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Challenges of trade and agricultural development for East/Central Europe and states of the former USSR

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ABSTRACT

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The agricultural transition in Central and Eastern Europe and the former USSR reflects a fundamental change in development strategy, and will have a profound impact on agricultural trade. The greatest impact will be indirect, through agriculture's contribution to general economic reform and acceleration of regional and global growth. The direct impact on trade in food and fiber will in aggregate consist of a fall in net imports. Most of the decline in net imports will derive from reduction in demand and improved utilization. Potential for productivity increase is substantial, but not all of the increased productivity will be reflected in the traditional supply response of increased production. Instead marginal resources will shift out of farming, and producers will restructure and adopt new technologies in pursuit of lower costs. Shifts in the commodity composition of trade will occur, and the changes in grain and livestock markets will be greatest. If the reform is successful, the former Soviet Union could become a modest net grain exporter instead of a large importer. Wheat would be the leading export grain, and levels of wheat exports and corn imports could become quite sensitive to relative prices on world markets.

INTRODUCTION

Three developments in the past quarter century have transformed international agricultural markets and created a trading environment very

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different from that of the early post-war period. In developed market economies, subsidies and other programs supporting producers have increased tradeable surpluses and augmented the role of governments as active participants in agricultural trade. In the centrally planned economies, consumer subsidies coupled with slow growth in food production transformed a region of traditional net food exports into one of very large food imports. Throughout the world, increased interlinkage and volatility of national currencies raised the dependence of agricultural trade on national macroeconomic policies.

The first two of these developments are again changing, and altering the basic structure of supply and demand on world food markets. Fundamental changes in the agricultural subsidy programs of developed market economies are currently under discussion in the GATT negotiations [see Koester (1993) and Brandão and Martin (1993) in this special issue]. If these negotiations succeed, the surpluses induced by agricultural policy of developed market economies will be significantly reduced. Simultaneously but independent of the GATT discussions, the economic transition in East/Central Europe and the former Soviet Union has eliminated a major source of growth in demand for agricultural imports. The inevitability of reduced net import demand into the region augments the urgency for cuts in agricultural support programs of Europe and North America, since these programs will be in the future even more costly and disruptive of international comparative advantage than they have been to date. Currency volatility and linkage between macroeconomic policy and agricultural trade appear to be enduring features of current and future markets, and will affect economic agents in the increasingly open economies in transition.

Recent trading behavior of this large and richly endowed agricultural region has been closely linked with the development strategy of central planning. The institutional base and policy environment imposed on the sector was not conducive to acceptable rates of growth in output at constant or declining cost. Particularly in the last quarter century, when agriculture was called upon to deliver a diet approaching that of developed market economies and simultaneously contribute to general economic growth, the sector failed to perform, and instead became an increasing burden on the rest of the economy. Performance varied within the region. Hungary, where price policy was somewhat more flexible than elsewhere, marketing less controlled, farm autonomy greater, and private entrepreneurship more developed, achieved growth both in domestic consumption and exports. The subsidies and macroeconomic distortions associated with Hungary's strategy were less than, for example, in the USSR, but nonetheless substantial. In the USSR, the government promised dietary improvements but retained an institutional structure that used traditional

inputs inefficiently and did not generate or adopt highly productive new technology. Imports filled the gap between rising expectations and lagging performance. Since both imports and domestic production were passed to consumers at highly subsidized prices, the agricultural development strategy contributed to fiscal imbalance and external debt. Stabilization and resumption of growth in the general economy implies fundamental change in agricultural development strategy and in agricultural trade, and sets the agenda for the agricultural transition.

The implications of the agricultural transition in East/Central Europe and the former USSR are global, both because of the size of the sector relative to world trade in food, and because of the complex interlinkage between changes within the countries, throughout the region, and elsewhere in the world. The greatest impact of the agricultural transition will be indirect, through its contribution to successful economic reform in the region and the resultant acceleration of global growth. The most important precondition for the agricultural transition is achievement of stabilization and resumption of growth in the rest of the economy. Only if the general economy is relatively stable can reinvestment in more efficient agriculture begin and redundant resources move to new, more productive activities. A narrow focus on sectoral issues and sectoral trade would fail to identify an appropriate strategy for reform and to measure its impact.

The transition has already had a direct impact on agricultural trade. The future impact will not be confined to the current flows and partners, but will spill over into other markets affecting a wide set of traders. The agricultural policies and growth strategy of central planning artificially augmented imports of temperate zone products (primarily grain), and restricted imports of tropical products (e.g., beverages, tropical oils, and fruits). The dismantling of administered trade and eventual resumption of growth, if the reforms succeed, may result in redirection of temperate zone products to the tropics, in response to income growth generated there by increased demand for tropical products in a more prosperous East/Central European and Eurasian region.

The challenge of the agricultural transition, like its impact, is global. A major challenge to the external world is removal of trade distortions and enhancement of the flexibility of the international trading system to accommodate a substantial shift in the volume, direction, and composition of trade. The challenge internal to the countries and region is to design and implement a policy framework conducive to reform and which the international donor community can support. Stymied reform and/or the spread of localized ethnic conflict to full scale civil war would reduce trade to the exchange of natural resources for a limited array of essential items commensurate with standards of living well below current levels. Although

levels of living have fallen throughout the region; in Russia, for example, per capita consumption indicators have fallen to the levels of the mid 1970s (Center for Economic Analysis and Forecasting, 1992), the potential for further fall is still substantial if the reform is aborted.

An effort to reimpose the old system would remove even concessional credit, and leave imports dependent on dwindling export capacity. Such a development in the region as a whole or in Russia separately would be an economic catastrophe that would affect global growth. States besides Russia could opt for slow or no reform without necessarily imposing their poverty on neighboring states. They would, however, affect trading patterns of neighbors, as partners within the former USSR and East/Central Europe turned to world markets to compensate for foregone intraregional trading opportunities.

DISAGGREGATION: DIFFERENCES BETWEEN CENTRAL/EASTERN EUROPE AND THE FORMER SOVIET UNION

A full analysis of the impact of reform on agricultural trade would require specification of the pace and extent of reform in twenty-two separate states, commodity specific estimates of the impact on producer and consumer behavior and interim trading procedures between and among states in the region, and residual net demand and supply reflected in extra-regional international trade. 'Central/Eastern Europe' and 'the former Soviet Union' are terms that can be used for expository shorthand, but are no longer appropriate economic aggregates. The economies within the region are not yet fully disentangled, however, and their trade with each other is still managed differently than trade with the rest of the world.

As heterogeneity within the region increases, three components of differential experience are particularly relevant for agricultural development and trade. The first is reorientation away from the region, and toward nonregional markets, particularly in Western Europe. Poland, Czechoslovakia and Hungary have strengthened their political and economic links with Western Europe, and signed associative agreements with the European Community. Hungary and Poland have had some success in gaining access to Western European markets to compensate for lost Soviet agricultural markets. The success is an important indicator that Western European consumers will accept Polish and Hungarian products when offered the opportunity.

Full market access and full integration with Western Europe has been blocked by the politics of agricultural protectionism within the European Community and in North America. The success of Poland's, Czechoslovakia's, and Hungary's turn to the west at this point is not yet a full test of

competitiveness or manifestation of comparative advantage, but rather an artifact of political favoritism. Other countries in the region have not been so favored, nor has the favoritism been worth as much as would genuine economic and political integration based on free trade.

Preferential treatment may have muted a united regional voice in favor of reduced agricultural trade barriers when this is one of the few economic interests in common throughout much of the region. In the past net exporters were somewhat disadvantaged by agricultural trade barriers in developed market economies and net importers, particularly the Soviet Union, benefitted from excess supply. Paradoxically, in the future, past exporters and major past importers would benefit from trade liberalization. The future strength of the Russian and Ukrainian agricultural market economies will derive from better valuation and utilization of the potential of their grain sectors, and both they and traditional exporters in Central Europe would benefit from trade liberalization and higher grain prices. In the immediate period, continued excess supply and threats of trade war deform agricultural assistance to economies in transition by wedging surplus disposal into the assistance agenda and displacing traditional trade consistent with long term comparative advantage. A breakthrough toward freer agricultural trade globally, and not just with Western Europe, would provide much needed flexibility and signals to accelerate the transition and hasten reinvestment in more productive agriculture throughout the region.

A second and more important dimension of heterogeneity is the speed with which countries have established the political consensus and economic foundation for macroeconomic stabilization and structural reform. In the transitional period agriculture is particularly vulnerable to inflation and macroeconomic instability, since governments are reluctant to allow food prices to rise with the general price level. A complex overlay of price controls, export restrictions, and subsidies interlinks agricultural stagnation with macroeconomic instability. In the former Soviet Union, Romania and Bulgaria, agricultural adjustment has been impeded by difficulties in implementation of stabilization and reform programs. In Poland, Hungary, and Czechoslovakia, agricultural adjustment is more firmly grounded, although much work remains on the overall reform and the sectoral adjustment.

A third area of heterogeneity lies in the political foundation for civil society; in particular, vulnerability to ethnic conflict or civil war. Here the heterogeneity lies less in vulnerability to conflict, but into which conflict a particular country might be drawn. The impact of war on agricultural performance is tragically evident in Yugoslavia, Moldova, the North Caucasus of Russia, Georgia, Armenia, Azerbaijan, and in pockets throughout Central Asia.

Rigorous analysis of the transition's impact on trade and development

requires careful specification of the process in each country. This complex exercise is not attempted here, but a heuristic approach focusing on the grain and livestock sectors and the factors that shape changes in consumption, production, and trade is attempted, including an informal effort at quantification of the impact on trade. The analysis focuses on the former Soviet Union, since it is this part of the region that will have the greatest impact on world trade.

TRADITIONAL PATTERNS OF PRODUCTION, CONSUMPTION, AND TRADE IN THE GRAIN/LIVESTOCK SECTORS

For the largest importer in the region, the USSR, grain and livestock products at the end of the Soviet period accounted for 40% of agricultural imports, or approximately \$8 billion out of a total of almost \$20 billion. The proportion absorbed by grain and livestock increases if sugar is realistically valued, instead of included at the inflated prices paid to Cuba.

Patterns of production, consumption, and trade in the grain-livestock sectors of the USSR and East/Central Europe since approximately 1970 derived from decisions of governments to increase consumption of meat and milk. Meat consumption became one of the primary indicators by which systemic performance was judged, and for the European parts of the region, meat consumption at levels of Western Europe and North America was an implicit standard against which progress was measured. The Soviet Union led in the primacy placed on meat consumption (although not in consumption, itself – see Table 1), and growth in per-capita availability of meat from 48 kilograms per capita on average for the USSR in 1970 to 67 kg in 1990 reflected this priority.

The policy environment in which this shift in consumption was effected reflected both commitment to domestic self sufficiency and confidence that the institutional base of socialist agriculture could provide the desired increase in consumption at acceptable cost. Had consideration of comparative advantage or realism with regard to likely increases in productivity been greater, more meat would have been imported directly, rather than produced domestically with imported grain. At the enterprise level, large mechanized livestock complexes were considered the most appropriate vehicle to achieve rapid increase in meat and milk production at low cost, and very large outlays for structures to house large herds near population centers absorbed much agricultural investment throughout the 1970s.

The priority placed on meat consumption was reinforced by pricing policy that created chronic excess demand, and kept meat shortages active despite the increase in availability. Earnings increased substantially, but meat prices in the USSR officially remained constant throughout the 1970s

TABLE 1

Indicators of the magnitude of potential adjustment in the grain/livestock sectors of East Central Europe and the former Soviet Union

	Grain production (clean, usable, 1987/88) (million t)	Grain fed 1987/88 (million t)	Net grain exports 1987/88 (million t)	1989 per capita availability of meat (kg)	Net meat exports 1990 (million t)
Russia	92.4	70.0	-18.1	75	-1.4
Ukraine	45.1	28.3	3.4	69	0.3
Byelarus	7.3	7.7	-3.1	73	0.2
Kazakhstan	24.1	8.2	8.4	70	0.2
Moldova	1.8	2.3	-1.6	57	0.05
Lithuania	2.9	3.2	-1.2	84	0.1
Latvia	1.5	2.0	-1.0	85	0.04
Estonia	0.9	1.4	-0.8	84	0.04
Georgia	0.6	1.0	-1.9	56	-0.5
Armenia	0.2	0.8	-1.2	56	-0.6
Azerbaidzhan	1.0	1.3	-1.9	34	-0.07
Uzbekistan	1.6	2.2	-5.3	31	-0.2
Kyrgyzstan	1.7	1.9	-1.1	51	0.0
Tadjikistan	0.3	0.6	-1.5	29	-0.3
Turkmenia	0.3	0.6	-1.1	44	-0.5
Poland	22.9 ^c		-2.9	76	0.08
Czechoslovakia	10.3 ^c		-0.6	91	0.0
Hungary	12.4 ^c		1.7	78 ^b	0.5
Romania	27.6 ^c		0.3 ^a	N/A	0.1
Bulgaria	6.3 ^c		-0.9	79	0.1

^a Includes only trade within CMEA.

^b 1987.

^c Bunker weight reported in source below, adjusted 14% to clean weight.

Source: For former Soviet Union: *Former USSR Agriculture and Trade Report, Situation and Outlook Series*, USDA-ERS RS 92-1, May 1992, pp. 54, 65-66. For East Central Europe: Statisticheskii ezhegodnik stran-chlenov CEB, 1989, Moscow, 1989, Finansy i statistika.

and 1980s. In Hungary consumer prices were adjusted more frequently, and distortions periodically reduced, but throughout the region meat was subsidized, and in most countries its real price fell secularly.

The falling apparent real price of meat exacerbated shortages and increased pressure on the government to expand supply. The supply side response to investment and higher producer prices was less than adequate to meet rising demand, and costs of production consistently rose. Despite investment in fertilizer, machinery, and land reclamation, domestic produc-

tion of feed was inadequate for the inefficiently fed and growing herd, and grain imports were increasingly necessary to supplement domestic feed supply.

With the exception of Romania, countries throughout East/Central Europe embarked on similar programs to increase domestic consumption and production of meat. As shown in Table 1, some of the rise in meat consumption came from intraregional trade, as Poland, Hungary, Romania, and Bulgaria were net exporters of meat, largely to Russia. Polish and Bulgarian meat exports, however, were derived from imported grain internally priced in a manner that masked the real costs of this trade. Although net imports into the region were most important in a global context, the trading patterns of each country were important insofar as they reflected structural distortions imposed by national and regional policies of administered central planning. As protectionism and surpluses of Western Europe and North America closed traditional markets for East/Central European grain and livestock exports, domestic consumption absorbed some of the foregone trade, and trade to the east with the USSR replaced trade to the west in importance (Inotai, 1992).

The costly expansion of consumption and inefficient growth in meat production throughout the region were financed by a large and complex program of producer and consumer subsidies. The subsidies were grounded in energy revenues from Soviet exports, increased foreign indebtedness, and intraregional transfers through trade and investment at administered prices. The oil boom that shifted resources from the rest of the world to the Soviet Union in the last two decades could have been used to build the technological and institutional underpinning for growth in the entire East/Central European and Soviet region in the next century, but was instead consumed or immobilized in investments with little enduring economic contribution. Agriculture's contribution to this legacy of impoverishment is substantial.

In the Soviet Union, where the distortions were greatest, trade in grain and meat in the final period from 1985 till the dissolution of the Union in 1991 took on an added function. After 1985 as macroeconomic imbalance worsened, administrative instruments of procurement and distribution weakened, and the central government's ability to direct feed to the large livestock enterprises created in the 1970s weakened. Grain imports increasingly reflected, not the gap between domestic production and utilization, but the gap between official procurement and commitments to enterprises and regions dependent on allocated supplies of food and feed grain.

An import pattern that originally derived from distortions in the policies of centrally planned agriculture came, by the end of the 1980s, to reflect the incipient collapse of the economic power of central government. In

1990/91, when grain production throughout the USSR was 25 million metric tonnes (bunker weight) greater than in 1986/87, imports were at the same level as 1986/87 (27 million t) because the state's capacity to procure the large crop had declined. As the collapse in procurement and internal trade accelerated throughout 1991, imports became even more important for deficit areas, but commercial credit to finance them evaporated. By late 1991, food imports had shifted entirely to concessional financing and food aid.

The traditional patterns of production, consumption, and trade in the grain/livestock sectors are shown in Table 1 for 1987/88, before the full collapse of the old system and transition to the new within the region. The high levels of meat consumption in the European parts of the region are evident in column 4. Columns 1, 2 and 3 show the dependence of the livestock industry on imported grain. For example, to sustain Russian meat consumption at 75 kg per capita, Russia in 1987/88 fed about 70 million tons of grain out of a usable crop of about 92 million t. The republic imported 18 million t of grain and 1.4 million t of meat. Within the Soviet Union, only Ukraine and Kazakhstan were consistent net exporters of grain, as were Hungary and Romania in East/Central Europe. Exports as a share of total grain production were highest for Kazakhstan, but even there the amount fed equalled the amount exported.

CHANGES IN THE TRADITIONAL PATTERNS

Alteration of distortions during the transitional period has already changed the traditional pattern of trade. A logical approach to estimating the impact of removing distortions would be to measure the distortions and simulate behavioral response to their removal. Efforts to measure the distortions through conventional concepts of consumer and producer subsidies in the USSR and in East/Central Europe have been attempted, and have clarified identification of major direct subsidies and taxes (Cook, 1991). Measured CSEs (consumer subsidy equivalent) and PSEs (producer subsidy equivalent) for 1986 for the USSR at two alternative exchange rates are shown in Table 2.

These measures are flawed for current purposes because they were undertaken at a time when there was little expectation that the entire domestic price structure would be exposed to world prices. The PSEs were calculated with the implicit assumption that output prices might be re-aligned to world prices and explicit budgetary flows into agriculture ended. There was at the time no expectation of genuine systemic reform that would include energy prices and fundamental behavioral parameters. The gap between domestic output prices and world prices at the assumed

TABLE 2

Calculated producer and consumer subsidy equivalents for the USSR, 1986 (%)

	PSEs (\$1 = RB 1.91)	CSEs	PSEs (\$1 = RB 2.5)	CSEs
Beef	33	82	8	138
Pork	20	21	-7	58
Mutton	22	60	-6	109
Poultry meat	46	-28	27	-5
Eggs	26	(*)	2	(*)
Fluid milk	3	63	-31	113
Cheese	25	82	0	138
Butter	65	53	49	100
Wheat	-30	71	-126	209
Coarse grains	26	18	-28	100
Rice	78	37	57	80
Cotton	23	24	-11	62
Sugar	55	-38	38	-18
Sunflower seed	-23	-29	-9	-7
Soybeans	15	36	-14	78
Aggregate	26	34	-10	93

* Not calculated.

Note: PSEs are the ratios of: (a) the difference between compensatory prices to domestic producers and reference prices; and (b) the value of domestic production in domestic prices expressed in percent. The higher the value of the PSE the more domestic producers are being subsidized with respect to the world market. A negative value indicates a tax.

RB, ruble.

Source: ERS/USDA calculations, presented in OECD, *The Soviet Agro-Food System and Agricultural Trade*, OECD, Paris, 1991, p. 200.

exchange rate is therefore captured in the measured PSEs, as are explicit budgetary subsidies for inputs. The gap between domestic and world prices of agricultural purchased inputs, such as machinery, fuel, and chemicals is not captured, nor is the provision of free land and cheap credit.

The estimates indicate that consumers were subsidized more than were producers. This is consistent with conventional qualitative wisdom. The measured producer subsidies, however, are underestimates, and suggest taxation when subsidy is more likely. The bias toward undervaluation of producer subsidy increases as the ruble devalues without corresponding increases in internal producer prices. For example, as the ruble falls from 200 to 400 to the dollar, the PSE will show an increase in producer taxation unless domestic product prices double. The increase in measured taxation should be partially offset by subsidies implicit in sale of domestically produced inputs at less than world prices. The gap between domestic and world prices on the output side increases and is measured. The omitted gap

between domestic and world prices on the input side also increases, but is not measured. Revaluation including implicit subsidies for purchased inputs, land, and credit would push more PSEs into the positive range.

Previously calculated PSEs are inappropriate measures of the full distortions of the prior system, and hence are weak indicators of changes in producer incentives during the transition. As a practical matter, however, better measures do not exist. It is the opinion of this author that PSEs calculated at \$1 = RB 1.91 are preferable to those at \$1 = RB 2.5, and that the measures for 1986 are preferable to those for later years that use a lower value for the ruble. As the value of the ruble falls, the distortion caused by omitted price subsidies to inputs increases. PSEs calculated at \$1 = RB 1.91 show that producers were on average subsidized, that the subsidies were greatest in the livestock sector, and that wheat and sunflower producers were taxed. The scale should perhaps be shifted upward, enhancing the measure of subsidy and reducing that of tax, but the demarkation between tax and subsidy appears appropriate, as do the relative values. Alternative measures (column 4 of Table 2), showing aggregate taxation of producers under the old regime, are difficult to reconcile with the observed deterioration in terms of trade and producer incomes that has accompanied price liberalization, even though the liberalization is still partial.

As long as production quotas and liberal credit write-offs were in place, the producer taxes and subsidies were largely off-setting at the enterprise level, and had little impact on producer behavior. A formal effort to model the impact of removal of distortions will thus founder both on measurement problems and on behavioral assumptions.

In an informal effort, the magnitude of the likely adjustment can be derived from estimates of adjustment on the demand and supply sides. The Center for Economic Analysis and Forecasting in Moscow recently estimated that real incomes in Russia had fallen in the first half of 1992 by 20–25% relative to the same period in 1991, which in turn was lower than 1990 (Center, 1992). The same source shows a decline of 13% in per capita meat consumption in Russia between the first half of 1991 and the corresponding period of 1992. Assuming that income effects of this magnitude dominate price effects (see Morduch et al., forthcoming), and that the decline in income is not yet complete, a fall in meat consumption of about 20–25% would accompany the income and price adjustments of the transition. This adjustment, although unwelcomed by consumers, would not necessarily cause undue hardship, since it would bring consumption to levels of the early 1970s.

A fall in meat consumption of 25% in Russia would imply at minimum a decline in domestic production of meat of 12–15% if imports (traditionally

13% of Russian consumption) were fully eliminated. Since the Russian meat industry is highly dependent on imported feed, it is likely to be less competitive than the Ukrainian industry, but not necessarily less so than that of Belarus and the Baltics, which also depend on imported feed. Russian imports of meat from within the former USSR traditionally came primarily from Belarus and the Baltics, but with new relative prices for energy and feed, the Ukrainian livestock industry should have a comparative advantage. The decline in Russian meat production could therefore be closer to the 15% end of the range, and greater if incomes continue to fall and trade with Ukraine expands.

A fifteen percent decline in production coupled with improved feed efficiency and a shift to forage based production for cattle could imply a 30% drop in grain fed, or a savings of 20 million t. This would turn Russia from a net importer to a slight net exporter of grain. An additional shift in the commodity composition of grain fed would allow approximately equal wheat exports and corn imports of initially modest amounts.

The assumptions underlying this analysis are heroic, but are the necessary conditions for the reform to succeed:

- (1) that consumers will face prices and incomes that make the consumption patterns of the early 1970s accessible;
- (2) that land reform, farm restructuring, price liberalization, and credit constraints will allow and force producers to adjust, and;
- (3) that geographically integrated internal markets will replace centralized allocative procedures.

On the consumption side the assumption is not overly radical, since much of the adjustment has already been absorbed. On the production side there has been less adjustment in livestock numbers than will be needed in the long run, although shifts between the socialist and private sectors are occurring. On July 1, 1992, six months after the January price liberalization, cattle numbers had fallen only 1% relative to January, 1991.¹ Hog numbers were down about 7%, and poultry numbers down 1% relative to January 1, 1991, before the change in relative prices was felt. In mid 1992, the shift in animal numbers onto private farms and out of collective and state farm herds was more significant than the total reduction in herd size. For example, although total poultry numbers declined only about 1% between January 1991 and July 1992, the number in collective management fell by 21% in the year prior to August 1, 1992 (Goskomstat RF, 1992). The number of hogs in collective and state farm holdings fell by 12% over the same twelve-month period.

¹ This represents a greater than 1% decline in cattle numbers, since July herds would ordinarily be larger than January herds, due to seasonal fluctuations in animal numbers.

The transfer of animals into the private sector makes total animal numbers somewhat less reliable now than under older accounting procedures, but it appears that part of the fall in collective herds is a transfer of animals into the private sector. The transfer exceeds the transfer of land, although both are occurring simultaneously. In August, 1992, private farmers held 5.4 million hectares, which, together with household plots, totals about 3.7% of Russian agricultural land in private production. The new private farms are on average more intensive in livestock production than is the old structure, and many will face sustained financial pressure as the contraction in the livestock sector continues. The disproportionate concentration of the new private sector in livestock production may accelerate the needed reduction in herd size, but it raises important questions regarding the distribution of the costs of adjustment and future farm structure.

The emergence of internal markets has been delayed by a combination of local regulation, monopoly in distribution, and producers' preference to hold stocks instead of money in an inflationary environment. Because animal numbers are still high, and many livestock enterprises are not yet able to buy feed on normal internal markets, demand for imported grain remains high. Feed imports purchased through food assistance programs and resold at substantial subsidy will continue into 1993. The fall in Russian meat consumption without commensurate fall in animal numbers and feed use is achieved by falling productivity per animal and reduced feed efficiency. The current trading pattern reflects international interim assistance intended to sustain the reform program until monetary stabilization and institutional reform improve internal marketing and the adjustment begins to have an impact.

A similar qualitative assessment of consumption and production patterns for the other states of the former Soviet Union, and for East Central Europe suggests several general themes. Fall in demand for meat will trigger reduced demand for imported grain. The decline in meat consumption will be greatest where income reduction is great and where consumption in 1989 was artificially high. Russia, the Baltic states, Belarus, and Czechoslovakia stand out for their high levels of meat consumption, and all are undergoing declines in real income of approximately 25%. The shock to producers will be greatest where the industry was based on exports of meat and milk produced from imported grain. In these areas the rise in grain prices will necessitate both contraction and shift to a new technology consistent with new input prices and relying less on concentrate feed. The livestock industries of the Baltics, Moldova, Belarus, Poland, and perhaps Bulgaria are most vulnerable, because their traditional assumed comparative advantage in livestock is dubious under new prices. Those with lower consumption of meat, much of which is directly imported, may have a more

moderate adjustment on both the demand and supply sides. The states of the trans Caucasus fall into this category.

Ukraine and Kazakhstan have traditionally exported both grain and meat. With the decline in demand for meat both within the states and in their traditional trading partners (Central Asia, the Caucasus, and Russia), Kazakhstan and Ukraine may shift grain from feed to export. When higher prices are passed to Ukrainian consumers, meat will shift from domestic consumption to export to Russia. Thus the Ukrainian livestock industry could contract somewhat in response to reduced domestic demand for meat and improved relative prices for exported grain, but the contraction will be moderated by increased exports to Russia.

In Central Asia levels of meat consumption are already quite low, and the majority rural population has not traditionally had much access to subsidized meat. The decline in meat consumption in the region may therefore be less than in European parts of the former USSR, although consumption will fall. Imports provide a large share of grain for food and feed in the region. Meat from the grazing lands of Kazakhstan and Kyrgystan may be more economical than local conversion of imported grain in Central Asia.

The adjustment in trade will come primarily from changes in utilization of grain and improved internal marketing, rather than from a traditional supply response. Changes in area and yield of grains will be partially offsetting, and of a lesser magnitude than changes in utilization.

Under trading patterns that have prevailed for the last two decades, imported grain has come from world markets and Ukraine to the North-western and central part of the former USSR, and from Kazakhstan and southern Russia to Central Asia. If utilization adjusts to new incomes and relative prices as suggested above, grain shipments from surplus areas of Russia, Ukraine, and Kazakhstan of approximately 15 million t would meet food needs in Central Asia and the Caucasus of about 10 million t and leave net exports of about 5 million t.

TIMING AND FACTORS THAT AFFECT THE PACE OF ADJUSTMENT

The analysis above emphasizes the importance of changes in demand for meat and utilization of grain as factors affecting trade. The extent and pace of change depends on how rapidly and completely higher prices are passed to consumers and producers, and how much enterprise reform alters the behavior of producers. At one extreme, consumer subsidies are retained, traditional state and collective farms are shielded from changes in relative prices by ad hoc subsidies and credit emission, and foreign concessional lending and aid postpones initiation of adjustment. At the other extreme,

consumers face higher prices for meat and make a permanent adjustment in consumption patterns. Producers internalize the implications of shifts in relative prices, drop unprofitable livestock enterprises, and restructure others (Brooks, 1992).

Although the course of the transition will be similar in all areas with large grain/livestock sectors, the disparate timing in national adjustment programs can produce trade flows unlike those that will prevail in the longer run. For example, although enterprise restructuring has been minimal in both Ukraine and Russia, Russia has led in price liberalization and the resulting fall in demand for meat. Russian producers do not yet face significant competition from Ukrainian meat producers because the Ukrainian government is still retaining meat for subsidized consumption within Ukraine, and may be drawing in some Russian meat, as well. Poland, Hungary, and Czechoslovakia led in price liberalization and subsidy reduction in East/Central Europe. The impact on Polish agricultural trade was rapid and large, as excess supply of grain appeared very quickly.

Unlike Poland, Hungary, and Czechoslovakia, which were quite successful in establishing convertibility and transmitting world prices to domestic producers and consumers, Russia's liberalization has not yet linked consumers and producers either to world markets or to integrated markets within the still vast ruble zone. The announced purchase price for grain in fall of 1992 of 10 000 rubles per ton reflects an exchange rate of approximately \$1 = RB 85, compared to a market rate close to 200 rubles per dollar. The gap between world prices and domestic procurement prices is maintained by export licenses. The autumn price is approximately three times that of spring, 1992, but in an environment in which hyperinflation threatens, the price level has less impact on producer behavior than does anticipated price change.

Fuel prices and machinery prices are not yet at world levels at the exchange rate of 200 rubles to the dollar, so the producer tax is not as large as implied by the ratio of domestic to world prices for grain, and may even be negative. Whether producers are taxed or subsidized at current prices is less important than the fact that until the ruble is stabilized and world prices passed through to the energy sector, the agricultural sector cannot be open and substantially governed by market forces. Stalled progress in stabilization has created a damaging impediment to progress in the agricultural transition, and to emergence of a trading pattern reflecting adjustment and supporting growth.

If stabilization can be strengthened and internal marketing improved, producers can be expected to react quickly. Once the foundations of the agricultural transition are in place (even if imperfectly functioning); e.g., stable currency, open trading regime, functional internal markets, and

financial accountability at the enterprise level, the impact of new relative prices on trade will be almost immediate, as in the Polish case. Conversely, until the foundations are in place, internal pressures will be strong to use international assistance to retain the immiserizing trading patterns of the past. In Romania, Bulgaria, and throughout the former Soviet Union establishment of the macroeconomic foundations supportive of the agricultural transition has proved to be very difficult, and this has delayed sectoral reform.

AGRICULTURAL TRADE OTHER THAN IN GRAIN AND LIVESTOCK PRODUCTS

In Soviet trade with the external world, the most important commodities outside the grain/livestock sector were sugar, oilseed products, fruits, vegetables, tropical beverages, and tobacco. These items in 1990 accounted for about half the total imports, or \$10 billion. If sugar is revalued at world prices instead of intra-bloc trading prices, the total drops by \$2 billion, to \$8 billion. Intraregional production of temperate zone oilseeds, fruits and vegetables and tobacco can be considered import substitutes, and the realignment of domestic prices may shift production into these commodities. Imports of tropical fruits, oilseeds, and beverages can be expected to expand if the ruble stabilizes at a more realistic value and growth resumes. The suppressed demand for tropical fruits released when Poland, Hungary, and Czechoslovakia opened was large enough to have an impact on the international banana market.

Although highest on the regional adjustment agenda are rationalization of production and utilization of grain and contraction of the livestock industry to economically justifiable levels, the adjustment does not require contraction of the agricultural sector across the board. On the contrary, the experience of Poland and Hungary to date indicates that markets in Western Europe are accessible even now for small quantities of high-quality specialty products. Resumption of growth and dietary adjustment throughout the region, particularly in Russia, will increase consumption of fruits, vegetables, wines, and vegetable oils, and this will increase demand for products of the southern parts of the region. More generally, economic recovery under market conditions will restore variety to diets stripped of traditional diversity by decades of production quotas for cabbage, onions, and carrots, and will stimulate both production and intraregional trade in horticultural products. If the market reforms survive long enough to give consumers an opportunity to express and develop their tastes, a renaissance in regional cuisine can be expected, and may have a significant impact on production and marketing of food.

AGRICULTURAL TRADE IN THE INTERIM: PRICES AND FLOWS

In the huge agricultural economy of East/Central Europe and the former USSR, intraregional trade has always been more important than trade with the rest of the world. Even at their height in 1989 and 1990 (of almost \$20 billion), imports of agricultural products into the USSR did not comprise more than 10–15% of domestic utilization of most products. Grain imports even in high years constituted no more than 20% of availability. The decline in intraregional trade in 1991, including both East/Central Europe and the former USSR, has been damaging for all partners, and has necessitated maintenance of flows from outside the region.

The problems of Poland, Czechoslovakia, and Hungary in this regard have been less than those of Romania, Bulgaria, and the former USSR. The former three entered the transition with lower distortions, achieved enough monetary stability to support relatively open trading regimes early, and had support from Western Europe in improving market access. Even so, the dislocation caused by rupture of traditional trading relations with the USSR in 1991 was severe.

Romania, Bulgaria, and the states of the former Soviet Union have until mid 1992 not yet succeeded in establishing the monetary stability necessary to carry out trade in regional currencies. Nor do they have adequate reserves to trade in convertible currencies, nor institutional arrangements to counter monetary disruption. As a consequence trade is still carried out

TABLE 3

Prices for interstate trade of major commodities within the former USSR, mid-1992

Products	World price per t (US\$)	Internal price per t (RB)	Implicit exchange rate (RB/\$)
Oil	123–137	2820	21–22.0
Gasoline	215	7800	36.3
Diesel	175	6600	37.7
Natural gas	80	2050	25.6
Steel pipes	625	28000	53.0
Meat and meat products	1616	110000	68.1
Butter	1800	180000	100.0
Sugar	270	52000	192.5
Vegetable oil	495	22500	45.0
Wool	5000	350000	70.0
Cotton	1200	100000	83.3

Source: Ekonomicheskaja Gazeta 31, August 1992, p. 12.

on an ad hoc basis comprised in part of barter and in part of negotiated agreements, overlaid with export licenses and taxes.

In this transitional trading regime, domestic prices are not yet linked to world prices, and relative prices are highly distorted, as shown in Table 3

TABLE 4
Agricultural imports, quantities of principal items, former USSR and Russia (1000 t)

Commodity	Former USSR			Former USSR without Baltics 1991	Of which Russia ^d 1991
	1988	1989	1990		
1 000 metric tons					
Wheat	21 180	14 186	15 025		
Barley	2 365	3 576	3 396		
Corn	11 426	18 984	13 227		
Other grain	71	223	653		
Sorghum	58	105	263		
Wheat flour ^a	237	250	246		
Rice, milled	498	640	320		
Subtotal	35 835	37 964	33 129	35 660	30 489
Meat and meat products ^b	719	696	1 129	2 249	1 304
Butter	440	247	299	472 ^f	310 ^f
Wool, scoured	114	128	69	53	42
Potatoes	N/A	843	962		
Vegetables, fresh	203	149	144		
Vegetables, canned	447	349	268		
Fruit, fresh	969	778	874		
Fruit, dried	64	77	78		
Sugar, raw	4 094	5 046	3 919	4 475	2 944
Coffee	50	113	87	245 ^e	162 ^e
Cocoa beans	138	179	104	76	50
Tea	133	215	256		
Tobacco	49	38	31	43	34
Cotton lint	90	77	55		
Tapioca	772	797	N/A		
Oilseeds	1 397	879	492		
Oilseed meal ^c	3 300	3 567	2 709		
Vegetable oil, edible	367	1 088	567		

N/A = Not available

^a Flour in wheat equivalent at 72%. ^b Does not include live animals. ^c ERS estimate for 1988. ^d Accounting procedures may differ from those of USDA. ^e Includes coffee and tea.

^f Includes aggregate of butter and vegetable oil.

Source: 1988–90, *Former USSR: Agriculture and Trade Report*, USDA ERS, RS-92-1, May 1992; 1991 State Committee on Statistics, Russian Federation.

for Russian imports and exports of selected commodities in mid 1992. Agricultural products in mid 1992 were trading within the former Soviet Union at prices lower than world prices at the market exchange rate, but relatively higher than prices for energy, raw materials, and primary manufactures. This suggests that terms of trade for agricultural producers may deteriorate somewhat more than they have to date as internal prices further align with world prices. It also suggests that trade balances for agricultural exporters, such as Ukraine, will deteriorate, and those for importers, such as Russia will improve.

The confusion in pricing and barriers to internal trade have affected flows among the former republics, and enhanced the importance of concessional financing for imports. Table 4 shows that food aid and credit programs kept imports of important commodities, such as grain, meat, and sugar at high levels in 1991, and that the share of Russia in total imports is high. Russian grain imports in early 1992 have declined, in part because the harvest is somewhat better than in 1991, and in part because changes in relative prices have reduced demand for grain. According to official reports, Russian grain imports for the first half of calendar 1992 were 12 million t. A main motivating force for continued imports into Russia in 1992 is uncertainty with regard to procurement in a highly inflationary environment, in addition to delays in reduction in herd size.

In 1991 little of Russian grain needs came from within the former Union. All flows within the former Union were much reduced in 1991, and have not since recovered. Construction of internal markets, both within and among the post Soviet states, that allow expression of regional comparative advantage within this vast internal market will be an important component of the agricultural transition, and one that depends heavily on achievement of monetary stabilization.

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