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Some Expected Changes in World Trade in Wheat and Coarse Grains

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Some Expected Changes in World Trade
in Wheat and Coarse Grains

Philip M. Raup*

March 18, 1992

Any forecast of trends in world trade in grains is foolhardy, and doubly so in this year. The collapse of communism in Eastern Europe and the Soviet Union brings to an end a remarkable era of grain trading surprises. The generation of these surprises for the past quarter century has been the demonstrated inability of large centrally planned economies to feed themselves. First China and then the Soviet Union abandoned efforts to force agriculture into a socialist mode, with world-wide consequences. The most portentous of these changes concerns the former Soviet Union.

The historical role of Russia in world grain trading, and later of the Soviet Union, was that of a net grain exporter. This was true in the 1950's, in all but one year in the 1960's, and through 1970/71. This was reversed dramatically in 1971/72 and especially in 1972/73, when the USSR imported 22.5 million metric tons of wheat and coarse grains, accounting for 17.7 percent of total world trade in grains. This was by far the largest amount ever imported by any one country in a single year, to that date. The shock effect was enormous, especially in the United States. This was not the only cause but it was certainly the trigger that ignited the explosion in prices of U.S. farmland in the 1970's.

The subsequent pattern of imports was erratic in the remainder of the 1970's, dropping to 5.2 million tons in 1974/75 and reaching 30.5 million tons in 1979/80. Since that date, Soviet grain imports fluctuated between 27 and

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55 million tons, averaging 35 million tons and 18.5 percent of total world trade over the past five years (1987/88 - 1991/92). Imports in 1991/92 by the states of the former USSR are forecast at 39 million tons, accounting for 20.3 percent of total world trade in wheat and coarse grains (Table 1).

This trade volume has dominated world grain trading for two decades, not only by its size but by its variability. The world's second largest grain importer, Japan, has imported annually a steady 25 to 28 million tons for the past ten years. In the same period, imports by the USSR or its successor states fluctuated from 26.8 to 55.4 million tons, a range of over 100 percent.

It is this volatility that has given the former Soviet Union its capacity to derail any forecasts of future trends in world trade in grains. For the immediate future, this is unlikely to change. Uncertainty about the future demand for grain by the Commonwealth of Independent States clearly ranks at the top of any list of potential destabilizing forces on the grain trade scene.

What are the prospects for a continuation of demand for grain on this scale by the states of the former Soviet Union? In the short run, defined here as two to three years, grain imports are almost sure to remain large. In a longer time frame, to the end of this decade, the situation could reverse dramatically.

Farm managers of the former USSR know how to produce grain. It is perhaps the major agricultural sector in which their technology has resulted in productivity increases similar in trend if not yet in level to those achieved in the grain belt of North America. The removal of bureaucratic interference from Moscow in the grain economy seems likely to result in a

**Table 1: USSR Imports as a Percentage of Total World Trade
in Wheat and Coarse Grains
1970/71-1991/92^a**

Trade Year ^b	Total World Trade in			USSR Imports of			USSR Imports as Percent of World Trade in		
	Wheat ^c	Coarse Grains ^d	Wheat and Coarse Grains	Wheat	Coarse Grains	Wheat and Coarse Grains	Wheat	Coarse Grains	Wheat and Coarse Grains
	(Million Metric Tons)						(Percent)		
1970/71	54.8	46.3	101.1	0.5	0.3	0.8	0.9	0.6	0.8
1971/72	52.4	48.7	101.1	3.5	4.3	7.8	6.7	8.8	7.7
1972/73	67.4	59.4	126.8	15.6	6.9	22.5	23.1	11.6	17.7
1973/74	62.6	71.1	133.7	4.5	6.5	11.0	7.2	9.1	8.2
1974/75	63.9	63.7	127.6	2.5	2.7	5.2	3.9	4.2	4.1
1975/76	66.5	76.4	142.9	10.1	15.5	25.6	15.2	20.3	17.9
1976/77	62.8	82.6	145.4	4.6	5.7	10.3	7.3	6.9	7.1
1977/78	72.9	83.3	156.2	6.9	11.7	18.6	9.5	14.0	11.9
1978/79	72.0	90.2	162.2	5.1	9.9	15.0	7.1	11.0	9.2
1979/80	86.0	100.9	186.9	12.1	18.4	30.5	14.1	18.2	16.3
1980/81	94.1	108.3	202.4	16.0	23.5	39.5	17.0	21.7	19.5
1981/82	101.3	97.8	199.1	19.5	20.4	39.9	19.2	10.9	20.0
1982/83	98.7	90.0	188.7	20.5	11.3	31.8	20.8	12.6	16.9
1983/84	102.0	93.3	195.2	20.5	11.9	32.4	20.1	12.8	16.6
1984/85	107.0	100.4	207.3	28.1	27.3	55.4	26.3	27.2	26.7
1985/86	85.0	83.2	168.1	15.7	13.6	29.3	18.5	16.3	17.4
1986/87	90.7	83.3	174.0	16.0	10.8	26.8	17.6	13.0	15.4
1987/88	106.1	82.9	189.1	21.5	10.4	31.9	20.3	12.5	16.9
1988/89	97.2	94.2	191.4	15.5	22.5	38.0	15.9	23.9	19.9
1989/90	96.1	100.0	196.1	14.6	23.0	37.6	15.2	22.2	19.2
1990/91	93.1	85.5	178.5	14.8	14.7	29.5	15.9	17.2	16.5
1991/92 ^e	107.7	84.1	191.8	23.0	16.0	39.0	21.4	19.0	20.3

^a US Dept of Agriculture, Foreign Agricultural Service, World Grain Situation and Outlook, FG 2-92, February 1992, and predecessor publications.

^b July-June through 1979-80; thereafter July-June for wheat, October-September for coarse grains.

^c Includes wheat flour and products in wheat equivalent.

^d Includes corn, sorghum, barley, oats and rye.

^e Forecast.

release of initiative that could go far to correct the past history of enormous losses in handling, storage, and utilization. These have exceeded total grain imports in all but a few years in the past two decades.

Two forces may bring about this transformation. The first is the emergence of realistic prices for grain, coupled with a reform in procurement methods that will convert post-harvest losses into diminished income for producers or handlers. In the past almost all loss or wastage after grain left the farm was borne by government or its agencies, and did not reduce incomes for any of the individuals involved in the distribution chain. This seems sure to change.

More realistic grain prices will also lead to improved efficiency in use of feed grains in the former USSR. In the past, and today, the principal use of wheat was as a feed grain. For the past 15 years the annual food use of wheat has been virtually flat, varying from 35 to 37 million tons. In contrast, the use of wheat as feed over the same period averaged 44 million tons, and has averaged over 51 million tons for the past two years. Anything that is done to improve efficiency in grain feeding of livestock will have a disproportionate effect on import demand for wheat.

Studies in the U.S. Dept. of Agriculture and in the former USSR suggest that the comparative disadvantage in Soviet production of meat has been greater than in the production of grain. If more realistic prices do begin to guide farm production decisions, this implies that the successor states to the USSR may find it rewarding to import more meat and less grain.

The feed use of coarse grains for the past 15 years averaged 77 million tons per year, with barley comprising the major part. If there is gradual improvement in feeding efficiency this will reduce the feed demand for wheat,

and permit domestic barley to play a larger role. Wheat can be used for food or feed but the food use of barley is limited.

This suggests that a combination of greater reliance on meat imports and improvement in the conversion ratios of grain to meat or milk will have the effect of reducing import demand for both wheat and coarse grains, but especially for wheat.

The second and potentially more powerful force that could lead to a reduction in grain imports is the determination of newly independent states to reduce dependency on others for their food supply. No symbol of that dependency is as strong as the need to import grain. No memory of the historic role of Russia in the world trading economy is as strong as the knowledge that it once was regarded as a bread-basket for Europe. A most vivid impression from interviews with economic planners in Russia, Belorussia, Ukraine and Kazakhstan in 1990 and 1991 was the frequency with which they identified the failure of the Soviet era with the need to import grain. Grain has the status of an icon of independence in what once was the Soviet Union. Its successor states will make heroic efforts to cut back or eliminate grain imports. Whether or not it remains true in the future, some current economic advisers in Russia, Ukraine, and Kazakhstan regard oil, gas, gold and in the longer run, grain as their most potent sources of hard currency foreign exchange.

The one sector in which a drive for self-sufficiency could command the widest public support is grain production. I do not expect imports by the CIS to drive the demand side of world grain trade after about 1995, as Soviet demand did for the past twenty years.

What about prospective trends in other markets? When attention turns from the former USSR; the one most often cited is China. Its wheat imports have been impressive, approaching the USSR level in two of the past five years. But it is often forgotten that China is a major exporter of coarse grains, mostly corn. In three of the past five years China has been the world's third largest exporter of coarse grains, after the US and the EC, and ahead of Canada, Argentina, and Australia.

For several years it was fashionable in grain trade circles to regard China's corn exports as an anomaly--more a reflection of internal transport limitations than of any true comparative advantage. This is changing. With North China corn-lands a short voyage from Japan, the world's largest importer of coarse grains, a view of China as an almost limitless potential import market for grain needs revision.

Large-volume wheat imports may well continue and even exceed the 15 million ton level of 1991/92. The sheer size of China's population of 1,151 million guarantees that bad weather could cause enormous fluctuations in China's import demand. But there is a considerable potential for expansion in grain output. Yields of wheat are well above those in North America, but only about three-fourths of levels achieved in Eastern Europe, and two-thirds of those in Western Europe. Big as it is in current world trade in grain, China seems unlikely to provide replacement demand for grain on the scale provided by the USSR for the past twenty years.

Two other areas seem more interesting to grain exporters. One is the India-Pakistan-Bangladesh-Myanmar (Burma)-Nepal subcontinent, or what once was British India. In 1991 this area, for the first time, surpassed the population of China (Table 2). Its annual rate of natural increase in

**Table 2: Population Levels and Growth Rates in 1991,
Selected States and Regions^a**

State or Region	Population 1991	Annual Rate of Natural Increase	Estimated Population Added in 1992	<u>Projected Population</u>	
	(Millions)	(Percent)	(000)	2010	2025
India	859.2	2.0	17,184	1,157.8	1,365.5
Pakistan	117.5	3.0	3,525	195.2	281.3
Bangladesh	116.6	2.4	2,798	176.6	226.4
Myanmar (Burma)	42.1	1.9	800	58.6	72.2
Nepal	19.6	2.5	490	30.6	41.1
Total	1,155.0	2.15 (ave.)	24,797	1,618.8	1,986.5
Doubling time: 32 years					
China	1,151.3	1.4	16,118	1,420.3	1,590.8
Doubling time: 51 years					
Former USSR	292.0	0.8	2,336	333.0	363.0
Doubling time: 91 years					
USA	252.8	0.8	2,022	299.0	333.7
Doubling time: 88 years					

^a Computed from 1991 World Population Data Sheet, Population Reference Bureau, Washington, D.C., April 1991

population is 2.15 percent, or over fifty percent greater than China's 1.4 percent. Population projections at current rates of increase give South Asia as here defined a population some 200 million larger than China's in 2010, and almost 400 million larger by 2025. This growth is occurring in areas with some of the highest densities of population per unit of agricultural land in the world. It is clearly not a unified market area, but it is also clearly an area in which population growth is exceeding any likely rates of increase in agricultural output.

In terms of need, the subcontinent of South Asia seems likely to provide the largest increase in potential world demand for imported grain in the next quarter-century. With a current population almost double that of all of Africa, it appears to be most vulnerable to disruptions in food supply due to weather or internal unrest. Its greatest handicap is the lack of export capacity to pay for food imports. Need will not equate with effective demand.

A second area of interest is North Africa and the Middle East. In 1989/90, the last full trade year before the break-up of the Soviet Union and the outbreak of the Gulf War, this area imported 16.4 million tons of wheat, more than the USSR and China combined. As a region, its current population is larger than that of the former USSR. Considered as a unit, although it is far from unified, its population is growing at over 2.8 percent per year, much faster than the South Asian subcontinent noted above, and over twice the growth rate of China (Table 3). Its distinguishing feature is that this growth is occurring in an area that has very limited potential for further growth in agricultural output, but it does have oil.

Here is a region in which the combination of need and effective demand seems likely to provide a growing market for grain imports. It has not in the

**Table 3: Population Levels and Growth Rates in 1991,
Selected States, North Africa and Middle East^a**

Region and Country	Population 1991	Annual Rate of Natural Increase	Estimated Population Added in 1992	<u>Projected Population</u>	
	(Millions)	(Percent)	(000)	2010	2025
<u>North Africa</u>					
Egypt	54.5	2.9	1,581	81.8	105.4
Algeria	26.0	2.7	702	39.1	49.3
Tunisia	8.4	2.2	185	11.5	13.6
Morocco	26.2	2.5	655	37.3	46.2
Libya	4.4	3.1	136	7.1	9.3
Total, North Africa	119.5	2.73	3,259	176.8	223.8
<u>Middle East</u>					
Iran	58.6	3.3	1,934	100.6	141.4
Iraq	17.1	2.7	462	31.0	43.8
Turkey	58.5	2.2	1,287	83.4	102.7
Syria	12.8	3.8	486	25.9	41.4
Yemen	10.1	3.5	354	19.0	29.9
Israel	4.9	1.6	78	6.1	7.2
Jordan	3.4	4.1	139	6.8	10.1
Lebanon	3.4	2.1	71	4.9	6.2
Saudi Arabia	15.5	3.4	527	29.7	44.4
Total, Middle East	184.3	2.90	5,338	307.4	427.1
Total, States Listed Above	303.8	2.83	8,597	484.2	650.9

^a Computed from 1991 World Population Data Sheet, Population Reference Bureau, Washington, D.C., April 1991

past been a large market for coarse grains, and this is unlikely to change. But over the decade of the 1980's it was one of the fastest growing markets for wheat. This may well continue, if political stability can be restored. Among major regions of the world, it could prove to be the most plausible successor to the Soviet market, and especially for wheat.

To this point, the discussion has focused on the demand side. What about exportable supplies? Here the picture is less complex, because there are fewer major players, but no less problematic. Perhaps the greatest uncertainty concerns the European Community (Table 4). After 1987/88 its exports of wheat and coarse grains have exceeded those of Canada and been exceeded only by the U.S. It is clearly the highest cost export producer of grain by any realistic reckoning of cost. It stands as one of the most emphatic abandonments of the principle of comparative advantage now practiced on the world stage. It is maintained by the most objectionable form of tax--a consumption tax on food, administered through the price system. Yet it commands political support from its victims that shows few signs of weakening.

In the long view, the level of subsidized grain exports from the EC seems unlikely to continue. With important elections due in coming months in the US and in several EC member countries, there is a prospect that the uncompromising position of the parties to the current GATT negotiations may change--if the negotiations can be kept alive. It may well be that we have seen the peak of grain exports from the EC, but there is unlikely to be any rapid decline in the immediate future.

It is more likely that there will be a resurgence of export supplies from Argentina. Almost alone among major grain exporters, it has unexploited potential for production increases that have been suppressed by internal

Table 4: World Production, Trade, and Export Market Shares for Wheat and Coarse Grains^a

Trade Year	World Production	World Exports ^b	Exports As % of Production	Export Market Shares ^c			
				US	EC-12	Aus./Arg./Canada	Others
	Million Metric Tons		%			In Percent	
1978/79	1,202.3	165.1	13.7	56.2	8.7	25.1	10.0
1979/80	1,169.3	185.5	15.9	58.6	8.5	25.9	7.0
1980/81	1,175.3	202.4	17.2	55.1	10.7	22.2	12.0
1981/82	1,216.3	199.1	16.4	54.2	10.0	27.0	8.8
1982/83	1,261.6	188.7	15.0	49.9	10.9	30.0	9.1
1983/84	1,177.4	195.4	16.6	48.4	10.1	32.6	8.9
1984/85	1,327.7	207.3	15.6	45.1	13.0	30.6	11.3
1985/86	1,343.3	168.1	12.5	36.5	14.1	35.4	14.0
1986/87	1,366.1	174.8	12.8	43.4	13.2	31.2	12.1
1987/88	1,298.5	189.1	14.6	51.2	12.3	27.3	9.1
1988/89	1,232.8	191.4	15.5	51.7	16.6	19.6	12.1
1989/90	1,340.6	196.1	14.6	52.4	14.8	23.0	9.7
1990/91	1,426.2	178.5	12.5	44.9	15.6	28.2	11.3
1991/92	1,350.0	191.8	14.2	42.0	16.7	27.0	14.3

^a USDA, FAS, World Grain Situation and Outlook, FG 2-92, February 1992, and predecessor publications. Time series does not pre-date 1978/79 due to difficulty in assembling consistent data for EC-12.

^b Trade year is July-June for wheat and October-September for coarse grains.

^c Totals may not add to 100 due to rounding.

political problems that now seem to be under rational control.

The end of the decade and the millennium may thus see a decline in grain imports by the states of the former Soviet Union, a decline in exports by the member states of the EC, renewed export competition from Argentina, increased imports by North Africa and the Middle East, and a replacement of China by the South Asian subcontinent as the area where population growth is providing the greatest divergence between need and effective demand, and therefore the greatest threat to stability of expectations in world grain markets.