

II. Response at Primary Production Level

In addition to shifts in relative prices of inputs and outputs, transition brought dramatic changes in farm structure. Producers responded by reducing livestock inventories, and production plummeted. The transition also resulted in a fracturing of production between large-scale former state and cooperative farms and tiny private subsistence farms. Many of the large-scale units are still majority state-owned; their management is largely unchanged, and they remain dependent on state subsidies. Private producers, in the meantime face serious obstacles in their efforts to expand into commercially viable units. The livestock sectors are still largely characterized by the “missing middle.”

Producers were hit simultaneously by two sets of shocks: the drastic shifts in relative prices of inputs and outputs described in Chapter I and the shifts in farm structure that came with privatization and land reform. The initial response in all five countries was a dramatic liquidation of inventories. However, the rates of decline varied. In general, the declines were greater in Russia and Ukraine than in Poland, Hungary, or Romania; declines were greater in the state sector than the private; and there were variations across livestock species. Cattle inventories declined more than those of other species in the three East European countries, while poultry and hogs were hit harder in Russia and Ukraine. To a large extent, these differences are attributable to differences in initial conditions.

Two to three years into the transition, livestock production throughout the region was divided between large-scale, restructured cooperative and state farms and very small

private farms, often less than a hectare in size. A typical private farm would own one cow, two pigs, and a small flock of chickens and produce mainly for home consumption. But all countries were characterized to varying extent by a “missing middle.” Medium-sized units producing principally for the market were slow to develop. In more recent years, Poland and Hungary have seen a growing number of such enterprises. There has been some increase in the number and average size of private, commercially oriented farms in Romania, Russia, and Ukraine as well. But these continue to face formidable obstacles. True private farms in Russia, for example, as late as 1999, accounted for only 3 percent of total crop production and barely 2 percent of livestock production in that country.

Structure of Production Under Communism

During the Communist period, most livestock production occurred on large state-owned, collective, or cooperative farms.¹ Central planners in the former Soviet Union, and to a slightly lesser extent in Romania, stressed regional independence such that each administrative district was expected to maintain self-sufficiency in livestock production. Because the farm’s location was not necessarily located close to feed sources and had other economic dif-



¹ All the countries covered in this study made a distinction between state-owned farms, whose assets belonged to the state, and farms that were in theory under collective ownership of the members. In Russia, Ukraine, and other countries of the former Soviet Union, these were known as collective farms. In Romania and Hungary they were called cooperatives. Poland only distinguished between state and private (or individual) farms. Polish cooperatives were mainly involved in marketing and input supply rather than primary agricultural production.

facilities, most survived solely on government credits that were rarely repaid. State loans allowed the farm to purchase inputs at controlled prices and to sell the production through the official procurement agencies, again at fixed prices. Debts were rarely repaid. Usually, loans were forgiven or payment delayed indefinitely.

One of the main problems with meat production in the study countries was that planners generally emphasized livestock production in large capital-intensive production units but did not allocate sufficient resources for field crop production to provide feed. As a consequence, livestock were never fed optimal rations. Feeds were often imported, and the availability of feed depended on the availability of foreign exchange. The resulting inefficiencies led to high production costs. As a result, in order to achieve their goals of ensuring an inexpensive food supply, planners were forced to provide generous subsidies to both producers and consumers.

Many state farms included dairies, meat processing facilities, and even bakeries on their premises. These were primarily intended to produce food items for workers and pensioners living on or near the collective. In addition, farmers delivered products to a specific processing facility nearby. These facilities then manufactured items for the oblast or region. In this way, the agro-food complex was highly integrated. Farms and processors had no choices as to where to deliver their goods or sources of raw materials.

As an adjunct to the large production enterprises, farmworkers were allocated small subsidiary plots. Even in Communist times, individuals used these plots to both grow fresh produce and to raise livestock. In 1990, for example, nearly a quarter of the livestock products in the Soviet Union was produced on these subsidiary plots. In

contrast, most land in Poland was never collectivized and most livestock production occurred on small privately owned farms.

Changes in Farm Structure

Prior to 1990, collective farming dominated the farming structure in all study countries except Poland (table II-1). By 1998, not only had state farming declined in all study countries, but the size of the newly privatized corporate farms had also declined.

Early in the transition state, cooperative and collective farms, more so in the Central European nations than in the former Soviet republics, were privatized, restructured, or liquidated. Most farms were converted to various types of shareholding companies. Farm privatization plans varied by country and met with different results.

In Poland, the Agricultural Property Agency (APA), created in 1992, took over the management of state farms and has been trying to sell off the assets. The APA is currently leasing a large portion of its assets to various private entrepreneurs, but there have been few buyers.

In Hungary, state and cooperative farms were transformed into various types of commercial companies. Some are now true, member-owned cooperatives. Others are commercial share-holding companies. All are private and all operate on a hard budget constraint. Many of the new companies have a substantial share of foreign ownership. In the restructuring process, several of the farms were significantly downsized. Some were split among different buyers; in many cases, less profitable lines of production were shut down (see boxes II-1, II-2).

Table II-1—Distribution of farm land by organizational type

Country	Farm type							
	Collective/co-op		State		New private/corporate		Households	
	Pre-1990	1998	Pre-1990	1998	1998	Pre-1990	1998	
	<i>Percent</i>							
Poland	4	3	19	7	8	77	82	
Romania	59	12	29	21	n.a.	12	67	
Hungary	80	28	14	4	14	6	54	
Ukraine	n.a.	n.a.	n.a.	n.a.	n.a.	7	17	
Russia	n.a.	n.a.	n.a.	n.a.	n.a.	2	11	

n.a.=not available

Source: OECD.

In Russia and Ukraine, the former state farms have all been reorganized in some fashion, with shares distributed among the farmworkers and pensioners. However, many of these farms continue to operate with few changes in terms of management, production, or resource allocation. And while the workers on the farm are, in principle, joint owners of the enterprise, a true market for selling shares of the assets and land has begun to develop only recently. This situation is rapidly changing: Ukraine only recently passed a land code, although Russia has yet to pass its own. Furthermore, most shareholders have little incentive to sell their share in a farm, as exiting the former collective would mean relinquishing their rights to farm subsidiary plots. Leasing of shares or land is more common. Farms are beginning to experiment with leasing operations and in doing so have begun to function more like private enterprises. While these farms do not show up in Ukraine's statistics as "private" farms, the profit motive between farmer and farmland is clearly apparent (see Box II-3).

In Romania, large cooperatives were liquidated early and land restituted to its former owners. However, most state-owned farms continued to exist and to benefit from subsidies not available to private farms. As of 1997, 34 percent of the hogs and 19 percent of poultry numbers were still raised on these state farms. The state livestock complexes were huge, vertically integrated enterprises. Some of them had as many as 800,000 hogs. They typically engage in every stage of the production chain: farrow to finish, slaughtering, processing, and even retailing. Many of these farms are located in the prime grain-growing regions

and produce their own feed as well. They own their own trucks, maintain their own equipment repair shops, and so forth. The rationale given by the managers is that it is just too difficult to arrange for a steady flow of services and raw materials from other suppliers, and this high degree of integration was the response to the bottlenecks in the marketing and distribution system. These enterprises have been transformed into commercial stockholding companies and are supposed to be privatized, but most are still majority state-owned, and the privatization process has proceeded very slowly (see Box II-4).

In Hungary, Poland, and Romania, the collective and state farms have shrunk while household plots have become larger, although the change in household plot size is insignificant (table II-2). In the Russia and Ukraine, data are less complete but the size of collective farm enterprises has declined (table II-3). Still, they remain large by any standard.

Box II-2—A State Farm in Svaros, Hungary

This is one of the few state farms left in Hungary, located in the southeast, near the Romanian border. It has 4,000 hectares, 3,200 of which are planted to grain, 400 is pasture, and the remainder is rented out. The primary enterprises are grain production and cattle—it has 620 dairy cattle. The farm also owns a rice factory, which processes imported rice.

The farm has downsized considerably during the transition. It used to farm 13,000 hectares. Its labor force has dropped from 1,500 employees to 200. But not all the former employees ended up on the unemployment rolls. The farm sold a slaughterhouse, a machinery station, and a construction unit, and many of the former employees went with these new companies.

Of the current employees, 90 work in crop production, 65-70 work in the rice factory, and 37 work with the cattle.

The manager seemed unsure just why this farm continued in state ownership. He thought that the state was interested in keeping some breeding farms in order to make sure the genetics remained pure. The farm receives no special subsidies and is expected to make a profit. However, the manager is not entirely free to make all business decisions. Five years earlier, when cattle were particularly unprofitable, private farms slaughtered their cattle, but he was prohibited from reducing his herds. The state also limits the salary he can pay his employees, and he is not free to fire some employees and raise the pay of those remaining. He said he could operate the farm with 60 employees.

Box II-1—Downsizing a Cooperative: Ber-ker-bet Poultry Farm, Hungary²

This was previously a cooperative employing 5,000 workers, which included a breeding farm, a hatchery, a processing plant, and a feed mill. Immediately after the beginning of the transition, the cooperative was transformed into a joint stock company, but shortly went bankrupt. The three current managers bought all the shares. They sold the hatchery, processing plant, and feed mill, then converted the breeding farm to a broiler farm because it required less capital. The farm now employs 45 workers.

²In 1997-98, the authors traveled extensively through the countries included in this study to collect data and information to support this research. As part of that travel, all five authors visited a number of farms and processing plants. Throughout this report we present case studies summarizing our observations from these visits. We have selected these case studies to illustrate the important points made in the text.

Box II-3—Restructuring the Collectives in Ukraine: A Success Story

While the management of most of Ukraine's restructured collectives remains unchanged, there are notable exceptions. In July 1998, we visited one of these, Agro, located about an hour from Kiev. This farm produced milk, meat, wheat, barley, and corn. It had about 800 hectares of land, about 200 of which were used to produce feed for 200 milking cows and 60 bulls. The rest of the grain was marketed to the local privatized grain mill.

The director had previously served as the chairman of a collective farm. When the collective was transferred to joint-stock ownership, the land and asset shares were transferred from the collective to the individuals on the farm. The current and former workers each owned a share of the land but no one had title to a specific plot. Partly due to this, most such farms continued to operate as before, maintaining the same number of workers, the same output, etc. The director of Agro, however, decided to make some significant changes. He took advantage of new leasing laws and worked out a plan to rent the land from the 217 workers and pensioners who now "owned" the farm. He made a deal with the shareholders, workers, and pensioners to lease their land in exchange for a percentage of the harvest. He outlined his plan to change operations and downsize staff, and to run the farm as a private or profit-seeking entity. He then rehired about 60 of the former collective

workers to work on his farm. He paid them in cash, or, on occasion, in grain.

Since May of 1997, the director had leased and farmed these 800 hectares of land. He had rented the land for a period of 15 years, but he renegotiated the terms of the agreement each year. In 1998, his leasing price for 800 hectares of lands (some of which he presumably owns himself) was about 100 tons of grain. He estimated that his total grain harvest would be about 3,000 tons of wheat, barley, and corn.

The farm raised cattle for both meat and milk. At the time of our visit, the farm owned about 200 milking cows and 60 bulls and planned on expanding this production. The farm sold the milk to a nearby state-owned processing plant. There was a great advantage to selling to the state-owned plant due to recent decree whereby producers who sold their meat and milk products to state-owned plants were not required to pay the value-added tax (VAT). According to this decree, the processor was then required to send 20 percent of the realized profits back to the producer. In the case of Agro, the processing plant paid for the milk in-kind by returning processed milk, cheese, and sour cream on a give-and-take contract. As for meat production, the cattle were slaughtered on the farm and the fresh meat was sold to various companies in and around Kiev. The farm was selling about 400

kilos of meat per week to the state-owned company.

The manager reported that his operations were in fact making some minimal profits. But the farm had been operating only since May 1997, and yields had already increased significantly, giving hope that profits would continue to improve. Milk yields per cow in 1998 were 3,500 liters, double the 1997 yield.

The manager seemed to have the freedom to make and implement his own decisions. He maintained that the shareholders had not restricted him in any way. In addition, he reported that the local authorities did not interfere in his operations, he did not receive assistance of any kind, and they did not attempt to dictate what he should produce or where it should be marketed. In fact, he seemed to enjoy a considerable amount of freedom in his marketing of grain. He marketed about 75 percent of his grain crop, using the rest for feed. He sold directly to a nearby private grain mill. An entrepreneurial Ukrainian, who also sold timber and steel piping, had recently built this grain mill, visible from the Agro property. The mill, which seemed to be making a significant profit, could process up to 70 tons of grain per day into flour and kasha. These two entrepreneurs, producer and processor, both engaged in profit-maximizing agribusinesses, could prove healthy examples for others in Ukrainian agriculture.



Credit: Britta Bjornlund.

Box II-4—State Hog Farm in Peris, Romania: An Extreme Case of Vertical Integration

This farm, which we visited in November 1998, was a fully integrated state farm with an annual output of \$25 million per year. The enterprise included 100,000 hogs, 2 breeding farms, a slaughterhouse with a capacity of 130,000 pigs per year, or 3,000 per week, a feed mill, and a research institute. At the time of our visit, the farm did not produce any crops.

The enterprise also owned a fleet of trucks, supplied all its own transport, and provided maintenance for all vehicles and equipment; it even maintained local roads. The managers believed this was necessary because they could not rely on a stable supply of such services from outside. There were few independent providers of these services, and high interest rates were a formidable obstacle to the start-up and survival of such companies.

The entire staff was 900 employees, of which 320 worked directly with the hogs, and 150 in the slaughterhouse. The remainder were employed in ancillary services not related to the main enterprises of the farm. In Western countries, and even in neighboring Hungary, farms would not employ these workers.

The farm bought all feed components, importing soymeal and fishmeal directly from Brazil and Argentina, and buying grain locally through intermediaries—it was too much trouble to buy directly from hundreds of small producers. The intermediaries were (usually) foreign companies, which provided pesticides to farmers in exchange for grain. The firm bought the entire year's grain supply immediately at harvest and received \$800,000 in short-term credit at an annual interest rate of 64 percent to do this.

The managers planned to rent some land for grain production, thus completing the vertical integration process. The rent would be 5 to 6 percent of the production potential. But they would also have to purchase equipment to grow the grain, and opted to postpone that investment for the time being.

We asked about any plans for privatization, which the managers believed was unlikely. They said the total value of the enterprise was \$16 million, and no investor was ready to put up that sort of cash. They could not conceive of splitting up the enterprise and allowing investors to buy just one part.

Table II-2—Average farm size by structure

Country	Farm type						
	Collective/co-op		State		New private/corporate	Households	
	Pre-1990	1998	Pre-1990	1998	1998	Pre-1990	1998
	<i>hectares</i>						
Poland	4,179	833	3,140	620	8	6.6	7.0
Romania	2,374	451	5,001	3,657	—	0.5	2.7
Hungary ¹	4,179	833	7,138	7,779	204	2.3	3.0

¹Hungarian state farms grew larger, but comprised only 4% of total agriculture in 1998 compared with 14% in 1990.
Source: OECD.

Table II-3—Average size of collective farms in Russia and Ukraine

Year	1991/91	1995/96	Percent change
	<i>hectares</i>		
Russia	9,500	8,000	-16%
Ukraine	3,700	3,100	-16%

Source: World Bank.

Rise of Subsistence Agriculture

In all five countries, the transition was marked by a significant rise in the share of animals held in the private sector. In Romania, like Poland and Hungary, the private sector now holds the majority of animals. According to official Romanian statistics, the private sector share of hogs in Romania rose from 33 percent in 1991 to 86 percent in 1999. In 1998 and 1999, as cattle and hogs in the state sector fell precipitously, private sector cattle and hogs rose. In Ukraine, private farms held 58 percent of the hogs in 1998, but restructured state and collective farms still own over half the cattle and poultry. The private sector share in Russia has risen steadily, but private farms still account for less than half the animals. However, in both Russia and Ukraine, the private sector produces the majority of meat output.

To varying degrees, all five countries are still characterized by a large subsistence livestock sector. In Romania, most livestock is held on peasant farms averaging half a hectare in size. In Poland and Hungary, although modernization has proceeded further, about half of all pork is produced on plots for home consumption. Throughout the region, a typical private farm has at most two or three hogs and perhaps a cow and a few chickens. Production is primarily for subsistence purposes, and very little is marketed.

In Russia and Ukraine, most private agriculture is still in the form of the subsidiary plots belonging to the collectives, as opposed to true private farms. According to official statistics, individual, private farmers accounted for less than 2 percent of total meat output in 1999. The historical synergy between the state or collective farm and the plots has continued into the reform period. Under Communism, state farms got cheap (though unproductive) labor, providing in return a small but guaranteed income, social welfare support, and access to farm resources such



Small farmers lack access to appropriate machinery.

as feed, energy, infrastructure, and transportation. Currently, although the farms now have private shareholders, and although input prices have risen, farmworkers continued to procure farm resources (feed in particular) for their own purposes.

This trend toward subsistence farming is a rational response to the changes in relative prices. These farms use large labor inputs and small capital outlays and are probably economically efficient in the current environment. In all five countries, there is a large rural labor force that has little incentive to relocate and is underemployed.

Declining Feeding Efficiency

The rise of labor-intensive subsistence farming was accompanied by a decline in feed efficiency. This was a direct result of a shift to lower cost feed ingredients. Farmers, no longer able to afford a balanced feed mix for animals, sharply reduced the use of costly mixed feeds, switching to less expensive feeds that are poorly balanced with proteins and other supplements. Hog producers switched from high-protein concentrated feed to lower quality feed, direct grain feeding, and greater use of potatoes and root crops. Cattle producers turned away from relatively expensive concentrated feed in favor of forage crops and pasture grazing. In all cases, this was a rational response to changing relative prices: producers were substituting low-cost labor for expensive high-quality feeds.

Feed conversion in the former Soviet Union never reached Western levels. But after the end of the Soviet period, feed conversion declined rapidly. Mixed feeds became too expensive and livestock were fed whatever was available. Feed-out times increased. For example in Russia and Ukraine in 1996, the feed-out time for a hog was nearly 18 months compared with less than a year in 1990.³ In contrast, feed-out times in the United States are about 6 months. Changes in these finishing times reflect much of the change in the structure of livestock farming in Russia and Ukraine.

Producer Response Linked to Farm Structure and Pace of Reform

The farm restructuring process in the countries we studied was generally accompanied by a wholesale transfer of animals into private hands. The new owners lacked adequate

³ Conversations with Russian researchers.

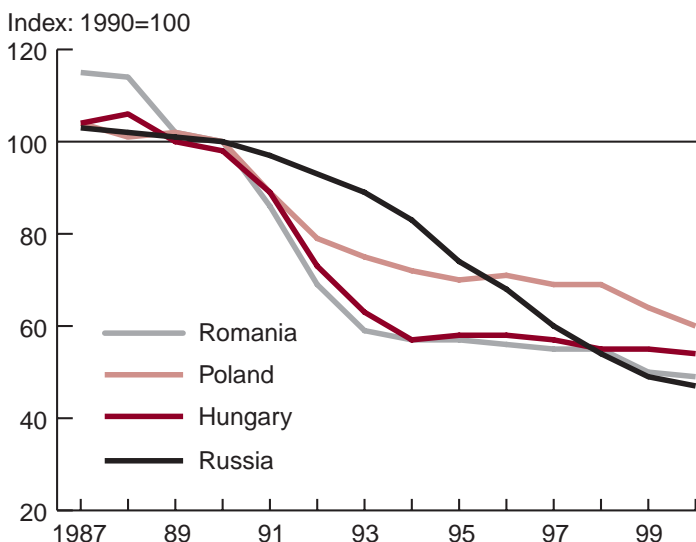
facilities to keep the animals and could not afford proper feed. The result was a widespread slaughter or export of live animals. In many cases, prized breeding animals were slaughtered. Animals that remained on large state-owned complexes usually did not fare any better. Heavily indebted or supported by soft government loans, these state complexes lacked the finances to maintain proper feed rations and have significantly reduced herds in response.

The response to the shocks varied across species and depended also on the structure of production before the transition. General observations by species are as follows:

Cattle numbers fell more than numbers for other species throughout Eastern Europe. Cattle numbers in Russia and Ukraine fell more slowly at first, but have continued to fall steadily through the transition (figure II-1 to II-3). Cattle in all these countries are raised primarily for dairy production, and beef is mainly a byproduct. East European cattle were severely affected by the collapse of the dairy industry. Dairy products were subsidized even more than meat, and there was a significant drop in consumer demand when those subsidies were removed.

On the other hand, the raising of cattle is less energy-intensive than for other species and allows for greater substitution of forage crops and pasture grazing for mixed feed. Russian and Ukrainian producers were able to make this sort of substitution. The result was that, early in the transition, declines in cattle numbers in Russia and Ukraine were not as great as they were in Poland,

Figure II-1—Cattle inventories during the transition to free markets



Hungary, and Romania. East European producers did not have as easy access to grazing land, and cattle numbers fell abruptly in all three countries. In Romania, most cattle were on cooperatives, which were liquidated in 1991, while hogs and poultry remained on state-owned complexes until 1997. Liquidation of Romanian cooperatives was accompanied by the massive redistribution of cattle to private producers, most of whom did not have sufficient land to keep the cattle. Polish farms are small and fragmented and not suited for grazing cattle.

Figure II-2—Beef output during the transition to free markets

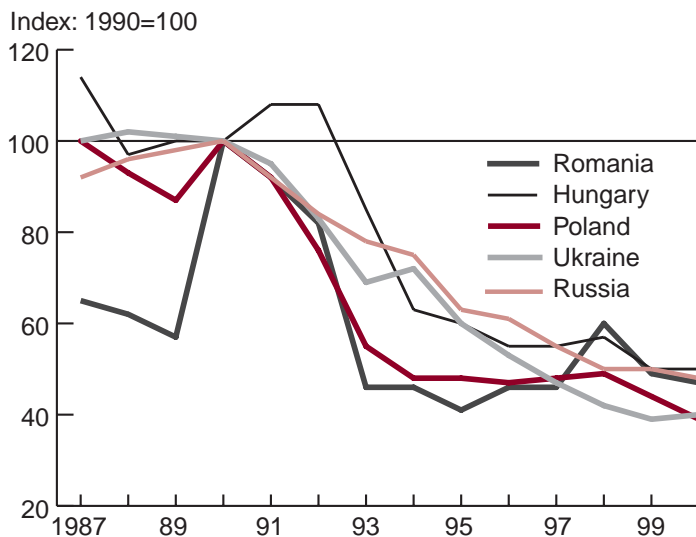
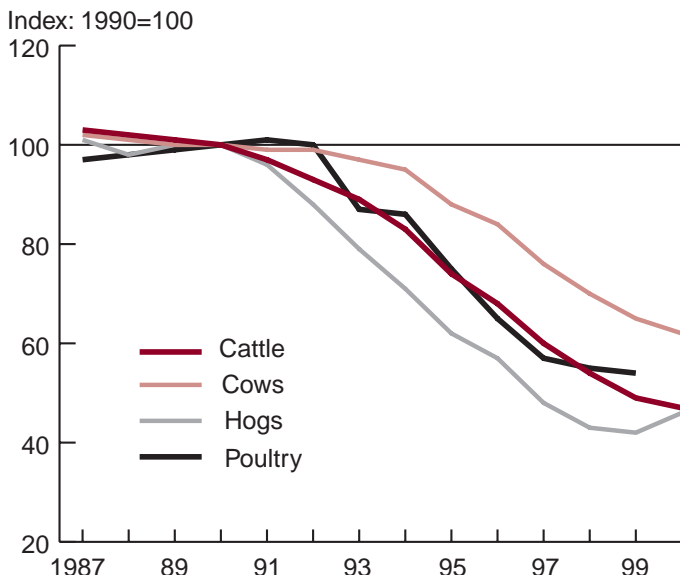


Figure II-3—Russia: Livestock inventories during the transition to free markets



Russia and Ukraine did not experience the liquidation of collective farms that occurred in many of the East European countries, so producers continued to have access to grazing land. However, in Poland, Hungary, and Romania, cattle numbers stabilized after 1994 or 1995, once the transfer of animals into the private sector was complete. In contrast, inventories in Russia continued to decline through early 2000, and Ukraine's cattle numbers were still declining as of January 2001. Russian and Ukrainian cattle breeders may have benefited during the early transition from better access to grazing land, but, the negative impacts of delayed reform ultimately outweighed this benefit.

Poultry declined significantly in Russia, Ukraine, and Romania (figure II-4). Poultry are more dependent on high-quality protein feed—corn and soymeal—and suffered more from the deterioration in feed quality. These countries also found it difficult to compete with low-cost chicken legs from the United States.

Poultry fared better in Poland and Hungary than in the other countries. The declines were much less, and, after 1993, poultry output began to grow in both countries, particularly in Poland. Several factors account for the growth of poultry output in Poland and Hungary. Consumers began to substitute lower priced poultry meat for beef, and producers were able to respond quickly to that shift in demand. In addition, a large share of poultry production was private in both countries before the transition. The technology is easily transferable across borders, and the short growing cycle also encourages investment. Moreover, there was also a well-established tradition of con-

tracting between processing plants and producers, whereby processors provided baby chicks and feed against delivery of finished birds. In both countries, contracting relationships tended to break down during the early years of the transition, as a result of restructuring in the processing industry. But these relationships were quickly reestablished, and poultry output began to grow again as a result.

Poultry in Romania, Russia, and Ukraine tended to be concentrated in large state-owned complexes, which were heavily subsidized under Communism and had great difficulty adjusting to the new conditions.

Trends in **hog** numbers varied considerably across the region and seem to be linked to changes in farm structure (figures II-5 and II-6). Poland, where 75 percent of the hogs were on private farms, has been subject to a clearly defined hog cycle since 1970, and this pattern did not change after 1989. Hog numbers continue to rise or fall in response to grain prices. Elsewhere, inventories dropped sharply in the early years of the transition. In recent years, hog numbers have begun to stabilize in Hungary and Russia, while hog numbers in Romania and Ukraine continue their decline.

Hogs in Russia, Ukraine, and Romania were concentrated on very large state-owned complexes, some of them with up to 500,000 hogs. These operations were heavily dependent on concentrated feeds based on imported protein meal. They were also heavily subsidized and tended to employ large amounts of both labor and capital. In addition, the complexes in Russia and Ukraine generally did not have the land on which to grow their own feed,

Figure II-4—Poultry output during the transition to free markets

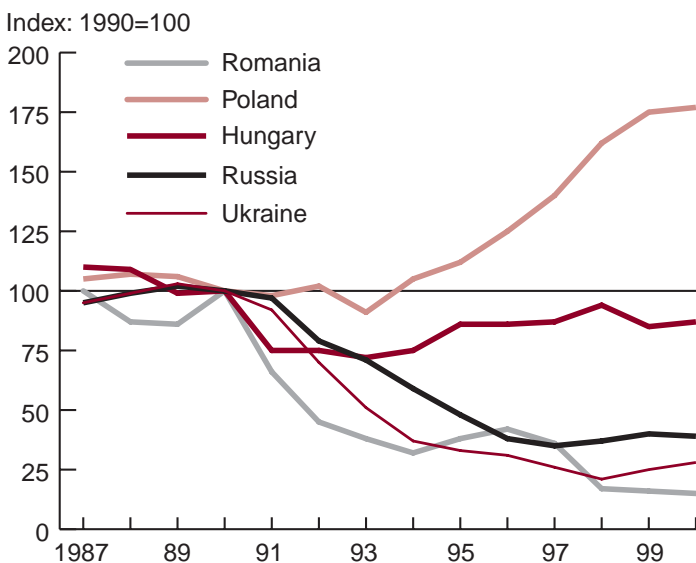


Figure II-5—Hog inventories during the transition to free markets

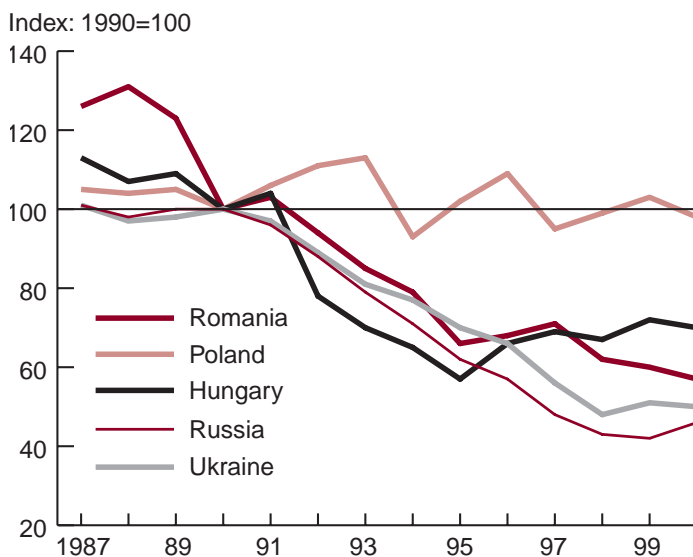
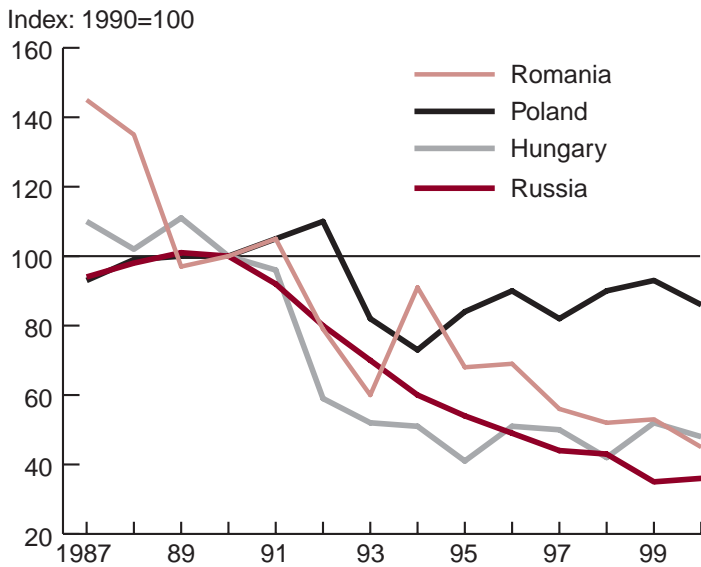


Figure II-6—Pork output during the transition to free markets



and many were inappropriately located in areas far from feed and energy supplies. With the transition, prices of feed, energy and other inputs rose, while output prices and subsidies fell. The complexes responded by slaughtering animals; many animals simply starved to death.

The Rise of Commercial Farming

The principal challenge facing all five countries is the relative absence of medium-sized commercially oriented farms. Subsistence farms are generally too small to be commercially viable, and most of the large-scale restructured collective farms remain inefficient and are kept afloat by a variety of government subsidies. But the emergence of medium-sized private farms producing for the market has been slow throughout the region. There has been some progress in Poland and Hungary, but private producers wishing to expand their operations in Romania, Russia, and Ukraine face a formidable array of institutional obstacles and a generally unfriendly policy environment.

In Poland and Hungary, there has emerged a significant class of commercially oriented private producers who recognize the importance of meeting the quality standards of foreign markets. In both countries, there are a significant number of producers who still produce mainly for their own consumption. But even in Poland, where the average farm size in 1999 was still just 8 hectares (up from 7 in 1990), there is a growing number of producers with 50 or more animals who produce mainly for the market. In Hungary, around half the animals belong to corporate farms, many of them with foreign ownership.

Poland and Hungary have both implemented policies deliberately designed to encourage the development of more commercially oriented livestock production. Both governments have extensive systems of subsidized credit. Many of the Polish producers we talked to had received credit through the Agency for Restructuring and Modernization with interest rates as low as 3 percent, compared with commercial interest rates of 50 percent or higher. The Hungarian Government has also provided a substantial amount of investment assistance.

Both governments have also designed their intervention programs to encourage higher quality output. These measures are motivated by pressures to conform to EU quality standards in preparation for eventual accession (see Box III-1 on page 24 for more details). Poland's Agricultural Market Agency (AMA) carries out intervention purchasing of hogs, but plants authorized to purchase on behalf of the AMA must be licensed to export and must meet EU standards. Furthermore, all carcasses that are purchased must meet the top three grades within the EU grading system. Hungary has a system of target prices and pays a premium to producers to make up for differences between the target and market prices. However, only commercial producers producing export-quality products are eligible for support.

There are a small and slowly growing number of private commercial producers in Romania. A study conducted by ACDI/VOCA of hog producers in Romania compared costs of production for small-, medium-, and large-scale producers and concluded that the medium-sized producers could be very efficient (Grant and Geber, 1997). The smallest producers, while showing a profit, probably did not suitably account for opportunity costs of their labor. The largest producers were clearly inefficient. Many of the medium-sized producers in Romania received startup capital through the World Bank and initially did well. However, their situation has become more difficult with the accelerating inflation and deteriorating macroeconomic environment that has characterized Romania since early 1998. They have difficulty accessing working capital, and their markets have shrunk with the declining income of the population. Moreover, marketing channels are still more oriented to handling production from the large state farms.

Some true private farms, producing for the market, are emerging in Russia and Ukraine. Ukraine passed a Law on Private Farmers in 1991, which allowed individuals wishing to start a new privately owned farm to receive 50 hectares of land from the state. There are currently only about 35,000 of this type of private farmer (see Box II-5).

The situation is somewhat better and is improving in Russia. In 1999, according to official statistics, Russia had 261,000 true private farms, and their average size had increased to 55 hectares from 43 hectares in 1995.

But even in Russia private farms accounted for only 7 percent of all agricultural land in 1999 and owned barely 2 percent of cattle and hog inventories. Overall, the share of private farms with livestock output in both Russia and Ukraine has remained small throughout the reform period, and the private sector continues to be dominated by household plots. Private farmers compete with plotholders at a major disadvantage. They must obtain credit to start up their operations and purchase animals, and they find it virtually impossible to obtain commercial credit. Private farmers, unlike plotholders, must pay full price for inputs such as feed and energy. Private farmers also lack access to veterinary and other services, and are on their own when looking for markets.

Polish and Hungarian Producers Begin to Specialize; Others Hedge Risk Through Diversification

The emerging commercial producers in Poland and Hungary are becoming more specialized. In the early days of the transition, a typical Polish farmer would produce a bit of everything, seeking self-sufficiency above all else. But in recent years a growing number of Polish producers have chosen to specialize in commodities that yield the greatest added value. The transformation of the state and cooperative farms in Hungary also led to greater specialization.

But many East European farms, whether large or small, private or state-owned, in Poland, as well as Romania, have more enterprises on them than does a typical American farm. U.S. farms tend to be much more specialized. For example, corn-soybean farms in the Midwestern United States will have at most one livestock enterprise on them, usually hogs. In North Dakota, if a farm has a livestock enterprise it is usually cattle feeding. Livestock production, with the exception of dairy production, is regionally specialized in the United States.

In Eastern Europe, farms usually have both multiple crop and livestock enterprises. Even the smallest subsidiary plot will produce several different crops and vegetables and will often have both hogs and a cow. The large state farms also will often have a dairy, hog, and sheep enterprise as well as two or three crop enterprises. As reform proceeds, some specialization will occur because some

Box II-5—Private Farming in Ukraine: Overcoming the Odds

We visited a private dairy farm in Ukraine in July 1998, which has been successful despite the obstacles described. The owner was formerly a livestock specialist at the Agricultural Institute in Kiev. In 1994, he decided to take advantage of recent laws and registered to receive his plot of 50 hectares. In addition, he now rents 50 adjacent hectares and farms 100 hectares in total.

He began his operations with 30,000 grivnas, which he took in credit and pays off yearly at a rate of 45 percent. He told us that he now has one year remaining on the rest of the loan, at a rate of 82 percent.

He began the farm producing grain and corn, but in 1997 he began to introduce livestock. He purchased 25 milking cows and had plans to purchase another 25. In the warm months, he allowed them to graze on 12 hectares of pasture and 15 hectares of hay fields. In the winter, they were kept in a pen where he fed them hay, concentrated feed, and silage. The cows would produce milk for up to 5 years and he planned to replace up to 40 percent of the herd using sperm purchased from Canada.

He sent the milk to the local joint-stock dairy plant on a daily basis. Most of the milk was made into butter. He reported that he received cash payments immediately for nearly all of the milk that he sold. He sold about 30 liters per day, four days a week. Because he did not have any refrigeration capacity, he had to transport the milk himself at the end of each day to the local plant.

His farm consisted of himself, his wife, and three hired workers. In addition to milk and grain, they also produced honey and fruits.

The farmer and his wife seemed to be enjoying the life that private farming gives them. They laughed at the collective farmers who had given up the rural life in order to seek office jobs in the city, while they have done just the opposite. They enjoyed working the land for their livelihood.

But there were many challenges to private farming. The owner complained of frequent visits by government officials to inspect his operations and accounting books, a constant drain on his energy, time, and efficiency. Although his operating costs included taxes on land, transport, and salaries, he offered that he would happily pay higher taxes (a VAT, for example) if he would be left to farm without interference from government officials.

regions of these countries are more suitable for some crops than others. Some land is suitable only for forage and will support cattle.

But there are some sound economic reasons to retain multiple enterprises. Multiple enterprises spread risk, make better use of on-farm labor, and provide for rotations that include pasture, thus reducing the need for expensive fertilizers and pesticides. Also, livestock waste can be recycled and crop waste can be grazed—all economizing strategies in an environment of limited capital (see Box II-6).

Institutional Barriers Perpetuate the Problem of the “Missing Middle”

While there are many obstacles to reform in the five countries, two major ones are apparent. First, land reform remains problematic. As already mentioned, the lack of transparent and enforceable property rights limit any investment in land. These institutional barriers also limit incentives to preserve or maintain the land using best farming practices that would limit erosion and environmental damage.

Box II-6—Multiple Enterprise Farming in Romania

The farm, located on the outskirts of Bucharest, which we visited in March 1998, was a former cooperative farm purchased at auction in 1991. At the time of our visit, it had been organized as a producer’s association with four shareholders, three of whom were active in the farm’s daily operation. We spoke with the general director and one of the four shareholders.

The farm consisted of 1,600 hectares located in three different counties. There were 100 employees who resided on the farm and remained from its days as a cooperative. The farm consisted of multiple enterprises, growing both livestock and cash field crops.

Field crops included wheat, barley, corn, soybeans, oats, and forages. Barley and wheat were the most important in terms of area sown. Previously, the farm had sold its field crops to local farmers in informal markets and to state procurement agencies. The managers now preferred to concentrate their acreage on feed crops, since raising field crops for cash had become unprofitable.

Livestock enterprises included dairy, beef, sheep, and hogs. The farm had about 100 hogs, down from about 500 two years ago, 300 head of cattle, and 200 sheep. The cattle were dual-purpose dairy-beef cattle and about 200 were being milked. The others were young bulls that were being finished for beef slaughter. The cow’s milk was mostly sold to a nearby private dairy. Sheep milk was processed into white (feta) cheese on the farm and sold through farmers’ markets. The farm also maintained a small slaughterhouse and a sausage plant.

The director explained that the farm engaged in multiple enterprises as a hedge against risk as well as a way to make maximum use of available labor. However, it seemed unlikely that any of the enterprises were operating anywhere near min-

imum long-run average costs. While multiple enterprises can be a hedge against risk, management poses some unique problems. For example, the director stated that crop farming was unprofitable both absolutely and compared with livestock farming. Yet, the farm’s internal pricing practices tended to confuse resource allocation. Grain was “priced” out of the field and stored. Later, over the course of the year as the grain was fed to livestock, it was “priced” to the livestock enterprise at its original “out-of-the-field” price rather than current market prices, which would have been higher. This practice understated the value of the feed when fed, overstated the profitability of the livestock enterprise and assumed no return to storage. Correct internal pricing is an important indicator of which enterprises are profitable and would help guide farm investment to the points of highest potential return.

The level of enterprise integration is unusual by Western standards. The on-farm manufacture of cheese from sheep milk, and the small hog slaughter and sausage-making enterprise represent a high level of vertical integration and are suggestive of U.S. farming practices earlier in the century when there was more on-farm manufacture of food items, usually for home consumption.

The two most serious problems cited by the director were low prices for farm goods and difficulty in raising capital. The major sources of capital were internal savings, which were negligible, and bank credit, which was not only expensive, but difficult to obtain.

One probable reason why banks were reluctant to lend to the farm was that the director did not seem to know which, if any, of his enterprises was profitable. However, the director did state that if he had additional funds, he would spend them first on improved livestock genetics and planting seeds, then on improving the diet of his livestock, especially dairy cows.

The second is lack of short-term working capital. Longer term investment is sorely needed in all transition economies, but if short-term capital is unavailable, longer-term investment certainly will be as well. Agriculture is tied to biological processes—seeds are sown, livestock are born and fattened. Yet, until the product is ready for market, producers must finance all expenses attendant to production, including family living expenses. Farms carry work-in-progress inventory. Once harvested, grain must be stored until needed, and animal carcasses are stored until final dress and sale. The lack of working capital is a major barrier to adopting more efficient methods of production.

Government credits on concessionary terms do not meet this need. Credit given without the expectation of repayment does not require the firm to be economically efficient. The constraint of allocative efficiency is absent. The results are large farms that are bankrupt by any Western

standard, yet continue to function, and small household plots that produce but cannot expand because of inability to obtain credit in any form. The result is the “missing middle”—an absence of medium-sized farms that are both technically and economically efficient.

An injection of capital investment, either foreign or domestic, could bring down the price of capital and stimulate expansion of small farms and a shift to more capital-intensive production practices. At present, however, agriculture is not seen as a particularly attractive investment by either foreign or domestic investors, and investors are further discouraged by the government practice, especially in Ukraine and Russia, of providing capital in the form of loans at less than market rates. Capital thus remains scarce, and the resulting high price for capital favors labor- and land-intensive farming. Until the relative prices of inputs change, the technology of food production is unlikely to change substantially.