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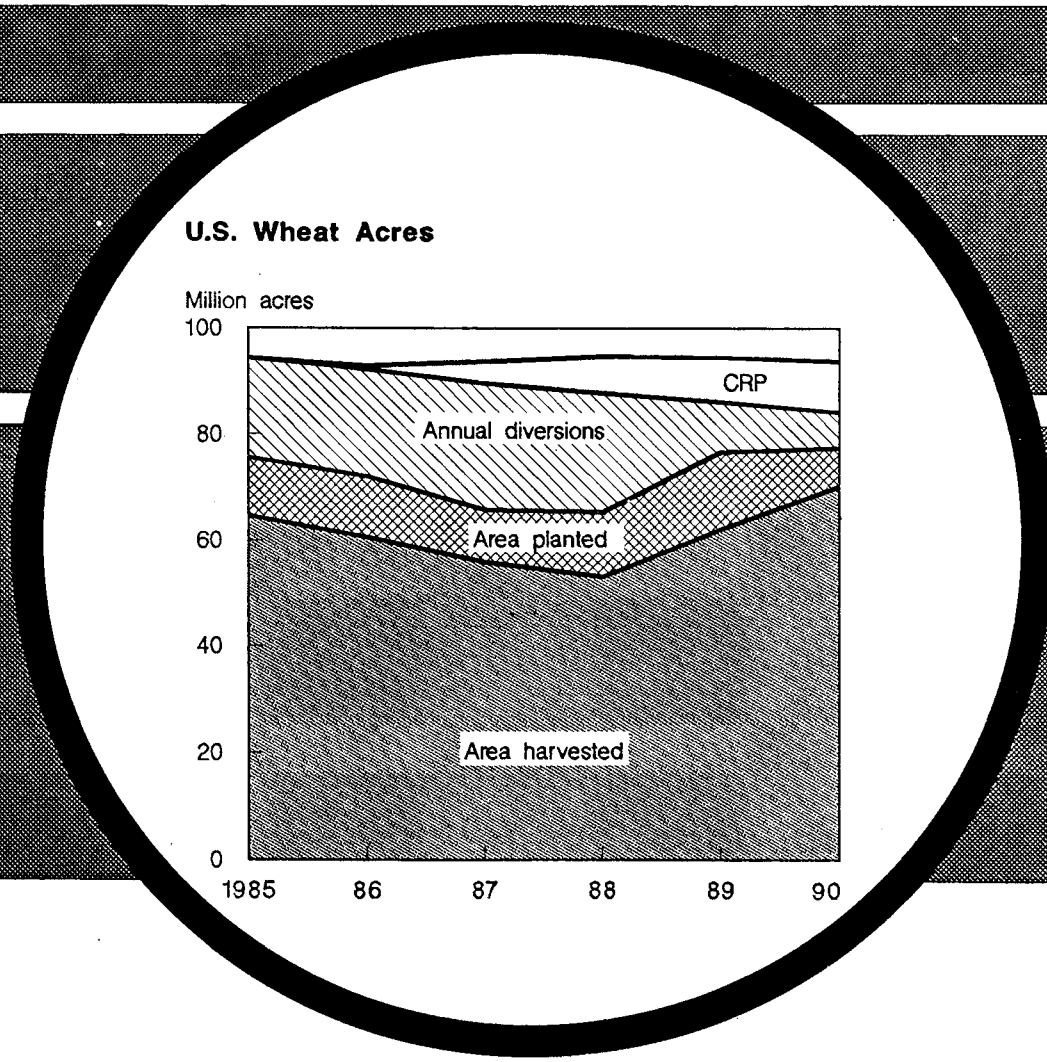
Wheat

Situation and Outlook Report



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The **Wheat Situation and Outlook** has a new format. The information is presented in information packages that cover a specific economic point about current and future conditions and are supported with tables or charts. The goal is to give you a more informative and useful report. I'd like your reaction to this format and your general reaction on what you find useful in the **Wheat Situation and Outlook.** Please note that future issues will contain special articles.

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Summary

Large U.S. Crop To Boost 1990/91 World Wheat Production To Record

U.S. wheat production is projected to rise more than 650 million bushels, the largest year-to-year increase in history. Paced by a near-record winter wheat crop, 1990 U.S. wheat production is projected at nearly 2.7 billion bushels, up about a third from the previous year, and the third largest on record.

U.S. winter wheat production in 1990 is forecast at 2,092 million bushels, up 44 percent from last year. Forecast yields of 41.1 bushels per acre are second only to 1983. Additionally, more of the planted area will be harvested than in an average year. Area planted was up less than 4 percent, but harvested area is forecast up 23 percent.

World wheat production in 1990/91 is forecast at a record 568 million tons. While global consumption is projected up almost 3 percent, it will trail production for the first time since 1986/87, leading to a projected 13-percent rise in world ending stocks.

Lower prices may lead to expanding world trade in 1990/91, especially in wheat for feeding. Trade in bread quality wheat is expected to be little changed from 1989/90. U.S. exports in 1990/91 are projected down slightly from a year earlier as record foreign crops lead to increased competition.

Sharply increased 1990 production is expected to boost U.S. supplies in 1990/91, despite the lowest carryin stocks since 1975/76. While a small drop in exports is projected, expanding domestic use may leave total use up 3 percent. Stocks on June 1, 1991, are forecast above those of the previous 2 years. Wheat prices received by farmers during 1990/91 are forecast at $2.90-3.30 per bushel, down from $3.71 and $3.72 the last 2 years.

The 1990/91 price relationships and competition across classes of wheat may change dramatically from 1989/90. Supplies of hard red winter wheat will be up sharply, resulting in more competition with hard red spring for the hard wheat market. Larger crops and reduced imports are expected in South Asia. This will mean that the larger U.S. white wheat crop will have to compete with soft red winter for export markets such as Egypt that take both classes of wheat.

Durum price premiums may reappear as planting intentions are down in the United States and Canada and dry weather has cut production prospects in Southern Europe. Production prospects also are poor in North Africa, a major durum importer.

THE WHEAT SITUATION AT A GLANCE

All wheat: supply and disappearance 1/

Year beginning June 1	1986	1987	1988	1989 Estimated	1990 Projected
	Million bushels				
Beginning stocks	1,905	1,821	1,261	702	442
Production	2,091	2,108	1,812	2,036	2,692
Imports	21	16	24	18	22
Supply, total	4,017	3,945	3,096	2,758	3,155
Domestic					
Food	712	721	735	750	765
Seed	84	85	103	102	100
Feed and residual	401	280	137	190	275
Domestic, total	1,192	1,086	975	1,042	1,140
Exports	999	1,598	1,419	1,275	1,250
Disappear., total	2,196	2,684	2,394	2,317	2,390
Ending stocks	1,821	1,261	702	442	765

Wheat by classes: supply and disappearance 1/

Year beginning June 1	Hard red winter	Hard red spring	Soft red winter	White	Durum	Total
1988/89			Million bushels			
Beginning stocks	567	402	75	135	83	1,261
Production	882	181	473	232	45	1,812
Supply, total 2/	1,449	590	547	370	139	3,096
Domestic disappear.	507	176	193	40	59	975
Exports	639	195	315	250	20	1,419
Disappear., total	1,146	371	508	290	79	2,394
Ending stocks	302	219	39	81	60	702
1989/90 (Estimated)						
Beginning stocks	302	219	39	81	60	702
Production	711	433	548	251	92	2,036
Supply, total 2/	1,014	659	587	335	164	2,758
Domestic disappear.	425	243	219	93	62	1,042
Exports	390	290	350	190	55	1,275
Disappear., total	815	533	569	283	117	2,317
Ending stocks	199	126	18	52	47	442

1/ Includes flour and products in wheat equivalent.
2/ Total supply includes imports.

Outlook for 1990/91

U.S. Wheat Production Projected To Rise 656 Million Bushels, the Largest Increase in History

Paced by a near-record winter wheat crop, 1990 U.S. wheat production is projected at nearly 2.7 billion bushels, up about a third from the previous year, and the third largest on record.

U.S. 1990 wheat production, projected at 2,692 million bushels, is a combination of a survey-based winter wheat production forecast (2,092 million bushels) by the National Agricultural Statistical Service (NASS) and a projection of spring wheat production (600 million bushels). The projected spring wheat crop is based on planting intentions, average yields, and an average ratio of harvested to planted area.

The spring wheat crop is still being planted, and any projection of spring wheat production is very tentative. Although subsoil moisture is limited in much of the Northern Plains, where most of the spring wheat is grown, April and May precipitation has generally provided enough moisture for planting and emergence. However, continued timely rains will be important for the spring wheat crop because subsoil moisture reserves are low.

Near Record U.S. Winter Wheat Production

Winter wheat production in 1990 is forecast at 2,092 million bushels, up 44 percent, and more than 50 million bushels larger than last year's total wheat production. Yields are forecast at 41.1 bushels per acre, the second highest on record.

Additionally, more of the planted area will be harvested than in an average year. Area planted was up less than 4 percent, but harvested area is forecast up 23 percent. Nearly 89 percent of the planted area is forecast to be harvested for grain, the highest portion since the record production year of 1981.

Planted area was constrained by continued movement of wheat base into the Conservation Reserve Program (CRP), and the 5 percent acreage reduction requirement of the 1990 regular contracts. Producers were also offered modified contracts, which allow farmers to harvest up to 105 percent of their wheat base if they forego a portion of their deficiency payments. Only 23 percent of base acres was enrolled under modified contracts, while 80 percent participated in the program.

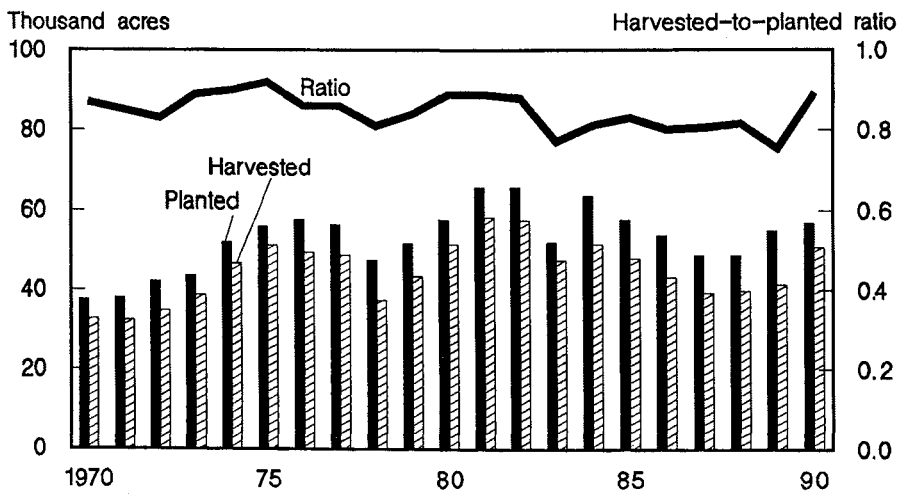
Producers who enrolled in the modified contract indicated intentions to plant 1.2 million acres more than 95 percent of their base. The Preliminary Enrollment Report data imply that more than half of the participants in the modified contracts planted for harvest a full 105 percent of their base. However, the report also indicates an increase in the 0/92 program to 4.5 million acres of wheat base idled.

Generally favorable growing conditions developed in the Southern Plains in mid-January, and have continued, allowing the wheat crop to recover from a record dry November and an unfavorable cold December. In some fields, the dry fall caused uneven germination. Above-normal temperatures in January and February, combined with above-normal precipitation and limited winterkill, allowed the wheat to develop a large number of tillers.

The lush growth of wheat has to date kept weed problems below normal. The rain, however, has led to some problems, such as powdery mildew. In most areas, the diseases that were prevalent 2 years ago, particularly mosaics, do not appear to be a major problem this year. Some fields may be suffering from insufficient nitrogen, because rains have leached the fertilizer, and the high plant populations increase the demand for nutrients. Flooding in Texas and Arkansas in early and mid-May is reported to have damaged some wheat.

Kansas, the Nation's largest wheat producing State, is forecast to produce a record 460 million bushels, more than

Figure 1
Winter Wheat: Area Planted and Harvested



double last year's drought- and freeze-reduced crop. Harvested area is estimated at 11.8 million acres, more than 95 percent of the planted area, and the highest harvested-to-planted ratio in Kansas since 1974. Yield is forecast at 39 bushels per acre, second highest on record.

Oklahoma is forecast to produce 214 million bushels, up 39 percent. Area harvested is forecast at 83 percent of planted area, the highest in 8 years. Strong feeder cattle prices probably encouraged some farmers to keep cattle on wheat pasture, and market through the cattle market instead of the wheat market. This will keep the harvested-to-planted ratio below 1981 and 1982 levels. Moisture has been favorable to excessive in Oklahoma, and yields are forecast at 34 bushels per acre, up 26 percent from last year but 11 percent below the 1979 record.

Texas experienced more weather problems than the other major Southern Plains producing States. Fall dryness, December's freeze, and favorable feeder cattle prices have contributed to a lower portion of the planted area being harvested for grain than for other States, but still above last year. Harvested area is forecast at 4.4 million acres, up 47 percent, while yields are forecast up 45 percent to 29 bushels per acre, 5 percent above the 1980-89 average.

Colorado is forecast to increase production by more than 50 percent to 88.4 million bushels, as area harvested increases 18 percent and yield jumps 31 percent. Nebraska is forecast to post a similar increase, but with a bit more of the gain coming from better yields.

In the Pacific Northwest the winter wheat crop has suffered from dryness, particularly in Oregon. However, there has not been a repeat of last year's widespread killing freeze, and in Washington, winter wheat harvested area is forecast up a whopping 73 percent, although planted area was only up 10 percent. Spring wheat planting intentions are 0.3 million acres, down from 1.0 million last year, as less wheat is expected to be reseeded. Winter wheat yields in Washington are forecast up almost 20 percent in 1990, pushing production to 142 million bushels.

In the Corn Belt, winter wheat growing conditions have been mostly favorable to date. In April late freezes reportedly caught some early maturing varieties in Illinois, Indiana, and Missouri. Although damage to some individual fields was heavy, most of the Corn Belt is expected to post a fourth straight year of good yields. Despite a forecast small decline in yield, Illinois increased area planted and is expected to produce 119 million bushels, up 13 percent. Increased area and yields are forecast to push Missouri output up 15 percent to 100 million bushels.

In Montana, winter wheat production is forecast up more than 60 percent to 88.4 million bushels, despite slightly lower forecast yields. While there was an 8-percent increase in winter wheat plantings, harvested acres are forecast up 73 percent because of a return to more normal winterkill from the abnormally high levels of 1989/90. Much of the area suffering from winterkill last year was reseeded to spring wheat. Thus with less reseeding expected in 1990, spring wheat planting indications show a 17-percent drop from 1989.

Figure 2
U.S. Wheat Acres

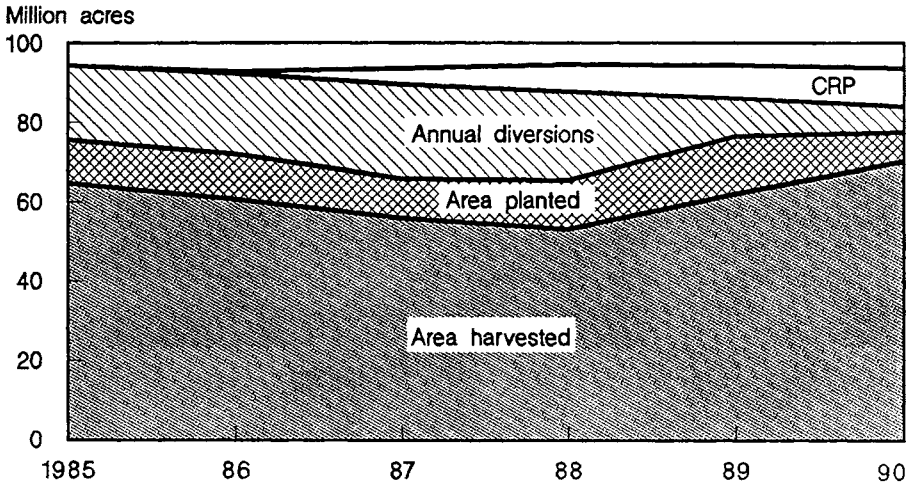
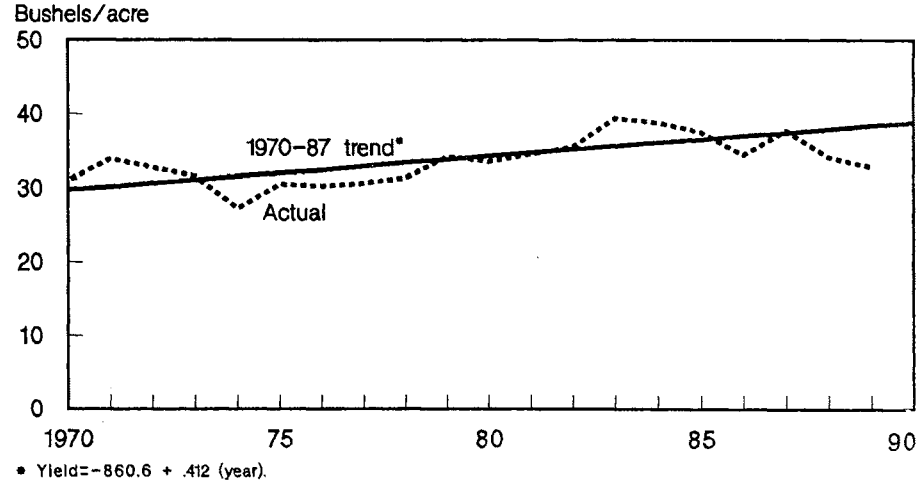


Figure 3
U.S. Wheat Yields



* Yield=-860.6 + .412 (year).

Outlook for 1990/91

Global Wheat Production To Reach a Record; Ending Stocks Begin To Recover

World wheat production in 1990/91 is projected at 568 million tons. While global consumption is projected up almost 3 percent, the projected large 1990/91 U.S. crop, and record foreign production are expected to lead to a 13-percent rise in world ending stocks. Lower prices may lead to expanding world trade in 1990/91, especially for wheat for feeding.

The situation going into 1990/91 is greatly changed from that of a year ago. World wheat production is projected up 6 percent from 1989/90 to a record 568 million tons. For the first time since 1987/88, production is projected to exceed consumption, leading to a modest recovery in global stocks. Since total 1990/91 ending stocks will still be very low from an historical perspective, supplies will depend in large part on this year's production.

Much of the 1989/90 stock drawdown occurred in the United States. In contrast, foreign production and ending stocks are forecast to rise modestly in both importing and exporting countries in 1989/90. In addition, prospects are favorable for the 1990/91 foreign winter wheat crops and the estimates for many of the major spring wheat and Southern Hemisphere producers are also up.

Total foreign production is projected at a record 495 million tons, 3 percent above 1989/90. Foreign consumption is forecast up 2 percent, with some of the increase due to expanded use of wheat for feeding. Foreign stocks are forecast to continue to recover from the lows of the last 3 years in both importing and exporting countries.

Foreign area and yields are forecast to rise 1 and 2 percent respectively. Area increases are expected in several of the major competing exporter countries, as well as the USSR, China, and Eastern Europe.

While the spring wheat crops in the Northern Hemisphere and winter wheat crops in the Southern Hemisphere are only just being planted, Northern Hemisphere winter grains, comprising about one-third of total grain production, are approaching harvest. Weather across Northern Europe, the Soviet Union, China, and India has been generally favorable. The winter in Northern Europe, the Soviet Union, and China has been unusually mild and moisture has been adequate. However, dry weather has limited wheat production prospects in Southern Europe, parts of North Africa, and several areas in the Middle East.

World trade is projected up 4 percent to 101 million tons despite the favorable production outlook for several major importers. The main reason for the projected increase is likely to be the larger imports of wheat for feeding. In the past, when the price of wheat has become competitive with corn, several importers, particularly the Soviet Union, South Korea, and Eastern Europe, have substituted feed wheat for coarse grain imports.

In 1990/91, coarse grain supplies are likely to be relatively tight, keeping pressure on coarse grain prices, especially corn.

Figure 4
Foreign Wheat Yields

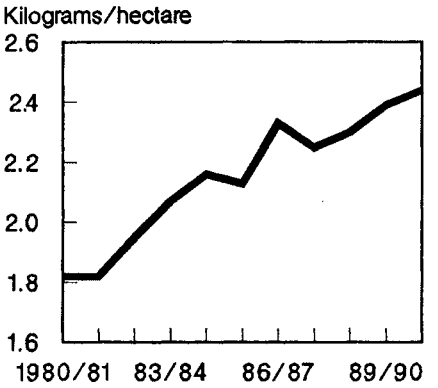


Figure 5
Foreign Wheat Area

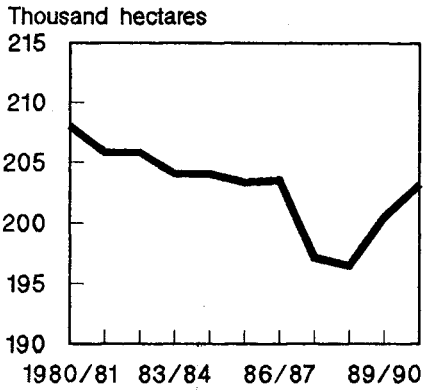


Table 1--World wheat supply and distribution, 1986-1990 1/

Year	Carryin	Production	Total exports	Total Use
		Million metric tons		
1986/87	167.9	530.6	90.7	522.5
1987/88	176.4	501.6	105.0	530.6
1988/89	147.5	500.8	96.9	531.2
1989/90 2/	117.0	535.2	97.4	538.3
1990/91 3/	113.9	568.2	101.0	553.4

1/ Data are based on an aggregate of local marketing years, but exports are on a July-June season. 2/ Estimated. 3/ Forecast.

Figure 6
Foreign Wheat Production and Consumption

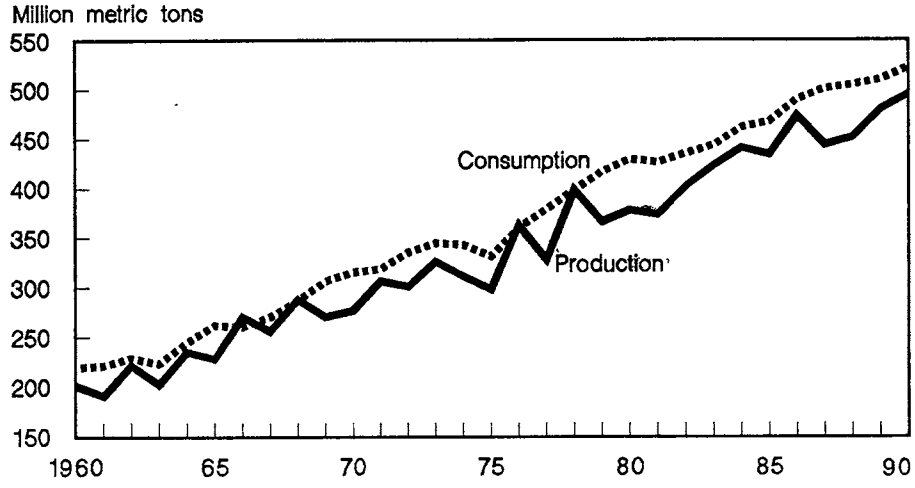


Figure 7
Foreign Wheat Ending Stocks

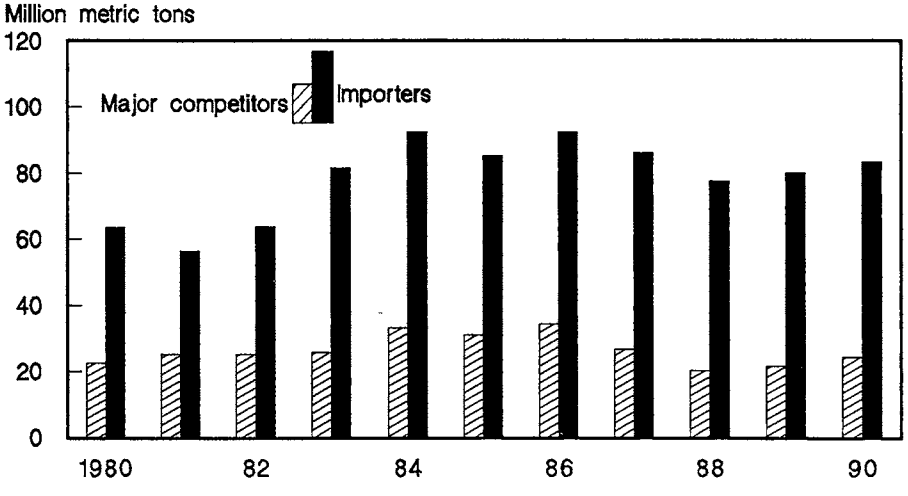
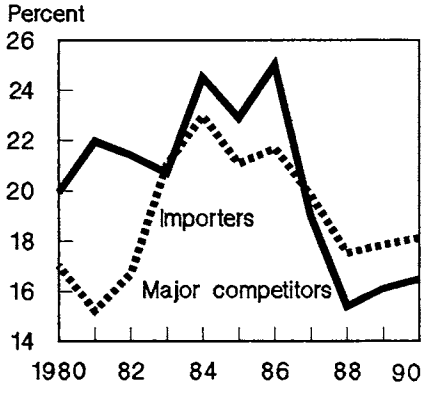


Figure 8
Foreign Wheat Stocks-to-Use Ratios



Outlook for 1990/91

Production Projected Up in the USSR, China, and Eastern Europe in 1990/91, Limiting Growth in World Trade

While many of the major importing countries are projected to increase production, world trade is forecast up 4 percent to 101 million tons. Much of the increase will be caused by larger imports of wheat for feeding, particularly by the Soviet Union. In the USSR and China, government procurements and foreign exchange constraints will influence total imports.

The initial 1990/91 projection for the Soviet Union is for a 215-million-ton total grain crop, second only to the 237 million tons of 1978/79. Soviet wheat production is forecast up 5 percent from 1989/90 to 95 million tons, the highest since 1980/81. Yields are projected at a record high due to the favorable growing season across the winter wheat zones, below average winterkill, and good, early prospects for an improved spring wheat crop.

Despite the larger crop, the Soviet Union is projected to import 15 million tons of wheat, 1 million tons above estimated 1989/90 imports. All of the increase will likely be wheat for feeding. Milling quality wheat imports may not increase. Even with the larger crop, State grain procurements will again be critical. Last year, the convertible ruble program, which was to have paid farmers in rubles convertible to foreign currency, failed to attract more than about 225,000 tons of additional wheat because the program was announced late and the rules of the new measure were unclear. The program is supposed to continue in 1990/91 but whether it will be much more effective is questionable.

Recently, the Soviet Union sharply increased the procurement prices of most grains. However, this program, also, is not expected to increase significantly the percentage of the crop that the government procures. The price increase was announced just before the winter grain crops are harvested and after most spring cropping plans were made. In addition, farmers may perceive little use for additional rubles if there are no additional capital or consumer goods to buy. In fact, farmers could sell less grain and still earn the same amount of rubles as last year.

China is projected to produce a record wheat crop of 93 million tons, 2 percent above 1989/90. Area is projected up because the government has been encouraging farmers to plant more area to grains. Yields are also projected up because of favorable weather during the winter wheat growing season.

China's imports are forecast to match estimated 1989/90 imports of 13.5 million tons, but several factors could cause imports to vary from this initial projection. Demand for wheat continues to grow due to population growth and rising incomes in urban areas. In recent years, it has been politically important for the government to make sure that urban residents have adequate food supplies, including wheat products. Increasing demand could lead to larger imports. However, in 1989/90 China is estimated to have produced a record wheat crop and is forecast to produce another in 1990/91, possibly limiting the need to meet demand with imports.

In addition, foreign exchange constraints could limit imports. China is facing its peak years of debt repayment and its export growth has slowed. The government has already imposed austerity measures throughout the economy and could decide to hold down wheat imports to conserve foreign exchange, even at the risk of reducing per capita consumption in urban areas.

East European production is projected to surpass 1989/90 by 2 percent. Area is projected only slightly higher but favorable weather across the region's northern tier is expected to boost winter wheat yields. As in 1989/90, conditions have been dry in the south, including Romania, Bulgaria, and Yugoslavia, reducing production prospects there. Wheat imports are forecast up from 1989/90 due to prospects of continued large food aid imports by Poland and some increase in imports of wheat for feeding. Exports are projected to decline as more wheat is consumed domestically, particularly for feed.

Table 2--World wheat production: Major exporters and importers

Country	84/85	85/86	86/87	87/88	88/89	89/90F	90/91P
Exporters							
United States	70.6	66.0	56.9	57.4	49.3	55.4	73.3
Major Competitors	136.2	120.6	128.4	118.6	113.2	127.9	133.0
Canada	21.2	24.3	31.4	26.0	16.0	24.4	26.5
EC-12	83.1	71.6	72.0	71.4	74.7	78.6	80.5
Australia	18.7	16.2	16.1	12.4	14.1	14.7	14.5
Argentina	13.2	8.5	8.9	8.8	8.4	10.2	11.5
Importers							
USSR	68.6	78.1	92.3	83.3	84.4	90.5	95.0
E.Europe	42.1	37.1	39.2	39.9	44.7	42.3	43.2
N. Africa	6.3	7.1	7.6	7.6	7.8	8.5	8.4
Algeria	1.6	1.7	1.2	1.2	0.6	0.9	0.8
Morocco	2.0	2.1	3.8	2.4	4.0	3.9	3.5
Tunisia	0.7	1.4	0.5	1.4	0.2	0.4	0.5
Egypt	1.8	1.9	1.9	2.4	2.8	3.2	3.5
Asia	151.0	148.7	158.3	149.1	151.5	166.3	169.1
China	87.8	85.8	90.0	85.8	85.4	91.0	93.0
India	45.5	44.1	47.1	44.3	46.2	54.0	54.0
Pakistan	10.9	11.7	13.9	12.0	12.7	14.4	15.0
Middle East	21.0	23.9	26.6	24.3	28.5	23.1	25.7
Turkey	13.3	2.7	14.0	13.0	15.0	11.5	13.0
Iran	4.5	5.7	7.1	6.0	6.8	6.8	6.8
Iraq	0.5	1.4	1.0	0.7	1.0	0.5	1.0
Syria	1.1	1.7	1.9	1.7	2.1	0.9	1.5
Latin America							
Excl. Argentina	8.1	11.0	12.8	12.5	11.8	12.5	11.7
Brazil	1.9	4.3	5.6	6.1	5.8	5.6	5.1
Subsaharan Africa	3.3	3.3	3.9	4.7	5.4	4.0	4.2
S.Africa	2.2	1.7	2.3	3.1	3.5	2	2.4
Foreign Total	441.3	434.1	473.7	444.2	451.4	479.8	494.9
World Total	511.9	500.1	530.6	501.6	500.8	535.2	568.2

F = forecast, P = projected.

Outlook for 1990/91

North Africa and the Middle East Remain Dry; Economic Changes Produce Uncertainty in Latin America

Some parts of North Africa and the Middle East remain dry and 1990/91 imports are projected to rise. South Asian production remains strong, but the picture in Latin America is more mixed due to uncertainties regarding changing economic policies.

While production in Egypt is forecast up 10 percent, production in the rest of North Africa is down 8 percent due to dry conditions.

North Africa produces a small proportion of its consumption needs. However, imports in 1990/91 are forecast to rise to 14.7 million tons, 5 percent above 1989/90, due in part to the region's projected production decline. Credit availability likely will continue to be a major factor in North African buying. Despite a tightening of credit terms, in 1989/90 Egypt is expected to match its year-earlier imports of 7 million tons by increasing its purchases of wheat without credit. It is likely to face a similar situation in 1990/91.

Middle Eastern imports are forecast down 10 percent, as Turkey, Iraq, and other countries recover from the 1989/90 drought. However, the weather has been mixed, and while much improved from 1989/90, it is still less favorable than 1988/89. Turkey's production is forecast up, but the country likely will remain a net importer. Iraq's production is also projected up, reducing its import prospects. Iran's production and imports are forecast to match 1989/90. Smaller countries, such as Jordan, Israel, and Syria, are projected to harvest larger crops and reduce imports.

In South Asia, production is forecast up slightly, primarily due to increases in Pakistan. India's production is forecast at a record 54 million tons, marginally above 1989/90. After harvesting a record crop in 1989/90, India's government-held food grain stocks have risen. Food grain imports have fallen off in 1989/90 and are expected to decline further in 1990/91.

Pakistan is projected to harvest a record crop in 1990/91 due to favorable weather in the Punjab. However, Pakistan will continue to need imports to meet consumption needs. Bangladesh's food grain crop could match its 1989/90 record (which was mostly rice) and wheat production is forecast up. However, population growth will likely outstrip the production gains and consumption needs will necessitate imports slightly above 1989/90.

East Asian imports are forecast up 12 percent due to a projected 45-percent increase in South Korea's imports, comprised mostly of feed wheat. In the past, South Korea has substituted wheat for feed grains when wheat prices were competitive. Recently, South Korea reportedly purchased 50,000 tons of feed wheat from Australia.

Japan's imports are likely to remain largely unchanged from 1989/90. However, processed wheat product imports, particularly in the form of doughs and mixes, have been increasing.

Led by Brazil and Mexico, Latin American imports are forecast up 13 percent from 1989/90 to 9 million tons. Brazil's production is forecast down 8 percent from 1989/90, which was down 4 percent from 1988/89. New economic policies have created difficulties for Brazilian farmers who are planting the 1990/91 wheat crop. Credit and private sector financing are tight because of Brazil's new economic reform plan. While the government has announced a $700-million credit package, the announcement has come late and its structure for implementation does not appear to be in place.

Price supports have been strengthened with the procurement price for wheat set at $200 per ton for the 1990/91 season. However, this is not likely to increase planting since the government has yet to complete payments for the last year's crop. Imports are likely to rise because of the lower production and to meet consumption needs, which are rising due to the recessionary impact of the new reforms. Wheat-based staples are a relatively low cost substitute for meat and other protein products. However, foreign exchange constraints continue to hamper imports and once again are pushing 1989/90 imports from Argentina into the 1990/91 July/June marketing year.

Continuing dry conditions may reduce Mexico's wheat production. Most of Mexico's wheat is irrigated and reservoirs are down significantly. However, the government recently announced that wheat will receive priority for water allocations. The projected production decline is expected to cause Mexico's wheat imports to double in 1990/91.

Other countries in Latin America present a mixed picture. Austerity measures in Venezuela are expected to lead to continued low imports. Foreign exchange constraints also are limiting imports in Peru and per capita consumption is continuing to decline. Dry conditions and marketing system changes are forecast to lead to a strong increase in Chilean imports.

Sub-Saharan Africa is likely to increase its imports due primarily to a projected increase in South African imports following a poor 1989/90 harvest. Projected imports in the rest of Sub-Saharan Africa remain largely unchanged.

Table 3--World Wheat Trade: Major exporters and importers 1/

Country	84/85	85/86	86/87	87/88	88/89	89/90f	90/91p
Exporters							
United States	38.1	25.0	28.4	43.4	37.6	35.0	34.0
Major competitors	61.7	54.5	56.3	54.4	48.8	54.2	58.7
Canada	19.4	16.8	20.8	23.6	13.5	16.5	19.0
Ec-12	18.5	15.6	16.4	14.8	21.0	21.0	22.0
Australia	15.8	16.0	14.8	12.2	10.8	10.7	11.0
Argentina	8.0	6.1	4.3	3.8	3.5	6.0	6.7
Others	7.2	5.5	6.0	7.2	10.5	8.2	8.3
Total foreign	68.9	60.0	62.3	61.6	59.3	62.4	67.0
Importers							
USSR	28.1	15.7	16.0	21.5	15.5	14.0	15.0
E.Europe	2.6	3.4	3.7	3.3	2.8	2.3	2.7
N. Africa	13.1	12.2	12.8	13.6	14.2	14.0	14.7
Algeria	2.8	2.8	3.4	3.8	4.2	4.3	4.4
Morocco	2.5	2.0	1.5	1.9	1.3	1.0	1.5
Tunisia	0.9	0.6	1.1	0.9	1.1	1.1	1.2
Egypt	6.6	6.3	6.0	6.4	7.0	7.0	7.0
Asia	25.6	23.9	26.6	35.3	37.2	32.9	33.7
China	7.4	6.6	8.5	15.0	15.5	13.5	13.5
India	0.2	0.1	0.0	0.4	1.9	0.2	0.1
Pakistan	1.0	1.5	0.4	0.6	2.4	2.0	1.5
Bangladesh	1.9	1.2	1.5	2.3	2.1	1.9	1.9
Sri Lanka	0.6	0.6	0.6	0.7	0.7	0.8	0.8
Japan	5.6	5.5	5.8	5.7	5.4	5.4	5.4
S.Korea	3.1	3.0	3.9	4.5	2.8	2.2	3.2
Taiwan	0.8	0.7	0.9	0.9	0.9	0.9	0.9
Middle East	11.8	8.7	9.6	11.4	10.1	15.4	13.9
Turkey	1.0	1.0	0.5	0.2	0.3	3.0	2.0
Iran	3.2	2.2	2.5	4.0	3.2	4.5	4.5
Iraq	3.0	1.7	2.8	3.0	2.8	3.4	2.9
Syria	1.3	0.9	0.6	0.9	0.8	1.2	1.2
Latin America excl. Argentina	12.8	9.2	10.3	9.5	8.0	8.0	9.0
Brazil	5.4	2.5	2.8	2.0	0.8	1.7	2.1
Venezuela	1.1	1.0	1.2	1.2	1.0	0.7	0.8
Colombia	0.6	0.6	0.6	0.7	0.7	0.7	0.7
Chile	0.8	0.4	0.2	0.1	0.1	0	0.1
Mexico	0.5	0.1	0.5	0.8	1.2	0.4	0.8
Subsaharan Africa	6.2	5.2	5.0	4.6	4.1	4.3	4.5
S.Africa	0.4	0.1	0.2	0.0	0.0	0.2	0.2
Nigeria	1.8	1.2	1.0	0.2	0.3	0.3	0.4
Sudan	0.6	0.6	0.6	0.6	0.5	0.5	0.5
Ethiopia	0.8	0.9	0.6	0.9	0.7	0.7	0.7
World total	107.0	85.0	90.7	105.0	96.9	97.4	101.0

1/ July/June marketing years. F = forecast P = projected

Outlook for 1990/91

More Competition Expected as Competing Foreign Exporters Expand Area and Yields

The large U.S. crop, increased area, higher yields, and the largest production since 1984/85 in the competing exporting countries mean more competition and lower wheat export prices.

Major competitor production is forecast up 4 percent due to projected increases in area (except in the EC) and yields (except in Australia). Favorable weather across Northern Europe, improved moisture conditions in Canadian spring wheat areas, and good planting conditions in Argentina and parts of Australia are contributing to the rise, despite prospects of lower 1990/91 export prices.

EC production is forecast up 2 percent from 1989/90 to 80.5 million tons, the second highest on record. Adverse weather in the south, rather than changes in EC policies, will keep harvested area below 1989/90. In Spain and Portugal, flooding prevented some wheat planting last fall, and some area went into oilseeds. Dry conditions similar to 1989/90 also reduced planting in southern France, Italy, and Greece and could result in abandonment of some planted acreage.

However, overall yields are projected up 6 percent, most notably in France and the United Kingdom (UK) where many farmers shifted from premium bread quality wheat varieties to higher yielding, lower protein varieties that are more suitable for feed. Mild winter temperatures and adequate moisture during most of the growing season are contributing to the projected higher yields. While the recent dryness affecting the UK and several other EC countries may stress the newly planted spring crops, the winter crops to date do not appear to be affected significantly. However, most of the winter wheat crop is not harvested until June and July and adverse weather could still affect the crop.

Increased production of lower quality wheat will likely have major consequences for both the export and domestic feed markets. Record EC exports of 22 million tons are projected and unlike 1989/90, some of which is likely to be feed wheat. In addition, increased domestic wheat feeding could lead to a reduction in EC coarse grain and/or non-grain feed consumption.

EC wheat imports, especially of durum, likely will continue to be relatively high despite its larger soft wheat crop. EC durum production will likely be down due to reduced output in Italy and Greece. EC durum stocks are low and exports could fall below 1989/90 shipments, which are already much reduced from 1988/89.

Canada is projected to increase production 9 percent from 1989/90 to 26.5 million tons, due to a 3-percent increase in area and a return to average yields. Initial payments for the 1990/91 crop were announced on May 1 at $CAN 135 per ton (No. 1 Canadian western red spring), 15 percent lower than the initial payment for 1989/90 announced in April 1989. That price was later raised to $CAN 165 in January 1990.

Planting conditions appear to be favorable over much of the Canadian spring wheat areas. Unlike the Northern Plains, most of the Western Provinces have received much more precipitation since March than most of the U.S. Northern Plains. According to the Statistics Canada March 1990 seeding intentions report, hard red spring area will expand 7 percent while durum area will be down 15 percent from the 1989/90 record. The shift from durum to hard red spring wheat is likely because durum's initial payments for 1989/90 and 1990/91 are below those of spring wheat and the returns for durum during 1989/90 were also lower. Ending stocks for 1990/91 are forecast up 23 percent to 7.8 million tons.

Australia's area is also forecast up in 1990/91. Planting has just begun in the Southern Hemisphere but several indicators point to the higher area. Sheep production competes with wheat for land in Australia. Recently, wool prices have dropped sharply and Australian wool stocks have increased. In contrast, wheat prices in 1989/90 were relatively strong. Even though world wheat prices may fall in 1990/91, the relative change in prices between wheat and wool is making wheat more attractive to some producers. In addition, Australian producers will likely be cushioned from the decline in prices because of the devaluation of the Australian dollar. This devaluation makes Australian wheat (and wool) more competitive in the world market while maintaining net returns to farmers.

Moisture conditions are good in western Australia, but excessive rain has delayed planting in some parts of the east. Assuming yields return to average (after reaching the second highest in 1989/90), production is projected down slightly from 1989/90 despite increased area. Exports are forecast up 3 percent to 11 million tons as shipments of the 1989/90 crop slide over into the 1990/91 (July/June) marketing year.

In Argentina, uncertainty about projected area is much more acute. Inflation and export taxes will have a major impact on expected returns and area planted. While the macroeconomic situation appears to be stabilizing somewhat, Argentine farmers faced inflation

rates of 40 percent in April. However, this represents a decline from the hyper-inflation in the first quarter of the year. Inflation has reduced Argentine farmers' access to credit and inputs. However, many farmers, especially those who double crop soybeans, probably need the income that wheat provides and may plant as much or more wheat than a year ago.

Hoping to encourage larger plantings, Argentine President Menem reduced export taxes on wheat from 23.5 percent to 13.5 percent on May 18th. However, when he promised to reduce taxes last year, the taxes fluctuated at harvest. Prior to the May 18th announcement, the president had asked wheat farmers to plant 8 million hectares to boost exportable supplies and earn foreign exchange. Farmers insisted that they would not increase area unless the export taxes that prevented them from earning the full value of the relatively high 1989/90 prices were cut or removed. It is unclear whether the reduction in the tax rate will be enough to satisfy farmers' demands.

However, like 1989/90, planting conditions are excellent. So, while economic uncertainties and climatic conditions are similar to 1989/90, area is forecast up 10 percent. Yields are also projected to be average, resulting in an initial production estimate of 11.5 million tons, 13 percent above 1989/90. Exports in 1990/91 are also projected higher at 6.7 million tons as a result of the increased wheat supply.

Figure 9
Major Competitors' Production

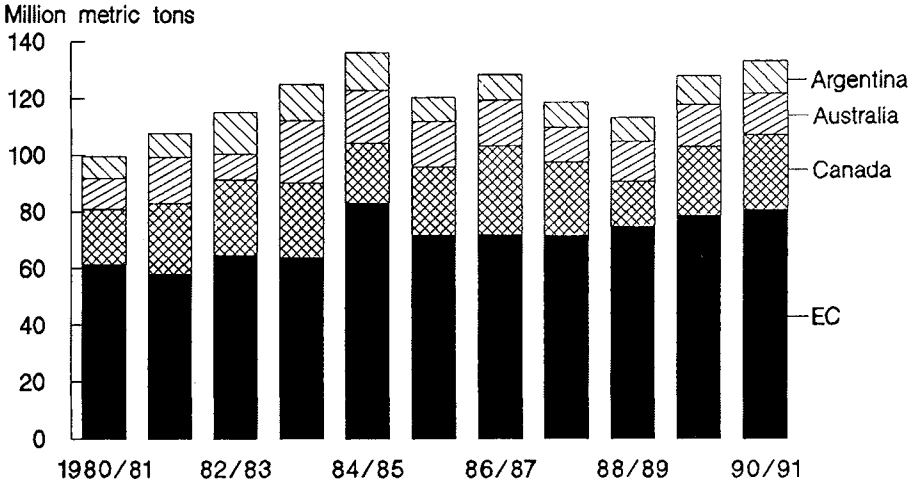
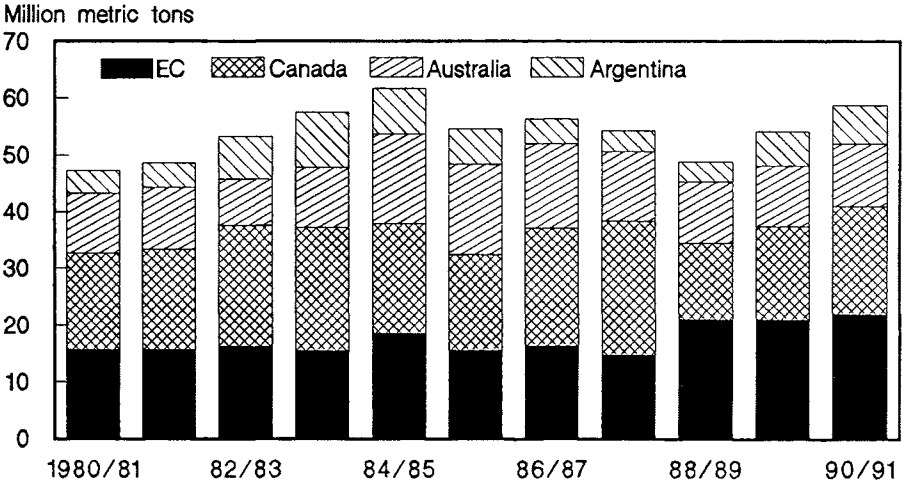


Figure 10
Major Competitors' Exports



Outlook for 1990/91

Increased Competition and Limited Growth in Trade To Keep U.S. Exports Down

Despite the larger U.S. crop, U.S. exports in 1990/91 are projected 3 percent below 1989/90 as large competitor crops lead to increased competition and trade in bread quality wheat remains virtually unchanged.

U.S. exports in 1990/91 are projected at 34 million tons in the July/June year (1.25 billion bushels on a U.S. June/May marketing year) and world market share could fall to 34 percent. Several factors account for the decline. Major competitors, especially those that do not subsidize their exports, will have more exportable supplies because of larger crops.

In addition, the projected increase in world trade is based largely on increased imports of wheat for feeding. The United States generally exports milling quality wheat. In the past, competitors, especially the EC, have been the major suppliers of wheat for feeding and are likely to benefit from increased wheat for feeding trade in 1990/91. Imports of milling quality wheat are projected to be largely unchanged from 1989/90 due to projected large crops in a number of importing countries.

Competition for all markets, particularly with the EC, will likely lead to lower export prices and more competitive use of export programs, such as the Export Enhancement Program (EEP). Rising bonuses and falling prices of new-crop U.S. wheat have brought prices to purchasers down sharply. EEP bonuses for new-crop wheat have already begun to rise in response to competition with the EC. Some new-crop wheat was sold to China earlier this year with a bonus of less than $5 per ton and some was sold to Tunisia on May 16 with a $20.26-per-ton bonus.

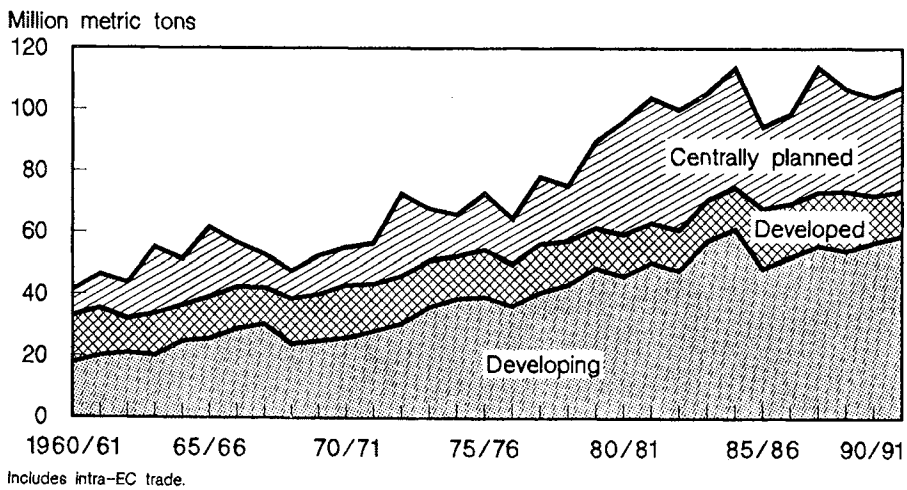
The value of EEP bonuses for wheat and flour sales announced between October 1, 1989, and May 21, 1990, totaled $166 million. The administration has proposed $900 million for EEP (including but not only for wheat and flour) in fiscal 1991. However, the EC appears to be allocating its budget resources towards higher restitutions, too. The EC awarded export licenses for soft wheat with a May (through the 18th) average of $99-per-ton restitution, compared with an average of $79 for the first 4 months of 1990.

U.S. guaranteed credit programs will continue to play an important role in 1990/91, particularly in the highly contested markets in North Africa, the Middle East, and in less developed countries constrained by the lack of foreign exchange. Administration proposals for fiscal 1991 include not less than $5 billion for total GSM-102 and not more than $1 billion for GSM-103.

The tight U.S. supply situation in fiscal 1990 led to the drawdown of the Food Security Reserve. While there have been no proposals for individual commodities yet, proposals for fiscal 1991 include a total P.L. 480 program level slightly below fiscal 1990. However, most commodity prices will be lower.

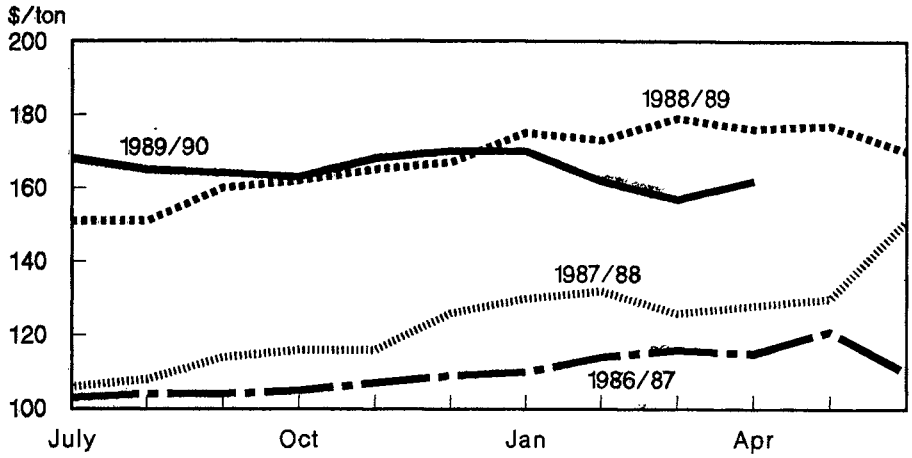
The United States reached an agreement in principal on a new grain LTA (long term agreement) with the Soviet Union. The terms of the agreement in principal call for the USSR to buy annually at least 4 million tons of wheat, 4 million tons of coarse grains, and 2 million tons of either wheat, coarse grains, or soybean meal. In any one year, the USSR can substitute up to 750,000 tons of one grain for another, but at no time during the agreement can the total of wheat or coarse grains purchased in place of the other exceed 1.5 million tons.

Figure 11
World Wheat Imports



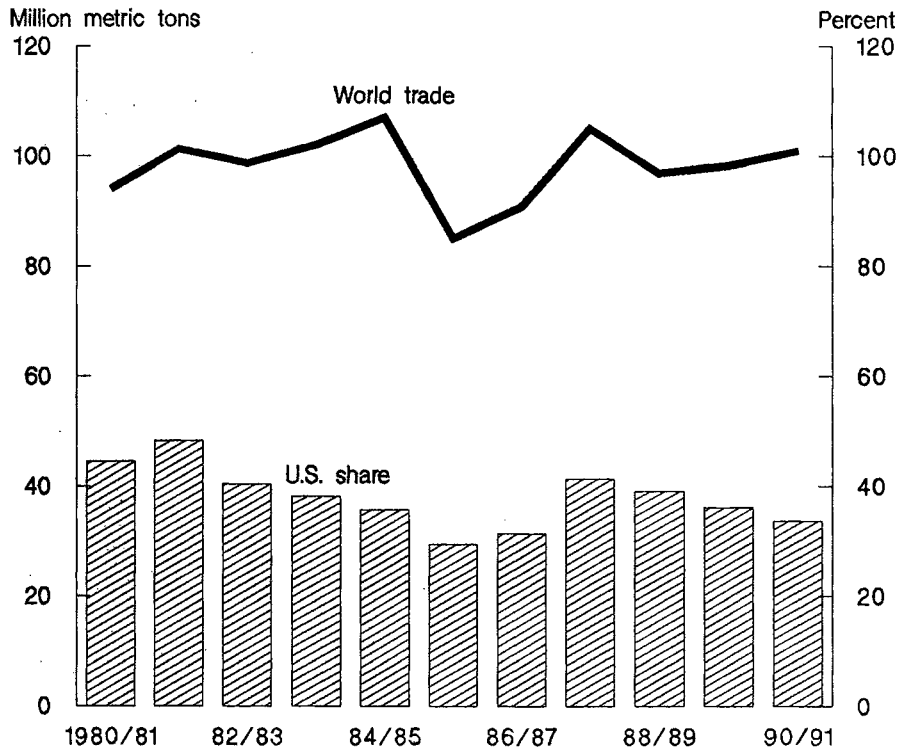
Includes intra-EC trade.

Figure 12
U.S. Wheat Export Prices



No. 2 HRW f.o.b. Gulf.

Figure 13
World Wheat Trade and U.S. Share



Includes wheat flour, excludes intra-EC trade.

Outlook for 1990/91

U.S. Supplies Increase, But Use Is Forecast Up Only Slightly, Leading to Lower Prices

Sharply increased 1990 production is expected to boost 1990/91 supplies, despite reduced beginning stocks. Slightly declining exports and modest increases in domestic use are forecast to leave total use up 3 percent. Stocks on June 1, 1991, are forecast above those of the previous 2 years. Wheat prices received by farmers during 1990/91 are forecast down from the last 2 years.

U.S. Wheat Supplies Forecast Up 14 Percent

Larger 1990 wheat production is expected to more than offset the lowest carryin stocks since 1975/76. Beginning stocks are forecast at 442 million bushels. Wheat imports are expected to remain steady and small, at 21 million bushels.

Total supplies in 1990/91 are forecast at 3,155 million bushels, up almost 400 million from 1989/90, but only 59 million above 1988/89, and 770 million below the 1981-87 average. Although supplies are increasing, they remain well below the burdensome levels prevalent during most of the 1980s.

Beginning stocks are forecast down 37 percent, but a smaller portion is tied up in government programs, so more are available to the market. The Farmer-Owned Reserve (FOR) on June 1, 1990, is forecast at 145 million bushels. All current FOR loans will mature in 1990/91. Extensions have not been granted, and no new entry into the FOR is expected in 1990/91, so there will likely be no wheat in the FOR at the end of 1990/91.

The Commodity Credit Corporation (CCC), government-owned, inventory is forecast at only 115 million bushels on June 1, 1990, as food aid shipments continue to deplete the Food Security Reserve. Under current repayment provisions, most FOR wheat is expected to be forfeited to the CCC as loans mature. Few if any 9-month loans will be forfeited to the government because loan rates are well below market prices. Only 25 million bushels are expected to start 1990/91 in the 9-month loan program. Except for last year, this is the lowest since 1976/77.

Unencumbered beginning stocks (those not under any government program) are forecast at 157 million bushels, down 24 percent from last year, but above 1986/87 and 1987/88. Since the market is expecting increased supplies in 1990/91, 157 million bushels should be enough "pipeline" stocks to maintain use as the harvest begins.

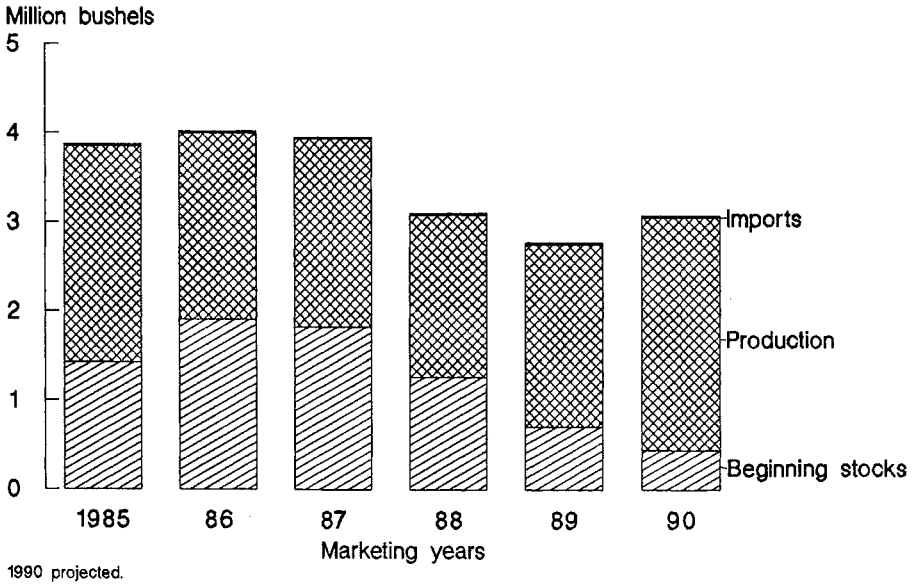
Total Use Forecast Up Slightly

Domestic use is forecast up 9 percent in 1990/91, to the third largest on record. Domestic use is forecast to account for 48 percent of total use, up from 45 percent last year. Food use is expected to continue to expand at a modest 2 percent, while the feed and residual category expands 45 percent.

Food use is forecast at 765 million bushels, expanding by 15 million bushels for the third straight year. A bit less than half the increase can be attributed to population growth, with the rest due to diets shifting to more carbohydrates and fiber, but less fats, and to the small effect of lower prices. The milling rate may increase in 1990/91 as the 1990 wheat crop will likely have more normal quality characteristics than last year's weather-damaged crop. The increased flour extraction rate may limit the increase in mill grind.

Feed and residual use is forecast up 85 million bushels to 275 million. This would be similar to years like 1985/86 and 1987/88, when there was some

Figure 14
U.S. Wheat Supply



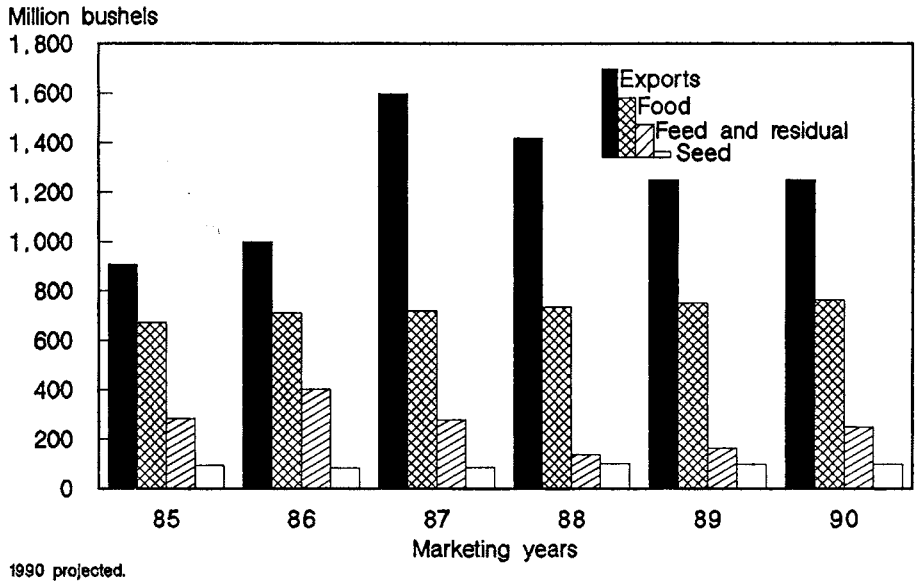
1990 projected.

incentive to feed low quality wheat or to feed wheat in locations where other feed ingredients were relatively expensive. However, incentives to feed wheat are likely to be less than in 1984/85 and 1986/87, when feed and residual use exceeded 400 million bushels. Incentives for wheat feeding will depend on the relative price of wheat and coarse grains.

Several things could change those prices. Given the reduced stocks, a summer drought in the Corn Belt could drive up coarse grain prices sharply, encouraging more wheat feeding. The quality of the wheat crop will also influence feeding. On the other hand, severe production problems in the Northern Plains spring wheat area could drive up wheat prices, making wheat feeding less attractive.

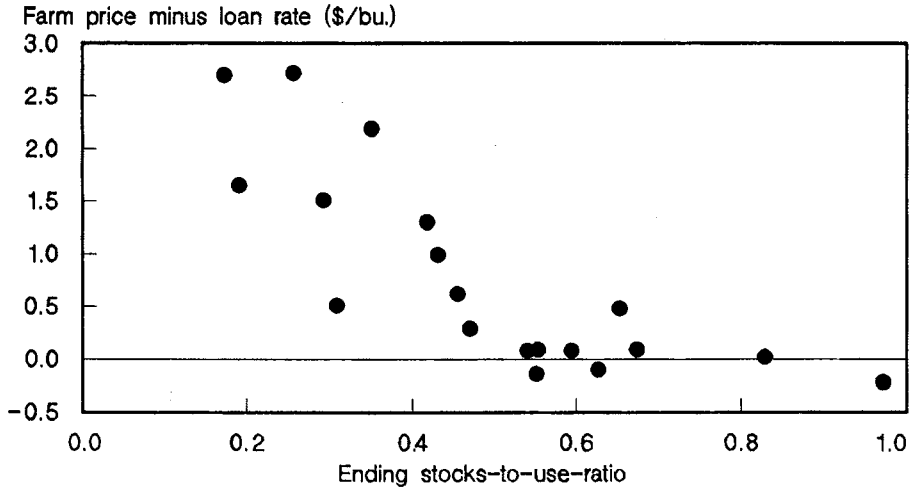
The feed and residual category includes all other uses of wheat (except food and seed use) and includes any errors in the estimates of other portions of the supply and demand. Because of these other factors, the change in feed and residual use is unlikely to perfectly reflect the changing economics of wheat feeding.

Figure 15
U.S. Wheat Use



1990 projected.

Figure 16
Farm Price Minus Loan Rate Vs. Ending Stocks-to-Use Ratio



Ending Stocks Are Forecast Up, Prices Are Projected To Decline

With domestic use projected to increase modestly over a year ago and with production forecast up over 30 percent in 1990/91, stocks are projected to rebound to 765 million bushels by the end of the marketing year. While ending stocks would be higher than during the last 2 years, they would remain below the 902-1,905 million bushels during 1975/76-1987/88.

Ending stocks of 765 million bushels imply a stocks-to-use ratio of 32 percent for 1990/91, well above 1989/90's 19 percent. Thus 1990/91 wheat prices received by farmers are forecast to average $2.90 to $3.30 per bushel, downfrom $3.71 and $3.72 the last 2 years. Corn prices may support wheat if wheat prices fall to the lower end of the forecast range. As low quality wheat moves into the feed market during the early months of the marketing year, the increased demand for wheat could limit price declines.

Major Policy Issues Seeking Resolution in 1990/91

The 1990 farm legislation is being debated, and some major issues can be highlighted. Moreover, certain issues have become the focus of debate in the Uruguay Round of trade negotiations. However, the wheat market's swing from tight supplies to more ample supplies and lower prices has some basic policy implications.

GATT Results Could Have a Major Say in Agricultural Policy

Agreements arrived at through the current negotiations taking place under the General Agreement on Tariffs and Trade (GATT) could result in some provisions that will require a change in farm legislation. This makes GATT negotiations very important to U.S. agricultural policy.

The debate within the GATT places the United States and the EC at opposite poles on some issues, especially export subsidies. The EC seeks what it calls "rebalancing." This would allow a country or the EC to treat different products more uniformly, lowering trade barriers on some items while increasing barriers on others, moving towards a more uniform treatment of all commodities. Then the overall level of trade barriers and export subsidies would be reduced. For example, the EC wishes to increase trade barriers on some items that now enter tariff free, such as corn gluten feeds. Import barriers to grains and other products would be reduced.

The United States wants to negotiate the reduction and gradual elimination of trade barriers and export subsidies. The United States considers the EC's desire to increase some trade barriers to be counter to GATT goals. The basic EC and U.S. positions on subsidies are so different, it is hard to predict what resolution will be forthcoming.

Farm Bill Debates Flexibility, FOR, and Other Changes

Many different proposals have been presented for the 1990 farm bill, many of which would affect the economics of wheat production. It is unclear what final legislation will include, how budgetary discipline will be imposed, or when legislation will be passed. However, certain themes of the debate are worth highlighting.

Some form of increased planting flexibility is common to many proposals. Current programs restrict producers' flexibility to change rotations or shift to other crops with more attractive prices. Planting other crops may cause them to lose program benefits as well as base acres. This makes U.S. acreage planted less responsive to market prices. The administration proposal would allow program participants more planting flexibility and would make U.S. agriculture more responsive to market prices.

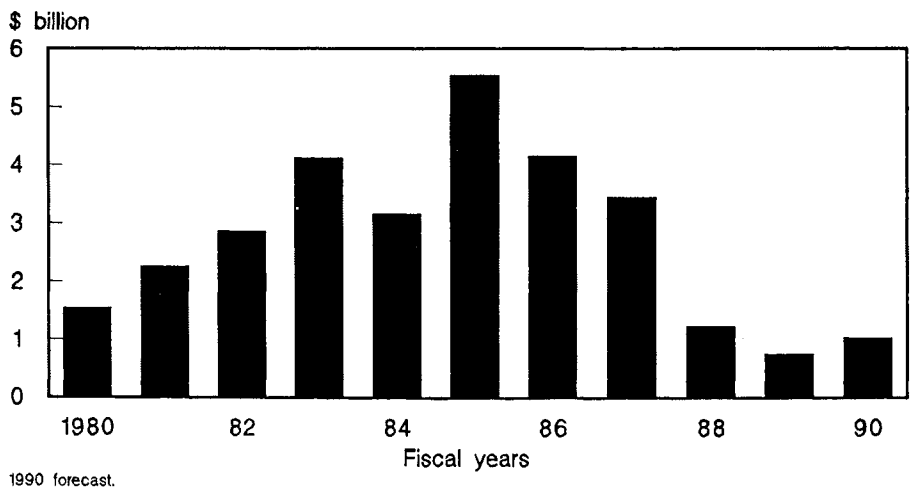
Other issues being debated of particular interest to wheat include: what sort of FOR is appropriate, target price and loan rate levels, crop insurance or disaster relief measures, EEP funding and commodity coverage, the size of the CRP, and what stock levels or stocks-to-use ratios should trigger ARP changes.

1991 Wheat Program Announcement Awaits New Farm Legislation

Program announcements for the 1991 wheat crop are not likely to be made until passage of new farm legislation. If provisions of the 1985 Act were still in effect, USDA would have had to announce any 1991 ARP by June 1, 1990. Forecast beginning stocks of 765 million bushels would have required an ARP between 0 and 20 percent.

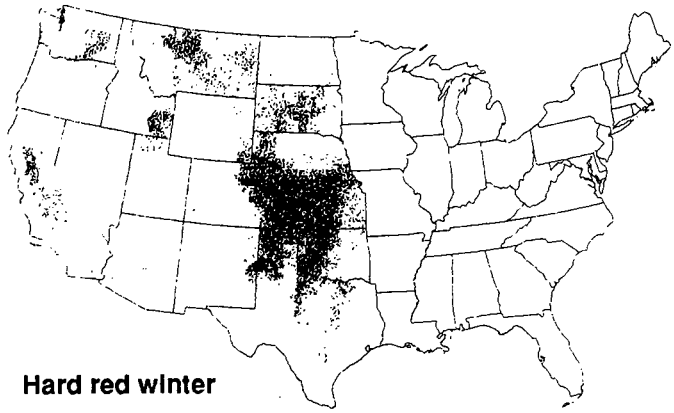
Program authority under the 1985 Act expires with the 1990 crop, however, and reverts to the permanent authority of the 1949 Agricultural Act, as amended. The 1949 Act requires a determination on acreage allotments and marketing quotas, but was suspended for the 1991 crop by Public Law 101-270. New legislation will likely bring changes in program authority and these changes will need to be incorporated into the 1991 wheat program. It is not known when the farm bill will be passed.

Figure 17
Wheat and Wheat Products: Net Budgetary Expenditures

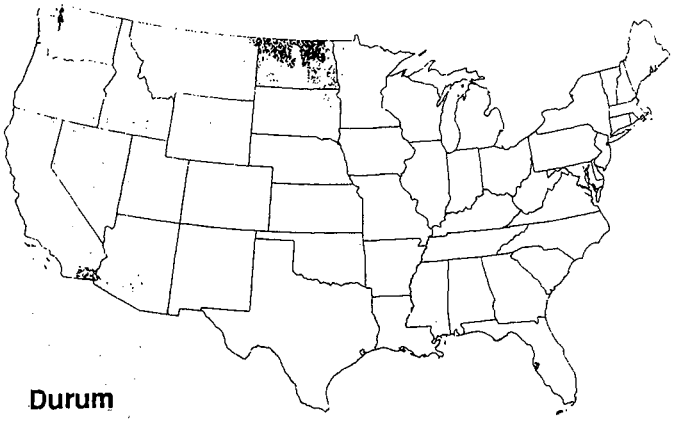


1990 forecast.

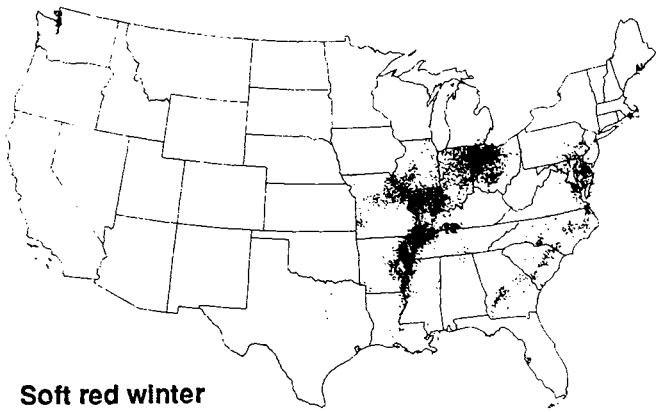
Distribution of the five U.S. market classes of wheat



Hard red winter

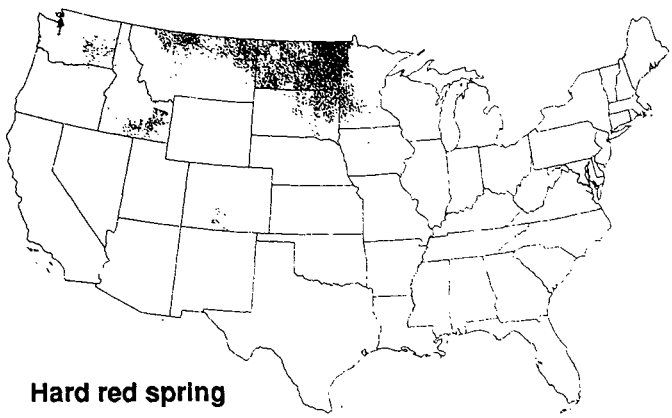


Durum



Soft red winter

White



Hard red spring

1 Dot = 5,000 acres.
Source (9).

1989/90 Situation

Prices Decline for 1989/90 Exports as Competition Increases

Import demand for old-crop 1989/90 wheat has slowed dramatically as foreign buyers wait for the new-crop harvest.

Global wheat production is estimated to have reached a record 535 million tons in 1989/90. Consumption exceeded production, leading to a stock drawdown for the third consecutive year. However, most of the stock reduction took place in the United States. Ending stocks in foreign countries are forecast to increase, both in the major importing and exporting countries. While some recovery is expected, stocks remain very low. Because carryin reserves are low, 1990/91 supplies available for consumption will hinge largely on 1990/91 production.

World trade in 1989/90 is forecast at 97.4 million tons, less than 1 percent above 1988/89. Imports by China and the Soviet Union are expected to decline 2 million and 1.5 million tons respectively, from 1988/89. Increased production and higher prices account for much of the decline.

The drop in Soviet and Chinese imports was more than offset by a sharp increase in Middle Eastern imports. Drought slashed production across the region. Turkey's production fell 23 percent and Turkey shifted from being a net exporter to a net importer in 1989/90. Sharp increases in imports are also likely for Iraq, Iran, Syria, and Jordan.

South Asia also remained an important market in 1989/90. Pakistan is expected to import 2 million tons, but a record wheat and near-record rice crop sharply reduced India's food grain imports.

East Asian imports are also forecast down due to a decline in South Korea's feed wheat imports. Until recently, wheat prices remained well above the price of corn, eliminating its competitive position in the feed grain export market.

Latin American imports are forecast up. Brazil's imports increased because of reduced 1989/90 production and delayed 1988/89 shipments from Argentina that pushed more into the 1989/90 July/June marketing year.

East European imports are estimated to have fallen 19 percent from 1988/89. In 1989/90, production contracted 5 percent and consumption also increased, leading to an 18-percent decline in forecast exports. Poland received the bulk of the region's wheat imports in the form of food aid from the West, particularly the EC.

Competitor production expanded 13 percent from 1988/89. Since world trade is forecast to increase only marginally, competition for the major markets increased despite continuing low stocks and relatively high prices until early in calendar 1990. Canada and Argentina rebounded from the 1988/89 drought. Argentina was able to quickly sell its crop and exports are forecast at 6 million tons. While Canada's exports lagged, particularly in the first half of the marketing year, they picked up sharply and are forecast 3 million tons above 1988/89. However, total 1989/90 Canadian exports are forecast at only 16.5 million tons, well below the 23-million-ton record the year before the 1988 drought.

Australia harvested a surprisingly large crop of 14.7 million tons in 1989/90 despite adverse weather during the growing season. Australia's exports will likely be down slightly in 1989/90 to 10.7 million tons as some of 1989/90 crop will likely be marketed in the 1990/91 (July/June) marketing year.

The EC also expanded production in 1989/90. Area expanded as farmers shifted from oilseeds into wheat and favorable weather boosted yields. In the UK, quality was particularly high, leading to competition between the UK and France for bread quality export markets. Early in the marketing year, UK wheat was priced well below that of France, leaving France with the prospect of increased ending stocks. Since then, EC restitutions have been climbing steadily, with France's wheat benefiting the most from the strong marketing efforts. Total EC exports are forecast to match the 1988/89 record of 21 million tons.

Prospects of an abundant 1990/91 winter wheat harvest in the United States, Northern Europe, the USSR, and China contributed to the sharp price decline in recent months. Competition for sales of old-crop wheat is becoming particularly acute as many importers await the harvest of the 1990/91 crop and even lower prices.

U.S. exports in 1989/90 are forecast down 7 percent to 35 million tons (1.275 billion bushels for the June/May marketing year). The U.S. world market share is forecast to fall from 39 percent in 1988/89 to 36 percent in 1989/90. Tight supplies, increased competition, higher production in major importing countries, and relatively high prices account for much of the decline.

According to the Export Sales report, 1989/90 (June/May) outstanding sales and accumulated exports as of May 10, 1990, lag 1988/89 by 15 percent. While they have increased somewhat to the EC and the Middle East, there is some decline in the other regions. Most notable are the drops of 2.6 million and 2

million tons in outstanding sales and accumulated exports to China and India, respectively.

The sales and export pace has slowed in recent months as importers await the new crop. However, EEP activity has picked up in recent months. New allocations of 2 million tons of wheat for China under the EEP were announced on May 2, 1990, and a 350,000-ton wheat initiative was announced for Jordan. EEP bonuses for old-crop wheat have risen from an average of $16.40 per ton in December 1989, to a high of $34.11 per ton for the April 11 sale of old-crop wheat to the Soviet Union.

Guaranteed credit has been particularly important for keeping U.S. wheat competitive. The largest allocations of GSM-102 credits for wheat in fiscal 1990 have been to Algeria, Egypt, and South Korea. Total GSM-102 allocations for wheat as of May 4 have reached $984 million, compared with $1.1 billion this time a year ago. Approvals in fiscal 1990 reached $984 million as of May 4. GSM-103 allocations for intermediate term (3-10 years) credit reached $200 million as of May 4, 1990, compared with $190 million a year ago. Credit Guarantee approvals under GSM-103 as of May 4 reached $110 million. The largest recipients of GSM-103 allocations so far have been Morocco and Algeria.

U.S. P.L. 480 wheat and flour allocations under Titles I/III about equal 1988/89. As of May 1990, P.L. 480 wheat and flour allocations under Titles I/III reached almost 2.3 million tons (grain equivalent), about the same as a year earlier. The major recipients to date in fiscal 1990 have been Egypt, Bangladesh, and Poland.

1989/90 Closing with Tight Stocks and Declining Prices

Stocks reports, export data, and mill grind are confirming that the USDA forecast for June 1, 1990, stocks (442 million bushels) is likely to be close to the mark. Despite the tight stocks, prices have dropped as 1990 production prospects have improved.

Quarterly Stocks Reports Confirm Use Forecasts

The March 1, 1990, Grain Stocks report pegged wheat at 944 million bushels, the lowest third-quarter carryin stocks since 1975. Combining the stocks report data with export and food use data, it appears that there was a significant positive residual and feed disappearance of 37 million bushels. However, a comparison of January export data indicates that the Census exports (used in all official government data) were significantly lower than reported by Export Sales and Grain Inspections.

The Census sometimes has a lag in reported exports, so if December-February exports were under-reported, those exports may show up in the Census export data for March-May. Thus, the marketing year feed and residual category appears likely to be near USDA's early season forecast, and much higher than many market analysts forecast based on the economics of wheat feeding.

Monthly data confirm a modest increase in domestic food use. Food use estimates are based on mill grind, and adjusted for trade in flour and selected products, with an allowance for non-flour food use. In 1989/90 wheat food use has increased more rapidly than flour consumption, as the average milling rate has dropped by more than a percentage point. The reduced extraction rate is probably caused by lower quality wheat associated with the drought- and freeze-damaged crops of the last 2 years.

Figure 18
Beginning Stocks and ARPs

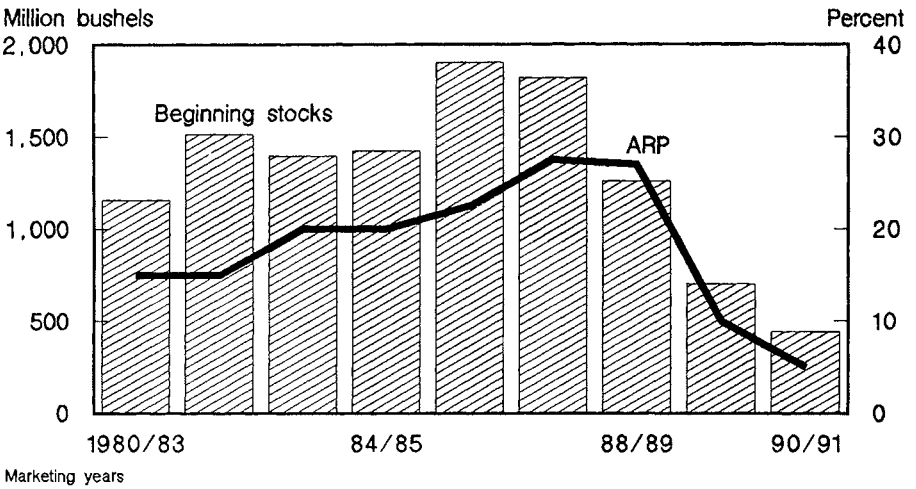
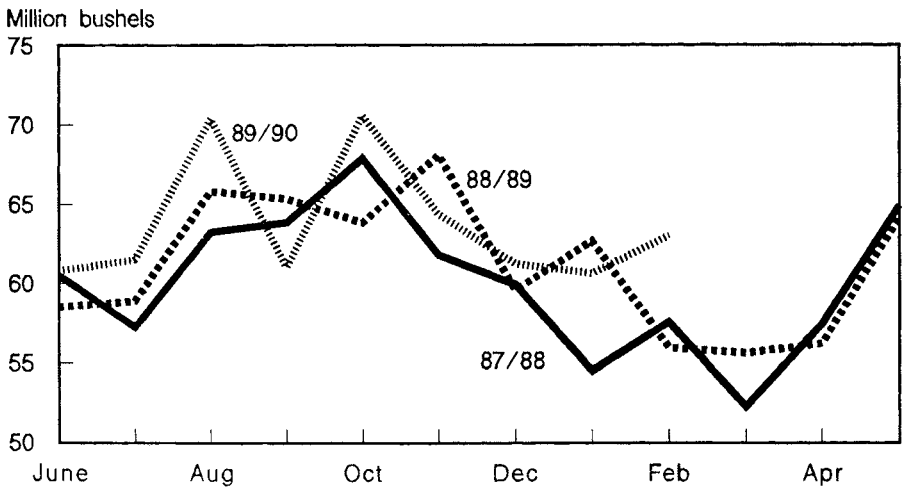


Figure 19
Wheat Food Use



Wheat Prices Decline as Market Takes on a Strong Inverse

Between December 1989 and March 1990, the monthly average Kansas City cash wheat price fell 35 cents per bushel. Futures prices were maintained above cash prices.

An "inverse" exists in a market when the cash price is higher than the nearby futures and the nearby futures are higher than the deferred futures. This is the opposite of a "carry." A carry exists if the deferred futures are enough greater than the cash market and nearby futures to pay carrying costs (storage and interest).

When there is a carry in the wheat market, there is a commercial incentive to store wheat because it will be worth more in the future. When there is an inverse, as has been the case in the wheat market, market participants have an incentive not to store wheat. Moreover, when there is an inverse in the market, wheat buyers have an incentive to put off as many purchases as possible, waiting for less expense wheat soon to come. This effect on buyers can function to ration short current supplies across existing demand, while deferring as much demand as possible into the more abundantly supplied future.

An inverse is common in many agricultural markets as harvest approaches. However, in January, February, and March, as 1990 wheat production prospects improved and stocks were very low, the wheat market showed an unusually large inverse, dampening current demand while the overall price level dropped.

Figure 20
A Carry or Inverse in the Futures Market

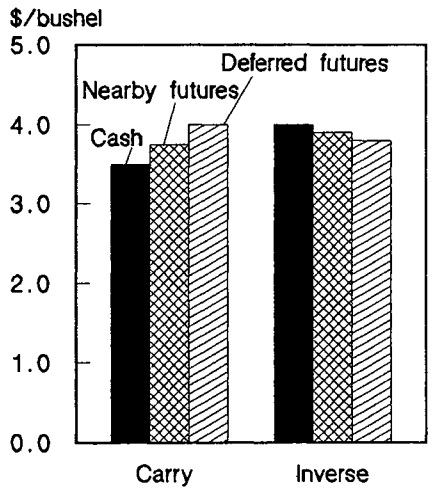
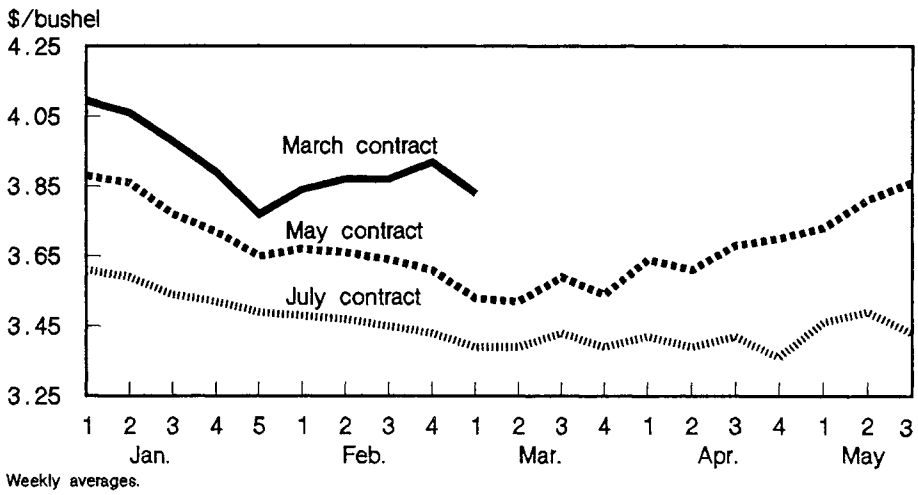
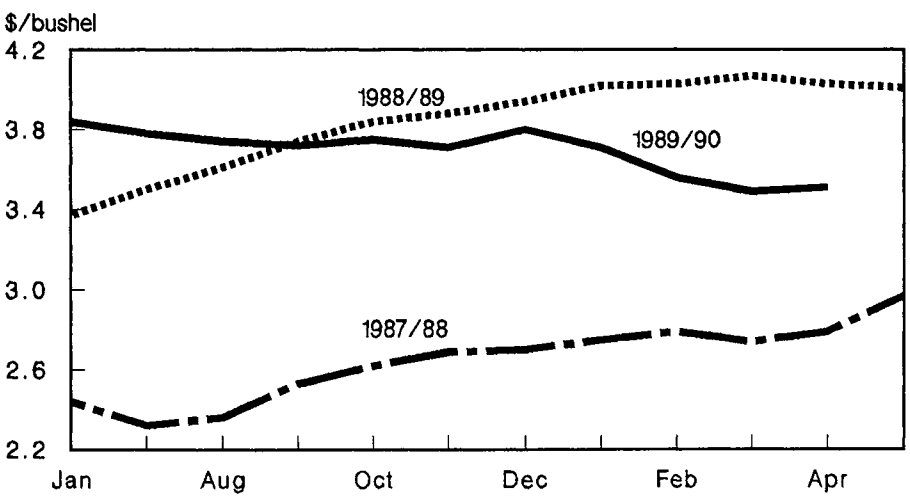


Figure 21
1990 Chicago Wheat Futures



Weekly averages.

Figure 22
Season Average Price Received by Farmers



Wheat by Class

HRW Production Forecast Up 70 Percent in 1990

The price relationships and competition across classes of wheat may change dramatically in 1990/91. HRW supplies may be much greater relative to HRS. The larger U.S. white wheat crop will have to compete with soft red winter for export markets such as Egypt that take both classes of wheat. Durum price premiums may reappear.

The price relationships and competition across classes of wheat may change dramatically in 1990/91. HRW supplies may be much greater relative to HRS. SRW production remains strong, and with white wheat production, soft wheat production could be a record. Larger crops and reduced imports are expected in South Asia. This will mean that the larger U.S. white wheat crop will have to compete with soft red winter for export markets such as Egypt that take both classes of wheat. Thus, there will be intense competition between the various classes of wheat for some export markets. Durum price premiums may reappear as demand may improve, foreign competition will likely be reduced, and area planting intentions are down.

The by-class estimates of area planted, area harvested, and yields are ERS estimates based on State data from NASS and using the by-class percentages for each State as published by NASS.

HRW Forecast at 45 Percent of U.S. Wheat Supplies in 1990/91

HRW production is forecast at 1,206 million bushels, up 70 percent from last year's weather-damaged crop, and the fourth largest on record. Area planted was 38.4 million acres, up slightly; but area harvested is forecast to increase 28 percent, as winterkill was limited and some farmers took advantage of modified contract provisions that allow harvest of between 95 and 105 percent of wheat base acres. More plentiful rains may result in lower average protein content, which in turn may be reflected in premiums for higher protein, something uncommon over the last year. However, much will depend on the size and quality of the HRS crop.

Table 4--HRW supply and demand

Item	1988/89	1989/90F	1990/91F
Area	Million acres		
Planted	34.4	37.5	38.4
Harvested	26.8	26.1	33.5
Yield,bu./acre	32.9	27.2	36.0
Supply	Million bu.		
Production	882	711	1,206
Begin stocks	567	302	197
Tot. supply	1,449	1,014	1,403
Use			
Food	330		
Seed	44		
Residual	135		
Tot. domestic	507	425	
Exports	639	390	
Total use	1,146	815	
Ending stocks	302	199	

F=forecast.

During 1989/90, the reduced supplies of HRW have limited its use. Domestic use slumped to 425 million bushels, the lowest since 1982/83. Estimated seed use was unchanged, while food use is forecast down less than 10 percent. On the other hand, in 1989/90, feed and residual use is forecast at just above half of 1988/89. Exports are forecast down almost 40 percent, a dramatic decline since last year's HRW exports were also down 30 percent. Exports of 390 million bushels would be the lowest since 1972/73.

Stocks on June 1, 1990, are forecast at 199 million bushels, the lowest since 1973/74. However, at 45 percent, HRW is expected to make up a normal portion of total wheat stocks. This means that HRW use adjusted to tight supplies in 1989/90.

HRS Planting Intentions Show Little Change

The Prospective Plantings report indicated that wheat farmers in HRS States were planning to sow 16.4 million acres of HRS, assuming a return to a normal percentage of HRS in Washington and Montana, after last year's widespread planting of spring wheat on winterkilled winter wheat area. If a normal portion of the planted area is harvested, and if yields are average, HRS production in 1990 would increase modestly. However, seeding is in progress, and a wide range of production possibilities exist. Timely rains could boost yields well above average, but limited sub-soil moisture leaves the HRS crop susceptible to prolonged hot, dry weather.

Table 5--HRS supply and demand

Item	1988/89	1989/90F	1990/91F
Area	Million acres		
Planted	13.0	16.5	16.4
Harvested	10.1	15.9	NA
Yield,bu./acre	17.9	27.3	NA
Supply	Million bu.		
Production	181	433	
Begin stocks	402	219	126
Imports	7	6	
Tot. supply	590	659	
Use			
Food	165		
Seed	23		
Residual	-12		
Tot. domestic	176	243	
Exports	195	290	
Total use	371	533	
Ending stocks	219	126	

F=forecast.

In 1989/90, HRS use is forecast up 44 percent to a record 533 million bushels, as tight HRW supplies have shifted demand to HRS. HRS exports are forecast at a record 290 million bushels. Domestic use has also increased, forecast up 25 percent to 243 million bushels. However, the increased use has come at a price—HRS prices have been below HRW prices, and protein premiums have been lower than recent years.

SRW 1990 Production Forecast Above 600 Million Bushels

SRW production is forecast at 610 million bushels in 1990, up 11 percent, and the third largest on record. This would be the fourth straight year of increased SRW production. Area planted to SRW increased 7 percent to 14.3 million

Table 6--SRW supply and demand

Item	1988/89	1989/90F	1990/91F
Area		Million acres	
Planted	10.9	13.4	14.3
Harvested	9.6	12.0	13.0
Yield, bu./acre	49.3	45.7	47.0
Supply		Million bu.	
Production	473	548	610
Begin stocks	75	39	18
Tot. supply	547	587	628
Use			
Food	140		
Seed	22		
Residual	31		
Tot. domestic	193	219	
Exports	315	350	
Total use	508	569	
Ending stocks	39	18	

F=forecast.

acres, while harvested area is forecast up 8 percent. SRW yields are forecast down in some important States like Illinois and Indiana, but the decline is partially offset by increased yields in Missouri, the Delta, and Southeast.

Stocks of SRW on June 1, 1990, are forecast at a nominal 18 million bushels, so total 1990/91 supply will largely depend on production. The forecast 1990/91 supply would be 7 percent above a year earlier, but competition in the export market from HRW should be more intense. Not only is more HRW production forecast, but the average protein of the HRW is likely to be reduced, as ample moisture and high yields tend to be associated with lower protein. SRW will face intense competition from the low protein end of HRW supplies and from large soft white wheat production.

In 1989/90 SRW use is forecast at the third largest on record. Exports are on a pace to reach 350 million bushels, up 11 percent, and a second straight year above 300 million. Domestic use is forecast up 13 percent, mostly because of an estimated increase in feed and residual use.

White Winter Wheat Production Up 42 Percent, Prices Slump

Sharply increased yields and a 73-percent increase in harvested area in Washington have paced a sharp increase in forecast white winter wheat production. Persistent dryness in Oregon has reduced yield prospects in that State, but Eastern white wheat production is forecast to rise as both area and yields are forecast to increase in Michigan and New York. White spring wheat area planted will be much smaller than last year because of the reduced winterkill of white winter wheat. Even with smaller spring wheat production prospects, and reduced beginning stocks, white wheat supplies may increase in 1990/91.

In 1989/90 white wheat use is forecast down slightly (off 2 percent), led by exports (down 24 percent). The increased domestic disappearance is really illusionary, because last year the feed and residual category was a negative 19 million bushels. In 1989/90, domestic use has more than doubled, as residual disappearance has become a positive 35 million bushels. It is not clear if the data problems are in the export statistics, food use by class, stocks breakout by class, production data, or all of the above. A slight decline is forecast in food and seed use.

White wheat stocks are forecast to be 52 million bushels on June 1, 1990, the lowest since 1975. The tight supply of white wheat in 1989/90 led to higher prices for white wheat than for any other class of wheat during the marketing year. As increased production prospects were confirmed for 1990, and prospects looked good for South Asian crops, white wheat prices declined more than prices for other classes of wheat.

Table 7--White wheat supply and demand

Item	1988/89	1989/90F	1990/91F
Area		Million acres	
Planted	4.0	5.4	5.2
Harvested	3.8	4.5	4.4W
Yield bu./acre	61.1	55.8	62.5W
Supply		Million bu.	
Production	232	251	276W
Begin stocks	135	81	52
Imports	4	3	
Tot. supply	370	335	
Use			
Food	49		
Seed	8		
Residual	-17		
Tot. domestic	40	97	
Exports	250	190	
Total use	290	283	
Ending stocks	81	52	

F=forecast. W=winter wheat only

Durum Wheat Market May Tighten In 1990/91

Durum planting intentions registered a decline of 8 percent. Desert durum production (Arizona and California) was forecast down 43 percent. Unless above average yields occur in the Northern Plains, U.S. durum supplies will be down in 1990/91. Stocks on June 1, 1990, are forecast at 47 million bushels, the lowest since 1975. Because total use in 1989/90 is forecast at only 117 million bushels, the stocks appear ample. However, export demand for U.S. durum may increase in 1990/91. EC durum supplies may be reduced by production problems in Southern Europe. Canada's durum plantings are expected to decline. Moreover, demand for durum may increase in North Africa. Increasing exports could tighten durum stocks, even if U.S. durum yields are above average. On the other hand, if U.S. durum yields are below average, durum prices might increase well above other wheat prices in order to bring use in line with supply.

In 1989/90 durum prices remained generally at a discount to other wheats. Domestic use is estimated up slightly, and exports rebounded to a forecast 55 million bushels, up from 1988/89's drought-reduced 20 million. However, durum ending stocks are forecast at 40 percent of total use, a much more generous cushion than for other wheat classes.

Table 8--Durum supply and demand

Item	1988/89	1989/90F	1990/90F
Area		Million acre	
Planted	3.3	3.8	3.4
Harvested	2.8	3.7	NA
Yield bu./acre	15.7	25.1	NA
Supply		Million bu.	
Production	45	92	
Begin stocks	83	60	47
Imports	12	12	
Tot. supply	139	164	
Use			
Food	51		
Seed	6		
Residual	2		
Tot. domestic	59	62	
Exports	20	55	
Total use	79	117	
Ending stocks	60	47	

F=forecast.

List of Appendix Tables

Appendix table 1--Wheat: Marketing year supply, disappearance, area, and price, 1984/85-1990/91

Item	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90 (Preliminary)	1990/91 (Projected)
				Million acres			
Area:							
Planted	79.2	75.5	72.0	65.8	65.5	76.6	77.6
Harvested	66.9	64.7	60.7	55.9	53.2	62.1	NA
Set aside and diverted	18.3	18.8	21	23.9	22.3	9.6	6.6
Acreage reduction	9.1	11.9	15.8	20.2	19.1	6.1	2.1
Diverted	5.6	6.9	3.9	0.0	0.0	0.0	0.0
PIK; 0-92 1/	3.6	---	1.3	3.7	3.2	3.5	4.5
Conservation Reserve Program	---	---	0.6	4.2	6.9	8.4	9.6
National base acreage	94.0	94.0	92.2	91.8	91.7	90.7	90.1
				Bushels per acre			
Yield/harvested acre	38.8	37.5	34.4	37.7	34.1	32.8	NA
				Million bushels			
Supply:							
June 1 stocks	1,399	1,425	1,905	1,821	1,261	702	442
Production	2,595	2,424	2,091	2,108	1,812	2,036	2,692
Imports 2/	9	16	21	16	23	21	21
Total supply	4,003	3,865	4,017	3,945	3,096	2,758	3,155
				Million bushels			
Disappearance:							
Food	651	674	712	721	735	750	765
Seed	98	93	84	85	103	102	100
Feed and residual 3/	407	284	401	280	137	190	275
Total domestic	1,156	1,051	1,197	1,086	975	1,042	1,140
Exports 2/	1,421	909	999	1,598	1,419	1,275	1,250
Total disappearance	2,577	1,960	2,196	2,684	2,394	2,317	2,390
				Million bushels			
Ending stocks:							
May 31	1,425	1,905	1,821	1,261	702	442	765
Farmer-owned reserve	654	433	463	467	287	150	NA
Special program 4/	3	163	169	0	0	0	NA
CCC inventory 5/	378	602	830	283	190	115	NA
Outstanding loans 6/	175	678	236	178	19	25	NA
Other	215	29	123	333	206	152	NA
				$/bushel			
Prices:							
Received by farmers	3.39	3.08	2.42	2.57	3.72	3.71	2.90-3.30
Loan rate	3.30	3.30	2.40	2.28	2.21	2.06	1.95
Target	4.38	4.38	4.38	4.38	4.23	4.10	4.00
				$ million			
Value of production	8,757	7,374	5,044	5,497	6,684	7,573	8,345

--- = Not applicable.
NA = Not available.
1/ PIK - 1983/84-1985/86; 0-92 - 1986/87-1989/90. 2/ Imports and exports include flour and other products expressed in wheat equivalent. 3/ Residual approximates feed use and includes negligible quantities used for alcoholic beverages. 4/ Projected amount of free-stock carryover in the special producer storage loan program. 5/ From 1981/82 on, includes 147 million bushels (2 million tons) in Food Security Reserve. 6/ Projected amount of free-stock carryover under 9-month loan. 7/ Through the 7th sign up, 8.4 million acres of wheat base have been enrolled in CRP.

Appendix table 2--Wheat: Area, yield, and production by major States, 1982-1990 1/

State	1982	1983	1984	1985	1986	1987	1988	1989	1990
Area harvested (million acres):									
Arkansas	1.9	1.5	1.4	0.6	0.8	0.8	1.1	1.2	1.4
Colorado	3.0	3.1	3.3	3.5	3.0	2.6	2.4	2.3	2.6
Idaho	1.5	1.3	1.3	1.4	1.3	1.1	1.2	1.4	0.9
Illinois	1.5	1.4	1.6	0.8	0.8	1.0	1.3	1.8	2.1
Kansas	13.1	10.8	11.2	11.4	10.2	9.9	9.5	8.9	11.8
Minnesota	3.2	2.1	2.6	2.7	2.8	2.5	2.3	2.7	0.1
Missouri	2.2	1.9	2.1	1.3	0.6	0.8	1.6	1.9	2.0
Montana	5.4	4.5	4.6	4.0	4.8	4.7	3.8	5.2	2.6
Nebraska	2.9	2.3	2.3	2.3	2.0	2.0	2.0	2.1	2.3
N. Dakota	10.3	7.2	8.7	8.9	9.4	9.1	7.2	10.3	0.2
Ohio	1.2	1.2	1.1	1.0	1.1	0.9	0.9	1.2	1.4
Oklahoma	6.9	4.3	5.3	5.5	5.2	4.8	4.8	5.7	6.3
Oregon	1.2	1.1	1.1	1.1	1.0	0.8	0.8	0.9	0.9
S. Dakota	3.6	2.7	3.7	3.8	3.8	3.5	2.6	3.5	1.8
Texas	6.0	4.6	5.0	5.9	4.8	3.6	3.2	3.0	4.4
Washington	2.8	2.7	2.6	2.7	2.4	2.0	2.1	2.3	2.3
Yield (bu/acre):									
Arkansas	38.0	39.0	44.0	32.0	41.0	41.0	53.0	44.0	43.0
Colorado	28.7	39.9	35.3	39.8	32.6	38.1	33.8	27.4	34.0
Idaho	62.8	70.3	63.6	53.4	62.4	75.0	65.7	66.7	72.0
Illinois	45.0	46.0	44.0	49.0	44.0	59.0	54.0	59.0	58.0
Kansas	35.0	41.5	38.5	38.0	33.0	37.0	34.0	24.0	39.0
Minnesota	39.8	36.9	47.3	52.7	36.8	40.7	23.0	38.0	30.0
Missouri	34.0	38.0	41.0	39.0	33.0	46.0	49.0	47.0	50.0
Montana	33.6	30.7	22.6	12.7	29.1	32.2	15.7	27.7	34.0
Nebraska	35.0	43.0	36.0	39.0	38.0	44.0	36.0	27.0	37.0
N. Dakota	31.5	26.9	32.8	36.4	31.2	29.5	14.3	23.5	22.0
Ohio	43.0	49.0	44.0	62.0	46.0	58.0	50.0	51.0	53.0
Oklahoma	33.0	35.0	36.0	30.0	29.0	27.0	36.0	27.0	34.0
Oregon	52.9	60.4	61.8	52.6	57.0	65.3	68.6	58.5	58.0
S. Dakota	27.4	32.9	34.1	29.6	28.3	30.2	14.4	23.6	28.0
Texas	24.0	35.0	30.0	31.7	25.0	28.0	28.0	20.0	29.0
Washington	48.9	63.9	61.4	47.7	48.5	56.7	60.5	48.7	63.0
Production (million bushels):									
Arkansas	2/ 72.2	58.5	61.6	18.2	33.4	34.4	56.7	52.8	59.3
Colorado	85.0	122.1	115.3	2/ 139.3	96.4	97.4	79.5	62.1	88.4
Idaho	94.8	91.7	81.4	72.0	81.8	85.5	75.5	91.4	62.6
Illinois	67.5	64.4	70.4	36.8	36.1	56.1	67.5	105.0	2/ 118.9
Kansas	458.5	448.2	431.2	433.2	336.6	366.3	323.0	213.6	2/ 460.2
Minnesota	126.8	79.0	120.7	2/ 142.4	103.7	102.6	51.7	102.5	2.0
Missouri	74.8	70.3	84.1	49.9	18.8	35.4	76.0	87.0	100.0
Montana	2/ 180.3	136.9	104.7	50.2	138.5	151.2	60.0	145.0	88.4
Nebraska	101.5	98.9	81.0	89.7	76.0	85.8	72.0	55.4	85.1
N. Dakota	324.8	194.1	284.2	323.3	292.3	269.1	103.4	242.3	3.5
Ohio	51.6	58.8	48.4	58.9	48.3	49.3	46.0	62.7	2/ 74.2
Oklahoma	2/ 227.7	150.5	190.8	165.0	150.8	129.6	172.8	153.9	214.2
Oregon	63.5	65.6	68.9	56.0	58.4	52.9	51.8	53.8	50.8
S. Dakota	98.5	89.7	2/ 126.0	111.2	108.7	106.7	38.0	83.1	50.4
Texas	144.0	161.0	150.0	2/ 187.2	120.0	100.8	89.6	60.0	127.6
Washington	138.9	2/ 172.6	160.4	128.3	116.9	114.3	124.6	110.6	141.8

1/ Indicated -winter wheat only. 2/ Record production.

Appendix table 3--Wheat classes: Estimated acreage, yield, and production, 1978-1990

Year	Planted acreage	Harvesteded acreage	Yield	Production
	---Million acres---		Bu./acre	Million bushels
Hard red winter:				
1978	36.5	28.5	29.1	829.9
1979	38.2	31.3	34.9	1,091.6
1980	40.7	35.8	33.0	1,181.3
1981	43.4	37.9	29.3	1,112.1
1982	43.2	37.0	33.6	1,243.6
1983	41.3	30.2	39.7	1,197.8
1984	43.6	34.1	36.7	1,250.6
1985	42.5	34.5	35.7	1,230.1
1986	39.4	31.5	32.3	1,017.8
1987	36.3	28.6	35.7	1,020.8
1988	34.4	26.8	32.8	881.9
1989	37.5	26.1	27.2	711.1
1990 1/	38.4	33.5	36.0	1,206.1
Hard red spring:				
1978	13.5	13.2	28.8	379.7
1979	14.2	14.0	26.3	368.8
1980	16.3	13.6	22.9	311.4
1981	16.1	15.8	29.4	463.8
1982	15.5	15.2	32.4	492.7
1983	11.1	10.7	30.2	322.7
1984	12.0	11.7	34.9	408.8
1985	14.0	13.1	35.1	460.2
1986	14.6	14.1	32.0	451.4
1987	13.3	13.0	33.0	430.6
1988	13.0	10.1	17.9	181.2
1989	16.5	15.9	27.3	433.5
1990 1/	16.4	NA	NA	NA
Durum:				
1978	4.1	4.0	33.3	133.3
1979	4.0	3.9	27.4	106.7
1980	5.5	4.8	22.6	108.4
1981	5.8	5.7	32.1	183.0
1982	4.3	4.2	34.7	145.9
1983	2.6	2.5	29.2	73.0
1984	3.3	3.2	32.3	103.4
1985	3.2	3.1	36.3	112.5
1986	3.0	2.9	34.0	97.9
1987	3.3	3.3	28.2	92.6
1988	3.3	2.8	15.7	44.8
1989	3.8	3.7	25.1	92.2
1990 1/	3.4	NA	NA	NA
Soft red winter:				
1978	6.2	5.5	34.3	188.9
1979	8.4	7.6	40.7	309.6
1980	11.7	10.6	41.7	441.8
1981	16.7	15.3	44.3	678.0
1982	17.2	15.8	37.3	588.9
1983	15.6	12.8	39.4	504.2
1984	14.5	12.6	42.2	531.4
1985	10.6	9.1	40.5	368.4
1986	10.1	7.7	38.0	292.5
1987	9.0	7.6	45.9	347.7
1988	10.9	9.6	49.3	472.7
1989	13.4	12.0	45.7	548.0
1990 1/	14.3	13.0	47.0	609.7
White:				
1978	5.7	5.3	46.0	243.7
1979	6.6	5.6	46.0	257.4
1980	6.6	6.3	53.7	338.0
1981	6.2	6.0	58.1	348.5
1982	6.0	5.7	51.6	294.0
1983	5.9	5.3	60.8	322.0
1984	5.8	5.3	56.7	300.6
1985	5.3	4.9	51.8	253.9
1986	4.9	4.5	51.6	232.0
1987	3.9	3.5	61.6	215.8
1988	4.0	3.8	61.1	231.6
1989	5.4	4.5	55.8	251.0
1990 1/	5.2	4.4 W/	62.5 W/	275.8 W/

NA = Not available.
1/ Based on Prospective Plantings or May NASS forecasts. W/ = Winter wheat only.

Source: National Agricultural Statistics Service; and Economic Research Service (estimates), USDA.

Appendix table 4--Wheat: Quarterly supply and disappearance, 1983/84-1989/90 1/

Year and periods beginning June 1	Supply				Disappearance						Ending stocks		
					Domestic use								
	Beginning stocks	Production	Imports 2/	Total	Food	Seed	Feed 3/	Total	Exports 2/	Total disappearance	Govt. owned	Privately owned 4/	Total
	Million bushels												
1983/84:													
June-Aug.	1,515.1	2,419.8	0.7	3,935.6	158.7	1.0	196.1	355.8	346.7	702.5	365.0	2,868.1	3,233.1
Sept.-Nov.	3,233.1	---	0.9	3,234.0	163.1	75.0	100.5	338.6	359.7	698.3	375.8	2,159.9	2,535.7
Dec.-Feb.	2,535.7	---	1.1	2,536.8	166.8	3.0	48.4	218.2	367.1	585.3	313.8	1,637.7	1,951.5
Mar.-May	1,951.5	---	1.1	1,952.6	154.1	21.0	26.1	201.2	352.8	554.0	188.0	1,210.6	1,398.6
Mkt. year	1,515.1	2,419.8	3.8	3,938.7	642.6	100.0	371.1	1,113.7	1,426.4	2,540.1	188.0	1,210.6	1,398.6
1984/85:													
June-Aug.	1,398.6	2,594.8	3.8	3,997.2	157.8	1.0	279.6	438.4	398.7	837.1	278.1	2,882.0	3,160.1
Sept.-Nov.	3,160.1	---	2.2	3,162.3	168.5	69.0	101.5	339.0	484.8	823.8	359.4	1,979.1	2,338.5
Dec.-Feb.	2,338.5	---	1.1	2,339.6	164.2	4.0	35.5	203.7	335.1	538.8	375.7	1,414.7	1,800.8
Mar.-May	1,800.8	---	2.3	1,803.1	160.5	24.0	(9.5)	175.0	202.9	377.9	377.6	1,047.6	1,425.2
Mkt. year	1,398.6	2,594.8	9.4	4,002.8	651.0	98.0	407.2	1,156.2	1,421.4	2,577.6	377.6	1,047.6	1,425.2
1985/86:													
June-Aug.	1,425.2	2,424.1	5.1	3,854.4	165.8	1.0	235.5	402.3	248.6	650.9	406.7	2,796.8	3,203.5
Sept.-Nov.	3,203.5	---	5.1	3,208.6	185.6	63.0	65.9	314.5	250.7	565.2	517.1	2,126.3	2,643.4
Dec.-Feb.	2,643.4	---	2.7	2,646.1	162.2	4.0	1.8	168.0	222.3	390.3	526.3	1,729.5	2,255.8
Mar.-May	2,255.8	---	3.5	2,259.3	160.8	25.0	(18.9)	166.9	187.4	354.3	601.7	1,303.3	1,905.0
Mkt. year	1,425.2	2,424.1	16.3	3,865.6	674.3	93.0	284.3	1,051.6	909.1	1,960.7	601.7	1,303.3	1,905.0
1986/87:													
June-Aug.	1,905.0	2,090.6	4.3	3,999.9	171.2	1.0	352.3	524.5	318.9	843.4	793.8	2,362.7	3,156.5
Sept.-Nov.	3,156.5	---	3.6	3,160.1	192.8	57.0	(20.8)	229.0	257.7	486.7	863.9	1,809.6	2,673.5
Dec.-Feb.	2,673.5	---	6.0	2,679.5	171.7	3.0	48.7	223.4	205.7	429.1	905.3	1,345.1	2,250.4
Mar.-May	2,250.4	---	7.3	2,257.7	176.6	23.0	20.9	220.5	216.3	436.8	830.1	990.8	1,820.9
Mkt. year	1,905.0	2,090.6	21.3	4,016.9	712.2	84.0	401.1	1,197.3	998.5	2,195.8	830.1	990.8	1,820.9
1987/88:													
June-Aug.	1,820.9	2,107.7	2.7	3,931.3	181.0	1.0	363.8	545.8	409.0	954.8	798.8	2,189.7	2,976.5
Sept.-Nov.	2,976.5	---	4.5	2,981.0	193.0	58.0	(79.1)	171.9	308.5	480.4	755.4	1,750.5	2,500.6
Dec.-Feb.	2,500.6	---	3.7	2,504.3	172.1	3.0	(7.3)	167.8	413.0	580.8	450.1	1,473.4	1,923.5
Mar.-May	1,923.5	---	5.1	1,928.7	174.6	23.0	2.9	200.5	467.3	667.8	283.0	977.8	1,260.8
Mkt. year	1,820.9	2,107.7	16.1	3,944.7	720.7	85.0	280.3	1,086.0	1,597.8	2,683.8	283.0	977.8	1,260.8
1988/89:													
June-Aug.	1,260.8	1,812.2	8.6	3,081.6	183.3	1.0	282.2	466.5	361.6	828.1	250.0	2,003.6	2,253.6
Sept.-Nov.	2,253.6	---	6.3	2,259.8	197.3	67.0	(49.4)	214.9	329.0	543.9	213.0	1,502.9	1,715.9
Dec.-Feb.	1,715.9	---	3.7	1,719.6	178.3	3.0	(50.0)	131.3	360.5	491.9	203.2	1,024.5	1,227.7
Mar.-May	1,227.7	---	4.1	1,231.8	176.0	32.0	(45.8)	162.2	368.0	530.2	190.5	511.1	701.6
Mkt. year	1,260.8	1,812.2	22.6	3,095.7	734.8	103.0	137.0	974.9	1,419.2	2,394.1	190.5	511.1	701.6
1989/90:													
June-Aug.	701.6	2,035.8	5.9	2,743.3	192.7	1.7	261.8	456.2	369.9	826.1	167.9	1,749.3	1,917.2
Sept.-Nov.	1,917.2	---	5.3	1,922.5	196.0	68.7	(94.5)	170.2	328.6	498.8	154.5	1,269.2	1,423.7
Dec.-Feb.	1,423.7	---	4.7	1,428.4	184.8	2.8	36.7	224.3	259.7	484.0	136.5	807.9	944.4
Mar.-May 5/	944.4	---	5.1	949.5	176.5	28.7	(14.1)	191.1	316.8	507.9	115.0	326.6	441.6
Mkt. year 5/	701.6	2,035.8	21.0	2,758.4	750.0	101.9	189.8	1,041.7	1,275.0	2,316.7	115.0	326.7	441.7

--- = Not applicable.
NA = Not available.
1/ Totals may not add because of rounding. 2/ Imports and exports include flour and other products expressed in wheat equivalent.
3/ Residual; approximates feed use and includes negligible quantities used for distilled spirits. 4/ Includes outstanding and reserve loans.
5/ Forecasts.

Appendix table 5--Wheat classes: Marketing year supply and disappearance, 1982/83-1989/90 1/

Year beginning June 1	Supply			Disappearance			Ending stocks May 31
	Beginning stocks	Production	Total 2/	Domestic use	Exports	Total	
	Million bushels						
1982/83:							
Hard winter	538	1,243	1,781	348	679	1,027	754
Hard spring	346	492	842	195	239	434	408
Soft red	60	590	650	251	325	576	74
White	109	294	403	53	207	260	143
Durum	106	146	256	61	59	120	136
All classes	1,159	2,765	3,932	908	1,509	2,417	1,515
1983/84:							
Hard winter	754	1,198	1,952	503	704	1,207	745
Hard spring	408	323	732	198	220	418	314
Soft red	74	504	578	284	220	504	74
White	143	322	465	78	220	298	167
Durum	136	73	212	51	62	113	99
All classes	1,515	2,420	3,939	1,114	1,426	2,540	1,399
1984/85:							
Hard winter	745	1,251	1,996	564	715	1,279	717
Hard spring	314	409	727	173	183	357	371
Soft red	74	531	605	289	252	541	64
White	167	301	469	86	210	296	173
Durum	99	103	206	45	61	105	100
All classes	1,399	2,595	4,002	1,157	1,421	2,578	1,425
1985/86:							
Hard winter	717	1,230	1,947	545	393	938	1,009
Hard spring	371	460	841	178	165	343	498
Soft red	64	367	431	204	148	352	79
White	173	254	428	80	150	230	198
Durum	100	113	216	42	53	95	121
All classes	1,425	2,424	3,864	1,049	909	1,959	1,905
1986/87:							
Hard winter	1,009	1,017	2,026	624	429	1,053	973
Hard spring	498	451	957	268	199	466	490
Soft red	79	292	371	180	114	294	77
White	198	232	437	77	175	252	185
Durum	121	98	225	49	82	132	95
All classes	1,905	2,091	4,017	1,198	999	2,196	1,821
1987/88 :							
Hard winter	973	1,019	1,992	514	911	1,425	567
Hard spring	490	431	925	268	255	523	402
Soft red	77	349	427	192	160	352	75
White	185	216	403	59	210	269	135
Durum	95	93	197	53	62	115	83
All classes	1,821	2,108	3,945	1,086	1,598	2,684	1,261
1988/89:							
Hard winter	567	882	1,449	507	639	1,146	302
Hard spring	402	181	590	176	195	371	219
Soft red	75	473	547	193	315	508	39
White	135	232	370	40	250	290	81
Durum	83	45	139	59	20	79	60
All classes	1,261	1,812	3,096	975	1,419	2,394	702
1989/90 3/:							
Hard winter	302	711	1,014	425	390	815	199
Hard spring	219	433	659	243	290	538	126
Soft red	39	548	587	219	350	564	18
White	81	251	335	93	190	283	52
Durum	60	92	164	62	55	117	47
All classes	702	2,036	2,758	1,042	1,275	2,317	442

1/ Data, except production, are approximations and totals may not add because of rounding. Imports and exports include flour and products in wheat equivalent. 2/ Total supply includes imports. 3/ Estimated.

Appendix table 6--Wheat: Status of price support loans on specified dates, 1980/81-1990/91

Crop year	Total stocks	Total CCC inventory	Outstanding CCC loans	Farmer-Owned Reserve 1/	Unencumbered stocks
			Million bushels		
1980/81:					
Jun. 1	902.0	187.8	99.3	259.9	355.0
Sept.1	2,714.0	202.1	96.7	211.0	2,204.2
Dec. 1	2,092.3	202.9	128.2	210.5	1,550.7
Mar. 1	1,522.8	203.2	114.3	303.8	901.5
1981/82:					
Jun. 1	989.1	199.7	54.6	359.6	375.2
Sept.1	3,056.0	195.4	147.0	398.6	2,315.0
Dec. 1	2,338.4	190.6	195.4	459.1	1,493.3
Mar. 1	1,777.6	190.2	182.2	515.2	890.0
1982/83:					
Jun. 1	1,159.4	190.3	112.0	560.4	296.7
Sept.1	3,229.3	193.3	77.5	763.3	2,195.2
Dec. 1	2,642.8	189.7	105.6	986.3	1,361.2
Mar. 1	2,072.0	184.6	92.5	1,117.1	677.8
1983/84:					
Jun. 1	1,515.1	192.0	65.2	1,060.6	197.3
Sept.1	3,233.1	365.0	294.1	824.8	1,749.2
Dec. 1	2,535.7	375.8	396.0	736.6	1,027.3
Mar. 1	1,951.5	313.8	443.9	610.7	583.1
1984/85:					
Jun. 1	1,398.6	188.0	379.1	611.2	220.3
Sept.1	3,160.1	278.1	254.9	657.9	1,969.2
Dec. 1	2,338.5	359.4	247.2	674.9	1,057.0
Mar. 1	1,800.8	375.7	218.4	673.8	532.9
1985/86:					
Jun. 1	1,425.2	377.6	175.0	657.1	215.5
Sept.1	3,203.5	406.7	493.7	689.5	1,613.6
Dec. 1	2,643.4	517.1	734.9	653.7	737.7
Mar. 1	2,255.8	526.3	770.8	633.1	325.6
1986/87:					
Jun. 1	1,905.0	601.7	677.7	596.4	29.2
Sept.1	3,156.5	793.8	455.8	629.9	1,277.0
Dec. 1	2,673.5	863.9	527.6	657.7	624.3
Mar. 1	2,250.4	905.3	419.8	662.6	262.7
1987/88:					
Jun. 1	1,820.9	830.1	235.6	631.8	123.4
Sept.1	2,976.5	798.8	245.1	597.5	1,335.1
Dec. 1	2,500.6	755.4	383.1	553.4	808.7
Mar. 1	1,923.5	450.1	293.8	517.9	661.7
1988/89:					
Jun. 1	1,260.8	283.0	177.5	466.8	333.5
Sept.1	2,253.6	250.0	108.1	391.0	1,504.5
Dec. 1	1,715.9	213.0	93.1	381.2	1,028.6
Mar. 1	1,227.7	203.2	46.9	377.9	599.7
1989/90:					
Jun. 1	701.6	190.5	19.2	287.0	204.9
Sept.1	1,917.2	167.9	48.2	211.4	1,489.7
Dec. 1	1,423.7	154.5	80.4	173.6	1,009.0
Mar. 1	944.4	136.5	65.4	153.6	588.9
1990/91: F/					
Jun. 1	441.6	115.0	25.0	145.0	156.6

1/ Includes any quantity in the special producer storage loan program. F/ = forecast.

Source: Agricultural Stabilization and Conservation Service, USDA.

Appendix table 7--U.S. wheat exports: Grain, flour, and products, by month, 1980/81-1989/90

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Total
						Thousand bushels 1/							
						Wheat (grain only)							
1980/81	96,193	123,598	141,415	137,325	116,948	112,199	132,048	129,981	124,397	128,770	127,652	78,030	1,448,558
1981/82	124,521	138,168	145,428	194,148	156,993	127,495	137,757	124,163	138,719	159,078	148,181	116,496	1,711,147
1982/83	156,914	117,914	124,336	130,992	98,520	94,638	88,457	143,141	146,594	131,134	112,451	96,235	1,441,326
1983/84	113,506	116,701	87,823	119,263	114,810	102,880	128,887	118,357	111,096	118,713	97,132	112,813	1,341,980
1984/85	105,344	133,276	146,187	242,731	137,298	97,283	131,941	106,430	85,493	57,969	67,811	56,588	1,368,352
1985/86	84,264	63,877	86,863	72,210	85,649	82,384	61,853	70,079	70,869	66,236	56,437	46,216	846,936
1986/87	79,497	104,677	114,853	98,234	84,769	59,182	53,837	65,047	67,764	65,529	65,426	64,603	923,419
1987/88	119,769	157,706	112,758	119,945	101,680	71,166	113,609	140,228	143,959	149,146	152,830	147,667	1,530,462
1988/89	121,842	111,498	107,562	127,564	93,153	93,309	100,149	115,846	127,165	141,828	115,899	91,579	1,347,393
1989/90	90,808	137,971	131,989	150,700	89,343	68,664	81,816	78,345	87,655	104,914			
						Flour (grain equivalent) 2/							
1980/81	4,230	2,082	5,057	3,774	2,785	2,165	1,739	2,658	5,217	6,353	7,347	4,803	48,209
1981/82	5,794	2,779	3,438	2,496	668	411	902	1,767	8,068	5,775	6,955	5,983	45,036
1982/83	4,577	1,364	3,488	2,508	3,904	2,483	999	3,998	8,865	6,532	10,530	7,521	56,769
1983/84	9,611	8,198	7,849	8,801	8,473	3,504	1,245	2,330	2,344	7,066	7,306	8,148	74,875
1984/85	6,614	4,105	1,166	1,596	3,242	633	941	392	6,297	5,148	6,335	4,020	40,489
1985/86	3,640	2,638	1,638	1,038	1,289	2,902	6,680	3,174	5,521	5,157	6,411	2,381	42,469
1986/87	5,104	4,795	6,675	4,731	5,999	2,332	6,664	6,681	3,676	6,173	6,722	6,365	65,918
1987/88	5,450	6,816	4,749	3,999	3,418	6,746	4,316	6,934	2,556	10,776	2,463	2,520	60,743
1988/89	7,036	6,400	6,002	2,402	7,908	3,368	6,086	4,178	6,515	6,841	6,540	5,214	68,490
1989/90	907	1,897	5,775	8,915	3,579	6,817	3,606	4,943	3,124	4,466			
						Wheat products (grain equivalent) 3/							
1980/81	912	1,222	711	1,849	1,284	1,005	1,230	890	1,010	1,114	4,433	1,406	17,067
1981/82	1,827	1,150	1,009	1,037	1,171	1,406	572	1,211	1,875	351	2,246	692	14,547
1982/83	971	465	1,073	984	529	2,604	472	796	492	586	630	935	10,537
1983/84	632	1,075	1,300	578	502	904	1,346	600	939	780	363	503	9,523
1984/85	717	670	587	1,076	429	497	824	1,831	935	916	1,956	2,164	12,600
1985/86	1,984	2,472	1,256	2,097	1,683	1,476	1,543	1,449	1,172	1,103	1,590	1,903	19,727
1986/87	1,052	1,563	685	1,149	896	371	723	670	611	447	542	463	9,173
1987/88	447	751	549	234	364	901	743	423	277	551	1,133	251	6,624
1988/89	421	424	449	490	673	154	564	20	20	59	30	25	3,328
1989/90	31	33	457	74	463	72	78	44	44	50			
						Total wheat, flour, and products							
1980/81	101,335	126,902	147,183	142,949	121,017	115,369	135,017	133,529	130,624	136,238	139,432	84,239	1,513,834
1981/82	132,142	142,097	149,875	197,681	158,832	129,312	139,231	127,141	148,662	165,204	157,382	123,171	1,770,730
1982/83	162,462	119,743	128,897	134,485	102,952	99,726	89,928	147,935	155,950	138,252	123,611	104,691	1,508,632
1983/84	123,750	125,974	96,972	128,642	123,785	107,288	131,479	121,287	114,378	126,559	104,801	121,464	1,426,378
1984/85	112,675	138,051	147,940	245,403	140,968	98,414	133,705	108,653	92,725	64,033	76,102	62,771	1,421,442
1985/86	89,888	68,986	89,757	75,344	88,622	86,763	70,075	74,703	77,562	72,495	64,438	50,499	909,131
1986/87	85,654	111,036	122,214	104,114	91,665	61,884	61,224	72,398	72,052	72,148	72,690	71,431	998,511
1987/88	125,666	165,273	118,057	124,178	105,462	78,813	118,668	147,585	146,793	160,472	156,426	150,437	1,597,829
1988/89	129,299	118,322	114,013	130,455	101,735	96,831	106,798	120,044	133,700	148,727	122,469	96,818	1,419,211
1989/90	91,747	139,901	138,221	159,688	93,385	75,553	85,499	83,331	90,822	109,430			

1/ Totals may not add because of independent rounding. 2/ Includes meal and groats, and durum. 3/ Includes macaroni, rolled wheat, and bulgar.

Sources: U.S. Bureau of the Census.
USDA/ERS calculations.

Appendix table 8--Wheat flour: Supply and disappearance, United States, 1960-89

Calendar year	Wheat ground	Millfeed production	Flour production	Flour and product imports 2/	Total supply	Exports		Domestic disappearane	Total population July 1	Per capita disappearance
						Flour	Products 2/			
	-----1,000----- bu.	tons	----------1,000 cwt.----------						Million	Pounds
1960	582,719	4,827	255,596	141	255,737	42,135	58	213,544	180.7	118
1961	591,999	4,858	260,709	131	260,840	43,528	42	217,270	183.7	118
1962	595,353	4,876	262,403	132	262,535	47,719	22	214,794	186.5	115
1963	589,245	4,794	260,291	136	260,427	44,498	19	215,910	189.2	114
1964	591,654	2,890	261,905	142	262,047	42,328	26	219,693	191.8	115
1965	564,724	4,645	250,591	145	250,736	30,597	194	219,945	194.2	113
1966	568,673	4,619	253,176	179	253,355	33,091	178	220,086	196.5	112
1967	549,801	4,423	245,390	222	245,612	21,056	16	224,540	198.6	113
1968	569,649	4,511	254,310	233	254,543	28,068	133	226,342	200.6	113
1969	567,956	4,458	254,194	274	254,468	26,333	158	227,977	202.6	113
1970	563,714	4,409	253,094	325	253,419	26,054	14	227,351	205.1	111
1971	555,092	4,279	249,810	341	250,151	20,685	15	229,451	207.7	110
1972	557,801	4,303	250,441	477	250,918	20,335	19	230,564	209.9	110
1973	567,287	4,395	254,661	550	255,211	16,107	26	239,078	211.9	113
1974	562,962	4,483	251,097	665	251,762	14,453	33	237,276	213.9	111
1975	582,675	4,701	258,985	621	259,606	12,364	22	247,220	216.0	114
1976	618,284	4,920	275,077	604	275,681	16,064	44	259,573	218.0	119
1977	618,125	4,787	275,784	604	276,388	22,053	37	254,298	220.2	115
1978	621,321	4,860	277,950	773	278,723	22,170	43	256,510	222.6	115
1979	636,375	4,945	284,051	823	284,874	20,927	86	263,861	225.1	117
1980	628,559	4,866	282,655	904	283,559	17,378	54	266,127	227.8	117
1981	634,381	5,045	283,966	1,166	285,132	18,655	84	266,393	230.1	116
1982	653,206	5,228	290,907	1,496	292,403	20,926	154	271,323	232.5	117
1983	698,951	5,655	311,587	1,590	313,177	37,315	150	275,712	234.8	118
1984	675,271	5,426	299,832	2,005	301,837	19,933	160	281,744	237.0	119
1985	700,151	5,556	313,815	2,064	315,879	18,387	141	297,351	239.3	124
1986	737,537	5,799	326,316	2,226	328,542	25,842	123	302,577	241.6	125
1987	767,507	6,260	341,565	2,632	344,197	28,529	142	315,526	243.9	129
1988	769,699	6,163	344,154	2,696	346,850	28,169	182	318,499	246.3	129
1989 3/	778,519	6,153	344,379	3,303	347,682	26,357	182	321,143	248.8	129

1/ Commercial production of wheat flour, whole wheat, industrial, and Durum flour and farina reported by Bureau of Census. Production prior to 1970 includes estimate for noncommercial wheat milled. 2/ Imports and exports of macaroni and noodle products (flour equivalent). 3/ Preliminary.

Appendix table 9--Wheat and flour price relationships at milling centers, annual and by periods, 1982/83-1989/90

Year and period	At Kansas City					At Minneapolis				
	Cost of wheat to produce 100 lb. of flour 1/	Wholesale price of				Cost of wheat to produce 100 lb. of flour 1/	Wholesale price of			
		Bakery flour per 100 lb. 2/	Byprod-ucts obtained 100 lb. flour 3/	Total products			Bakery flour per 100 lb. 2/	Byprod-ucts obtained 100 lb. flour 3/	Total products	
				Actual	Over cost of wheat				Actual	Over cost of wheat
	Dollars									
1982/83:										
June-Sept.	9.24	10.14	1.39	11.53	2.29	9.31	10.43	1.25	11.68	2.37
Oct.-Dec.	9.22	10.06	1.58	11.64	2.42	9.22	10.43	1.29	11.72	2.50
Jan.-Mar.	9.60	10.40	1.47	11.87	2.27	9.15	10.41	1.10	11.51	2.36
Apr.-May	9.77	10.26	1.65	11.91	2.14	10.11	10.88	1.40	12.28	2.17
Mkt. year	9.46	10.22	1.52	11.74	2.28	9.45	10.54	1.26	11.80	2.35
1983/84:										
June-Sept.	9.54	10.36	1.72	12.08	2.54	9.97	11.17	1.47	12.64	2.67
Oct.-Dec.	9.48	10.00	2.16	12.16	2.68	9.76	10.79	1.90	12.69	2.93
Jan.-Mar.	9.22	9.52	1.83	11.35	2.13	9.56	10.28	1.49	11.77	2.21
Apr.-May	9.57	10.06	1.62	11.17	2.11	10.08	10.74	1.49	12.23	2.15
Mkt. year	9.45	9.99	1.83	11.69	2.37	9.80	10.75	1.59	12.34	2.54
1984/85:										
June-Sept.	9.21	9.78	1.47	11.26	2.05	9.64	10.31	1.21	11.52	1.89
Oct.-Dec.	9.05	9.85	1.47	11.32	2.27	9.16	10.56	1.11	11.67	2.50
Jan.-Mar.	8.77	9.90	1.16	11.06	2.29	9.09	11.27	0.83	12.11	3.01
Apr.-May	8.62	9.58	1.16	10.74	2.12	9.34	11.22	0.88	12.11	2.77
Mkt. year	8.96	9.78	1.32	11.09	2.13	9.27	10.84	1.01	11.85	2.58
1985/86:										
June-Sept.	7.99	8.94	1.10	10.04	2.05	8.60	10.96	0.77	11.73	3.13
Oct.-Dec.	8.37	9.07	1.38	10.45	2.08	9.24	11.65	1.09	12.70	3.50
Jan.-Mar.	8.37	9.38	1.10	10.48	2.11	9.02	11.95	0.83	12.78	3.76
Apr.-May	8.38	9.73	1.21	10.94	2.56	9.35	11.05	0.95	12.00	2.65
Mkt. year	8.28	9.28	1.19	10.47	2.20	9.05	11.39	0.90	12.29	3.25
1986/87:										
June-Aug.	6.19	7.90	0.79	8.69	2.50	6.86	9.70	0.62	10.32	3.46
Sept.-Nov.	6.27	8.18	0.85	9.03	2.76	6.78	9.52	0.64	10.16	3.38
Dec.-Feb.	6.70	7.97	0.99	8.96	2.26	7.03	8.55	0.66	9.21	2.18
Mar.-May	7.00	8.18	0.74	8.92	1.92	7.30	9.10	0.58	9.68	2.38
Mkt. year	6.54	8.06	0.84	8.90	2.36	7.00	9.22	0.63	9.85	2.85
1987/88:										
June-Aug.	6.62	7.85	0.72	8.57	1.95	6.80	8.63	0.51	9.14	2.34
Sept.-Nov.	7.04	7.85	1.19	9.04	2.00	7.07	8.98	0.90	9.88	2.81
Dec.-Feb.	7.51	7.97	1.53	9.50	1.99	7.36	9.77	1.18	10.95	3.59
Mar.-May	7.43	8.18	1.12	9.30	1.87	7.50	10.17	0.98	11.15	3.65
Mkt. year	7.15	7.96	1.14	9.10	1.95	7.18	9.39	0.89	10.28	3.10
1988/89:										
June-Aug.	8.83	9.57	1.57	11.13	2.30	9.72	11.00	1.48	12.48	2.76
Sept.-Nov.	9.34	9.88	1.76	11.64	2.30	9.78	9.80	1.67	11.47	1.69
Dec.-Feb.	9.93	10.37	1.81	12.18	2.24	9.96	10.05	1.70	11.75	1.79
Mar.-May	10.37	11.03	1.59	12.62	2.25	10.32	10.72	1.62	12.34	2.01
Mkt. year	9.62	10.21	1.68	11.89	2.27	9.94	10.39	1.62	12.01	2.07
1989/90:										
June-Aug.	9.86	11.07	1.14	12.21	2.35	9.84	10.63	1.15	11.78	1.94
Sept.-Nov.	9.67	10.33	1.64	11.97	2.30	9.36	9.70	1.51	11.21	1.86
Dec.-Feb.	9.68	10.35	1.58	11.93	2.25	9.50	9.92	1.47	11.38	1.88
Mar.	9.17	10.10	1.32	11.42	2.25	9.03	9.60	1.26	10.86	1.83

1/ Based on 73-percent extraction rate, cost of 2.28 bushels: At Kansas City, No. 1 hard winter, 13-percent protein; and at Minneapolis, No. 1 dark northern spring, 14-percent protein. 2/ Quoted as mid-month bakers' standard patent at Kansas City and spring standard patent at Minneapolis, bulk basis. 3/ Assumed 50-50 millfeed distribution between bran and shorts or middlings, bulk basis.

Source: Compiled from reports of Agricultural Marketing Service and Department of Labor.

Appendix table 10--Wheat farm prices for leading classes and major feed grains in U.S. regions, 1983/84-1989/90

Crop year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.1/	May	Average	Loan rate
							$/60-pound bushel							
							Central and So. Plains 2/							
Wheat (hard winter):														
1983/84	3.49	3.34	3.54	3.59	3.56	3.49	3.45	3.48	3.41	3.48	3.62	3.63	3.51	3.56
1984/85	3.46	3.30	3.42	3.45	3.43	3.41	3.36	3.34	3.34	3.34	3.39	3.25	3.37	3.23
1985/86	3.06	2.90	2.85	3.00	3.07	3.21	3.24	3.16	3.10	3.21	3.33	2.92	3.09	3.23
1986/87	2.38	2.19	2.23	2.26	2.25	2.39	2.43	2.45	2.50	2.49	2.52	2.60	2.39	2.37
1987/88	2.39	2.26	2.29	2.42	2.51	2.58	2.65	2.68	2.74	2.71	2.72	2.91	2.57	2.26
1988/89	3.30	3.36	3.42	3.62	3.72	3.74	3.90	3.90	3.89	4.04	4.03	4.01	3.74	2.21
1989/90	3.84	3.80	3.74	3.76	3.79	3.81	3.87	3.82	3.63	3.51	3.56			2.04
Sorghum:														
1983/84	3.02	3.00	3.14	3.14	3.02	3.02	2.97	2.96	2.87	2.94	3.02	3.10	3.02	2.68
1984/85	3.01	2.89	2.77	2.57	2.49	2.48	2.51	2.52	2.51	2.59	2.68	2.76	2.65	2.59
1985/86	2.71	2.58	2.24	2.06	2.05	2.13	2.25	2.23	2.16	2.25	2.36	2.33	2.28	2.59
1986/87	2.16	1.97	1.67	1.50	1.54	1.51	1.51	1.51	1.47	1.53	1.61	1.71	1.64	1.95
1987/88	1.73	1.62	1.53	1.52	1.58	1.67	1.69	1.70	1.81	1.83	1.82	1.82	1.69	1.86
1988/89	2.57	2.78	2.59	2.61	2.55	2.44	2.45	2.48	2.47	2.52	2.58	2.53	2.55	1.80
1989/90	2.43	2.38	2.28	2.28	2.22	2.17	2.21	2.22	2.21	2.30	2.40			1.69
							Corn Belt 3/							
Wheat (soft red winter):														
1983/84	3.25	3.25	3.54	3.49	3.36	3.33	3.43	3.46	3.26	3.38	3.54	3.44	3.39	3.66
1984/85	3.26	3.22	3.29	3.29	3.29	3.40	3.42	3.44	3.39	3.42	3.44	3.19	3.34	3.28
1985/86	3.01	2.94	2.74	2.66	2.77	3.10	3.22	3.18	3.24	3.37	3.42	2.87	3.04	3.28
1986/87	2.40	2.30	2.28	2.27	2.57	2.65	2.73	2.71	2.77	2.85	2.75	2.65	2.58	2.36
1987/88	2.42	2.37	2.41	2.51	2.66	2.74	2.90	3.02	3.07	2.85	2.96	3.08	2.75	2.35
1988/89	3.33	3.39	3.53	3.67	3.84	3.93	4.06	4.13	3.99	4.12	4.00	3.91	3.82	2.33
1989/90	3.80	3.75	3.77	3.82	3.87	3.99	4.01	3.99	3.87	3.76	3.60			2.14
Corn:														
1983/84	3.39	3.43	3.81	3.68	3.46	3.54	3.52	3.48	3.45	3.56	3.74	3.75	3.57	2.87
1984/85	3.80	3.66	3.50	3.17	2.83	2.76	2.76	2.84	2.85	2.91	2.95	2.91	3.08	2.76
1985/86	2.89	2.85	2.65	2.38	2.21	2.38	2.47	2.48	2.49	2.48	2.50	2.59	2.53	2.76
1986/87	2.56	2.19	1.84	1.54	1.46	1.56	1.61	1.59	1.57	1.60	1.67	1.85	1.75	1.94
1987/88	1.88	1.74	1.61	1.62	1.68	1.79	1.82	1.95	2.02	2.05	2.10	2.18	1.87	1.98
1988/89	2.75	3.08	2.98	2.91	2.78	2.73	2.79	2.87	2.79	2.87	2.84	2.87	2.86	1.95
1989/90	2.80	2.75	2.57	2.52	2.45	2.46	2.52	2.55	2.56	2.64	2.79			1.80
							Northern Plains 4/							
Wheat (other spring):														
1983/84	3.81	3.80	3.78	3.69	3.68	3.66	3.59	3.62	3.59	3.68	3.78	3.87	3.71	3.68
1984/85	3.86	3.69	3.52	3.49	3.47	3.46	3.41	3.45	3.46	3.49	3.57	3.56	3.54	3.34
1985/86	3.50	3.30	3.05	3.18	3.36	3.49	3.58	3.51	3.47	3.51	3.57	3.48	3.42	3.34
1986/87	2.81	2.41	2.38	2.34	2.30	2.51	2.59	2.69	2.66	2.63	2.65	2.69	2.56	2.40
1987/88	2.50	2.36	2.37	2.55	2.62	2.65	2.70	2.76	2.77	2.74	2.78	2.98	2.65	2.28
1988/89	3.30	3.62	3.67	3.79	3.83	3.74	3.81	3.92	3.94	3.99	3.96	3.98	3.80	2.21
1989/90	3.89	3.80	3.66	3.59	3.60	3.58	3.62	3.58	3.50	3.47	3.47			2.06
Wheat (durum):														
1983/84	4.01	3.96	4.11	4.07	4.04	3.97	3.83	3.84	3.67	3.88	3.91	4.07	3.95	3.68
1984/85	3.96	3.73	3.84	3.78	3.75	3.77	3.69	3.63	3.61	3.55	3.60	3.55	3.71	3.34
1985/86	3.53	3.34	3.18	3.08	3.01	3.07	3.16	3.17	3.17	3.21	3.29	3.41	3.22	3.34
1986/87	3.30	2.38	2.24	2.29	2.36	2.54	2.64	2.88	2.93	3.05	3.12	3.14	2.74	2.40
1987/88	3.15	3.06	2.87	3.19	3.30	3.33	3.20	3.21	3.29	2.93	3.22	3.47	3.19	2.28
1988/89	4.61	5.18	5.28	5.21	4.99	4.93	4.72	4.29	4.43	4.44	3.78	4.18	4.67	2.21
1989/90	3.83	3.65	3.50	3.25	3.31	3.27	3.36	3.31	3.31	3.35	3.47			2.06
							Pacific Northwest 5/							
Wheat (white):														
1983/84	3.78	3.61	3.68	3.70	3.62	3.59	3.51	3.49	3.31	3.48	3.57	3.64	3.58	3.75
1984/85	3.71	3.26	3.32	3.31	3.38	3.38	3.35	3.43	3.45	3.53	3.57	3.54	3.44	3.43
1985/86	3.35	2.97	3.05	3.16	3.29	3.39	3.44	3.40	3.41	3.52	3.60	3.49	3.34	3.43
1986/87	2.97	2.44	2.36	2.35	2.40	2.48	2.56	2.61	2.69	2.69	2.74	2.73	2.59	2.50
1987/88	2.60	2.54	2.48	2.57	2.70	2.62	2.73	2.88	2.89	2.79	2.95	3.09	2.74	2.39
1988/89	3.44	3.72	3.80	3.97	4.13	4.19	4.31	4.48	4.56	4.37	4.41	4.32	4.14	2.32
1989/90	4.19	4.13	4.14	4.04	4.06	3.97	4.15	4.06	3.66	3.47	3.32			2.17
Barley:														
1983/84	3.06	2.97	3.19	3.33	3.35	3.38	3.48	3.45	3.36	3.39	3.58	3.42	3.33	2.81
1984/85	3.50	3.15	2.98	2.98	2.92	2.98	3.02	3.00	2.98	2.99	2.95	2.87	3.03	2.74
1985/86	2.68	2.73	2.63	2.55	2.52	2.69	2.77	2.73	2.65	2.53	2.48	2.54	2.63	2.74
1986/87	2.19	2.14	2.31	2.19	2.29	2.24	2.26	2.29	2.35	2.28	2.32	2.37	2.27	1.67
1987/88	2.43	2.64	2.53	2.48	2.36	2.45	2.53	2.56	2.55	2.25	2.29	2.43	2.46	1.77
1988/89	2.94	3.15	3.30	3.13	3.06	3.27	3.20	3.23	3.06	3.25	3.28	3.22	3.17	1.74
1989/90	3.08	2.90	3.19	2.91	2.82	3.01	3.22	3.15	3.01	2.97	2.85			1.60
							U.S. average 6/							
Wheat:														
1983/84	3.50	3.34	3.61	3.65	3.60	3.54	3.48	3.50	3.40	3.49	3.63	3.66	3.51	3.65
1984/85	3.46	3.29	3.43	3.43	3.43	3.45	3.38	3.38	3.38	3.38	3.33	3.30	3.39	3.30
1985/86	3.09	2.93	2.89	3.01	3.10	3.22	3.25	3.19	3.16	3.28	3.37	3.01	3.08	3.30
1986/87	2.47	2.25	2.26	2.28	2.30	2.43	2.49	2.53	2.58	2.57	2.63	2.66	2.42	2.40
1987/88	2.44	2.32	2.36	2.53	2.62	2.69	2.70	2.75	2.79	2.74	2.79	2.97	2.57	2.28
1988/89	3.37	3.50	3.61	3.74	3.84	3.88	3.94	4.02	4.03	4.07	4.03	4.01	3.72	2.21
1989/90	3.84	3.78	3.74	3.72	3.75	3.71	3.80	3.71	3.56	3.49	3.51		3.71	2.06

1/ April 1990 data are preliminary. 2/ Kansas, Nebraska, Texas, Oklahoma, and Arkansas. 3/ Ohio, Indiana, Illinois, and Missouri. 4/ Wheat prices by class represent averages for the entire United States. 5/ Washington, Oregon, and Idaho. 6/ Season average prices do not include an allowance for unredeemed loans and purchases beginning 1979/80.

Source: National Agricultural Statistics Service & Economic Research Service, USDA.

Appendix table 11--Wheat cash prices for leading classes at major markets, 1983/84-1989/90

Year	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Simple average
						$/bushel							
Kansas City, no.1 hard red winter (ordinary protein):													
1983/84	3.92	3.71	3.88	3.90	3.84	3.82	3.85	3.81	3.71	3.85	3.93	3.89	3.84
1984/85	3.80	3.67	3.80	3.89	3.86	3.85	3.76	3.76	3.74	3.67	3.62	3.42	3.74
1985/86	3.38	3.17	3.03	3.07	3.15	3.35	3.42	3.32	3.30	3.36	3.45	3.40	3.28
1986/87	2.80	2.50	2.48	2.53	2.60	2.68	2.68	2.70	2.80	2.90	2.90	3.02	2.72
1987/88	2.70	2.59	2.65	2.78	2.90	2.90	3.10	3.20	3.28	3.10	3.14	3.20	2.96
1988/89	3.79	3.78	3.78	4.03	4.13	4.18	4.25	4.40	4.37	4.32	4.46	4.55	4.17
1989/90	4.41	4.28	4.24	4.18	4.28	4.36	4.39	4.30	4.14	4.04	4.13		
Kansas City, no.1 hard red winter (13% protein):													
1983/84	4.22	4.15	4.16	4.21	4.20	4.17	4.11	4.06	3.95	4.12	4.22	4.17	4.15
1984/85	4.15	3.99	3.98	4.03	4.01	3.99	3.91	3.87	3.87	3.80	3.84	3.72	3.93
1985/86	3.72	3.53	3.36	3.41	3.50	3.70	3.81	3.69	3.65	3.67	3.70	3.65	3.62
1986/87	2.90	2.70	2.55	2.66	2.75	2.84	2.89	2.95	2.98	3.00	3.05	3.17	2.87
1987/88	2.95	2.86	2.90	3.01	3.10	3.15	3.20	3.30	3.38	3.21	3.26	3.31	3.14
1988/89	3.92	3.85	3.85	4.08	3.98	4.23	4.26	4.41	4.40	4.55	4.50	4.60	4.22
1989/90	4.44	4.29	4.24	4.18	4.23	4.31	4.34	4.27	4.13	4.02	4.07		
Chicago, no. 2 soft red winter:													
1983/84	3.53	3.59	3.71	3.62	3.56	3.42	3.55	3.47	3.34	3.57	3.65	3.65	3.56
1984/85	3.51	3.44	3.49	3.47	3.51	3.62	3.49	3.51	3.55	3.58	3.63	3.34	3.51
1985/86	3.27	3.09	2.87	2.83	3.04	3.33	3.46	3.34	3.37	3.40	3.39	3.25	3.22
1986/87	2.52	2.58	2.44	2.36	2.57	2.73	2.76	2.87	2.91	3.11	3.16	3.08	2.76
1987/88	2.63	2.54	2.61	2.77	2.82	2.80	3.00	3.23	3.23	2.94	3.02	3.13	2.89
1988/89	3.56	3.52	3.61	3.84	4.07	4.09	4.25	4.39	4.30	4.31	4.04	4.07	4.00
1989/90	3.87	3.92	3.94	3.93	4.07	4.07	4.13	4.03	3.92	3.61	3.83		
St. Louis, no. 2 soft red winter:													
1983/84	3.46	3.51	3.79	3.70	3.62	3.58	3.67	3.62	3.46	3.71	3.82	3.51	3.62
1984/85	3.45	3.44	3.50	3.52	3.60	3.72	3.67	3.69	3.65	3.67	3.65	3.24	3.57
1985/86	3.29	3.07	2.84	2.85	3.10	3.42	3.58	3.48	3.49	3.64	3.66	2.74	3.26
1986/87	2.61	2.60	2.54	2.55	2.88	3.05	3.06	3.08	3.05	3.09	2.88	3.03	2.87
1987/88	2.63	2.58	2.59	2.77	2.95	2.97	3.22	3.24	3.18	2.98	3.10	3.20	2.95
1988/89	3.50	3.56	3.73	3.94	4.13	4.22	4.33	4.46	4.30	4.39	4.22	4.20	4.08
1989/90	3.89	3.95	3.97	4.03	4.05	4.20	4.19	4.13	4.00	3.87	3.88		
Toledo, no. 2 soft red winter:													
1983/84	3.42	3.48	3.69	3.54	3.43	3.37	3.46	3.43	3.26	3.50	3.61	3.60	3.48
1984/85	3.50	3.44	3.44	3.44	3.43	3.53	3.43	3.52	3.56	3.54	3.58	3.30	3.48
1985/86	3.22	3.02	2.77	2.74	2.90	3.18	3.39	3.32	3.34	3.47	3.30	3.22	3.16
1986/87	2.58	2.55	2.45	2.33	2.61	2.75	2.81	2.92	2.93	3.06	2.99	3.07	2.75
1987/88	2.60	2.55	2.54	2.69	2.86	2.82	3.10	3.21	3.20	2.92	2.99	3.07	2.88
1988/89	3.63	3.63	3.73	3.93	4.02	4.06	4.26	4.37	4.24	4.26	4.02	4.09	4.02
1989/90	3.86	3.86	3.86	3.84	3.95	3.99	4.09	3.96	3.86	3.83	3.90		
Toledo, no. 2 soft white:													
1983/84	3.42	3.51	3.71	3.56	3.42	3.36	3.46	3.43	3.25	3.50	3.62	3.49	3.48
1984/85	3.35	3.37	3.42	3.42	3.41	3.51	3.41	3.50	3.53	3.48	3.48	3.18	3.42
1985/86	3.13	3.02	2.89	2.89	3.12	3.30	3.42	3.26	3.26	3.31	2.89	2.93	3.12
1986/87	2.50	2.52	2.48	2.29	2.54	2.69	2.73	2.80	2.84	2.87	2.79	2.89	2.66
1987/88	2.63	2.57	2.69	2.81	2.88	2.95	3.14	3.28	3.27	2.96	3.02	3.09	2.94
1988/89	3.62	3.61	2.82	3.87	3.94	3.95	4.11	4.22	4.02	4.06	3.80	3.91	3.83
1989/90	3.81	3.82	3.83	3.79	3.92	3.93	4.01	3.86	3.74	3.70	3.72		
Portland, no. 1 soft white:													
1983/84	4.15	4.08	4.06	4.12	4.03	3.90	3.81	3.79	3.69	3.73	4.03	4.05	3.95
1984/85	4.03	3.73	3.74	3.70	3.73	3.78	3.76	3.77	3.83	3.93	3.94	3.91	3.82
1985/86	3.73	3.57	3.45	3.57	3.72	3.77	3.80	3.75	3.74	3.85	3.88	3.78	3.72
1986/87	3.03	2.75	2.68	2.70	2.78	2.84	2.86	2.93	3.07	3.07	2.99	3.09	2.90
1987/88	2.87	2.79	2.73	2.94	3.08	2.97	3.05	3.26	3.21	3.10	3.32	3.36	3.06
1988/89	3.79	4.05	4.15	4.39	4.46	4.68	4.81	4.98	4.97	4.81	4.63	4.66	4.53
1989/90	4.47	4.47	4.50	4.56	4.72	4.64	4.63	4.44	4.11	3.76	3.68		
Minneapolis, no. 1 dark no. spring (ordinary protein):													
1983/84	4.15	4.07	4.21	4.30	4.33	4.23	4.20	4.15	4.06	4.20	4.28	4.39	4.21
1984/85	4.40	4.21	3.72	3.57	3.64	3.64	3.48	3.47	3.52	3.55	3.64	3.55	3.70
1985/86	3.54	3.29	2.87	2.97	3.01	3.42	3.45	3.38	3.32	3.33	3.42	3.05	3.25
1986/87	2.51	2.17	2.39	2.64	2.70	2.81	2.77	2.82	2.65	2.61	2.60	2.76	2.62
1987/88	2.66	2.52	2.60	2.74	2.85	2.81	2.96	3.12	3.26	3.05	3.19	3.30	2.92
1988/89	4.17	3.96	4.09	4.16	4.17	4.09	4.20	4.42	4.37	4.45	4.45	4.50	4.25
1989/90	4.29	4.21	4.22	4.23	NA	NA	NA	NA	NA	NA	NA		
Minneapolis, no. 1 dark no. spring (14% protein):													
1983/84	4.39	4.38	4.34	4.33	4.33	4.25	4.21	4.17	4.08	4.24	4.37	4.45	4.30
1984/85	4.45	4.34	4.07	3.97	4.03	4.02	3.92	3.90	3.92	3.94	4.36	4.02	4.08
1985/86	3.99	3.77	3.56	3.76	3.91	4.09	4.16	3.97	3.90	4.00	4.17	4.03	3.94
1986/87	3.17	3.00	2.86	2.85	2.98	3.09	3.04	3.08	3.13	3.19	3.17	3.24	3.07
1987/88	3.07	2.94	2.94	3.04	3.15	3.11	3.13	3.24	3.32	3.15	3.30	3.42	3.15
1988/89	4.32	4.23	4.24	4.32	4.33	4.22	4.26	4.44	4.40	4.56	4.47	4.55	4.36
1989/90	4.41	4.36	4.18	4.08	4.11	4.13	4.23	4.21	4.06	3.96	4.08		
Minneapolis, no. 1 hard amber durum:													
1983/84	4.76	4.74	5.04	5.10	4.99	4.91	4.82	4.81	4.69	4.70	4.74	4.71	4.83
1984/85	4.68	4.57	4.65	4.43	4.47	4.46	4.43	4.34	4.37	4.33	4.36	4.32	4.45
1985/86	4.16	4.05	3.99	4.07	4.03	4.08	4.09	4.01	4.01	3.99	4.07	4.24	4.07
1986/87	3.79	3.08	3.04	3.21	3.31	3.49	3.60	3.68	3.78	3.89	3.93	4.03	3.57
1987/88	3.91	3.66	3.80	4.30	4.31	4.33	4.22	4.19	4.22	4.02	4.21	4.39	4.13
1988/89	6.13	6.30	5.85	5.84	5.70	5.56	5.17	5.20	5.33	5.30	5.02	5.01	5.53
1989/90	4.64	4.50	4.18	4.08	4.11	4.08	4.20	4.23	4.12	4.13	4.30		

NA = Not available.
Source: Grain and Feed Market News, Agricultural Marketing Service, USDA.

Appendix table 12--Domestic and foreign wheat prices, 1980-1990

Year and month	United States				Foreign		
	Farm 1/	Kansas City 2/	Gulf Ports 3/	Rotterdam 4/	Argentina 5/	Canada 6/	Australia 7/
	$/metric ton						
Calendar year:							
1980	143	159	176	213	203	192	176
1981	142	160	176	210	190	194	175
1982	129	147	161	187	166	165	160
1983	132	145	158	185	138	169	161
1984	127	140	153	180	135	166	153
1985	117	125	137	169	106	173	141
1986	100	107	117	148	88	161	120
1987	94	104	114	141	89	134	115
1988	122	134	146	176	125	177	150
1989	142	160	171	190	151	202	176
1986:							
January	117	122	133	178	108	189	140
February	116	121	131	176	102	183	133
March	121	123	136	164	97	189	139
April	124	127	138	172	96	187	137
May	111	125	128	163	90	185	131
June	91	102	107	135	85	169	114
July	83	91	103	128	81	160	104
August	83	91	104	124	80	137	104
September	84	93	104	127	81	133	105
October	85	96	105	131	80	130	108
November	89	98	107	137	79	133	111
December	91	99	109	137	78	133	110
1987:							
January	93	100	110	141	82	136	110
February	95	103	114	145	92	138	112
March	94	107	116	140	90	139	115
April	97	107	115	138	88	134	115
May	98	111	120	146	88	136	119
June	90	100	110	144	86	130	111
July	85	95	106	134	84	126	107
August	87	97	108	134	84	124	109
September	93	103	114	139	89	130	115
October	96	105	116	139	95	134	118
November	99	105	116	140	95	134	118
December	99	114	126	148	95	142	126
1988:							
January	101	118	130	158	94	148	127
February	103	120	132	155	106	151	135
March	101	114	126	149	107	143	131
April	103	115	128	156	108	145	133
May	109	118	130	159	107	152	131
June	124	140	151	191	125	166	158
July	129	139	151	200	141	209	157
August	133	139	151	193	140	206	154
September	137	148	160	190	152	202	160
October	141	152	162	190	147	202	169
November	143	154	165	185	152	202	171
December	145	156	167	189	NQ	206	173
1989:							
January	148	162	175	205	NQ	213	179
February	148	161	173	207	NQ	212	178
March	150	166	179	192	NQ	210	183
April	148	164	176	192	NQ	207	179
May	147	167	177	193	NQ	209	182
June	141	161	170	187	156	204	178
July	139	157	168	185	155	204	175
August	137	155	165	181	155	196	170
September	137	153	164	180	149	188	171
October	138	156	165	183	149	190	172
November	136	159	168	183	147	191	174
December	140	161	170	191	149	194	176
1990:							
January	136	158	169	193	143	193	175
February	131	151	162	186	137	189	NA
March	128	148	157	178	123	191	NA
April	129	151	162	182	124	8/ 179	NA

NQ = No quotes.
1/ Hard red winter wheat. 2/ No.1, hard winter, ordinary protein. 3/ No. 2, hard winter, ordinary protein, f.o.b. vessel. 4/ U.S., no. 2 dark northern spring, 14 percent, c.i.f. 5/ f.o.b. Buenos Aires. 6/ No. 1, Canadian western red spring, 13.5 percent in-store, St. Lawrence. 7/ Australian standard wheat, f.o.b.
8/ Preliminary.

Appendix table 13--Wheat and wheat flour: World trade, production, stocks, and use, 1984/85-1990/91 1/

Country or region	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90 7/	1990/91 8/
	Million metric tons						
Exports:							
Canada	19.4	16.8	20.8	23.6	13.5	16.5	19.0
Australia	15.8	16.0	14.8	12.2	10.8	10.7	11.0
Argentina	8.0	6.1	4.3	3.8	3.5	6.0	6.7
EC-12	18.5	15.6	16.4	14.8	21.0	21.0	22.0
USSR	0.5	0.5	0.5	0.5	0.5	0.5	1.0
All others	6.7	4.9	5.5	6.7	10.0	7.7	7.7
Total non-U.S.	68.9	60.0	62.3	61.6	59.3	62.4	67.0
U.S. 2/	38.1	25.0	28.4	43.4	37.6	35.0	34.0
World total	107.0	85.0	90.7	105.0	96.9	97.4	101.0
Imports:							
EC-12	3.4	2.8	2.4	2.2	2.5	2.5	2.5
USSR	28.1	15.7	16.0	21.5	15.5	14.0	15.0
Japan	5.6	5.5	5.8	5.7	5.4	5.4	5.4
E. Europe	2.6	3.4	3.7	3.2	2.8	2.3	2.7
China	7.4	6.6	8.5	15.0	15.5	13.5	13.5
All others	59.9	50.9	54.3	57.4	55.1	59.7	61.9
World total	107.0	85.0	90.7	105.0	96.9	97.4	101.0
Production: 3/							
Canada	21.2	24.3	31.4	26.0	16.0	24.4	26.5
Australia	18.7	16.2	16.1	12.4	14.1	14.7	14.5
Argentina	13.2	8.5	8.9	8.8	8.4	10.2	11.5
EC-12	83.1	71.6	72.0	71.4	74.7	78.6	80.5
USSR 3/	68.6	78.1	92.3	83.3	84.4	90.5	95.0
E. Europe	42.1	37.1	39.2	39.9	44.7	42.3	43.2
China	87.8	85.8	90.0	85.8	85.4	91.0	93.0
India	45.5	44.1	47.1	44.3	46.2	54.0	54.0
All other foreign	61.1	68.4	76.7	72.3	77.5	74.1	76.7
U.S.	70.6	66.0	56.9	57.4	49.3	55.4	73.3
World total	511.9	500.1	530.6	501.6	500.8	535.2	568.2
Utilization: 4/							
U.S.	31.4	28.6	32.6	29.6	26.5	28.4	31.0
USSR 5/	91.2	91.6	102.8	101.5	100.4	101.5	107.0
China	92.2	100.4	101.5	102.8	104.4	105.0	105.8
All other foreign	275.3	274.4	285.5	296.7	299.9	303.4	309.6
World total	490.1	495.0	522.4	530.6	531.2	538.3	553.4
Stocks, ending: 6/	164.4	168.2	176.4	147.5	117.0	113.9	128.7

1/ July-June years. 2/ Includes transshipments through Canadian ports; excludes products other than flour. 3/ Production data include all harvests occurring within the July-June year shown, except that small grain crops from the early harvesting Northern Hemisphere areas are moved forward; i.e., the May 1984 harvests in areas such as India, North Africa, and southern United States are actually included in 1984/85 accounting period, which begins July 1, 1984. 4/ Utilization data are based on an aggregate of differing marketing years. For countries for which stock data are not available, utilization estimates represent apparent utilization, i.e., they are inclusive of annual stock level adjustments. 5/ "Bunker weight" basis; not discounted for excess moisture and foreign material. 6/ Stocks data are based on an aggregate of differing marketing years and should not be construed as representing world stock levels at a fixed point in time. 7/ Forecasted as of May 1990. 8/ Projected as of May 1990.

Source: World Grain Situation and Outlook, Foreign Agricultural Service, USDA.

Appendix table 14--Quarterly Government stock activity for wheat, 1987/88-1989/90

	1987/88				1988/89				1989/90		
	June-Aug.	Sept.-Nov.	Dec.-Feb.	March-May	June-Aug.	Sept.-Nov.	Dec.-Feb.	March-May	June-Aug.	Sept.-Nov.	Dec.-Feb.
	Million bushels										
9-month loans:											
Carryin outstanding	235.0	245.1	383.1	301.1	117.0	108.1	93.1	46.9	19.2	48.2	80.4
Loans made	104.0	293.7	63.5	13.0	60.1	34.2	10.8	1.7	42.6	47.1	17.8
Certificate exchange	33.2	124.0	24.4	11.0	5.8	0.7	0.5	0.2	0.0	0.1	0.1
Cash redemption	45.3	11.4	110.5	118.7	118.2	47.1	55.2	23.1	13.5	14.8	32.7
CCC collateral acquired	15.4	20.3	10.6	7.4	5.0	1.4	1.3	6.1	0.1	0.0	0.0
Reserve conversion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carryout outstanding	245.1	383.1	301.1	117.0	108.1	93.1	46.9	19.2	48.2	80.4	65.4
FOR loans:											
Carryin FOR	631.0	597.5	553.4	519.8	466.8	391.0	383.4	377.9	287.0	211.4	173.6
Reserve conversion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cash redemption	2.0	4.2	0.0	8.3	0.0	0.5	1.8	68.4	39.6	8.7	3.7
CCC collateral acquired	17.0	27.4	21.6	23.1	23.2	3.4	1.8	2.9	24.1	23.2	10.9
Certificate exchange	14.5	12.5	12.0	21.6	52.6	3.7	1.9	19.6	11.9	5.9	5.4
Carryout FOR	597.5	553.4	519.8	466.8	391.0	383.4	377.9	287.0	211.4	173.6	153.6
CCC owned:											
Carryin CCC	830.1	798.8	755.4	450.1	283.0	250.0	213.0	203.2	190.5	167.9	154.5
CCC collateral acquired	32.4	47.7	32.2	30.5	28.2	4.8	3.1	9.0	24.2	23.2	10.9
Certificate exchange	47.9	69.4	302.8	158.9	20.2	23.6	9.0	6.6	3.5	42.9	13.5
Other 1/	15.8	21.7	34.7	38.7	41.0	18.2	3.9	15.1	43.3	(6.3)	15.4
Carryout CCC	798.8	755.4	450.1	283.0	250.0	213.0	203.2	190.5	167.9	154.5	136.5

1/ Includes PL480 exchanges for Title II, off-grade sales, domestic programs, section 416 export programs, and residual errors.

Appendix table 15--Rye: Supply, disappearance, area, and price, 1982/83-1990/91

Item	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90 1/	1990/91 2/
				Million acres					
Area:									
Planted	2,533	2,707	2,971	2,543	2,334	2,428	2,374	2,014	1,862
Harvested	677	892	979	708	661	671	595	479	525
				Bushels per acre					
Yield/harvested acre	28.8	30.3	33.1	28.8	28.8	29.1	24.7	28.1	29.0
				Million bushels					
Supply:									
Beginning stocks	3.0	5.8	11.2	19.8	21.9	18.6	18.9	10.3	4.0
Production	19.5	27.0	32.4	20.4	19.1	19.5	14.7	13.5	15.2
Imports	3.0	1.6	0.6	2.2	1.0	1.2	0.2	0.2	0.3
Total supply	25.5	34.4	44.2	42.4	41.9	39.3	33.8	24.0	19.5
Disappearance:									
Food	3.3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Feed and residual	9.6	11.9	14.4	10.9	13.7	10.6	11.4	10.0	6.0
Seed	4.3	4.7	4.1	3.8	3.7	3.8	3.2	3.0	3.0
Industry	2.3	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.0
Total domestic	19.5	22.2	24.0	20.3	22.9	19.9	20.1	18.5	14.5
Exports	0.2	1.0	0.4	0.2	0.5	0.5	3.4	1.5	1.0
Total disappearance	19.7	23.2	24.4	20.5	23.4	20.4	23.5	20.0	15.5
Ending stocks	5.8	11.2	19.8	21.9	18.6	18.9	10.3	4.0	4.0
				$/bushel					
Prices:									
Loan rate	2.17	2.25	2.17	2.17	1.63	1.55	1.50	1.40	1.33
Season average price	2.40	2.17	2.08	2.03	1.49	1.63	2.52	2.10	2.10
				$1,000					
Value of production	47,460	60,074	68,828	41,902	29,159	31,641	37,006	27,652	27,652

1/ Preliminary. 2/ Projected.

Appendix table 16--Rye: Production by major States, 1981-89

State	1981	1982	1983	1984	1985	1986	1987	1988	1989
					1,000 bushels				
Georgia	2,730	1,470	1,470	1,760	2,070	1,785	1,540	1,890	1,610
Indiana	234	260	270	336	308	280	162	210	204
Michigan	448	522	600	588	651	713	640	650	660
Minnesota	2,883	3,300	4,960	6,650	3,300	1,600	1,200	920	1,088
Nebraska	924	1,269	1,265	1,392	1,242	1,035	1,150	1,375	600
N. Jersey	261	319	390	261	320	310	232	310	182
N. York	288	341	416	429	420	429	300	396	480
N. Carolina	400	525	440	550	665	595	600	780	525
N. Dakota	2,170	2,400	4,320	5,400	2,640	4,250	5,115	1,350	1,064
Oklahoma	680	736	780	704	828	840	360	720	532
Pennsylvania	363	408	578	578	740	630	525	684	576
S. Carolina	726	621	320	546	532	391	528	720	644
S. Dakota	3,220	4,680	8,740	10,800	4,440	4,440	5,040	2,250	3,240
Virginia	364	364	312	378	312	364	435	560	264

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