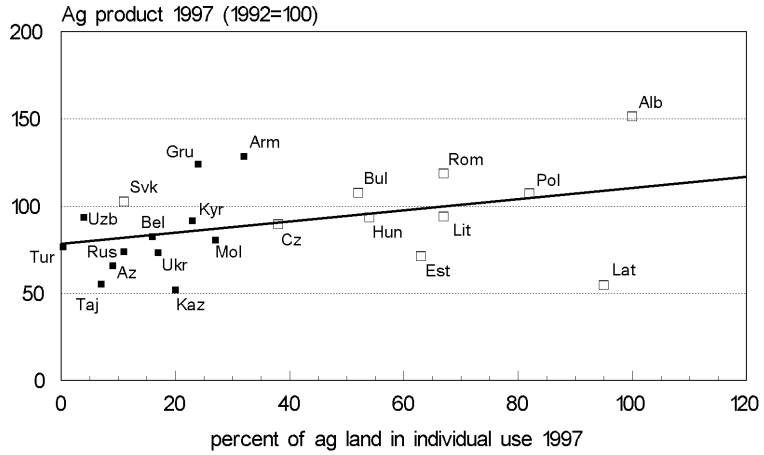
behavior from a new post-shock level. Success of reforms in transition countries should not be measured by the yardstick of the 1990 production level, as is often done by politicians and many experts. Instead, we should focus on the behavior that has set in after the initial shock. Resumption of growth after that point is good, regardless of whether a particular country returns to the pre-1990 level or not. Moreover, if the decline in output is associated with an even greater decline in the use of inputs, the net outcome is an increase in productivity or efficiency. Thus, a desirable outcome may be achieved despite the decline in output. As we demonstrate toward the end of the chapter, the productivity of agriculture indeed increased in some transition countries despite what looked like a catastrophe with agricultural production.

Obvious differences in the institutional and policy environment have emerged since 1990 between CIS and CEE. In the domain of land policy, these differences are manifested in the attitude toward private land ownership (universal acceptance in CEE, heated debates in most of CIS), the land privatization strategy (restitution in CEE, distribution in CIS), the land allocation strategy (physical plots in CEE, land share certificates in most of CIS), and the legal framework for land transferability (significantly more permissive in CEE than in CIS). Differences in farm restructuring strategies have led to the emergence of substantially downsized corporate farms with clear profit accountability in CEE ("new companies"), while most corporate farms in CIS retain the traditional characteristics of collective and cooperative organization despite their new market-sounding names. The divergence between CIS and CEE is also reflected in various dimensions of institutional and policy reform outside primary agriculture, which are directly linked to the components of the overall transition agenda. Although these dimensions—privatization and demonopolization of processing, marketing, and supply channels, development of rural finance, emergence of competitive market institutions—are not discussed explicitly in the preceding chapters, various policy and institutional reform indices incorporating an assessment of the corresponding dimensions reflect strong differences between CEE and CIS in the overall progress of reform.

As a result of the differences in land and farm restructuring policies, the individualization of agriculture is much more advanced in CEE than in CIS. This factor in itself has a

positive impact on agriculture in CEE, because a clear positive correlation is observed between the degree of individualization (as measured by the share of agricultural land in individual use) and agricultural growth since 1992. Figure 3.13 shows that countries with a higher share of individual farming register higher agricultural growth. However, individualization of agriculture is not a sufficient condition of success: some countries with a relatively small individual farming sector achieve impressive growth (e.g., Slovakia), while other countries with fairly large individual agriculture lag behind (e.g., Latvia). There is no evidence to establish strict causality between individualization of agriculture and agricultural growth. Agricultural transition apparently depends on additional political and social factors that determine the emergence of market institutions both in agriculture and in other sectors of the economy.

Figure 3.13. Change in agricultural product (1992-97) versus land in individual use. Legend: black squares—CIS countries; white squares – CEE countries; the straight line shows the regression fit with slope coefficient (b = 0.32) significant at 10% (p = 0.08), R^2 = 0.14.



One of the major goals of transition to market is to achieve improvements in productivity of agriculture. In the absence of data for calculation of total factor productivities, we focus on a standard partial measure of productivity—the productivity of agricultural labor, which is calculated as the ratio of agricultural output to agricultural labor (in index numbers).

The annual rates of change in agricultural labor between 1992 and 1997 are shown in Figure 3.14. The 22 transition countries can be grouped in four categories by the behavior of agricultural employment during transition:

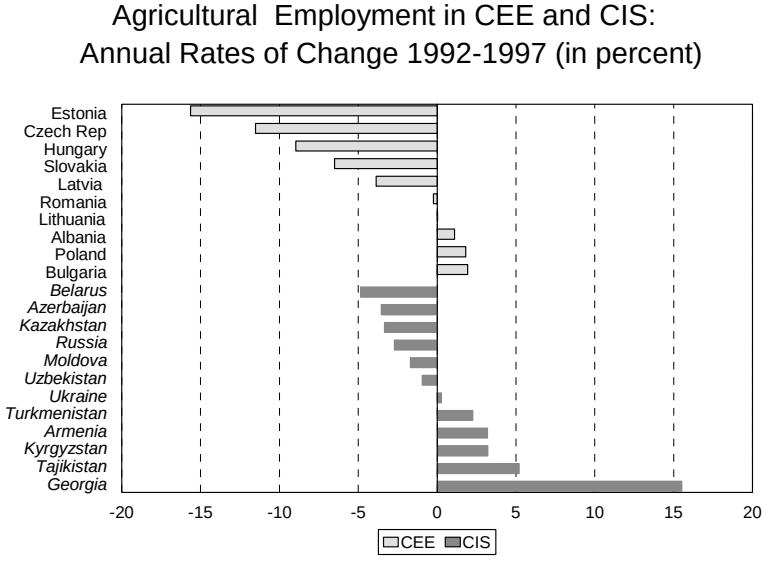
(a) Countries showing a sharp decline in agricultural employment: Czech Republic, Estonia, and Hungary (all in CEE);

(b) Countries showing a generally moderate, but statistically significant, decline in agricultural employment: Latvia and Slovakia in CEE; Azerbaijan, Belarus, Kazakhstan, and Russia in CIS;

(c) Countries in which agricultural employment remained steady: Albania, Lithuania, and Romania in CEE; Moldova, Ukraine, and Uzbekistan in CIS;

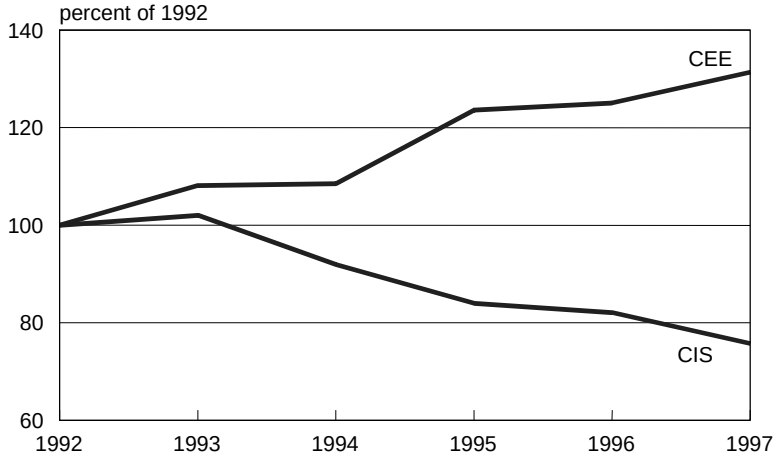
(d) Countries with increasing agricultural employment: Bulgaria and Poland (and also Slovenia) in CEE; Armenia, Georgia, Kyrgyzstan, Tajikistan and Turkmenistan in CIS (most of Transcaucasia and Central Asia).

Figure 3.14. Changes in agricultural employment in CEE and CIS 1992-1997
(annual average rates of change, in percent)



Thus, in both CEE and CIS there are countries where agricultural employment decreased between 1992-97 and countries with increasing agricultural employment. On balance, however, a sharper decline in agricultural employment is observed in CEE. Combining the agricultural employment trends with agricultural growth, we obtain that agricultural labor productivity increased markedly since 1992 in the CEE countries and declined in the CIS countries (Figure 3.15, Table 3.20; for detailed country data see Table A3.1 in the Annex at the end of the chapter). The improvement in agricultural labor productivity has been largely due to sharp reductions of agricultural employment in some CEE countries rather than any significant growth in agricultural output.

Fig. 3.15. Productivity of Agricultural Labor in CEE and CIS: 1992-1997*



*Ratio of gross agricultural product to agricultural empoyment

What drives the differential changes in agricultural employment across transition countries? We have shown in Chapter 1 that, in the pre-transition period, changes in agricultural employment primarily reflected population growth rates. This was not particularly surprising in the pre-1990 environment, where mobility of labor was highly restricted and all socialist countries had similar growth rates (by both GDP and GAO). In the post-1990 period, on the other hand, the formal restrictions on mobility of labor have been removed, while CEE and CIS countries show considerable divergence in growth rates. It is naturally tempting to hypothesize that labor migrates out of agriculture in

countries where higher GDP growth rates support creation of alternative job opportunities and, conversely, agricultural employment increases in countries where declining GDP deprives the rural population of alternative job opportunities. Unfortunately, this attractive hypothesis is not supported directly by the available data: the relationship between the change in agricultural employment and the change in GDP between 1992-97 is not statistically significant, although its sign is negative, as expected (the correlation coefficient is only –0.2).

Table 3.20. Economic and Policy Indicators of CEE and CIS (percentage change 1992-97)

	GDP	Agricultural product	Agricultural employment	Ag labor productivity	Land in individual tenure 1997
CEE (10 countries)	8	-1	-16	25	63
CIS (12 countries)	-25	-17	9	-21	16
West CEE (4)*	12.1	-10.7	-42.3	56.3	42
East CEE (4) **	-8.3	-6.2	-2.2	-5.3	70
Poland	32.6	7.4	9.4	-1.8	82
Albania	36.5	51.6	5.7	43.4	100
European CIS, Kazakhstan (5)	-30.7	-27.6	-11.4	-17.6	18
Transcaucasia (3)	-16.2	6.2	35.4	-17.0	22
Central Asia (4)	-25.4	-20.8	13.3	-28.1	9

* Czech Republic, Slovakia, Hungary, Estonia.

** Bulgaria, Romania, Latvia, Lithuania

Table 3.20 summarizes the relationship between agricultural employment and GDP. Sharp declines in agricultural employment are generally (but not always) associated with growth in GDP. This is the case in western CEE and Estonia, but not in Albania and Poland, where growth in GDP was associated with increase in agricultural employment. Agricultural employment increased in Albania, Poland, the Transcaucasian countries, and Central Asia. In Central Asia the increase in agricultural employment is clearly driven by the high rates of increase of the rural population, which grew by 9% since 1992, while the rural population in all other ECA countries actually declined. In Albania, Poland, and Transcaucasia, on the other hand, the increase in agricultural employment appears to be associated with land policy. In all these countries agriculture is based primarily on individual farming: in Albania and Transcaucasia agricultural land is distributed in the

form of physical plots to rural households, whereas in Poland 80% of agricultural land has always remained in individual farms. The phenomenon of increasing agricultural employment in countries with predominance of individual agriculture can be explained by empirical evidence from a number of farm surveys across the region, which indicate that small-scale individual farming absorbs more labor than the large-scale collectives, despite their large contingent of non-productive workers employed in various support services (Lerman 1998). Individual farming acts as a labor sink and prevents out-migration of the rural labor force.

Stronger results are produced by a more general model, which in line with the above discussion additionally includes among the explanatory variables the share of land in individual use and the change in rural population during 1992-97 (the expanded model also includes the change in agricultural output, a variable that is obviously related to agricultural employment). The results of this model are summarized in Table3.21. Agricultural employment indeed decreases when GDP increases, if we control for the change of agricultural output, the increase of the rural population, and the percentage of land in individual use. In this model, a 1% increase in the change of GDP between 1992-97 reduces by 0.6% the change in agricultural employment (the regression coefficient is statistically significant with $p = 0.02$). The other coefficients are also statistically significant and have positive signs, as expected: agricultural employment increases as the rural population and the share of land in individual use increase; it also increases with the increase of agricultural output, although the direction of causality in this case is probably reversed.

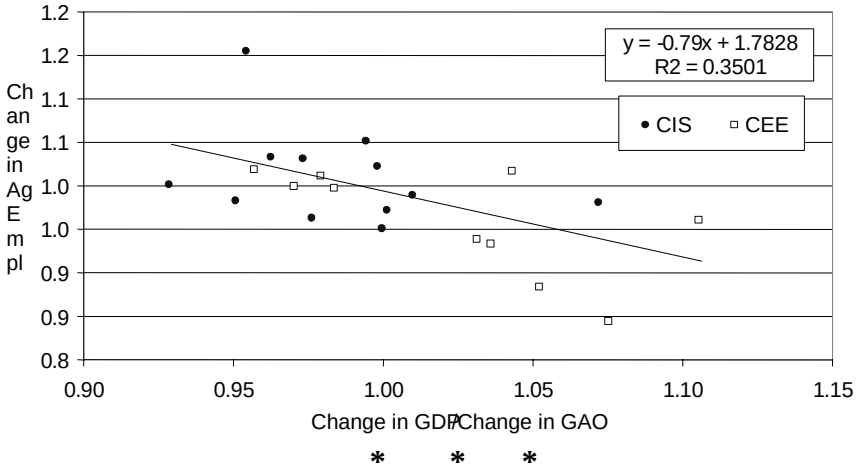
Table 3.21. Factors Affecting the Change in Agricultural Employment (based on 1992-97 data)

	Coefficient	*p*-value		Coeff	*p*-value
Change in agricultural output	0.74	0.001	Ratio of change in GDP to change in agricultural output	–0.54	0.002
Change in GDP	–0.64	0.022			
Change in rural population	1.20	0.047	Change in rural population	1.11	0.067
Share of agricultural land in individual use	0.37	0.076	Share of agricultural land in individual use	0.49	0.021
R-square	0.65		R-square	0.61	

Note: The regression was run with a CIS/CEE dummy variable to allow for the systematic technical difference in the reported level of land in individual use in the two subregions.

Growth in GDP and growth in agriculture have conflicting, oppositely directed effects on agricultural employment. The somewhat technical language of the regression results can be clarified by examining the behavior of the change in agricultural employment as a function of the ratio of the change in GDP to the change in agricultural output—GDP/GAO. This ratio measures the change in GDP relative to the change in agricultural output: if the GDP/GAO ratio is greater than 1, the overall economic growth is faster than the growth in agriculture; conversely, if the GDP/GAO ratio is less than 1, agriculture grows faster than the overall economy. Figure 3.16 illustrates the strong negative relationship between the change in agricultural employment and the GDP/GAO ratio: agricultural employment decreases to a greater extent when the growth in GDP is faster than the growth in agriculture. As the GDP/GAO ratio increases, the creation of alternative job opportunities outside agriculture exceeds the creation of jobs in agriculture, and labor migrates out of agriculture to other sectors. (This analysis and the corresponding insights were suggested by Pepijn Schreinemachers.) Note that the transformation from two separate variables representing GDP growth and GAO growth to a single ratio GDP/GAO representing relative growth does not affect the impact of the other explanatory variables—change in rural population and share of agricultural land in individual use—on agricultural employment. Both variables retain positive (and significant) coefficients in the alternative regression model (see the right-hand part of Table 3.21).

Fig. 3.16. Change in Ag Employment versus Ratio of Change in GDP to Change in GAO, CEE and CIS 1992-97



* * *

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 3.22. Differences in Implementation of Reforms in Transition Countries

	Potential private land ownership	Allocation strategy	Transferability	Farm organization
CEE				
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
CIS				
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 3.22 briefly summarizes the most prominent differences in the implementation of agrarian reforms in CEE and CIS discussed in Chapters 2 and 3. 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 emerging "East/West divide"—the divergence in the performance of agriculture in CEE and CIS that we are witnessing since the early 1990s.

Annex 3

Table A3.1.Sectoral Changes in Transition Countries

	Percent of ag land in individual cultivation		Change in ag employment 1992-1997, percent	Change in ag output 1992-1997, percent	Change in GDP 1992-1997, percent	Change in productivity of labor 1992-1997, percent	ECA Policy Reform Index
	pre-1990	1997					
Poland	77	82	9	7	33	-2	7.6
Romania	12	67	-1	19	10	20	6.0
Bulgaria	13	52	10	8	-14	-2	5.4
Estonia	6	63	-57	-29	03	67	7.8
Latvia	5	95	-18	-45	-10	-33	7.6
Lithuania	9	67	0	-6	-20	-6	7.0
Group average	**20**	**71**	**-9**	**-8**	**0**	**7**	**6.9**
Hungary	6	54	-27	-6	8	49	8.6
Czech Rep.	5	38	-46	-10	15	66	8.2
Slovakia	5	11	-29	3	22	49	7.4
Group average	**5**	**34**	**-37**	**-5**	**15**	**53**	**8.1**
Albania	4	100	5	52	36	43	6.4
Armenia	4	32	17	29	12	10	7.4
Georgia	7	24	106	24	-20	-40	6.2
Moldova	9	27	-8	-19	-27	-12	5.8
Azerbaijan	3	9	-17	-34	-42	-21	5.0
Group average	**5**	**38**	**21**	**10**	**-8**	**-4**	**6.2**
Russia	2	11	-13	-26	-26	-15	6.0
Ukraine	7	17	1	-27	-49	-28	5.4
Group average	**4.5**	**14**	**-6**	**-26**	**-38**	**-21**	**5.7**
Kazakhstan	0.2	20	-9	-48	-26	-36	5.8
Kyrgyzstan	1	23	17	-9	-26	-22	5.8
Tajikistan	2	7	29	-45	-46	-57	3.8
Group average	**1**	**17**	**9**	**-34**	**-32**	**-38**	**5.1**
Turkmenistan	0.2	0.3	12	-23	-24	-31	1.8
Uzbekistan	2	4	-5	-6	-2	-2	2.2
Group average	**1**	**2**	**3.5**	**-14.5**	**-13**	**-16.5**	**2.0**
Belarus	7	16	-12	-8	-8	5	1.6

Chapter 4. Lessons of Transition in Agriculture

The ECA countries entered the transition in 1989-91 with a common institutional and organizational heritage in agriculture: most land, regardless of its legal ownership, was cultivated collectively in large-scale collective and state farms that managed thousands of hectares and employed hundreds of member-workers; the commercial production from the collective and state sector was supplemented by subsistence-oriented individual agriculture based on rural household plots of less than one hectare, creating a distinctly dual agricultural structure; product markets and input supply channels were largely controlled by state organizations within an administrative command framework; production targets were set centrally; budget constraints to penalize underperformers virtually did not exist. This, in effect, was the Soviet model of socialist agriculture that had dominated the region since the late 1920s in CIS and since the early 1950s in CEE. Only Poland and former Yugoslavia partially deviated from this common pattern: here large-scale collective farms never achieved the same prominence as in other socialist countries, and their agriculture remained largely based on small individual farmers throughout the decades following World War II. Yet pervasive central controls plagued farmers in Poland and Yugoslavia exactly as in all other socialist economies.

The well-documented persistent inefficiency of socialized agriculture was an inevitable result of the command economy, which insulated the farms from market signals, imposed central targets as a substitute for consumer preferences, and allowed farms to function indefinitely under soft budget constraints without proper profit accountability. Yet this inefficiency also can be attributed to two “micro-level” factors, which sharply distinguished socialist agriculture from agriculture in market economies: exceptionally large farm sizes and collective organization of production. The typical farm size in socialist countries was an order of magnitude larger than the average in land-rich market economies, such as the USA or Canada. The excessive size was reflected not only in

large land endowments, but also in the large number of workers employed (in absolute terms and per hectare of land). Such large farms are a rarity in market economies, because they are relatively inefficient due to high transaction costs (including the cost of monitoring labor and various agency costs associated with hired management) and can survive in a competitive environment only under special circumstances. As to the other micro-level factor, collective farms—in the form of production cooperatives or communes—virtually do not exist today in market economies, also because of their inherent inefficiency stemming from a variety of behavioral and governance features.

Related to these micro-level factors was also the issue of ownership and transferability of land. The stylized model of agriculture in market economies is characterized by a predominance of individual or family farms—not collectives—that operate on privately owned land and enjoy fully transferable use rights. In some socialist countries (the 15 republics of the Soviet Union and Albania), all land was nationalized and held in exclusive ownership by the state. In CEE countries, only a small portion (up to about 20%) of the land was expropriated by the state after World War II; most land remained in formal private ownership, but the landowners had no control over the disposition of their land. In either group of countries, regardless of ownership, land was locked into fixed collective use patterns, and land transfers among users could be initiated only by central authorities. Even in Poland and Yugoslavia, where land largely remained in individual cultivation (and in private ownership), transactions were rendered virtually impossible by administrative barriers and land could not flow from less efficient to more efficient users.

Because of this common heritage, efficiency considerations suggested a fairly uniform conceptual framework for agricultural reform in all transition countries. On the macroeconomic level, the reform framework called for elimination of central controls, price liberalization, and introduction of hard budget constraints. On the sectoral micro-level, it included a shift from collective to individual agriculture as well as corporate farms managed as businesses, and general downsizing of farms, all in line with the

established experience of market economies. The abolition of collective agriculture would need to be accompanied by privatization of land rights, which in Western thinking implies transferable property rights and functioning land markets. Ultimately, these actions could change the entire system of producer incentives, leading to a more efficient and competitive agriculture.

Without in any way detracting from the importance of actions on the macroeconomic level, progress on the sectoral micro-level of the agenda had the potential for a significant impact on the agrarian rural population. Individual responsibility and direct accountability were expected to cure free riding, shirking, and moral hazard that make collective organizations generally inefficient. Smaller farm sizes were expected to be more manageable and less wasteful, reducing the level of monitoring and other transaction costs between managers and workers that are typically high in large organizations. Property rights associated with private ownership of land (or secure tenure) were expected to induce farmers to put a greater effort into production. Finally, transferability of use rights was expected to facilitate the flow of land from less efficient to more efficient producers, or more concretely from passive landowners (such as pensioners in an aging population) to energetic active operators.

The Divergence of Land Policies

In this conceptual framework, transition to the market should involve radical reconfiguration of the land resources in former socialist countries, including changes in both property rights and land use patterns. These issues are usually characterized under the rubric of land reform and farm restructuring. The agrarian policies of transition countries related to land reform and farm restructuring should be evaluated against the basic attributes of market agriculture, namely private land ownership, transferability of use rights, and individual or non-collective organization of production. An examination of these attributes reveals that, despite far-reaching commonalities imposed by the

communist regimes on societies and economies, the agricultural sectors in CEE and CIS are in fact following divergent paths of market reforms, which gradually create a sharp "East/West divide" between the two subblocs in the formerly Soviet-dominated region. Since the common institutional and organizational heritage dictated a conceptually common framework for transition in all these countries, the divergence appears to be associated with differences in the policies actually adopted and in the specifics of implementation, stemming from inherent cultural, social, and political differences that persisted throughout the Soviet era.

The three main components of land policies in the region include the legal attitude toward private land ownership, transferability of land, and land allocation strategies. Most transition countries allow private ownership of potentially all farmland, and agricultural land remains largely state-owned only in Belarus and parts of Central Asia. Private ownership, however, is not synonymous with the right to transfer land among users. The ten CEE countries plus the four "small" CIS countries (Armenia, Georgia, Moldova, and Azerbaijan) recognize private ownership of land and have no legal barriers to land transactions. In this respect, these fourteen countries have the most liberal land policies. Russia and Ukraine, which control the bulk of farmland resources in the region, legally recognize private land ownership, but buying and selling of land is restricted in practice, and land transactions are mainly limited to leasing. Kyrgyzstan recognized private land ownership following the June 1998 referendum, but immediately imposed a 5-year moratorium on all transactions in land (thus moving backward by measures of transferability compared with the pre-referendum period, when land was state-owned but use rights were secure for 99 years and transferable). The remaining countries of Central Asia and Belarus generally do not recognize private land ownership, but they differ in their attitude toward land transactions. Land use rights are transferable in Kazakhstan and Tajikistan. Turkmenistan, Uzbekistan, and Belarus, on the other hand, prohibit any transactions in land.

Private ownership of land is the norm in market economies, and it is certainly an appropriate goal for countries in transition. Yet successful market agriculture can develop on state-owned land (it suffices to recall the case of Israel, where most land is leased by the state to farmers for terms of 49 or 99 years). Security and transferability of tenure appear to be more important determinants of productivity and efficiency gains than legal property rights. The experience in developed market economies indicates that many farmers are "operators" and not "landowners:" they cultivate land that they do not own. Thus, farmers in Belgium, France, and Germany rent more than 60% of the land they cultivate, while the overall "tenancy rate" in the 15 countries of the European Union is 40%. In Canada, 30% of farmed land is not owned by the farmers, and in the US, only 35% of farmed land is fully owner operated: another 55% is a mixture of own land with land leased from others and 10% is cultivated by farmers who do not own any land. In ranking the land privatization policies in transition countries, one should give separate scores for two dimensions of the process: one score for actual legal recognition of private ownership of land (as in a market economy) and another, totally independent score for transferability of land and security of tenure. Transferability is important no less, and perhaps even more, than private ownership for the development of land markets that enable the farmers to adjust the size of their holdings and allocate resources to the most efficient producers.

While restrictions on land transferability are a real barrier to flow of resources from less efficient to more efficient users and thus an obstacle to overall efficiency improvement in agriculture, pragmatic considerations suggest that temporary moratoria on buying and selling of land in transition countries may be necessary from political or social considerations. Policy makers in CIS and CEE are often concerned that immediate exposure of the new landowners to the full range of land market transactions after decades of collectivism may lead to negative social consequences, which may involve excessive concentration of land in the hands of speculators and foreign owners. Thus, Kyrgyzstan motivated the moratorium imposed simultaneously with the introduction of

private land ownership in 1998 by the need to let the new landowners get used to the entire set of their property rights and fully recognize the implications of their decisions. Psychologically, people need a delay period to adjust to the new reality before making irrevocable decisions. To borrow an example from an area outside of agriculture, many recipients of mass privatization vouchers in Russia in the early 1990s blindly rushed to sell them to speculators and professional investors. They did not recognize the long-term value of the new asset and precipitously converted it into something familiar—cash. These early "voucher sellers" understood the implication of their irrevocable decision only much later, when gradual normalization had led to steep increases in the value of stock of the privatized companies, which they could have owned had they only avoided selling the vouchers. In Kazakhstan, the managers of farm enterprises took advantage of the total lack of asset management experience among the rural population to entice the new shareholders to sell their land shares. In this way, large segments of the rural population turned over their main asset, and land was concentrated in the hands of a small number of farm bosses. This negative effect probably could have been avoided had the government of Kazakhstan temporarily restricted buying and selling of land and instead limited transferability to short- or perhaps medium-term lease transactions. Such approach to transferability of land would allow rural people to postpone irrevocable decisions to a later stage, when the economic situation has normalized and individuals have become more cognizant of the implications of land transactions. To ensure that the temporary moratorium quickly achieves the intended educational effect, it should be accompanied by appropriate information campaigns explaining property rights and land market transactions to the new landowners.

Another dimension of land policy in transition countries is the land allocation strategy. All CEE countries plus the "small" CIS countries allocate land to beneficiaries in the form of physical plots. In Russia, Ukraine, Kazakhstan, and other CIS countries, beneficiaries usually receive paper shares that certify their entitlement to a certain amount of land within the local farm enterprise, without specifying a concrete physical plot (in

addition to paper shares, rural families in CIS cultivate small household plots of less than 1 hectare – a long-standing tradition in the former Soviet Union that dates back to the 1930s). Allocation of physical land plots is clearly a better option in terms of potential transferability and impact on land markets. Ownership of a plot of land allows one to decide whether to farm it, sell it in return for a one-time lump sum, or perhaps lease it to somebody who can operate it more profitably, thus retaining the property rights "just in case" while earning a stream of future returns. If one holds a paper share, it represents fractional ownership in a large tract of jointly shared land, which in reality is managed and controlled by somebody else (typically the former collective farm in the village). Realizing land disposition options as a shareholder is much more difficult. The easy way is simply to leave the land share in the large farm that is already cultivating the land (as it always did in the past). Any other alternative will require negotiating with the current operator to identify, survey, and mark a physical plot of land that can be withdrawn for individual use from the jointly shared tract. Eventually, if the negotiations go well, the shareholder will end up in the same place as a person in a country that allocated land plots to beneficiaries from the start. Only this will have taken much longer and may involve considerable uncertainty as to the final outcome. For purposes of ranking land policies, allocation of physical plots gets a much higher mark than distribution of paper shares.

The last difference in land policy between CEE and CIS concerns the privatization strategy. The CEE countries (except Albania) have chosen to privatize land by restitution to former owners. The CIS countries (and Albania) have adopted the "land to the tiller" strategy: land is privatized to workers without any payment and in an equitable manner. Hungary and Romania are two CEE countries that used a mixed strategy: land was restituted to former owners and also distributed without payment to agricultural workers in the interest of social equity. The common explanation attributes the restitution/distribution dichotomy to the different length of time since nationalization or collectivization—80 years in CIS and 50 years in CEE. This explanation clearly carries a

lot of weight, but a number of prominent counter-examples cast doubts as to its general validity. Thus, in CIS, Moldova, Ukraine, and Belarus rejected the concept of restitution, although the western parts of these countries were integrated into the Soviet Union after World War II, at the same time as the Baltic states, and the memory of private land ownership was much fresher than in Russia. In CEE, Albania deviated from the general practice of its neighbors and opted for distribution, not restitution. Perhaps the choice of restitution over distribution was determined more by the desire to make a clean break with the Soviet past than by the memory of land ownership. In other words, this was probably a strictly political decision, and not necessarily a decision driven by rational economic considerations.

Examination of the impacts of restitution versus distribution does not indicate anything that recommends one strategy over the other. Both are guided by clear justice principles, although the beneficiaries turn out to be different (former owners under restitution, "the tiller" under distribution). The distribution procedure with its strict egalitarian foundations may be simpler to design, as it does not require any decisions concerning former ownership rights. Yet both procedures are equally complex to implement if extended to the ultimate stage of physical allocation of land plots to individuals. True, restitution typically ends with allocation of physical plots of land, which is the preferred allocation strategy according to our "scorecard." But distribution is not necessarily restricted to paper shares. Albania, Armenia, and Georgia followed a strict "land to the tiller" strategy, and yet it took the form of distribution of physical plots to individuals. Azerbaijan is preparing to launch a similar procedure. Moldova is currently in the middle of a large-scale "share conversion" process that allocates physical plots to shareholders. Whether a country adopts restitution to former owners or distribution to agricultural workers, the major determinants remain the allocation strategy (plots or paper shares), the legal status of private ownership, and the transferability or tradability of use rights and property rights. Restitution and distribution get the same mark on our score card.

The ECA countries differ with regard to their land policies—recognition of private ownership of land, transferability of property and use rights, allocation of land in physical plots or paper shares, privatization by restitution or distribution. To quantify these differences, the study ranked the land policies on a scale of 0 to 10, where 10 corresponds to the ideal attributes: private land ownership, full transferability, allocation in the form of physical plots. In this ranking of land policies, the CEE countries as a group get a score of 9 out of 10 and the CIS countries a score of 6. This is indeed significant divergence.

Individualization of Agriculture

Market economies are characterized by the predominance of individual or family farms, with a smaller share of commercially viable corporate farms. How have the divergent land policies affected the transition from collective to individual agriculture in CEE and CIS? Individual agriculture is possible without land privatization, and land privatization does not necessarily create individual farmers. Yet primarily because of differences in land allocation strategies—paper shares versus physical plots—the extent of individual cultivation in CIS is substantially lower than in CEE. On average, 16% of agricultural land is cultivated individually in household plots and individual farms across CIS, compared with 63% across the CEE countries (up from 4% and 14% in the pre-transition decade). Although in CIS the share of individual agriculture in land is relatively modest, its contribution to agricultural product has been steadily increasing over time and now approaches (and in some countries exceeds) 50% of total agricultural output.

There is a strong correlation between the land policy choices of countries and the degree of individualization in agriculture. A higher land policy score goes with a higher individualization rate: the CEE countries get 9 out of 10 for land policy and the degree of individualization is 63%; the CIS countries get 6 out of 10 for land policy and the degree of individualization is 16%. This is not surprising, as we have discussed the impacts of

land policies on the shift of resources from collective to individual farming. Perhaps less trivially, there is also a fairly strong association between the degree of individualization and agricultural performance. All six countries showing positive growth in agricultural output between 1992–97 are countries with a relatively high share of land in individual cultivation (more than 50% for CEE countries and more than 20% for CIS countries). Among the 16 countries that did not achieve agricultural growth, 10 have a relatively low degree of individualization. It thus seems that more market-compliant land policies lead to higher individualization of agriculture, which is in turn associated with agricultural growth.

The positive impacts of individualization are also evident at the rural household level. In CIS, the process of land reform consists of two main components: the assignment of paper shares to the rural population and actual allocation of land for augmentation of household plots. While a land share corresponds to an endowment of 10–20 ha, the average household plot is less than 1 ha after enlargement. Yet a bird in the hand is better than two in the bush: the land share remains on paper, while the household plot is allocated in physical form for real individual cultivation. The average plot size virtually doubled in the early 1990s, the number of plots increased significantly, and the share of total agricultural land in household plots rose from 4% in the 1980s to 16% in the late 1990s. The household plot is mainly a source of food for the family, but 10–20% of the output is sold for cash in nearby markets. The cash revenue from these sales augments the income of rural families, and the household plot contributes altogether 40%-50% of the family budget (including the value of home grown products consumed by the family). Some families increase the household plot even further by leasing additional land from friends and neighbors. Other families pool the land resources of parents, grandparents, and married children to create relatively large holdings. Surveys of rural households show that the larger the plot, the greater is the surplus available for cash sales and the greater the contribution to family income.

Private farmers cultivating land independently outside the collectivist framework are another segment of the rural population that appears to enjoy the benefits of individualization in CIS. Private farmers in most cases are former farm-enterprise employees who have decided to leave the collective and take the fate of their families in their hands. The employees remaining in farm enterprises come basically from the same population as private farmers, but they have a different set of attitudes and priorities. They prefer the relative safety of the traditional collective framework to the risks and uncertainties of independent farming. This may be attributed to personal attitudes toward risk, which are determined, among other factors, by age, education, and skills. Both groups give a fairly low evaluation of the general standard of living in their countries. Yet their responses in numerous surveys show that on the whole private farmers are better off and more optimistic than employees of collective enterprises. Since private farmers represent the ultimate individualization of agriculture, their positive assessment of family well-being—at least relative to the individuals who have decided to stay in the collective rather than face the risks of personal initiative—is evidence of the benefits of individual farming.

Persistence of Collective and Corporate Farm Structures

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 CEE and CIS than in market economies, where agriculture is primarily based on family farms. Various collective, cooperative, and corporate forms of farm organization continue to manage nearly 40% of agricultural land in CEE and 80% in CIS. As a result, the distribution of farm sizes in most transition countries retains the sharp duality that traditionally characterized socialist agriculture: a high proportion of very small farms (mainly household plots) control a relatively small proportion of land, and a small proportion of very large farms control a large proportion of land (if not most of the land). This dual or bimodal distribution of land is at a sharp variance with the distribution observed in

market economies (USA, Canada, the countries of the European Union), where most of the land is concentrated in mid-sized farms and the two extreme tails of very small and very large farms are much less prominent.

Although large collective or corporate farms remain prominent throughout the region, important differences are beginning to emerge between their organizational forms in CIS and CEE. Most large farms in CIS continue to operate like the former collectives, without significant change in size or management, although they are now registered under a variety of "market sounding" names (joint-stock societies, limited liability companies, partnerships) and are not called "kolkhozes." The corporate farms in CEE—called "companies," not "cooperatives" any more—are substantially smaller than the original collectives (averaging less than 1,000 ha, down from 3,000–5,000 ha before the transition) and are beginning to show greater sensitivity to market signals, including the ability to adjust the labor force to operating needs in the interest of higher profitability. 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 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, including introduction of hard budget constraints and enforcement of strict bankruptcy procedures for failing farms, which radically change the organizational behavior of farm enterprises and sharpen their response to market forces. 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.

As noted in the previous section, individualization of agriculture has positive impacts at both the sectoral and the household level. Yet there has been no rush into individual farming by members of former collectives, and on the whole large corporate farms have not disintegrated. Different motivations are possible for the mutually exclusive decisions to farm one's land individually or "collectively." Individual risk preferences provide one explanation. A collective or cooperative farm may provide lower income but in a relatively safe, non-volatile environment. This in itself is sufficient for some individuals to forgo the potentially higher incomes of individual farming that are necessarily associated with much higher uncertainty. In CIS, the privatized land resources represented by the individual shares are typically left by the shareowners in joint cultivation in the former collective farm or some corporate successor. Overall, a very small proportion of rural residents opt for exit from collectives and the individual farming sector is mainly growing through the increase of household plots assigned to collective farm employees. Another explanation, particularly relevant in CEE, is that many of the new landowners created through restitution 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 private individuals, but this may be perceived as riskier than leasing to a large organization, which is regarded as a more reliable source of lease payments.

But there are at least two other broad sets of reasons that may create barriers to transition from collective to individual agriculture. One set may be characterized as market failure or, more modestly, market imperfection. The other group is related to regional and local power play and politics.

There is generally no evidence of economies of scale in primary agricultural production, while individual or family farms are easier to organize and operate than corporations. This accounts for the predominance of individual farming in market economies, where an individual farm is not necessarily a very small farm: the optimal farm size is determined in each particular case by the managerial capacity of the farmer, and it may be quite large for highly capable individuals. Corporate farms normally develop in special niches, where the corporate form of organization and the relatively large scale of operation have clear advantages. Thus, poultry and pig production are easily amenable to industrialization and corporatization, especially if integrated with processing.

Yet, in an imperfectly competitive environment, large farms may have easier access to input supplies, product marketing channels, and credit facilities. This gives them a practical advantage relative to smaller individual farms and encourages the creation of large corporate farms in higher proportions than in a perfect market environment. Such market imperfections are observed in all market economies, and individual farmers typically overcome them through the creation of service cooperatives. A service cooperative is a large corporation that interfaces between the member-farmers and the imperfect market to exploit the special advantages enjoyed by large-scale operations. It can wield the combined power of the productive resources of 300 or 500 members when negotiating with input suppliers, product marketers, or banks, and yet the members keep their individual identity in production. The two-tier structure of individual family farms supported by a network of service cooperatives is a common phenomenon in market economies. It evolves naturally in any community of individual farmers who seek to overcome barriers to competition and access to market services.

The situation is more complex in CEE and CIS. The markets in transition countries are still far from perfect, and the established large corporate farms that have had decades of experience operating in the former socialist environment indeed may have substantial advantages in access to these imperfect markets compared with newly created and

relatively inexperienced individual farmers. As a result, there is little motivation for individuals to exit from existing collectives and corporations and force their breakup through the creation of family farms. Potential farmers report in field interviews that, in the prevailing environment, they will be strongly disadvantaged relative to the established large corporate farms that succeeded the former collectives. Farmers interviewed in areas where individual farms are created in sufficient numbers display strong psychological resistance to the formation of service cooperatives: they see too much similarity between the collective organization that they have left behind and the cooperative organization advocated as a market solution for their difficulties. As a result, they prefer to fight it out on their own, individually, from a position of inferiority relative to the large farms, and unwittingly forgo the strengths and benefits that true voluntary cooperation imparts to the individual members.

Closely related to the whole issue of market imperfections is the question of power politics at the local and regional level. In many countries, especially in CIS, the regional political system still retains many of the crude interventionist features that characterized the socialist command economy. Even if the central government no longer interferes directly in farm operations through plans and targets, the regional authorities often preserve the traditional pattern of prescription and proscription. Although regional governments no longer command central budgets that they can distribute among their favorite farms, they often have access to other resources and authority mechanisms that can be used to force compliance with behavior in their interest.

There is a symbiotic relationship between the management of large collective and corporate farms, on the one hand, and the regional authorities, on the other. The large farms still represent the organized backbone of agriculture in each region, and even though they often produce less than 50% of agricultural output, they are much easier for the local authorities to control and tax than the thousands and tens of thousands of individual households. The organizational logic that fueled the collectivization strategy in

the Soviet Union in the 1930s and then in Central Eastern Europe in the 1950s remains equally valid today: it is easier for the authorities to deal with a small number of large farms when trying to meet budget targets, food availability objectives, and other procurement goals. In return for the rents and payoffs that the local authorities extract from the large collective farms, their managers are rewarded with preferential access to inputs and credits, as well as personal prestige and other perquisites. This interplay between managers of large collective farms and regional authorities acts to preserve the existing farm structure, suppressing the expected shift from collective to individual farming and to viable corporate farms that act like business entities accountable to their shareholders.

This phenomenon has largely disappeared in countries and societies that became highly democratized during the transition. Yet in less democratized countries with strong remnants of the former authoritarian mentality it persists and, together with market imperfections, plays a role in shaping the farm structure. Generalization is impossible for lack of data, but the specific case of Russia demonstrates that agriculturally productive regions, where large collective farms are still a potentially rich source of payoffs for the regional authorities, have little tendency to reform. Farms in agriculturally poor regions, on the other hand, are less attractive as a cash source or provider of strategic agricultural products (e.g. grains) for the regional authorities and there is a higher likelihood that they will be left alone to adjust and adapt to the new environment, possibly breaking up into a large number of smaller units or even individual farms in the process. This prediction is borne out by the election results in Russia, where the fertile agricultural provinces form the “Red Belt” that consistently returns the conservatives to power. It is also supported by recent empirical findings of World Bank study in Russia, which shows that the agricultural sector in the fertile Saratov Oblast is much less reformed than the agricultural sector in the less fertile Leningrad Oblast.

Barriers to individual farming and persistence of large-scale collective or corporate farming in CEE and CIS thus may be explained by various factors: personal risk preferences of individual landowners, lack of alternative occupation opportunities, market imperfections, cronyism and special relations between regional authorities and farm managers, and the desire of local authorities to use the farm sector as a tool for social and political objectives. All these factors play a certain role, but their specific importance or weight varies from country to country depending on local conditions. In combination, they maintain the proportion of collective and corporate farms in transition countries at a higher level than in established market economies.

Implications for Agricultural Strategies

The analysis in this study suggests that policy makers aiming for a transition from the former socialist structure to an efficient and viable farm sector should place the emphasis on individual agriculture and corporate entities operating under hard budget constraints and strict business orientation. We cannot ignore the evidence of market economies: agriculture is predominantly organized around individual farms, with a small share of corporate farms, and certainly not collective or labor-managed farms. Albania, Armenia, Georgia, Moldova, and more recently Azerbaijan and Kyrgyzstan are examples of countries that move toward complete individualization. In these countries, governments and the international community should support the process by developing the institutional tools of individual land management, including titling, registration, extension, and farmer education.

In countries where fast transition towards individualization is not feasible for social and political reasons (e.g. Russia, Ukraine, Belarus, Central Asia), the strategy should focus on creating the conditions which provide inducement to the breakup of the large corporate farms into farms of most efficient size given local circumstances—farms that typically will be much smaller and certainly more manageable and will operate under

hard budget constraints. Various subsidization avenues allowing "restructured" farms to avoid being exposed to market discipline need to be curtailed, as these only serve to slow the transition process and sustain farms that are not economically viable. This implies also that central governments need to induce local authorities to cease viewing farms as a tool for social policy (e.g., a source for producing cheap food). A level playing field is required that allows farms of all structures and sizes to operate if they can maintain viability under market conditions. The procedure for breakup of non-viable corporate structures needs to be in place, thus facilitating the emergence of smaller or individual farms where larger farms have failed. Identification of land ownership or land rights entitlements with distinct tracts of land is an important ingredient of such a procedure.

Dismantling of large farm enterprises, as implemented in Albania, Armenia, Georgia, and to a certain extent Romania, is the most direct path, but not the only path to the creation of a family farm dominated agriculture. Distribution of land and asset shares can serve the same purpose, as is becoming evident in Moldova. To be effective, however, the first stage of allocating paper shares must be followed by a second stage in which land and assets are distributed to individuals in kind. This is the only way to achieve genuine restructuring of the former socialist farms. A possible strategic direction that combines the advantages of individual enterprise with economies of scale of corporate organization is to support a two-tier agricultural system. In this system, land and production are managed by individuals, whereas services are provided by corporations or cooperatives. This is similar to the system practiced in the Israeli moshav. This is also similar to recent developments in Russia, where according to anecdotal evidence some former farm enterprises act as a service shell for household plots, which are responsible for all production. The extent to which these service shells evolve into genuine service cooperatives for individual producers will ultimately depend on the elimination of subsidized input deliveries by local authorities and introduction of hard budget constraints requiring strict repayment of all debt.

As we have noted previously, an individual farm is not necessarily a small farm. To exploit the full potential of individual farming, the strategy must ensure relatively free transferability of land from the state to private users (either in ownership or in long-term leases) and, more importantly, among private users. This naturally involves development of land-market institutions, including titling, registration, full cadastral services, and possibly also mortgage banking. Yet these technical aspects on their own are not enough. Governments in the region need to be convinced of the importance of land transactions for efficiency and productivity improvement. While there is much concern among various observers and policy-makers regarding the damage of excessive land fragmentation and the need for land consolidation, transferability of land should be recognized as a recipe for curing these problems. Land policy should aim for elimination of restrictions on land transactions (including prohibition on corporate and foreign land ownership, which persists in some CEE countries) and lowering of fiscal and administrative barriers (taxes, fees, bureaucratic requirements).

The thrust to promote transferability of land must be managed by international bodies so as to avoid possible conflicts with countries that do not wish to recognize private land ownership. World experience shows that in most cases transferability and security of tenure are more important than formal ownership for efficiency and productivity increases. The proven capacity of rental markets to improve land allocation suggests that excessive focus on convincing ideologically stubborn governments to relent in this regard may be counter-productive. Rather, progress on legitimizing rental markets and providing the legal and enforcement apparatus for long-term leases may prove to be a more feasible objective in the medium term.

A related issue is the disposition of large areas that for various reasons (which typically relate to political, historical, and ideological factors) are maintained under state ownership. The ultimate objective is to privatize the ownership of such land, but as has been argued above long-term leases to private operators provide for a fairly efficient

utilization of such land. The focus of the policy discussion should be on ensuring that the access to such land is available to all potential operators, rather than only or preferentially to those who intend to manage very large farms. Competition in accessing leases from the state is also necessary to avoid a hidden subsidy (through artificially low rent) to farm entities that would not be eventually viable.

The general lessons and conclusions that we draw from a decade of transition in CIS and CEE are schematically summarized in bullet form in Table 4.1.

Table 4.1. Lessons of Transition in the Farm Structure

General patterns of success

- Privatization without true reorganization does not lead to performance breakthroughs
- Better agricultural performance goes with
    - larger individual sector
    - greater liberalization
    - better performance of the overall economy
    - greater political commitment
- Change varies across the region depending on
    - government's commitment to reform (both executive and legislative branches)
    - regional and local acceptance
    - presence of hard budget constraints for corporate farms
    - emergence of supporting market services
- CEE countries as a group have done more of the right things and are outperforming the CIS

Lessons for Governments and the international community

- Do not support agriculture without true restructuring of farms
- Do not continue subsidization without performance criteria
- Do not be misled by claims of formal privatization and formal adoption of reform: pay close attention to political reality, local-level power groups and constraints
- Recognize diversity: not everything works the same way everywhere

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