



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Staff Papers Series

STAFF PAPER P89-53

DECEMBER 1989

The Significance for World Trade of Variability in Grain Imports by the USSR and China

Philip M. Raup



Department of Agricultural and Applied Economics

University of Minnesota
Institute of Agriculture, Forestry and Home Economics
St. Paul, Minnesota 55108

STAFF PAPER P89-53

DECEMBER 1989

**The Significance for World Trade of Variability in Grain
Imports by the USSR and China**

Philip M. Raup

Staff Papers are published without formal review within the Department of Agricultural and Applied Economics.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, religion, color, sex, national origin, handicap, age, or veteran status.

The Significance for World Trade of Variability in Grain
Imports by the USSR and China^a

Philip M. Raup^b

World trade in grains is highly concentrated among a few countries, both on the export side and to a lesser extent on the import side. For wheat, the top two exporters, the United States and the European Economic Community, accounted for 60.2 percent of total exports in 1988/89, and the top five exporters accounted for 88.7 percent.

For coarse grains, the degree of concentration was even more pronounced. The top two, again the U.S. and the EEC, exported 77.0 percent of all coarse grains in 1988/89, and the top five accounted for 90.0 percent.

Among importing countries, the concentration in grain trade is substantial but less dramatic. China and the USSR were the top wheat importers in 1988/89 in almost equal quantity, buying 31.0 percent of all wheat entering international trade. The top five importers together bought 48.4 percent.

The import concentration is greater for coarse grains, with the USSR and Japan importing 46.5 percent, again in nearly equal quantity, while the top five importers accounted for 63.6 percent of total coarse grain trade.

^aPaper presented at a symposium on socialist agriculture, at the annual meeting, American Agricultural Economics Association, Louisiana State University, Baton Rouge, Louisiana, July 30-Aug. 2, 1989. Tabular data have been updated through September 1989.

^bProfessor Emeritus, Dept. of Agricultural and Applied Economics, University of Minnesota, St. Paul.

In summary, two exporters provided 60.2 percent of the world's traded wheat in 1988/89, and 77.0 percent of the coarse grains. Two importers bought 31.8 percent of the wheat and 46.5 percent of the coarse grains. The tonnage and percentage figures are shown in Tables 1 and 2.

Concentration on this scale is all the more remarkable when set against the dramatic expansion in world trade in grains in the last three decades. As shown graphically in Figure 1, world trade in wheat and coarse grains doubled from 1970/71 to 1980/81. It has fluctuated sharply in the 1980's, but is ending the decade at levels twice as high as those prevailing at the end of the 1960's.

While concentration among grain exporters and importers is not new, the degree of concentration on the import side has been especially marked in the past two decades. From the end of the Napoleonic Wars to the outbreak of the Second World War, the growth in grain imports was in large part a demonstration of the classical economic principle of comparative advantage. Countries imported grain when they had other more rewarding uses for their labor and land.

Since the Second World War much of the world's trade in grain cannot be explained by a conventional use of the idea of comparative advantage. The principle is still useful, but it must be interpreted to mean least comparative disadvantage, and political and ideological goals must be given heavy weight in measuring the disadvantages of alternative modes of organizing the uses of productive land. The outstanding examples of the politicization of comparative advantage as an analytical tool are the USSR and China.

**Table 1: Leading Grain Exporters
 1988/1989a/**

<u>Product and Country</u>	<u>Exports</u>	
	<u>Volume</u>	<u>As Percent of World</u>
	Thousand M.T.	%
<u>Wheat, incl flour</u>		
United States	37,800	38.7
EC-12	21,000	21.5
Canada	13,500	13.8
Australia	10,800	11.1
Argentina	<u>3,500</u>	<u>3.6</u>
Total, Top 5	86,600	88.7
Total, World	97,700	100.0
 <u>Coarse Grains</u>		
United States	63,100	64.9
EC-12	11,800	12.1
China	5,200	5.3
Canada	4,500	4.6
Argentina	<u>3,000</u>	<u>3.1</u>
Total, top 5	87,600	90.0
Total, world	97,200	100.0

a/ USDA, World Grain Situation and Outlook, FG 9-89,
September 1989.

**Table 2: Leading Grain Importers
1988/1989^{a/}**

Product and Country	Imports	
	Volume	As Percent
	Thousand M.T.	of World
		%
<u>Wheat, incl flour</u>		
China	15,500	15.9
USSR	15,500	15.9
Egypt	6,800	7.0
Japan	5,200	5.3
Algeria	<u>4,200</u>	<u>4.3</u>
Total, Top 5	47,200	48.4
Total, World	97,700	100.0
 <u>Coarse Grains</u>		
USSR	23,500	24.2
Japan	21,700	22.3
S. Korea	6,850	7.0
Mexico	5,200	5.3
Saudia Arabia	<u>4,700</u>	<u>4.8</u>
Total, top 5	61,950	63.6
Total, world	97,200	100.0

**^{a/} USDA, World Grain Situation and Outlook, FG 9-89,
September 1989.**

Figure 1:

TOTAL WORLD TRADE IN WHEAT AND COARSE GRAINS

1970-71 —

Million
Metric
Tons

200

190

180

170

160

150

140

130

120

110

1970-71 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89

U.S. Dept. of Agriculture, Foreign Agricultural Service, World Grain Situation and Outlook, FG 6-89, June 1989, and predecessor publications for years before 1985/86.

They have become by far the world's largest wheat importers, taking just under one-third of all traded wheat in 1988/89. Their rise to this dominant position began in the mid-1960's, and accelerated in the 1970's and 1980's, as shown in Table 3.

Variability is the noteworthy feature of this growth in import grain demand by the USSR and China. This emerges clearly in Figures 2 and 3, showing imports of wheat and coarse grains combined for the USSR, China, and Japan. The example of Japan is striking, since that country has been a remarkably stable element in world trade in grain for the past two decades. In contrast, in several years since 1970/71 the year-to-year variations alone in demand by the USSR and China have exceeded the total amounts imported by the third or fourth largest importers.

This is especially true of the USSR. Figure 4 and Table 4 show imports of wheat and coarse grains by the USSR as a percent of total world trade since 1970/71. For wheat, Soviet imports as a percent of world trade increased more than three-fold in a single year, from 1971/72 to 1972/73, only to fall back almost to the 1971/72 level the next year, in 1973/74. In percentage terms, Soviet wheat imports increased almost four-fold from 1974/75 to 1975/76 and were cut in half in 1976/77. They doubled from 7 percent to 14 percent of world trade from 1978/79 to 1979/80, rose to 26.3 percent of total world trade in 1984/85 and dropped back to 15.9 percent of trade by 1988/89.

Soviet demand for coarse grains has been especially volatile in the 1980's. In four years since 1980/81 Soviet imports of coarse grains were under 13 percent of world trade and in two years they ranged from 24 to 27

**Table 3: Import Market Shares of Wheat,
USSR and China,
Selected Years^a**

	1970/71	1975/76	1980/81	1985/86	1988/89
	Million Metric Tons				
USSR	0.5	10.1	16.0	15.7	15.5
China	<u>3.7</u>	<u>2.2</u>	<u>13.8</u>	<u>6.6</u>	<u>15.5</u>
Subtotal	4.2	12.3	29.8	22.3	31.0
World Trade	54.8	66.5	94.1	85.0	97.7
	Percent				
USSR-China as Percent of World Trade	7.7	18.5	31.7	26.2	31.8

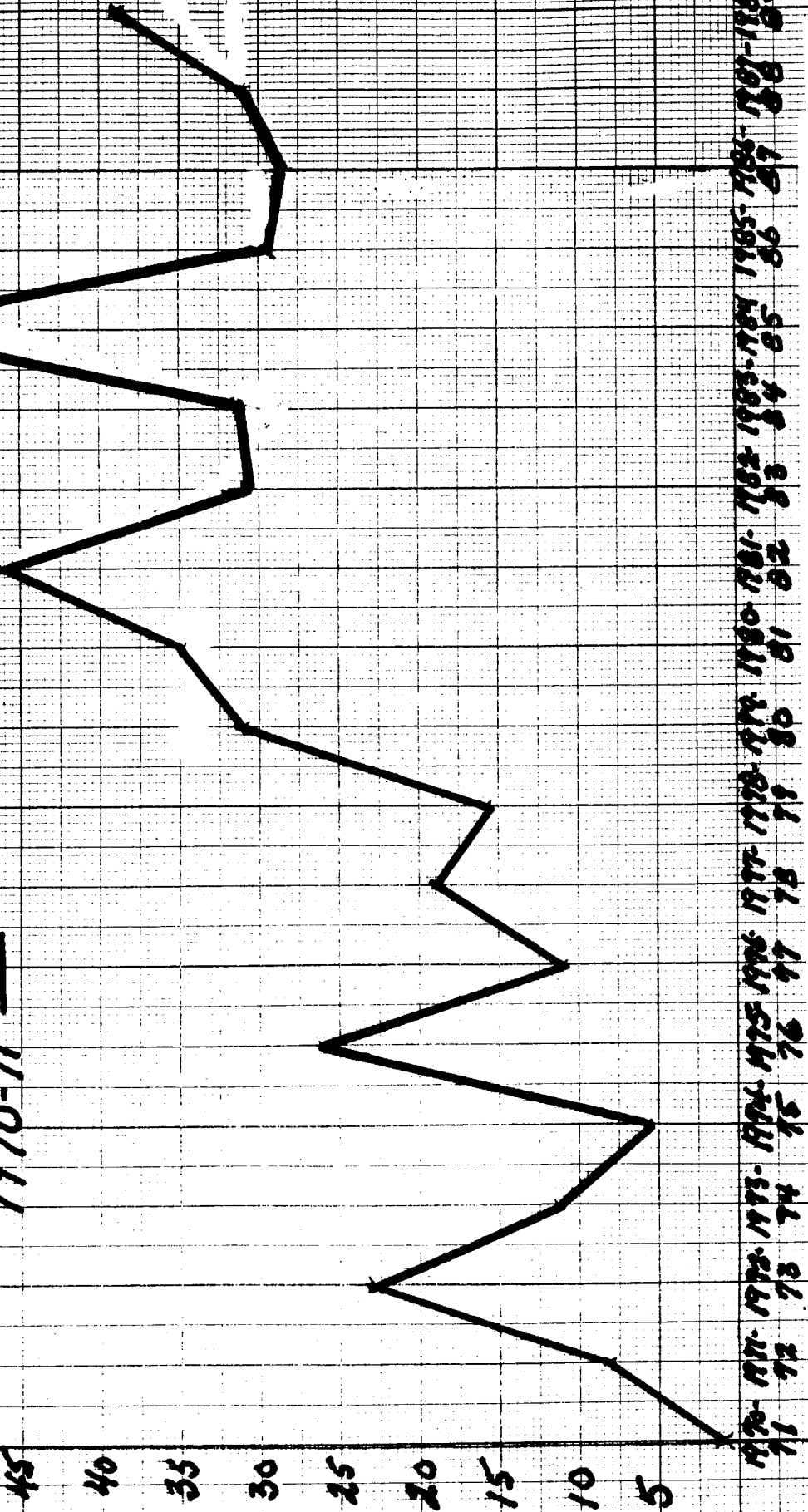
a USDA, FAS, World Grain Situation and Outlook, FG 9-89, September 1989 and predecessor publications.

Figure 2:

USSR IMPORTS OF WHEAT AND COARSE GRAINS

Million
Metric
Tons

1970-71 —



U.S. Dept. of Agriculture, Foreign Agricultural Service, World Grain Situation and Outlook, FG 6-89, June 1989, and predecessor publications for years before 1985/86.

Figure 3:

IMPORTS OF WHEAT AND COARSE GRAINS JAPAN AND CHINA, 1970-71 -

Million
Metric
Tons

35

30

25

20

15

10

5

JAPAN

CHINA

1970-71 1971-72 1972-73 1973-74 1974-75 1975-76 1976-77 1977-78 1978-79 1979-80 1980-81 1981-82 1982-83 1983-84 1984-85 1985-86 1986-87 1987-88 1988-89

U.S. Dept. of Agriculture, Foreign Agricultural Service, World Grain Situation and Outlook, FG 6-89, June 1989, and predecessor publications for years before 1985/86.

**Figure 4: USSR IMPORTS AS A PERCENTAGE OF TOTAL
WORLD TRADE IN WHEAT AND
COARSE GRAINS
1970-71 - 1988/89a**

PERCENT

25

20

15

10

5

0

10

15

20

25

30

35

40

45

50

55

60

65

70

75

80

85

90

1970/ 71/ 72/ 73/ 74/ 75/ 76/ 77/ 78/ 79/ 80/ 81/ 82/ 83/ 84/ 85/ 86/ 87/ 88/ 89/

a US Dept. of Agriculture, Foreign Agricultural Service, World Grains Situation and Outlook, FG 6-89,
June 1989, and predecessor publications.

Table 4: USSR Imports as a Percentage of Total World Trade
in Wheat and Coarse Grains
1970/71 - 1988/89^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	Wheat	Coarse Grains	Wheat and Coarse	Wheat	Coarse Grains	Wheat and Coarse
	(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	20.9	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	84.1	174.8	16.0	10.8	26.8	17.6	12.8	15.3
1987/88	104.7	83.4	188.2	21.5	10.7	32.2	20.5	12.8	17.1
1988/89 ^e	97.7	97.2	194.9	15.5	23.5	39.0	15.9	24.2	20.0

^a US Dept. of Agriculture, Foreign Agricultural Service, World Grain Situation and Outlook, FG 9-89, September 1989, 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.

percent, with tonnages ranging from 27.3 million tons in 1984/85 to 10.7 in 1987/88.

Variability on this scale, in both quantity and percentage terms, is extremely unsettling to world markets, especially when it characterizes the world's largest importers. It underscores the fact that solutions to the grain problems in the Soviet Union, and to a lesser extent in China, transcend the boundaries of national problems. Of immediate interest is the fact that the magnitude of this variability reduces if it does not negate the significance of estimates now being made of prospective benefits of a reduction in agricultural trade distortions through the Uruguay round of GATT negotiations. Until the Soviet Union and China put their agricultural houses in order there can be little confidence in any refined analysis of the benefits from an improvement in institutional constraints on world agricultural trade.

Of longer-run interest is the clear warning that exporting countries should move cautiously in tailoring their grain-trading or land-use policies to world grain markets that are so dependent on Soviet and Chinese demand. This is especially relevant to current policy debates in the U.S. and the EEC.

In 1988/89, imports by the USSR of hard red winter wheat from the US were 27 percent of total U.S. exports of hard winter wheat and equaled just under 80 percent of the entire 1989 production of Kansas, the leading US hard winter wheat producing state. Also in 1988/89, imports by China of soft winter wheats from the US were the equivalent of 54.5 percent of

total 1989 exports of soft winter wheats from the U.S. This is single-market dependency on a massive scale.

The timing of the increase in Soviet demand for feed grains in the past decade has coincided nicely with the sharp increase in the production of feed-quality wheats in the member countries of the EEC. Much of the increased grain output of the EEC in the past ten years has been of wheat that is below milling grade, i.e. is saleable primarily as livestock feed. The dependence of the EEC on the Soviet market for this quality of wheat has increased sharply in the 1980's. Any disturbance in this linkage between USSR demand and EEC supply will be felt keenly in the EEC.

These data emphasize the fact that the variability of Soviet and Chinese demand for wheat is focused on specific classes of wheat. This means in turn that the effects of any resultant instability in those markets will be concentrated in the geographic areas that produce the classes of wheat preferred by the USSR and China. The areas most vulnerable to variations in Soviet demand are the hard red winter wheat belt of the central and southern Great Plains, in the US, and feed-wheat producing areas in the EEC, especially in France. Variations in Chinese demand will be especially significant for soft winter wheat producers in the U.S. Midwest (Illinois, Ohio) and in the Pacific Northwest.