

VI. Scenario 1—Romania: What Is the Impact of Partial Removal of Subsidies?

As a first step in modeling alternative reform scenarios for Romania, we simulated the partial removal of the extensive array of subsidies that were in place during the 1994-96 base period. The results of this scenario were used as a base for the scenarios that follow. These subsidies were removed in 1997, and it is unlikely that they will be restored in full during the projection period. The results of the partial price liberalization scenario show deep declines in pork, poultry, and dairy output but a slight rise in beef output. There is also a pronounced increase in the share of the subsistence sector in agricultural output. These results are consistent with developments that have actually taken place since 1997.

The base period data used for construction of the computer model contains consumer subsidies, producer subsidies, and herd subsidies to large livestock enterprises. Beginning in 1997, the Romanian Government began to dismantle this intervention. Consumer subsidies were removed and producer and investment subsidies sharply reduced. There have been pressures to restore these

subsidies, but it is unlikely that the Government will restore them in full. Thus, before accurate analysis of other issues can be done, the model results must be adjusted to reflect the policy reforms undertaken. That new partial liberalization solution forms the base for the subsequent analysis.

The shocks applied in this scenario are summarized in table VI-1:

The general impact of these changes is to reduce output of the formerly subsidized sectors, leading to an overall decline in agricultural output. Since agriculture accounts for 19 percent of GDP and 28 percent of the labor force in Romania, these declines have a profound effect on national income and employment. These effects are compounded because the reduced agricultural output leads to declines in demand and prices for nontraded inputs. National income is further reduced because of the increase in unemployment and the reduction in land rent that comes with the decline in crop output. The combined impact of these factors is a 12 percent decline in GDP and expenditures and an increase in unemployment from 9.6 percent to 16 percent.

Pork, Poultry, Dairy Output Fall, Beef Rises

In the meat industries, output of pork and poultry meat fall, while output of beef rises (table VI-2). Profitability of pork, poultry meat, dairy products, and milk, as measured by payments to physical and human capital, fall with effects transmitted downward to animal sectors. Herd subsidy reductions are harmful to the agroindustrial



Table VI-1—Romania: Summary of shocks

Policy	Shock
Consumer subsidies on pork and poultry meat (20 percent of producer price), milk (50 percent) and bread (20 percent)	Removed
Herd subsidies: 70 percent interest subsidy for purchase of breeding stock and equipment or construction or expansion of livestock facilities; restricted to large scale producers	Cut by 50 percent
Producer subsidy for milk	Removed
Producer subsidy for poultry (subsidy for purchase of feed and other inputs)	Cut by 60 percent
Producer subsidy for grain (subsidy for purchase of seed and fertilizer)	Cut by 75 percent

Table VI-2—Romania: Impact of partial price liberalization on meat sector

	Beef	Pork	Poultry
<i>Percent change</i>			
Output	6	-11	-37
Food	-2	-18	-16
<i>Imports (1,000 tons)</i>			
Base value	0	-40,000	27,000
Scenario	-14,000	-66,000	55,000

Table VI-3—Romania: Impact of partial price liberalization on the dairy sector

	Fluid milk	Butter	Cheese	Raw milk
<i>Percent change</i>				
Output	-35	-14	-15	-39
Food	-35	-13	-15	n.a.
<i>Output of Processed goods</i>				
Fluid	n.a.	n.a.	n.a.	-42
Butter	n.a.	n.a.	n.a.	-18
Cheese	n.a.	n.a.	n.a.	-20
Feed	n.a.	n.a.	n.a.	-35

Table VI-4—Romania: Impact of partial price liberalization on animal sectors

	Cattle	Swine	Birds
<i>Percent change</i>			
Births	4	-14	-79
Slaughter	7	-16	-73
Ending inventories	1	0	-4

complexes, not to peasant farmers. Cattle are mostly raised by subsistence farmers. There were no retail subsidies for beef in the base scenario, so there is a relative price change at the retail level that favors beef consumption. Pork and poultry were more evenly split between the commercial and subsistence sectors, and retail consumption of both was subsidized. The retail price rises for pork and poultry meat reinforce the effects of falling national income and cause significant declines in consumption. For beef, the retail price is unchanged and this dampens the impact of falling national income. Thus, beef consumption falls little. With the exception of birds, peasant households expand animal agriculture while agroindustrial complexes reduce animal agriculture. There are significant rises in net exports of beef and pork; in the case of pork, demand declines more than output. The drop in poultry meat production exceeds the fall in consumption, with the result that poultry meat imports double.

Because dairy products are modeled as nontraded, falling income, rising consumer prices, and reduced production subsidies cuts demand and production (table VI-3). Fluid milk production shows the largest decline, falling by 35 percent, but butter and cheese output also fall. In turn, demand for raw milk at the farm level falls, and production of raw milk falls 39 percent.

Reduced meat and dairy production puts pressure on the animal sectors, with the exception of cattle for beef (table VI-4). Poultry and swine numbers fall sharply, since the reduction of producer subsidies results in a lower price to producers and a higher price to processors. The calf crop, however, rises slightly, as peasant farmers expand to meet the increased demand for cattle slaughter.

Producers Switch to Nongrain Feeding

Adjustment in animals forces changes in feeding (table VI-5). Grain use is lower for all animal types as grain is more expensive. Meal use is lower for cattle and birds, but greater for swine. One reason for these shifts is that the reduced grain subsidy causes its price to rise relative to other feeds, so that other feeds replace grain. Milk in feed is also priced higher due to the subsidy removal. Cattle breeders substitute silage and forage for grain, milk, and meal, with a resulting loss in total feed efficiency. In the swine sector, increased use of meal, potatoes, roots, and legumes replace the more expensive grain. Again there is a loss in feed efficiency.

The changes in final and derived demand bring adjustments in crop production (table VI-6). Land rent falls from \$85 per hectare to \$75 per hectare, as area shifts to accommodate the lower grain price. Area moves out of grain production into other crops, and grain output shrinks by 9 percent. Lower land rent and relatively higher costs for purchased inputs leads to a more land-extensive grain production, causing a 3 percent drop in grain yields. Net grain exports rise slightly, despite the lower output, as a result of sharply reduced feed demand.

Commercial Producers Hit Harder

Because herd subsidies were restricted to large producers, the bulk of the adjustment was in commercial production (table VI-7). Milk production falls for both commercial and subsistence producers, but commercial producers suffer far more—output by commercial producers falls by 76 percent. The calf crop expands, but all of that expansion is in the subsistence sector. Peasant calving expands 5 percent while the calf crop in the agroindustrial complexes fall 1 percent. The changes in the pig crop show an even more pronounced shift towards subsistence agriculture.

Grain production also shifts towards subsistence agriculture, as the fall in output in the subsistence sector is less severe. The shares of subsistence production for silage and forage rise as production of those two crops increase.

Table VI-5—Romania: Impact of partial price liberalization on feeding

Type of feed	Cattle	Swine	Birds
<i>Percent change</i>			
Grain	-14	-8	-40
Meal	-4	14	-20
Milk	-35	n.a.	n.a.
Silage	6	n.a.	n.a.
Forage	5	n.a.	n.a.
Roots/Legumes	n.a.	11	n.a.
Sugarbeets	-3	n.a.	n.a.
Potatoes	n.a.	14	n.a.

Table VI-6—Romania: Impact of partial price liberalization on crop output

	Sugarbeets	Potatoes	Grain	Roots and legumes
<i>Percent change</i>				
Output	6	5	-9	9
Food	n.a.	-3	-6	1
Feed	-3	14	-12	12
Process	9.03	n.a.	n.a.	n.a.
Imports	n.a.	0	6	0
	Silage	Forage	Oilseeds	Meals
Output	6	5	12	n.a.
Food	n.a.	n.a.	0	n.a.
Feed	6	5	0	6
Imports	n.a.	n.a.	n.a.	-9

Table VI-7—Romania: Impact of partial price liberalization on agricultural output by farm type

	Subsistence	Commercial
<i>Percent change</i>		
Milk output	-1	-76
Cattle births	5	-1
Swine births	13	-51
Birds births	-59	-34
Egg output	-34	-63
Sugarbeet output	2	19
Potato output	2	9
Grain output	-4	-11
Oilseed output	5	16
Roots/legume output	4	17
Silage output	6	5
Forage	6	3

Conclusions

These results are generally consistent with actual developments in Romania since 1997. On the macroeconomic level, real income fell 3 years in a row beginning in 1997, finally starting to rise in 2000. Unemployment was at 8 percent in 1996, and by 1998 was in the double digits. Hog and poultry numbers have fallen, with most of the decline occurring in the former state complexes. The fall in poultry meat output was particularly severe. Grain yields and output have also fallen. Contrary to model results, the cattle/beef sector in aggregate has not expanded, and cattle numbers have continued to decline. But beef output has remained nearly constant since 1997, and it can still be said that the reform favored beef at the

expense of pork, poultry meat, and milk. The model results show that pattern.

The declines in swine and poultry output will likely continue in the short term. But, under pressure from the World Bank, the Romanian Government is accelerating the process of privatizing state livestock complexes. A number of smaller poultry complexes have already been privatized. Privatization of some of the largest complexes—one of which had 834,000 hogs in April 1999—is now under way. The state Ownership Fund is attempting to find strategic investors interested in purchasing the assets of these farms. If these efforts are successful, the result may be a revitalization of the sector. In the investment scenarios that follow, we try to quantify the possible impact of such investment.