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Wheat Year in Review (Domestic): High U.S. Exports Drive Record Prices and Low 2007/08 Ending Stocks

Gary Vocke

Abstract

U.S. wheat supplies were up in 2007/08 as favorable wheat prices at planting time expanded plantings and Great Plains hard red winter wheat production recovered from the severe drought the previous year. Use was up markedly with sharply increased exports, the highest in 15 years. A global shortage of wheat because of low stocks and adverse weather around the world led to a large foreign demand for U.S. wheat and historically low U.S. ending stocks, the lowest since the late 1940s. Reflecting these and other factors, U.S. wheat prices soared. The 2007/08 farm gate season average price (SAP) was $6.48 per bushel. The previous SAP high was $4.55 per bushel in 1995/96.

Keywords: Wheat, United States, world, production, feed, consumption, supply, use, stocks, price

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Approved by USDA's World Agricultural Outlook Board

Summary

Supplies. Total U.S. supplies for 2007/08 were 130 million bushels above those for 2006/07. All U.S. wheat production totaled 2,067 million bushels in 2007, 14 percent above 2006. Planted area was up and the recovery from the 2006/07 drought reduced abandonment and raised yields despite winter wheat losses from spring freeze damage and harvest-time rains. Lower beginning stocks and imports than in 2006/07 partially offset the increased all-wheat production.

Utilization. U.S. domestic wheat use in 2007/08 was down from 2006/07 as sharply reduced feed and residual use, due to exceptionally high prices, more than offset slightly higher food use. U.S. exports for the 2007/08 marketing year were 1,264 million bushels, sharply above 2006/07 despite record prices. Throughout the 2007/08 marketing year, adverse weather events around the world reduced crops in several major wheat-producing and exporting countries. Importing countries had few alternatives and turned to United States for a greater share of their needs. Demand for U.S. wheat was also boosted by export restrictions and taxes imposed by several major exporting countries to control internal food costs. Exports in 2007/08 reached a 15-year high. Underlying the high world wheat prices was a decline of world wheat stocks to a 26-year low as global consumption exceeded production in 7 of the 8 years through 2007/08.

Ending stocks, prices, and price spreads. Ending stocks of U.S. wheat for 2007/08, at 306 million bushels, were down sharply from 2006/07. U.S. ending stocks have not been this low since the late 1940s. The low ending stocks led to a historic run up in prices. The 2007/08 farm gate season average price (SAP) was $6.48 per bushel, up from the previous SAP high of $4.55 per bushel in 1995/96. The all-wheat monthly price at the start of the 2007/08 marketing year in June 2007 was $5.03 per bushel. The farm gate monthly price rose to $10.50 per bushel in March 2008, led by a durum price of $15.40 per bushel.

All Wheat Situation for 2007/08

Production and Supplies Up in 2007/08 With Recovery From Historically Low Planted Area

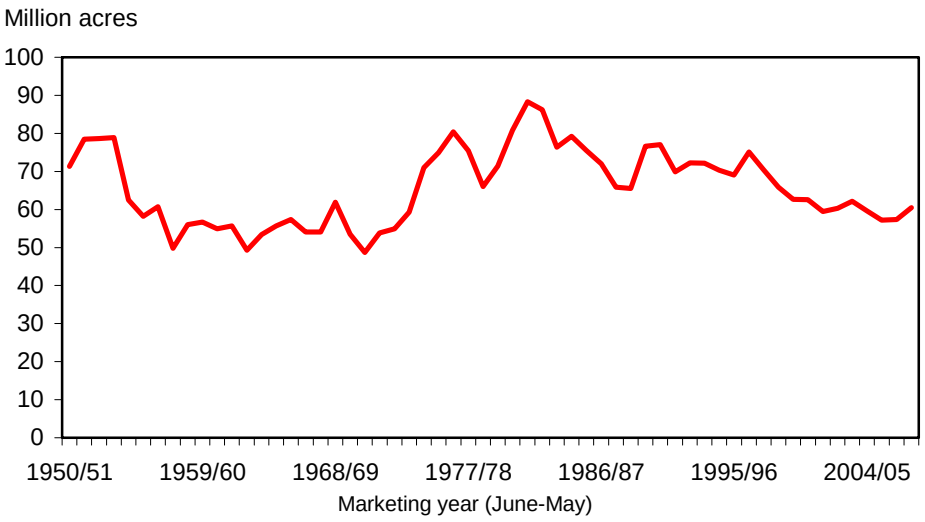
For all wheat, 2007 planted area of 60.4 million acres was up 3.1 million from 2006 and up 3.2 million from the 57.2 million acres planted in 2005. Planted area for 2005 was the lowest since 1972, when U.S. wheat producers planted only 54.9 million acres (fig.1). This low acreage at the beginning of the 1970s was the result of U.S. government programs that idled substantial cropland. This land use policy was reversed with higher prices beginning in 1973. In contrast, U.S. wheat farmers planted 88.3 million and 86.2 million acres in 1981 and 1982, respectively[1].

U.S. wheat production was estimated at 2,067 million bushels for 2007, up 255 million bushels or 14 percent from 2006 as favorable wheat prices expanded plantings and the Great Plains recovered from severe drought in 2006. The 2006 drought reduced both yields and harvested area, particularly in the Southern Plains. Production of hard red winter wheat (HRW) was up 280 million bushels from 2006 despite losses due to an April freeze and excessive rainfall at harvest time in parts of the Central and Southern Plains. While U.S. planted area for all wheat was up 3.1 million acres, harvested area was up 4.2 million acres as recovery from the drought on the Plains led to reduced abandonment. The U.S. average yield was 40.5 bushels per acre, up 1.8 bushels from 2006 with the improved weather conditions.

Supplies for 2007/08 were up 130 million bushels from 2006/07 because increased production more than offset lower beginning stocks and imports (table 1). Beginning stocks were down 115 million bushels year-to-year. Imports were down from the previous marketing year by 9 million bushels.

Figure 1

U.S. wheat planted area, 1950/51- 2007/08



Source: USDA, National Agricultural Statistics Service, *Quick Stats* .

[1] For information about the long-term forces behind this large decline in wheat area in the United States, see USDA Wheat projections, 2008-17, http://www.ers.usda.gov/briefing/wheat/2008baseline.htm.

Table 1--Wheat: U.S. market year supply and disapperance

Item and unit		2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Area:							
Planted	Million acres	60.3	62.1	59.7	57.2	57.3	60.4
Harvested	Million acres	45.8	53.1	50.0	50.1	46.8	51.0
Yield	Bushels per acre	35.0	44.2	43.2	42.0	38.7	40.5
Supply:							
Beginning stocks	Million bushels	777.1	491.4	546.4	540.1	571.2	456.2
Production	Million bushels	1,605.9	2,344.8	2,158.2	2,104.7	1,812.0	2,066.7
Imports 1/	Million bushels	77.4	63.0	70.6	81.4	121.9	112.6
Total supply	Million bushels	2,460.4	2,899.2	2,775.3	2,726.1	2,505.1	2,635.5
Disappearance:							
Food use	Million bushels	918.6	911.9	909.6	917.1	937.9	947.8
Seed use	Million bushels	84.4	79.7	77.6	77.7	81.5	87.6
Feed and residual use	Million bushels	115.7	202.9	182.1	157.3	121	30.1
Total domestic use	Million bushels	1,118.7	1,194.4	1,169.2	1,152.2	1,140.5	1,065.8
Exports 1/	Million bushels	850.2	1,158.3	1,065.9	1,002.8	908.5	1,264.1
Total disappearance	Million bushels	1,968.9	2,352.8	2,235.2	2,155.0	2,048.9	2,329.9
Ending stocks	Million bushels	491.4	546.4	540.1	571.2	456.2	305.8
CCC inventory 2/	Million bushels	66.0	61.0	54.0	43.0	41.0	0
Stocks-to-use ratio		25.0	23.2	24.2	26.5	22.3	13.1
Loan rate	Dollars per bushel	2.80	2.80	2.75	2.75	2.75	2.75
Contract/direct payment rate	Dollars per bushel	0.52	0.52	0.52	0.52	0.52	0.52
Farm price 3/	Dollars per bushel	3.56	3.40	3.40	3.42	4.26	6.48
Government payments	Million dollars	1,172	1,237	1,218	1,151	1,120	1,118
Market value of production	Million dollars	5,679	7,929	7,283	7,171	7,710	13,392

Totals may not add due to rounding.
1/ Includes flour and selected other products expressed in grain-equivalent bushels.
2/ Stocks owned by USDA's Commodity Credit Corporation (CCC). Most CCC-owned inventory is in the Bill Emerson Humanitarian Trust.
3/ U.S. season-average price based on monthly prices weighted by monthly marketings. Prices do not include an allowance for loans outstanding and government purchases.
Sources: USDA, World Agricultural Outlook Board, *World Agricultural Supply and Demand Estimates* and supporting materials.

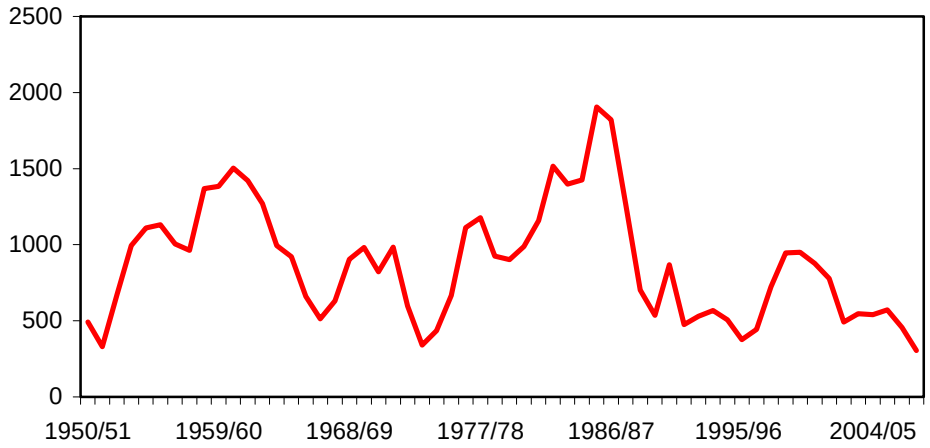
Higher Exports More Than Offset Reduced Feed and Residual Use In 2007/08

Total disappearance of U.S. wheat in 2007/08 was up 281 million bushels from a year earlier, to 2,330 million bushels. Domestic use was down 75 million bushels while exports were up 356 million bushels. The high exports, the largest since 1992/93, occurred because of the shortfalls in other major-producing countries. Food use was 948 million bushels, up 10 million bushels from a year earlier, with per capita flour use recovering after the sharp decline that began in 2000. Feed and residual use, at 30 million bushels, was down sharply in 2007/08. Extremely high wheat prices for wheat during 2007/08 essentially eliminated feeding and sharply reduced residual loss. Ending stocks for 2007/08 were 306 million bushels, a level not seen since the late 1940s and well below the recent peak of 950 million bushels in 1999/2000 (fig. 2). Expectations that the strong export demand would result in near record low ending stocks kept wheat prices high throughout the marketing year.

Figure 2

U.S. wheat ending stocks, 1950/51- 2007/08

Million bushels



Source: USDA, National Agricultural Statistics Service, *Quick Stats* .

U.S. Export Demand High in 2007/08

Global stocks at the start of 2007/08 were down from a year earlier and the lowest level since 1982/83. Rising wheat prices in late 2006 and 2007 provided a strong incentive to plant wheat, and farmers generally responded around the world. Then adverse weather conditions reduced production in many wheat-producing regions, limiting global output. The result was very strong demand for U.S. wheat.

Across Northern Europe, a dry spring was followed by heavy rains during the harvest period. In Southeast Europe, a drought was accompanied by high temperatures, reducing area harvested as well as yields. Drought in eastern Ukraine and into the southern district of Russia (North Caucases) severely reduced winter wheat production for the second straight year. Canada's wheat area declined as prices favored canola and a wet spring delayed seeding. Also, hot, dry weather in July reduced yields. Wheat production in Australia in 2007/08 was cut by a drought nearly as bad as that in the previous year. Wheat production in North Africa dropped, largely due to drought in Morocco. Production in the Middle East declined mostly due to a cold winter and dry conditions that affected production in Turkey.

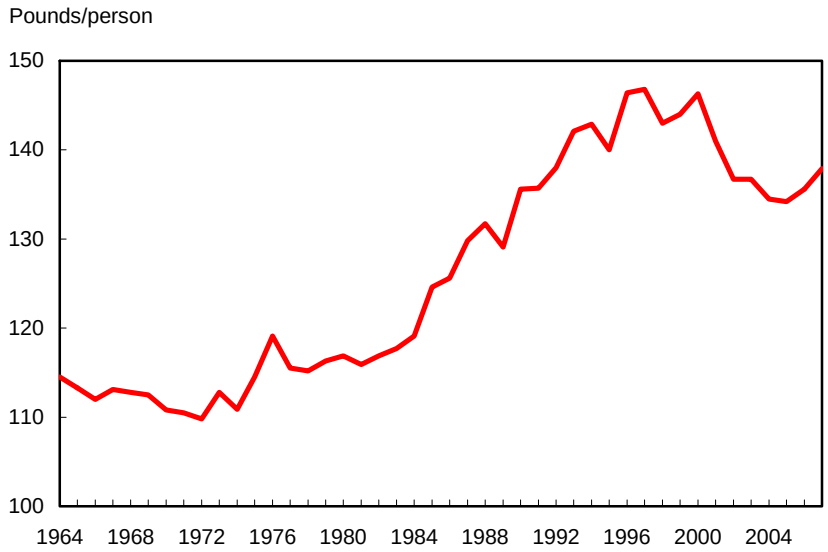
U.S. wheat exports were further boosted as several wheat exporting countries, especially Argentina, Ukraine, Russia, and Kazakhstan, limited exports with quantity controls or export taxes in an effort to control their domestic wheat and food prices.

U.S. Per Capita Flour Use Decline Ends

U.S. per capita wheat flour use for calendar year 2007 was estimated at 137.9 pounds, up 2.3 pounds from a year earlier, but still down 8.4 pounds from the recent

Figure 3

U.S. per capita wheat flour use



Sources: Calculated using data from U.S. Department of Commerce, Bureau of Economic Analysis and Bureau of the Census, Flour Milling Products (MQ311A) and trade data.

high in 2000 (fig. 3). Until the late 1990s, U.S. wheat producers could count on rising per capita food use of wheat to expand the domestic market for their crop.

The strength of this domestic market developed out of the historic turnaround in U.S. per capita wheat use that occurred in the early 1970s. Starting in the mid-1800s, per capita wheat use declined in the United States, as strenuous physical labor became less common and diets diversified. Wheat use dropped from over 225 pounds per person in 1879 to a low of 110 pounds in 1972. However, by 1996, use rebounded to 146.8 pounds per capita. The boom in away-from-home eating, the desire of consumers for greater variety and more convenience in food products, the promotion of wheat flour and pasta products by industry organizations, and widespread recognition of health benefits stemming from eating high-fiber grain-based foods all influenced the growth in per capita wheat use.

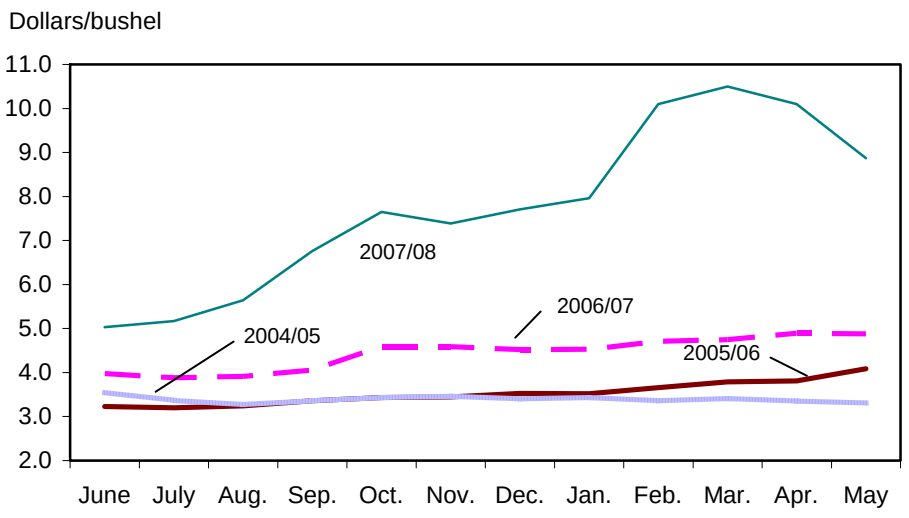
The decades-long growth ended in 1997 as changing consumer preferences, led by the adoption of low-carbohydrate diets, reduced per capita wheat consumption. Consumer interest in these diets spiked after 2000. Per capita flour use dropped rapidly at first and then fell more slowly until reaching a low of 134.2 pounds in 2005. In response, the flour milling industry was forced to close some smaller, older, and less efficient mills. From 2000 to the start of 2006, 12 percent of the 223 mills listed in *Grain & Milling Annua*l closed, while milling capacity fell by 7 percent.

U.S. Prices Were Up Sharply in 2007/08

The all-wheat monthly farm gate price at the start of the 2007/08 marketing year was $5.03 per bushel (fig. 4). Rising slowly at first, the all-wheat monthly farm

Figure 4

Prices for 2007/08 are sharply above earlier years



Source: USDA, National Agricultural Statistics Service,*Quick Stats* .

price began a very rapid rise, reaching $7.65 per bushel for October, as exports spiked upwards. Trouble with the Australian crop was increasingly realized. Farmers marketed their wheat at a faster-than-normal seasonal rate with this steep rise in prices. Cash bid prices at principal markets for nearly every U.S. wheat class declined through October and into mid-November as Russian and Kazakhstan spring wheat crops proved better than expected. After this brief pause, however, prices for U.S. wheat began moving up again as weather problems continued in Australia and major exporters, such as Argentina and Russia, took steps to restrict their exports. The farm-gate all-wheat monthly price rose to $10.50 per bushel in March, with durum prices reaching $15.40 per bushel. In subsequent months, farm-gate prices dropped off slightly. The monthly farm-gate price premium of wheat over corn went from $1.50 per bushel in June to $5.80 per bushel by March. Such price premiums eliminated wheat feeding throughout the marketing year.

High Prices Reduce Farm Program Expenditures for 2007 Crop

The U.S. wheat sector receives various forms of government assistance, including marketing assistance loans, direct and countercyclical payments, crop insurance, and export assistance through credit guarantees and food donation programs[2].

Marketing Loans. Nonrecourse marketing assistance loans provide for benefits to producers when market prices are low. Farmers can get these benefits through the loan program and market loan gains, or equivalently, through loan deficiency payments (LDP).

For the 2007 crop, loans were made on only 36 million bushels and the high prices meant that there were no marketing loan gains or loan deficiency payments. The quantity put under loan has been dropping from a recent peak of 186 million bushels for the 2003 crop. In 2003, total LDPs were $87 million paid on 494 million bushels.

[2] For more information on these programs, see The 2002 Farm Act: Provisions and Implications for Commodity Markets http://www.ers.usda.gov/publications/aib778/.

Direct payments (DPs). DPs under the 2002 Farm Act were similar to production flexibility contract (PFC) payments under the 1996 Farm Act. DPs were decoupled from current production and prices, providing farmers with a fixed predetermined payment that did not depend on market conditions. The wheat DP expenditures have averaged $1.1 billion annually under the 2002 Farm Act.

Countercyclical payments (CCPs). CCPs were decoupled from current production, but linked inversely to season-average farm prices. CCP rates rise as the season-average market price falls below a specified level. The payments were intended to replace ad hoc market loss assistance payments, which supplemented PFC payments in 1998-2001.

There have not been any wheat CCP net expenditures under the 2002 Farm Act because wheat prices have been above the CCP trigger.

Crop insurance subsidies. Since the 2001 crop year, roughly 75 percent of planted wheat acres have been insured annually under the Federal crop insurance program. In 2007, about 47 million wheat acres were insured and total crop insurance premiums for wheat were about $896 million, of which about $525 million were premium subsidies paid by the Government. About $818 million were paid to wheat producers in crop insurance indemnities on the 2007 crop. Participation in revenue insurance increased slightly in 2007, reaching about 77 percent of wheat insured acres.

Export Assistance and Food Aid. U.S. food assistance programs donate or sell agricultural products directly to individual countries with food-aid needs or through loans at concessional rates. The United States provides food assistance through Public Law 480 (Food for Peace) and the Food for Progress Program. Title I of PL 480 finances sales of commodities under long-term credit arrangements to developing countries that were deemed to have insufficient foreign exchange. Title II provides for donations for emergency food relief and nonemergency humanitarian assistance to international organizations such as the World Food Program and to recipient governments. Section 416(b) of the Agricultural Act of 1949, as amended, provides for donations of Commodity Credit Corporation (CCC)-owned surplus commodities to developing countries. Food for Progress authorizes the donation or sale of food-aid commodities to assist developing countries that were implementing market-oriented policy reform. During 2007/08, most of the CCC-owned wheat stocks were in the Bill Emerson Humanitarian Trust (formerly the Food Security Commodity Reserve) and thus were available for humanitarian purposes[3]. The McGovern-Dole International Food for Education and Child Nutrition Program was authorized by the 2002 Farm Act to provide donations of U.S. agricultural products and technical assistance for school feeding projects in low-income countries.

[3] By the end of the 2007/08 marketing year, USDA had sold all CCC-owned stocks.

With the ending of the Export Enhancement Program (EEP) activity in the mid-1990s and the decline in Section 416 since the late 1990s, the share of U.S. wheat exports under these and other food-assistance programs has dropped sharply from an average of 75 percent in the first half of the 1990s. In 2006/07, the latest year for which data is available, only 7 percent of total U.S. exports were under any of these programs. This level was slightly less than the 9 percent in 2005/06 and less than half of the 18 percent in 2004/05 as the volume under both PL 480 shipments and CCC Credit Guarantee dropped sharply.

Wheat by Class in 2007/08

2007/08 Ending Stocks of All Classes of Wheat Were Remarkably Low

Ending stocks of all classes of U.S.wheat, except for soft red winter (SRW) wheat, were at historical lows over the past three decades. Supplies of hard red winter (HRW) wheat were up markedly year-to-year due to recovery from the previous year's drought. Supplies of all other classes of wheat were down or nearly unchanged year-to-year. Use of all classes of wheat, except white wheat was up, due to higher exports. Volatile inter-class price spreads led to unexpected shifts in the blending of classes of wheat for milling during the marketing year.

HRW Production Up Sharply in 2007/08 After the 2006 Drought

HRW production totaled 962 million bushels, up 41 percent (280 million bushels) from the previous year (table 2). HRW harvested acreage was 25.732.9 million acres, up 21 percent from the previous year, as higher price expectations led to higher planted area and recovery from the 2006 drought in the Great Plains States led to an improved harvest-to-planted ratio, 78 percent vs 73 percent[4]. Yields were up year-to-year by 5.4 bushels per acre to 37.4 bushels. The HRW crop had great yield potential from earlier rains, but was reduced to an average-type yield due to freeze and harvest time rain.

[4] By class acreage data are provided by USDA's National Agricultural Statistics Service (NASS) to the Economic Research Service for internal analysis and publication.

HRW harvested acreage was up significantly in 2007 from 2006 mostly due to improved moisture conditions in the Great Plains States. The National Agricultural Statistic Service's (NASS) Small Grains–2007 Summary reported that rains in 2007 that broke the 2006 drought persisted throughout much of the growing season. Kansas was the only State in the region that did not increase harvested acres from 2006, due to the April freeze and June flooding that destroyed fields, particularly in the central part of the State. Rains throughout June 2007 also caused flooding and delayed harvest in Kansas, Oklahoma, and Texas. In Texas, wheat production was up 418 percent from the 2006 drought-stricken crop. Overall, Texas experienced very little crop failure due to the above-normal precipitation and below-normal temperatures this year, except in the eastern wheat-producing regions where some acres were destroyed by flooding. Oklahoma's production was up 20 percent from 2006. The Oklahoma season began under ideal conditions but an April freeze and an unprecedented 17 straight days of rain during June took a toll on the crop's quality. The rains came as operators were beginning harvest and caused many fields to be completely abandoned. The impact of these adverse weather conditions on HRW wheat quality, and the qualities of the other classes of wheat, is shown in table 3 5.

HRW supplies in 2007/08 were 229 million bushels higher than a year earlier, as the higher production more than offset beginning stocks that were 50 million bushels lower. Total use was 255 million bushels higher than previous year (table 2). The higher exports, up 258 million bushels, overwhelmed slightly reduced domestic use. The net result was to lower HRW ending stocks by 25 million bushels compared with the previous year. These stock levels were very low, dropping the ending stocks-to-use ratio to 14 percent, much less than the previous 5-year average of 23 percent.

Table 2--Hard red winter wheat supply and demand 1/

Item	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
					Million acres					
Area:										
Planted	32.4	30.8	30.4	28.9	30.1	32.6	30.8	30.0	29.3	32.9
Harvested	27.3	24.4	23.6	20.9	19.9	25.6	23.4	24.6	21.3	25.7
					Bushel per harvested acre					
Yield	43.2	43.1	35.9	36.7	31.1	41.7	36.6	37.8	32.0	37.4
					Million bushels					
Supply:										
Beg. stocks	307	435	458	411	363	188	227	193	215	165
Production	1,179	1,051	846	766	620	1,071	856	930	682	962
Imports	1	0	0	1	0	0	1	0	1	1
Total supply	1,487	1,486	1,304	1,178	984	1,260	1,084	1,123	898	1,127
Domestic use:										
Food	387	386	375	366	377	378	382	370	366	397
Seed	35	34	32	34	37	35	33	33	36	35
Residual	186	132	93	65	74	109	86	77	51	19
Total domestic	608	552	500	465	488	522	502	481	453	452
Exports	444	476	393	349	308	510	389	428	280	538
Total use	1,052	1,028	893	815	795	1,033	891	908	733	990
Ending stocks	435	458	411	363	188	227	193	215	165	138

1/ ERS estimates of area, yield, and domestic use.

Sources: Unpublished data from the National Agricultural Statistics Service, calculations based on Department of Commerce, Bureau of the Census and USDA data, and market information collected by ERS.

Table 3--Summary of wheat class qualities for 2007 1/

Class	Protein (Percent)	Flour/semolina extraction (Percent)	Test weight (Pounds/bushel)	Wheat falling numbers (Seconds)
2007 wheat crop:				
Hard red winter	11.6	68.3	59.7	417
Hard red winter	14.3	67.7	61.1	432
Soft red winter	10.3	71.0	60.0	343
Soft white	10.2	68.8	60.0	331
Durum	15.1	63.8	59.9	367
2006 wheat crop:				
Hard red winter	13.7	67.7	60.5	392
Hard red winter	15.2	68.5	60.4	431
Soft red winter	9.9	68.0	59.8	318
Soft white	10.5	70.3	60.2	335
Durum	15.1	65.1	59.9	385
5-year average:				
Hard red winter	12.8	69.5	59.7	402
Hard red winter	14.6	69.0	60.4	382
Soft red winter	10.0	68.9	59.3	348
Soft white	10.3	67.9	59.9	348
Durum	14.1	64.4	60.7	360

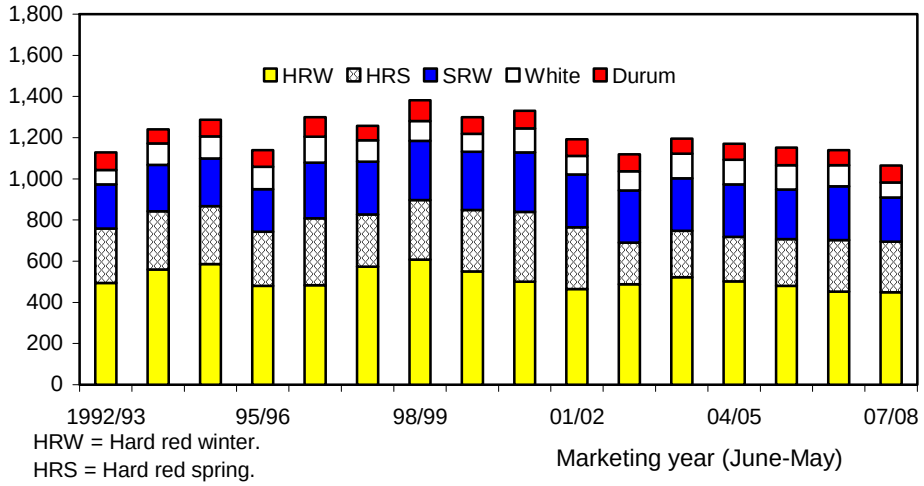
1/ ERS estimates of area, yield, and domestic use.

Source: U.S. Wheat Associates. *Crop Quality Report 2007*.

Figure 5

U.S. domestic wheat use for 2007/08 lower than recent years

Million bushels

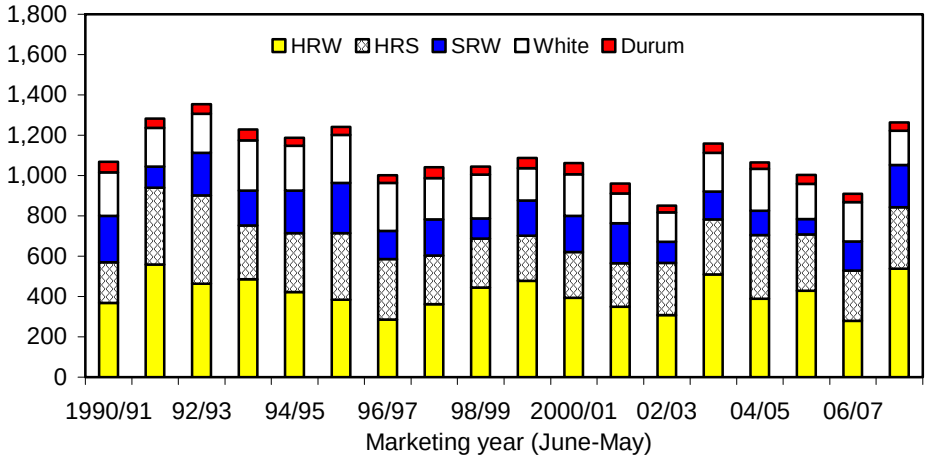


HRW = Hard red winter.
HRS = Hard red spring.
SRW = Soft red winter.
Source: USDA, Estimated by ERS for the monthly*Wheat Outlook* .

Figure 6

Wheat exports are up substantially in 2007/08

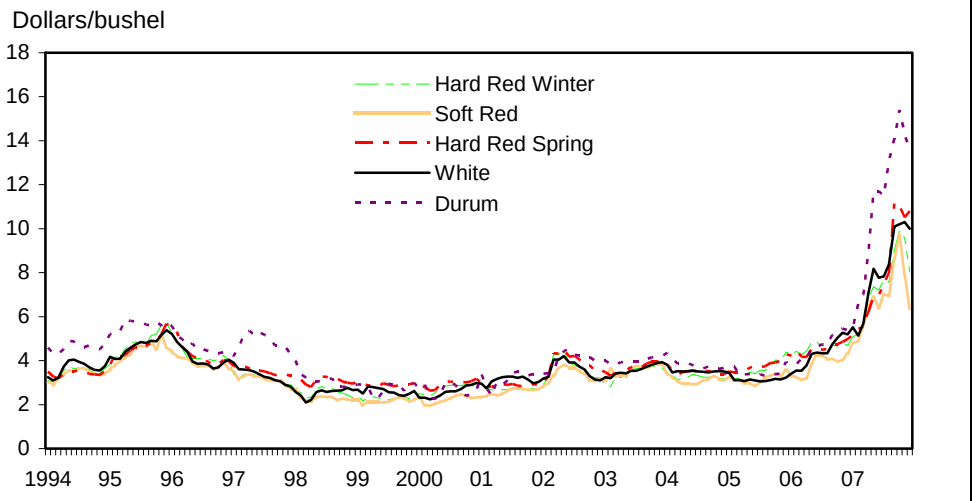
Million bushels



Source: Calculated by ERS from Department of Commerce, Bureau of the Census data.

Figure 7

Average monthly prices received by wheat farmers, June 1994-May 2008



Source: USDA, National Agricultural Statistics Service, *Agricultural Prices* .

The monthly farm-level prices of HRW for 2007/08 were considerably above a year earlier. Because of the large world demand for the crop, prices began to rise very rapidly from the beginning of the marketing year. Monthly HRW farm-gate prices increased from a harvest low of $5.10 per bushel in June to $7.37 in October, then dipped slightly when wheat supplies in Russia and Kazakhstan proved to be better than earlier projections had indicated. However, global supply concerns and high export demand persisted, and prices began to rise again, reaching $7.56 per bushel in January 2008 then soaring to $9.93 in March.

The domestic demand situation was driven by quality issues. Abundant rainfall led to the low-protein content of HRW, especially compared to the hard red spring (HRS) wheat. Also, from August to mid-October the March contracts at Kansas City and Minneapolis had HRS at a discount to HRW. Thus, millers were substituting HRS for HRW as the HRS crop was being harvested. Then, price relationships reversed and the HRS premium to HRW began to balloon, especially after it was revealed that Canada's HRS supplies were less than expected. By the middle of December, some U.S. millers were substituting HRW for HRS. This substitution gained momentum into 2008.

HRS Production Up Compared With a Year Ago

Despite lower planted area than in 2006, production for the 2007 HRS crop was up year-to-year by 4 million bushels at 449 million bushels (table 4). As with the HRW situation, recovery from the year-earlier drought led to a higher harvest-to-planted percentage and improved yields. The average HRS yield was 36.2 bushels per acre, up 4.0 bushels from the previous year.

Table 4--Hard red spring wheat supply and demand 1/

Item	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
					Million acres					
Area:										
Planted	14.8	14.3	14.4	14.8	14.8	13.1	13.0	13.3	14.4	12.7
Harvested	14.4	13.8	13.6	13.7	12.6	12.7	12.5	12.9	13.4	12.4
					Bushels per harvested acre					
Yield	33.8	32.5	37.0	34.6	27.9	39.2	42.2	36.0	32.2	36.2
					Million bushels					
Supply:										
Beg. stocks	220	233	218	210	230	145	157	159	132	117
Production	486	448	502	475	351	500	525	467	432	449
Imports	58	56	56	61	23	9	8	12	50	48
Total supply	765	737	776	746	605	654	690	638	614	614
Domestic use:										
Food	230	242	267	250	215	223	228	227	236	233
Seed	18	24	20	23	20	19	21	21	19	20
Residual	40	28	51	26	-33	-17	-33	-22	-6	-13
Total domestic	288	295	339	299	202	225	216	226	249	240
Exports	243	224	227	217	258	272	315	280	248	305
Total use	532	518	566	516	460	497	531	506	497	546
Ending stocks	233	218	210	230	145	157	159	132	117	68

1/ ERS estimates of area, yield, and domestic use.

Sources: Unpublished data from the National Agricultural Statistics Service, calculations based on Department of Commerce, Bureau of Census and USDA data, and market information collected by ERS.

The NASS *Small Grains–2007 Summary* reported that spring wheat planting in the six major producing States started off behind normal mostly due to colder-than-normal temperatures in April. However, planting had progressed ahead of normal by the end of May due to warm and dry weather across much of the growing area. The crop's development and maturation was accelerated by warm temperatures and timely rains during June. Hot and dry weather during July caused the crop condition ratings to decline and pushed maturation and harvest progress ahead of the normal pace in all States in the growing area. The yield potential of the crop was also reduced by this hot and dry weather. Nonetheless, yields were at or above the previous year's level in all States except Colorado, Idaho, and Washington. North Dakota and South Dakota yields were up significantly from the previous year's drought-stressed crop.

HRS supplies in 2007/08 were unchanged from a year earlier. Production was up 17 million bushels, while beginning stocks and imports were down 15 million bushels and 2 million bushels, respectively. Imports were down because of reduced supplies in Canada. Total use was 54 million bushels higher than in 2006/07. Exports were 57 million bushels higher than a year earlier, while domestic use was down 4 million. The net result was that HRS ending stocks for 2007/08 were down 54 million bushels from 2006/07. These stock levels were very low. The ending stocks-to-use ratio was 11 percent, much lower than the average of the previous 5 years of 29 percent. Because the HRS harvest follows the HRW harvest by several weeks, the substitution of HRW for HRS will have to continue from 2007/08 into the early part of the 2008/09 marketing year.

The monthly farm-gate prices of HRS for 2007/08 were considerably above a year ago because the huge export demand for the crop. Monthly HRS prices increased steadily from a marketing year low of $5.17 per bushel in June 2007 to a high of $11.20 in February 2008. The use of HRS in the hard wheat mills first increased

Table 5--White wheat supply and demand 1/

Item	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
					Million acres					
Area:										
Planted	4.7	4.4	4.4	4.2	4.4	5.2	5.1	4.9	4.3	4.0
Harvested	4.5	4.1	4.2	4.0	4.1	5.0	4.8	4.7	4.1	3.8
					Bushels per harvested acre					
Yield	67.0	60.0	75.1	56.9	56.4	59.5	64.5	63.6	62.0	60.3
					Million bushels					
Supply:										
Beg. stocks	90	87	91	75	73	75	72	63	78	44
Production	301	245	301	226	233	297	306	298	254	227
Imports	10	6	5	8	11	11	11	10	10	9
Total supply	401	339	397	309	317	383	390	371	342	280
Domestic use:										
Food	75	75	74	75	80	85	75	85	85	85
Seed	6	6	6	6	7	7	6	7	6	6
Residual	16	6	37	8	8	27	38	27	11	-18
Total domestic	97	87	116	89	94	119	120	119	103	73
Exports	217	161	206	147	147	192	208	174	196	170
Total use	314	248	322	236	242	311	327	293	298	243
Ending stocks	87	91	75	73	75	72	63	78	44	37

1/ ERS estimates of area, yield, and domestic use.

Source: Unpublished data from the National Agricultural Statistics Service, calculations based on Department of Commerce, Bureau of Census and USDA data, and market information collected by ERS.

and then decreased as price relationships between HRS and HRW changed as described. During this period, there developed a new demand for HRS. Pasta makers who were producing products that were not 100 percent semolina began substituting the relatively lower priced HRS for durum wherever possible. This switch occurred because durum prices were going up even faster than HRS prices (see durum discussion that).

White Wheat Production Down

White winter wheat production, the largest part of U.S. total white-wheat production, was down for 2007 from a year earlier by 29 million bushels, to 197 million bushels (table 5). White spring production was up 2 million bushels year-to-year to 30 million bushels in 2007. The NASS *Small Grains–2007 Summary* reported that in Idaho and Washington, yields were down from the previous year due to a lack of rain and unseasonably high temperatures during the growing season. Even though the Oregon crop faced dry weather in May and June, conditions improved and yields ended up better than a year earlier. 2007/08 total white wheat supplies were down 62 million bushels from 2006/07 because production was down 27 million bushels and beginning stocks were 34 million bushels lower. The lower ending stocks were primary due to large exports in 2006/07 because of the drought in Australia. Total use was down 56 million bushels compared with 2006/07. Exports were down 25 million bushels and domestic use was down 31 million bushels. White wheat food use was unchanged. Ending stocks were down 6 million bushels from a year earlier. The ending stocks-to-use ratio was 16 percent, sharply lower than the average of the previous 5 years of 23 percent.

White wheat monthly farm-gate prices followed a similar pattern as the other classes of wheat. White wheat established a harvest low of $5.13 per bushel in July, rose quickly to $8.18 in October. Prices then dipped for a couple of months before

Table 6--Soft red winter wheat supply and demand 1/

Item	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
					Million acres					
Area:										
Planted	10.2	9.1	9.5	8.6	8.1	8.3	8.2	6.1	7.4	8.6
Harvested	9.1	8.0	8.1	7.1	6.5	6.8	7.0	5.1	6.2	7.1
					Bushels per harvested acre					
Yield	48.9	56.3	57.9	55.8	49.6	55.7	54.1	60.0	63.3	50.7
					Million bushels					
Supply:										
Beg. stocks	80	136	133	135	78	55	64	88	106	109
Production	443	452	469	397	321	380	380	309	390	358
Imports	0	4	3	3	13	22	22	26	20	14
Total supply	523	592	605	535	412	457	466	423	516	481
Domestic use:										
Food	150	155	153	155	165	153	155	155	165	150
Seed	17	18	16	16	16	16	12	14	17	21
Residual	119	111	120	87	72	87	88	72	80	46
Total domestic	287	285	290	258	253	256	255	241	261	217
Exports	100	174	180	200	105	138	122	76	145	209
Total use	387	459	470	457	357	393	378	317	407	426
Ending stocks	136	133	135	78	55	64	88	106	109	55

1/ ERS estimates of area, yield, and domestic use.

Sources: Unpublished data from the National Agricultural Statistics Service, calculations based on Department of Commerce, Bureau of Census and USDA data, and market information collected by ERS.

rising to a high of $10.30 in April. Strong demand relative to supplies pushed down ending stocks and boosted prices**.**

Soft Red Winter (SRW) Production Down With Lower Yields

Higher SRW acreage for 2007/08was more than offset by sharply lower yields to drop SRW production to 358 million bushels, 32 million bushels less than in 2006/07 (table 6). Planted and harvested areas for SRW were up year-to-year by 1.3 million acres and 0.9 million acres, respectively. SRW yields averaged 50.7 bushels per acre, 12.6 bushels below 2006.

The NASS *Small Grains–2007 Summary* reported that favorable conditions during the fall of 2006 resulted in more acreage planted to wheat across most of the SRW growing region, except the eastern Corn Belt where wet conditions limited plantings. This was the second straight year of larger planted area in the southern SRW growing areas with harvested area also increasing. Several of the northern SRW States' harvested area was down mainly due to smaller planted acreage along with an early April freeze that caused more abandonment than normal. In Wisconsin, harvested acreage was a record, surpassing the previous year's level. Production of SRW was down from the previous year when record high yields were realized in many States. The crop's yield potential was good early in the growing season until the April freeze damaged the crop and caused conditions in many of the SRW States to decline.

SRW supplies for 2007/08 were down 35 million bushels from 2006/07 because of both lower production and imports. Total use was up 17 million bushels compared with the previous year as exports were up 63 million bushels. Food use was down 15 million bushels with the recovery of HRW production from the previous year's drought. Ending stocks were down 52 million bushels. The ending stocks-to-use ratio for 2007/08 was 13 percent, much less than the 5-year average of 23 percent.

SRW farm gate-prices for 2007/08 were considerably above the previous year's prices for the same reason as the other classes, huge export demand, particularly in the first half of the marketing year. SRW monthly farm-gate prices rose from a harvest low in June of $4.77 per bushel to $7.03 in December. Demand pressure eased as competing supplies became available elsewhere the world. Then prices began to rise again, reaching a high of $9.70 in March.

Durum Production Up Sharply in 2007, Recovering From Historically Low Area and Production

Durum wheat production for 2007, at 72 million bushels, was up 19 million bushels from 2006 with increases in planted area, harvested area, and yields (table 6). Harvested area in 2007 was up 0.3 million acres from 2006 to 2.1 million acres. The 2006 harvested area was the lowest harvested area since 1961. Yields were up 4.4 bushels per acre to 33.9 bushels with recovery from the drought in the Northern Plains. Durum production of 53 million bushels in 2006 was the lowest production since 1988.

The NASS Small Grains–2007 Summary reported that in the northern Great Plains, warm weather during the months of June and July accelerated crop development and timely rains increased the durum yield from previous year. Yields were at or above the previous year's level in all States except Idaho and California.

California and Arizona Desert Durum accounted for 21 percent of the country's durum production in 2007, about average in recent years. This Desert Durum was grown primarily in California's Imperial Valley and adjoining areas in Arizona and was usually delivered "identity preserved" to buyers because of its unique qualities.

The U.S. Wheat Associates in their *Crop Quality Report 2007* reported that the 2007 Desert Durum crop's protein percentage was 13.8, higher than the previous year's 13.6 percent. The 2007 crop's test weight, at 62.7 pounds per bushel, was slightly higher than the 62.0 pounds for the 2006 crop.

The 2007/08 durum supplies were 2 million bushels lower than a year earlier. Imports and beginning stocks were lower by 1 million bushels and 19 million bushels, respectively. Total use was up 11 million bushels from 2006/07 as domestic use and exports were up, 9 million bushels and 2 million bushels, respectively. Ending stocks were down 13 million bushels year-to-year. Ending stocks of 8 million bushels were very low given that the Northern Plains durum harvest follows the June 1 stocks estimate by several weeks. During that period, carryover stocks must provide nearly all the available supplies. The ending stocks-to-use ratio for 2007/08 was 6 percent, much lower than the 5-year average of 26 percent.

Durum prices for 2007/08 rose faster and higher than any of the other classes of wheat. Outside of the United States, tight global supplies were the result of rains during the European harvest and dryness in Canada, which reduced crop size and quality. High demand for U.S. durum relative to supplies raised the durum monthly farm-gate price from a marketing year low of $5.49 per bushel in June 2007 to $15.40 in March of 2008. Such high prices caused pasta makers to substitute HRS for durum whenever possible (see previous HRS discussion).

Table 7--Durum supply and demand 1/

Item	1998/99	1999/00	2000/01P	2001/02P	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
					Million acres					
Area:										
Planted	3.8	4.0	3.9	2.9	2.9	2.9	2.6	2.8	1.9	2.1
Harvested	3.7	3.6	3.6	2.8	2.7	2.9	2.4	2.7	1.8	2.1
					Bushels per harvested acre					
Yield	37.0	27.8	30.7	30.0	29.5	33.7	38.0	37.2	29.5	33.9
					Million bushels					
Supply:										
Beg. stocks	26	55	50	45	33	28	26	38	40	22
Production	138	99	110	84	80	97	90	101	53	72
Imports	33	28	26	34	30	21	29	32	41	40
Total supply	197	182	185	163	143	145	145	171	135	134
Domestic use:										
Food	68	71	81	80	81	73	70	80	86	83
Seed	4	9	4	5	5	3	5	3	4	4
Residual	30	1	0	-4	-4	-3	2	3	-15	-4
Total domestic	101	81	85	81	82	73	77	85	74	83
Exports	41	51	56	49	33	46	31	45	40	42
Total use	143	133	140	130	115	119	108	131	114	125
Ending stocks	55	50	45	33	28	26	38	40	22	8

1/ ERS estimates of area, yield, and domestic use.

Source. USDA, National Agricultural Statistics Service, Quick Stats, calculations based on Department of Commerce, Bureau of Census and USDA data, and market information collected by ERS.