



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

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

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

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

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

**2009 Outlook of the U.S. and World Wheat Industries, 2008-2018**

Won W. Koo  
Richard D. Taylor



Center for Agricultural Policy and Trade Studies  
Department of Agribusiness and Applied Economics  
North Dakota State University  
Fargo, North Dakota 58105-5636

## ACKNOWLEDGMENTS

The authors extend appreciation to Andrew Swenson and Frayne Olson for their constructive comments and suggestions. Special thanks go to Edie Watts who helped prepare the manuscript.

This research is funded under a grant by the General Service Administration.

This publication is available electronically at this web site: <http://agecon.lib.umn.edu/>. Please address your inquiries to: Department of Agribusiness and Applied Economics, North Dakota State University, P.O. Box 6050, Fargo, ND, 58108-6050, Ph. 701-231-7441, Fax 701-231-7400, E-mail [ndsu.agribusiness@ndsu.edu](mailto:ndsu.agribusiness@ndsu.edu).

NDSU is an equal opportunity institution.

Copyright © 2009 by Koo and Taylor. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided this copyright notice appears on all such copies.

## TABLE OF CONTENTS

	<u>Page</u>
List of Tables .....	ii
List of Figures .....	iii
Abstract .....	iv
Highlights .....	v
Introduction .....	1
World Wheat Industry .....	2
Wheat Classes .....	2
Wheat Production .....	3
Wheat Exports .....	7
Recent Changes in the World Wheat Industry .....	8
Outlook for the World Wheat Industry .....	13
United States .....	14
Canada .....	17
European Union .....	19
Australia .....	21
Argentina .....	22
Former Soviet Union .....	23
Importing Countries .....	24
Asian Importers .....	24
African Importers .....	25
Latin America Importers .....	26
Concluding Remarks .....	27
References .....	30
Appendix .....	31

## LIST OF TABLES

<u>Table</u>		<u>Page</u>
1	Wheat Production by Class, 2004 to 2008 Average Production .....	3
2	Harvested Area, Yields, and Production for Major Wheat Producing Countries/Regions .....	5
3	Wheat Imports by Country, 2004 to 2008 Average Imports .....	7
4	Wheat Exports by Class, 2004 to 2008 Average Exports .....	8
5	Wheat Exports by the Major Exporting Countries, 1990 and 2008 .....	13
6	Wheat Production, Consumption, Exports, and Carry-over Stocks in the United States .....	15
7	Wheat Production, Consumption, Exports, and Carry-over Stocks in Canada .....	18
8	Wheat Production, Consumption, Exports, and Carry-over Stocks in the European Union .....	20
9	Wheat Production, Consumption, Exports, and Carry-over Stocks in Australia .....	21
10	Wheat Production, Consumption, Exports, and Carry-over Stocks in Argentina .....	22
11	Wheat Production and Exports in the Former Soviet Union .....	23
12	Imports of Common and Durum Wheat by Major Importing Countries .....	24

## LIST OF FIGURES

<u>Figure</u>		<u>Page</u>
1	Changes in Wheat Production in Major Producing Countries/Regions .....	6
2	Historical Farm Wheat Price, by Class, 1990-2008 .....	9
3	World Wheat Production, 1995 to 2008 .....	10
4	Wheat Production in Argentina and Australia .....	10
5	Wheat Production in Canada, the EU, and the United States .....	11
6	Wheat Production in China, the FSU, and India .....	12
7	Projected Farm Wheat Price, by Class, 2008 to 2018 .....	14
8	U.S. Wheat Production, 2008 to 2018 .....	15
9	U.S. Common Wheat Utilization, 2008 to 2018 .....	16
10	U.S. Durum Wheat Utilization, 2008 to 2018 .....	16
11	Canadian Western Red Spring Wheat Utilization, 2008 to 2018 .....	18
12	Canadian Western Amber Durum Wheat Utilization, 2008 to 2018 .....	19
13	EU Common Wheat Utilization, 2008 to 2018 .....	20
14	EU Durum Wheat Utilization, 2008 to 2018 .....	21
15	Australian Common Wheat Utilization, 2008 to 2018 .....	22
16	Argentine Common Wheat Utilization, 2008 to 2018 .....	23
17	Common Wheat Imports by Major Asian Countries, 2008 to 2018 .....	25
18	Common and Durum Wheat Imports by Major African Countries, 2008 to 2018 .....	26
19	Common and Durum Wheat Imports by Latin American Countries, 2008 to 2018 .....	27

## **Abstract**

This report evaluates the U.S. and world wheat markets for the 2008-2018 period using the Global Wheat Policy Simulation Model. This analysis is based on a series of assumptions about general economic conditions, agricultural policies, weather conditions, and technological change.

Both the U.S. and world wheat economies are predicted to remain relatively healthy for the next ten years. World demand for both common and durum wheat are expected to remain strong. The price levels in 2007 and 2008 will not be maintained in 2009 and future because increased wheat and corn production in 2008 and reduced demand for corn for ethanol production will lower demand and increase supply. World trade volumes of both classes of wheat are expected to expand, but trade volume of common wheat may grow faster than that of durum wheat.

**Keywords:** common wheat, durum wheat, production, exports, consumption, ending stocks

## Highlights

Total world wheat trade is projected to increase by 23.9% from 73.1 million metric tons in 2008 to 90.6 million metric tons in 2018. It is expected that the average price of wheat will return to \$4.90-\$5.40 range for HRS wheat. U.S. durum wheat prices are expected to decrease to about \$6.00 per bushel in 2009 and slowly increase to about \$7.50 in 2018.

Production of hard red winter (HRW), hard red spring (HRS), and durum wheat in the United States is predicted to increase for the 2008-2018 period. The largest increase in production occurs for U.S. durum wheat, followed by HRS wheat. Exports of common wheat are predicted to increase for the 2008-2018 period and the United States is expected to become a net exporter of durum wheat by 2018.

Production of both Canadian western red spring wheat (CWRS) and Canadian western amber durum (CWAD) wheat is predicted to increase for the 2008-2018 period. CWRS wheat exports are projected to increase due to higher production levels. Canada is expected to increase its wheat exports.

Common and durum wheat production in the European Union (EU) is predicted to increase by 6.7% and 12.8%, respectively, from the 2006-2008 average to 2018. The EU is expected to increase its wheat exports.

Australia's wheat production is predicted to grow 89.9% over the 2008-2018 period, however, Australia produced only 13.0 million metric tons of wheat in 2007 compared to an average 21 to 24 million metric tons. Wheat exports also are expected to increase from 9.7 million metric tons in 2006-2008 to 20.7 million metric tons in 2018.

Argentinian wheat production is projected to decrease to about 12.3 million metric tons in 2018. Wheat exports are expected to decrease from 8.4 million metric tons in 2008 to 6.2 million metric tons in 2018.

The Former Soviet Union (FSU), China, and India have gone from major importing countries to exporting countries during the past 10 years. Wheat production in India has increased 40-50% since the 1980s. Most of the increase has been due to increases in yields. China's production peaked in 1997 and has been decreasing since. China has been lowering its carry-over stocks to limit imports. Production in the FSU remained below the 1980s until 2001 and 2002, when production increased 15% and 25%, respectively, above this level. Production fell in 2003 to 85% of the 1980s level before recovering in 2004. The FSU and India are expected to remain exporters of wheat, and China is expected to import 1.3 million metric tons in 2018 because of land and water constraints.

Most importing countries are predicted to increase their imports for both common and durum wheat. Among those countries, import demand for common wheat in Brazil, Algeria and Tunisia will grow faster than in other countries. Import demand for durum wheat in Algeria and Venezuela is predicted to remain strong. Import demand for common wheat in Morocco, Egypt, and Mexico is also expected to be strong for the period. Asian imports, except for China, are expected to remain level although per capita consumption is falling.



# 2009 Outlook of the U.S. and World Wheat Industries, 2008-2018

Won W. Koo and Richard D. Taylor\*

## INTRODUCTION

This report evaluates the U.S. and world wheat industries for the 2008-2018 period using the Global Wheat Policy Simulation Model developed by Benirschka and Koo. The outlook projection is based on an assumption that current farm and trade policies adopted by wheat exporting and importing countries will remain unchanged. Assumptions associated with macroeconomic variables, such as GDP growth rates, interest rates, inflation rates, exchange rates, and consumer price indices in the United States and other countries, are based on projections prepared by Global Insight. Average weather conditions, historical rates of technological change, and current political policies are also assumed to prevail during the projection period.

Wheat is a differentiated product. Substitution among wheat classes is imperfect, and consumer preferences differ among countries, suggesting that wheat characteristics are an important determinant of trade flows. The Global Wheat Policy Simulation Model is a partial equilibrium model that distinguishes wheat into common and durum wheat. U.S. common wheat is further divided into four classes: hard red winter (HRW), hard red spring (HRS), soft red winter (SRW), and white wheat.

The model contains five exporting countries and regions [Argentina, Australia, Canada, the United States, the European Union (EU),] and 11 importing countries and regions [Algeria, Brazil, Egypt, Japan, Mexico, Morocco, South Korea, Taiwan, Tunisia, Venezuela, and a Rest of the World region]. India, the Former Soviet Union (FSU), and China have been both exporters and importers in recent years. The model simulates production, consumption, stocks, and exports or imports for wheat classes over a ten-year period. The model is solved for a set of equilibrium wheat prices in which demand for each wheat class equals supply for every year. The model is linked to the Food and Agricultural Policy Research Institute (FAPRI) model and uses the predicted prices of all agricultural commodities, except wheat, from this model. The model uses 2008 as the base year of the simulation.

Wheat is widely produced across the world. Total world wheat production has increased from 521 million tons in 1986/87 to 612 million tons in 2008/09. The EU (151 million tons) was the largest producer of wheat in 2008, followed by China (113 million tons) and the FSU (90 million tons). The United States produced 77 million tons of wheat in 2008 an increase from 64 million tons in 2003, 59 million tons in 2004, 57 million tons in 2005 and 56 million tons in 2007. Other major wheat-producing countries are Canada, Australia, India, and Argentina. These countries produce about 84% of the wheat in the world. Because of the concentration of wheat production in a few countries, a large volume of wheat is traded in the world market. The total quantity of wheat traded in the world market was 101 million tons in 2008, which is about 17% of wheat produced in that year. Major exporting countries are the United States, Canada, Australia, the EU, and Argentina.

---

\*Professor and Director, and Research Scientist, respectively, in the Center for Agricultural Policy and Trade Studies, North Dakota State University, Fargo.

The world wheat market has changed dramatically in the past decade. Farm support policies in exporting and importing countries have encouraged production, however the overriding fact is the impacts of the ethanol industry on all commodities. Recent weather problems in various countries have resulted in decreases in production which as further impacted the wheat industry. As world trade decreased during the early 1980s due to a depressed world economy, major exporting countries expanded the use of export subsidies or export promotion programs to maintain their grain market shares.

The Uruguay Round of GATT negotiations, which became effective in 1995, has affected trade flows of wheat. The average export price of wheat at the Gulf ports decreased from \$5.02 per bushel in 1996/97 to \$3.30 per bushel in 2001/02; it increased to \$3.62 in 2003 due to weather conditions in the United States, Canada, and Australia, and then fell to \$3.24 in 2005. Prices increased during 2006 and 2007 for several reasons. First, world wheat production fell about 5% in 2006, and second, the increase in demand for corn in the United States pressured all commodity prices. Carry over stocks fell in 2007 to levels which have not occurred during the past 30 years. World stocks have fallen 46% since 2000 and 28% since 2004. However in 2008, world wheat production increased by 18% and carry-over stocks returned to normal levels.

## **WORLD WHEAT INDUSTRY**

World wheat trade is dominated by a few exporting countries: the United States, Canada, Australia, the EU, and Argentina. These countries handle over 63% of wheat traded in the world market. Even though exporting countries compete with each other, the world wheat market is not perfectly competitive. Australia and Canada use wheat boards to market their grain, and many countries maintain trade agreements with importers. In addition, some countries use credit guarantees and others use preferential trade policies to promote their exports.

### **Wheat Classes**

Wheat varieties are highly differentiated in terms of their agronomic and end-use attributes. Based on criteria such as kernel hardness, color, growth habitat, and protein content, wheat is divided into several classes. Color and hardness refer to physical properties of the wheat kernel. Based on the color of the outer layer of the kernel, common wheat varieties are described as white, amber, red, or dark, while the hardness of the kernel is used to characterize them as hard or soft. Most wheat varieties grown today belong to the broad category of common or bread wheat, which accounts for approximately 95% of world wheat production. The remaining 5% of world wheat production is durum wheat used to produce pasta and couscous. Common wheat is further divided into hard red spring, hard red winter, and soft wheat.

Growth habitat is an important agronomic feature of wheat varieties. Winter wheat is planted in late summer or fall and requires a period of cold winter temperatures for heading to occur. After using fall moisture for germination, the plants remain in a vegetative phase or dormancy during the winter and resume growth in early spring. In contrast to winter wheat, spring wheat changes from vegetative growth to reproductive growth without exposure to cold temperatures. In temperate climates, spring wheat is sown in spring. Since yields tend to be higher for winter wheat than for spring wheat, spring wheat is produced primarily in regions

where winter wheat production is infeasible, where frozen soil kills the wheat plants, or where winters are too warm. Countries with mild winters, such as Argentina and Brazil, produce spring wheat but plant in the fall rather than in the spring.

## Wheat Production

Because of differences in soil types and climates, wheat produced in one country generally differs from that produced in other countries in terms of quality. The United States produces hard, soft, and durum wheats. Hard wheat produced in the United States is further divided into hard red winter (HRW) and hard red spring (HRS) wheat, and soft wheat is divided into soft red winter (SRW) and white wheat. SRW wheat is produced in the Corn Belt and Southern states. HRS and durum wheat are grown in the Northern Plains, mainly North Dakota, which produces about 80% of durum wheat and 50% of HRS wheat produced in the United States. HRW wheat is grown primarily in the Central Plains, particularly Kansas and Oklahoma. White wheat, a type of soft wheat, is grown in the Pacific Northwest, Michigan, and New York. Average U.S. wheat production for the 2004-2008 period was 57.8 million tons, with 24.3 million tons of HRW, 13.0 million tons of HRS, 11.1 million tons of SRW, 7.3 million tons of white wheat, and 2.2 million tons of durum wheat (Table 1).

**Table 1. Wheat Production by Class, 2004 to 2008 Average Production**

Country/Class	2004	2005	2006	2007	2008	Average	Share
Argentina	-----1,000 metric tons-----						%
Common	16,000	12,100	13,508	15,512	9,492	13,820	2.5
Australia							
Common	21,500	24,444	10,509	13,054	20,020	18,124	3.3
Canada							
All	24,796	25,784	25,265	20,054	28,610	24,895	4.6
Common	20,550	21,345	20,552	16,484	23,882	20,463	4.5
Durum	4,246	4,439	4,713	3,570	4,728	4,359	0.8
EU							
All	146,886	132,356	124,870	119,442	150,514	134,814	24.8
Common	137,486	124,320	116,895	112,103	141,698	126,500	23.3
Durum	9,400	8,036	7,975	7,560	8,816	8,357	1.5
United States							
All	58,985	57,336	49,318	55,822	68,026	57,897	10.7
HRW	23,547	25,360	18,564	26,007	28,174	24,330	4.5
HRS	14,302	12,699	11,765	12,250	13,921	12,987	2.4
SRW	10,350	8,410	10,620	9,580	16,700	11,132	2.0
White	8,339	8,116	6,913	6,020	6,921	7,262	1.3
Durum	2,447	2,752	1,456	1,965	2,311	2,186	0.4
Other Producers							
All	274,362	279,973	282,732	294,716	336,031	293,563	54.1
Total World							
All	542,529	532,673	508,259	519,409	612,692	543,113	100.0

Source: FAO Stat, International Grains Council, Canadian Wheat Board, ERS-PS&D

The majority of Canadian wheat is produced in Saskatchewan, southwestern Manitoba, and southeastern Alberta. Canada primarily produces a hard red spring wheat (Canadian Western Red Spring (CWRS)) and durum wheat. Average Canadian wheat production for the 2004-2008 period included 20.5 million tons of CWRS and 4.4 million tons of durum wheat (Table 1).

The EU produced an annual average of 126.5 million tons of soft wheat and 8.4 million tons of durum wheat during the 2004-2008 period. France accounted for 30% of soft wheat production in the EU in 2007. Germany and the United Kingdom are also major producers. The majority of durum is produced in Italy, Greece, and France. Italy accounted for nearly 58% of EU durum production in 2008, followed by Greece (21%) and France (12%).

Australia primarily produces a winter wheat which is similar to HRW wheat in terms of quality and characteristics. Australian average wheat production amounted to 19.3 million tons for the 2003-2007 period. Wheat production is concentrated in the eastern Australian states of New South Wales and Victoria. However, in 2006 Australia produced just 10.5 million tons of wheat and 13.0 million metric tons in 2007. This was the third poor harvest in 6 years.

Argentina produces wheat with characteristics of both soft and hard wheat. Argentina's average wheat production amounted to 13.5 million tons for the 2003-2007 period.

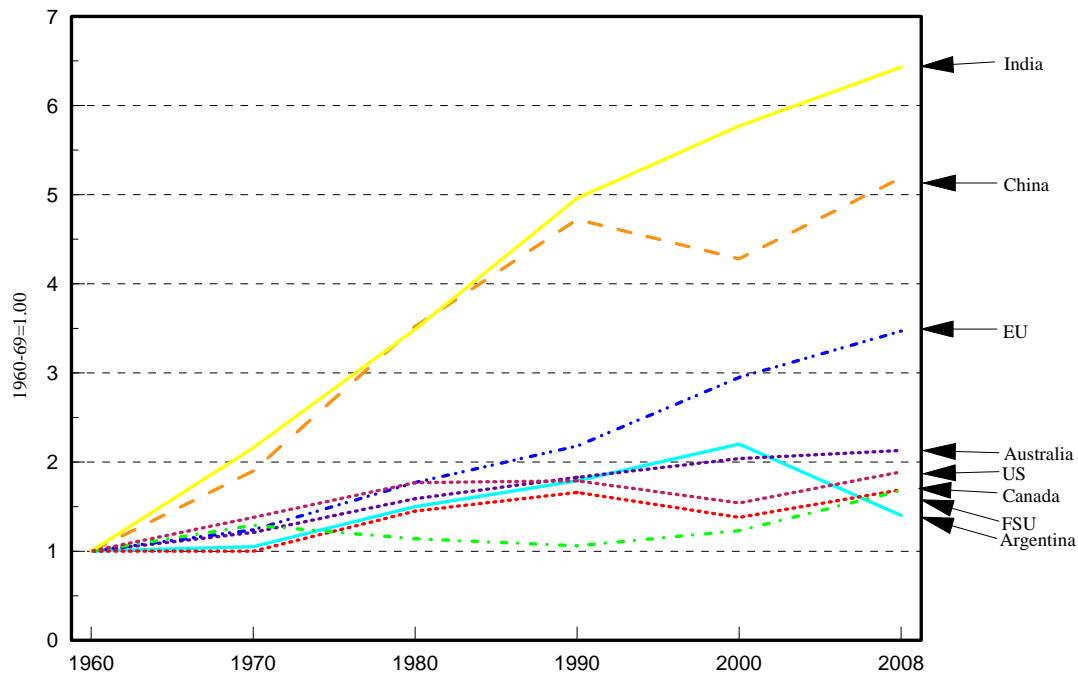
Table 2 shows the historical harvested area, yields, and production of the major wheat producing countries/regions in the world, by decades. Harvested wheat area in India has increased by 106% since the 1960s, followed by Australia (69%). The wheat area for the EU increased by 45%, but the majority of that was due to the addition of countries to the EU. Wheat area in the United States increased by 24% and Canada fell by 10%, respectively, from the 1960s level. World wheat harvested area increased about 7%.

Yields increased by 422% in China since the 1960s and by 203% in India. The EU had yield increases of 140%. The U.S. yields increased by 72%, while Canadian yields increased by 93%. The world wheat yield increased by 128% during the five decades.

Since the 1960s, total wheat production in 2008 increased by 520% in India and by 403% in China. The EU production increased by 248%, but a large share of that was due to the addition of countries to the EU. Argentina increased production by 40%. The United States and Canada increased production by 114% and 73%, respectively. Figure 1 shows the changing levels of production using an index where average production over the 1960-1969 period equals 1.00.

**Table 2. Harvested Area, Yields, and Production for Major Wheat Producing Countries/Regions**

	1960	1970	1980	1990	2000	2008	% Change
<b>Harvested Area</b> ----- 1,000 hectares-----							
Argentina	5,023	4,625	5,629	5,320	6,408	4,200	-16
Australia	7,691	8,735	10,954	9,620	12,141	13,000	69
Canada	11,187	9,198	13,101	12,109	10,963	10,030	-10
China	24,937	27,358	29,037	29,858	26,650	24,000	-4
EU	18,523	16,790	17,269	17,293	23,479	26,772	45
FSU	66,415	61,465	52,005	45,595	42,973	47,508	-28
India	13,675	19,554	23,170	25,122	27,486	28,200	106
U.S.	20,324	23,643	26,493	24,829	21,474	25,240	24
World	212,479	220,997	229,639	223,086	217,570	226,942	7
<b>Yield</b> -----metric tons/hectare-----							
Argentina	1.34	1.53	1.80	2.27	2.53	2.26	68
Australia	1.23	1.29	1.37	1.76	1.82	1.54	25
Canada	1.47	1.80	1.84	2.27	2.42	2.85	93
China	0.90	1.55	2.73	3.56	3.74	4.71	422
EU	2.34	3.22	4.44	5.43	5.29	5.62	140
FSU	1.03	1.43	1.51	1.59	1.47	1.89	84
India	0.89	1.35	1.85	2.43	2.78	2.71	203
U.S.	1.77	2.11	2.41	2.60	2.82	3.05	72
World	1.26	1.68	2.14	2.55	2.67	2.86	128
<b>Production</b> -----1,000 metric tons-----							
Argentina	6,799	7,150	10,181	12,152	16,230	9,492	40
Australia	9,416	11,386	14,970	17,206	22,108	20,020	113
Canada	16,554	16,626	24,073	27,415	26,519	28,586	73
China	22,492	42,718	79,238	106,119	99,640	113,040	403
EU	43,293	53,877	76,796	93,467	124,197	150,459	248
FSU	68,322	87,914	78,057	72,530	63,123	89,790	31
India	12,326	26,607	42,959	61,177	76,369	75,422	520
U.S.	35,965	49,642	63,731	64,443	60,641	76,982	114
World	267,528	371,075	489,177	568,001	581,500	649,054	143



**Figure 1. Changes in Wheat Production in Major Producing Countries/Regions**

Different wheat classes have their preferred uses. Hard wheat flour has excellent bread baking properties; soft wheat flour is well-suited for cakes, cookies, and Asian noodles; and durum wheat is used for pasta products and couscous. However, since different types of wheat can be blended to produce flours with certain characteristics, some substitution among wheat classes is possible in flour milling.

Although wheat is used primarily for human consumption, it is also an excellent feed grain for poultry and livestock. Feed use of wheat tends to be highly variable and depends on the quality of the wheat crop and the price relationship between wheat and other feed grains. Generally, only lower quality wheat is used for feed, and different characteristics among wheat classes are not important for feeding purposes except for durum as durum wheat is not fed to livestock. Wheat is a differentiated product only for human consumption.

Major importing countries include Algeria, Brazil, Egypt, Japan, Mexico, Morocco, South Korea, Taiwan, Tunisia, and Venezuela (Table 3). Most of these importing countries use various types of barriers to restrict the inflow of wheat to their countries. Until 1995, China had been the largest importer of wheat, followed by Brazil and Japan. However, China's wheat imports have been highly volatile, depending upon its domestic wheat production and import policies. China recently reduced wheat imports substantially, and changed from importing 12.0 million tons in 1995 to becoming a net exporter of wheat in 2001.

The EU and the United States are major exporters of wheat, but they also import considerable amounts of wheat. The United States imports wheat from Canada, while the EU

imports wheat from the United States, Canada, Argentina, and Australia. The largest importer of wheat is Egypt, followed by Brazil, Algeria, and Japan (Table 3).

**Table 3. Wheat Imports by Country, 2004 to 2008 Average Imports**

Country	2004	2005	2006	2007	2008	Average	Share
	-----1,000 metric tons-----						%
Algeria	5,390	5,469	4,879	5,887	5,600	5,445	5.1
Brazil	5,033	5,300	7,681	6,960	8,200	6,635	6.2
Egypt	8,140	7,761	7,290	6,990	7,790	7,594	7.1
Japan	5,321	5,046	5,330	5,363	5,075	5,227	4.9
Korea	3,465	3,790	3,352	3,000	4,020	3,525	3.3
Mexico	3,213	3,016	3,062	1,875	2,550	2,743	2.6
Morocco	2,178	2,300	1,668	4,041	3,900	2,817	2.6
United States	1,921	2,224	3,266	3,064	2,994	2,694	2.5
Other	54,420	57,438	51,060	50,128	48,898	52,389	58.8
Total World	89,081	92,344	87,588	87,308	89,027	89,070	100.0

Sources: United Nations, International Wheat Council, Canadian Wheat Board, ERS-PS&D

### Wheat Exports

The six major wheat exporting countries (the United States, Canada, the EU, the FSU, Australia, and Argentina) supply approximately 80% of the wheat traded in the world market. The United States is the largest exporter, followed by Canada and Australia (Table 4). The United States leads in exports of HRW and SRW wheats; an average of 27.0 million metric tons of all wheat classes was exported annually from 2004 to 2008, of which 11.7 million metric tons were HRW and 6.2 million metric tons were HRS. The United States competes with the EU for market share of SRW wheat. Major U.S. and EU markets for SRW wheat include China, West Asia, and North Africa.

Canada is the leader in exports of HRS and durum wheat. The United States also exports HRS and durum wheat and competes with Canada. The EU competes with the United States and Canada for market share of durum wheat exports. Major U.S. markets for HRS wheat include Southeast Asia and East Asia, including Japan and South Korea. Major Canadian markets for HRS wheat include China and the East Asian markets. The United States, Canada, and the EU compete intensely for the North African durum markets.

Australia and Argentina compete with the United States in exporting HRW wheat. Major U.S. markets for HRW wheat include China and East Asia. Argentina exports HRW wheat mainly to South America and West Asia. Australia's major markets are the North African countries, China, and West Asia.

**Table 4. Wheat Exports by Class, 2004 to 2008 Average Exports**

Country	2004	2005	2006	2007	2008	Average	Share
	-----1,000 metric tons-----						%
Argentina/Common	11,832	9,553	10,495	10,496	4,295	9,344	8.6
Australia/Common	14,664	15,930	8,636	7,392	12,925	11,909	10.9
Canada							
All	14,619	15,728	19,112	15,726	18,700	16,777	15.4
Common	11,427	11,936	14,920	12,541	15,508	13,266	12.2
Durum	3,192	3,792	4,192	3,185	3,192	3,511	3.2
EU							
All	7,684	8,936	8,736	5,296	13,000	8,730	8.0
Common	6,684	8,586	8,336	5,096	12,350	8,210	7.5
Durum	1,000	350	400	200	650	520	0.5
United States							
All	27,036	28,576	21,639	31,296	24,633	26,636	24.5
HRW	11,260	13,277	8,393	15,112	10,561	11,720	10.8
HRS	6,839	6,648	5,319	7,118	5,218	6,229	5.7
SRW	5,445	4,454	6,635	5,079	8,113	5,945	5.5
White	3,477	3,529	3,311	2,630	2,485	3,087	2.0
Durum	54	395	(136)	44	(408)	(10)	NA
Other Producers							
All	13,246	13,621	18,970	17,102	15,474	15,683	17.9
Total World							
All	89,081	92,344	87,588	87,308	89,027	89,070	100.0

Sources: United Nations, International Wheat Council, Canada Wheat Board, ERS-PS&D

### RECENT CHANGES IN THE WORLD WHEAT INDUSTRY

Figure 2 shows the recent price trend for U.S. wheat. The price levels have varied from a high of \$8.96 per bushel in 2008 for durum wheat to a low of \$2.20 per bushel in 1998 for SRW wheat. The prices for all of the wheat classes have recovered from the lows of 1998-1999 to the \$3.25 to \$4.00 range in 2002 and 2003, before falling to the \$2.75 to \$3.50 range in 2004. Price increased in 2005 to the \$3.20 to \$4.00 range followed by a large price increase in 2006, 2007 and 2008. Prices respond to changes in supply and demand. Therefore, major changes or shocks must have taken place in the world wheat industry to affect prices to this extent.

Figure 3 shows the world wheat production for the last 12 years. An index was created on the basis of the average of 1985 through 1994 production levels. The index was set at 1.00 for those years. World wheat production grew during the mid-1990s, peaking in 1997 with an 18% increase over the 1984/94 levels. Wheat production then slowly fell until it was only 3% above the 1985/94 levels. Prices responded to increased world production in 1996 and 1997. Then, with a small drop in production (from 1.09 mmt to 1.03 mmt) in 2002 and 2003, prices increased about 40% from the low levels in 1999. This shows an unusual degree of price sensitivity. The large increase in production in 2004 reduced prices again by about 12%. In 2005, world production remained near the 2004 level, but prices increased by about 7% from 2004 levels. World production fell in 2006, which increased wheat prices by about 13%, however production



increased in 2007, but prices continued to increase. The price increases have continued during the second half of 2007 and early 2008 to historical highs. This is mainly because of strong demand causing lower carry over stocks around the world during 2007. During the last half of 2008 and early 2009 wheat prices have decreased substantially. The current recession lowered all commodity prices and increased world production have returned carry-over stocks to normal levels.

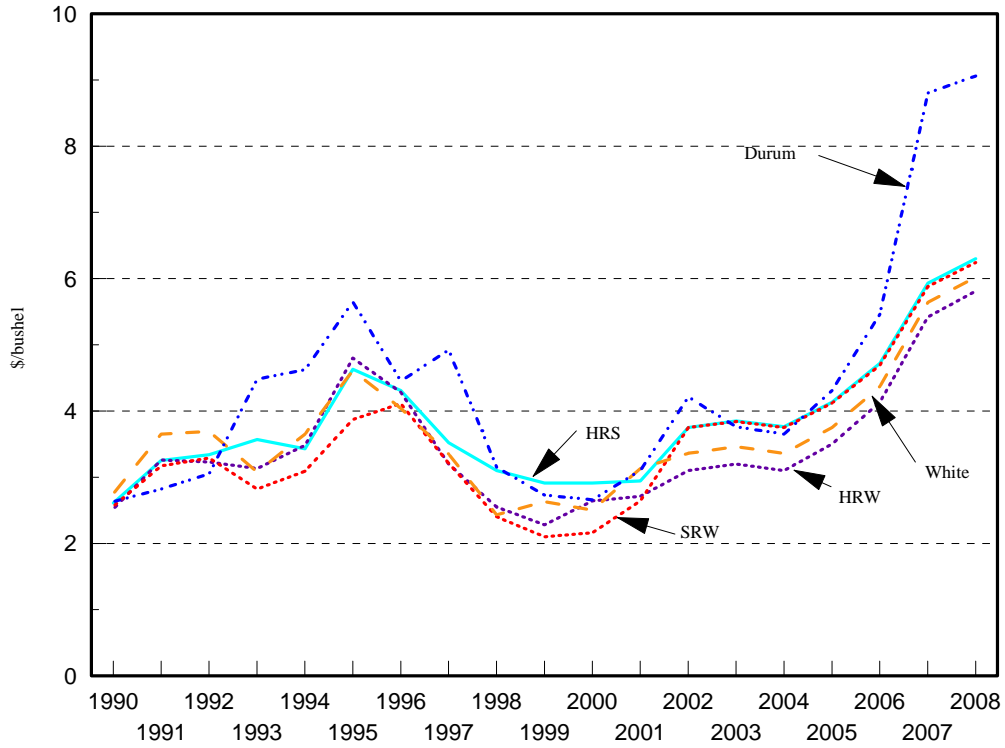
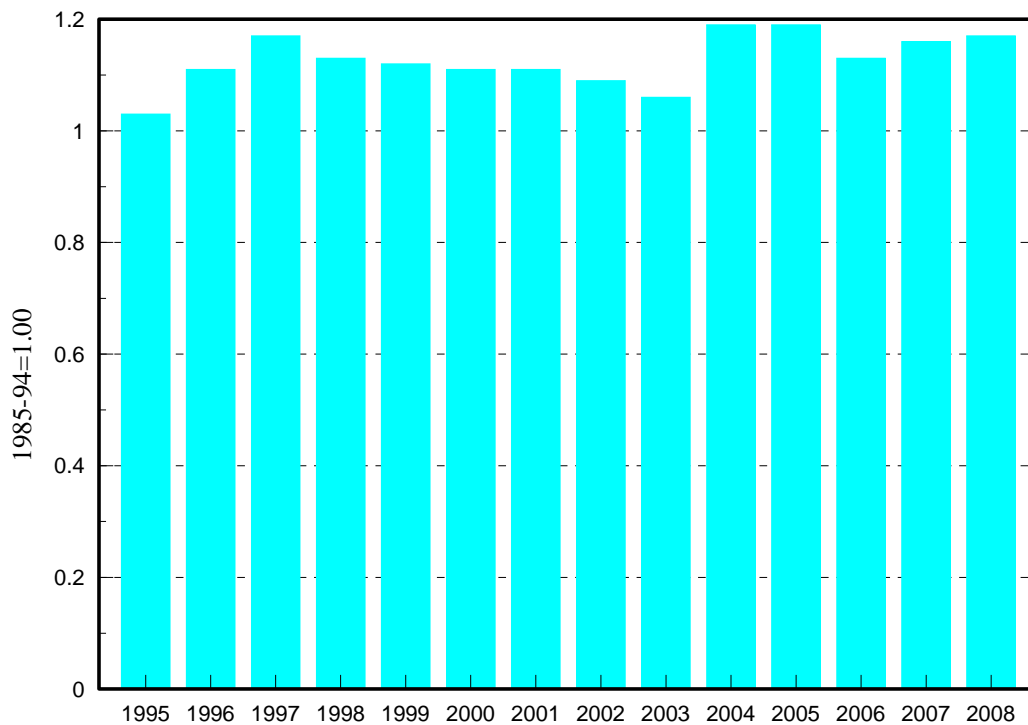
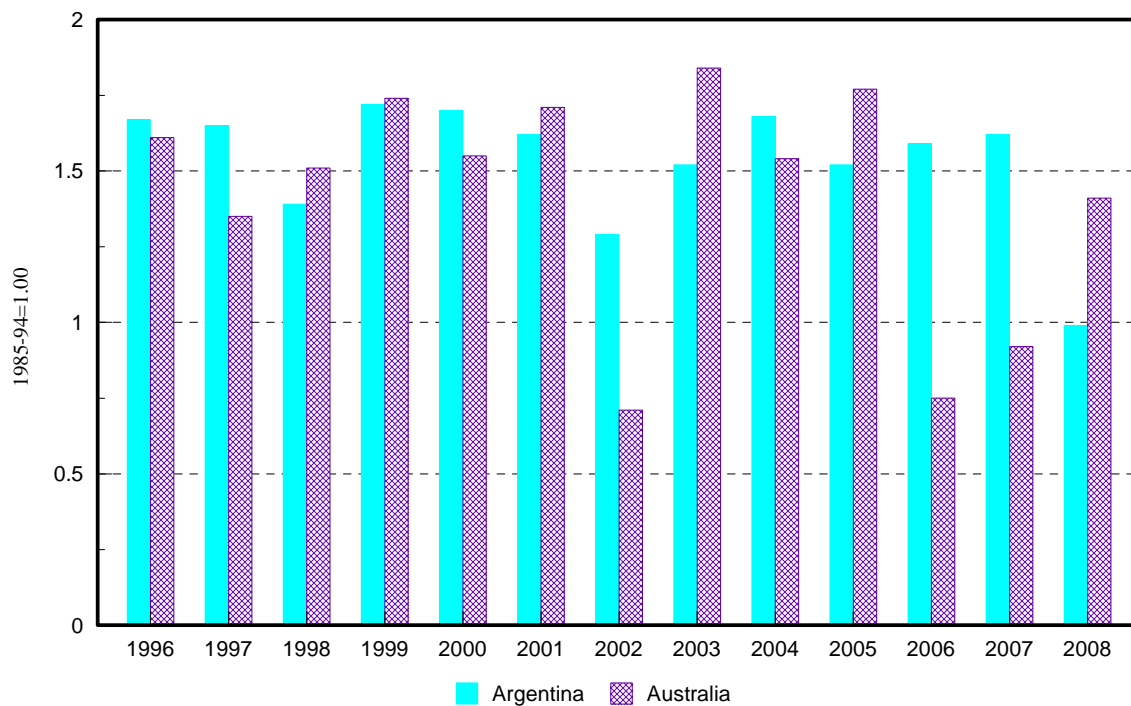


Figure 2. Historical Farm Wheat Price, by Class, 1990-2008



**Figure 3. World Wheat Production, 1995-2008**

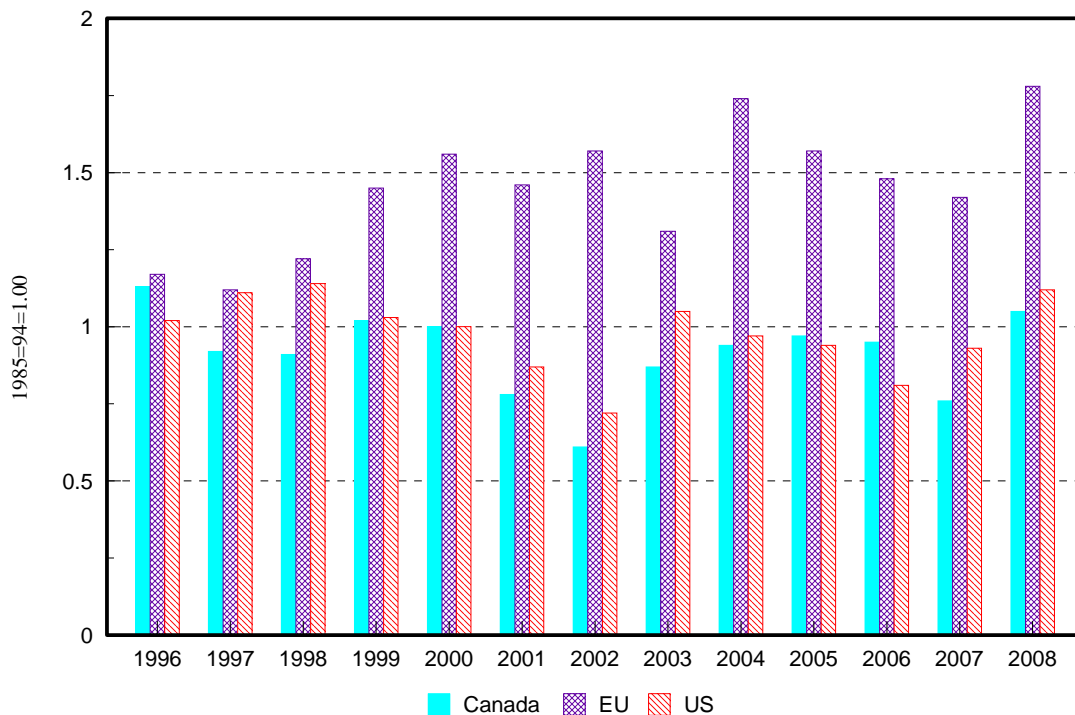


**Figure 4. Wheat Production in Argentina and Australia**

Figures 4 and 5 show wheat production for the major exporting countries. Both Argentina and Australia had increased their production above the 1985-94 average by 70% to 80% by 1999 relative to the 1985-94 period. In 2002, Argentinian production fell by 30% from 2001 and

Australian production fell by 60%. Both countries' production increased in 2003, and Argentine production increased another 18% for 2004 but fell to 2002 levels in 2005, while Australian production fell 11% in 2004 but increased 16% for 2005. In 2008 Australian production increased from the low production levels in 2006 and 2007 but was still much lower than the long term levels. The Canadian and U.S. wheat production levels remained near the long-term average until 2001, when Canadian and U.S. wheat production fell by 23% and 12%, respectively, from the long-term average. In 2002, Canadian wheat production was 40% less than the long-term average, and the U.S. wheat production was 28% less. U.S. production returned to the long-term average in 2003, was lower in 2006 and 2007 before recovering in 2008.

Wheat exports have followed the same trend as production in major exporting countries. Argentinian and Australian exports increased by more than 50% from 1997 through 2001, while exports for Canada and the United States, fell to about 80% of the 1985-94 average. In 2002, Australian exports were only 80% of the long-term trend, while exports for Canada, the United States, and the EU were 45%, 66%, and 83%, respectively. During this time, world exports did not change substantially. World exports of wheat peaked in 2005 at 92 million tons before falling to 88 million tons in 2006, 87 million metric tons in 2007 and 89 million metric tons in 2008.

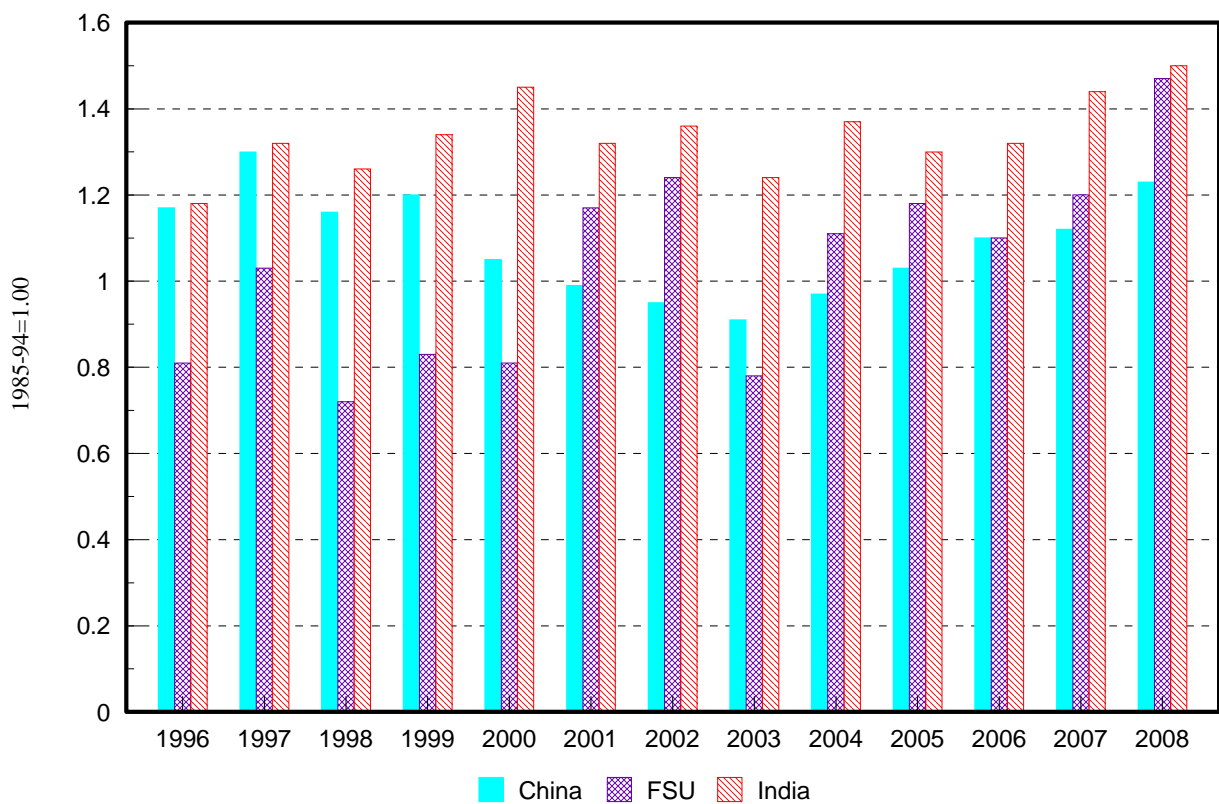


**Figure 5. Wheat Production in Canada, the EU and the United States**

Wheat exports from India and the FSU increased dramatically in 2001 through 2003, which made up for the shortfall from other countries. Figure 6 shows the wheat production in China, the FSU, and India for 1996 through 2008. Wheat production increased in the FSU and India during the time period relative to the long-term average.

China's production peaked in 1997 at 29% more than the long-term average, and India's production peaked in 2000 at 49% more than the long-term average. The FSU production remained less than the long-term average until 2001, when it grew to 18% larger than the long-term average. In 2002, the FSU wheat production increased again to 22% over the long-term trend. China's production has been falling since 1997, although production has increased during the past five years.

World wheat exports did not vary much between 1995 and 2008. The large increases in exports by India and the FSU have been absorbed by the rest of the world, reflected in lower exports by Canada and the EU. Table 5 compares wheat exports by major exporting countries in 1990 and 2008. The United States has been the largest exporter of wheat for the 1990-2008 period. U.S. exports of wheat decreased 13.9% from 28.1 million metric tons to 24.2 million metric tons for the period. Canada was the second largest wheat exporter, followed by the FSU and Australia. However, Canadian wheat exports were reduced by 15.5%, from 22.1 million metric tons in 1990 to 18.7 million metric tons in 2008. The EU decreased its exports significantly from 18.6 million metric tons to 13.0 million metric tons. India, traditionally an exporter, had a small crop in 2008 which allowed for minimal exports.



**Figure 6. Wheat Production in China, the FSU, and India**

**Table 5. Wheat Exports by the Major Exporting Countries, 1990 and 2008**

	1990	2008	Percentage Change
	---1,000 metric tons---		%
Argentina	5,592	4,295	-23.2
Australia	11,790	12,925	9.6
Canada	22,130	18,700	-15.5
China	(9,406)	(1,970)	NA
EU	18,635	13,000	-30.0
FSU	(14,649)	24,130	17.9
India	100	50	-50.0
United States	28,117	24,222	-13.9
World	102,654	89,027	-13.3

Sources: United Nations, International Wheat Council, Canada Wheat Board, ERS-PS&D

### OUTLOOK FOR THE WORLD WHEAT INDUSTRY

Total world wheat trade for the five major exporters is projected to increase by 23.9% from 73.1 million metric tons in 2008 to 90.6 million metric tons in 2018. Trade of all wheat classes is expected to increase for the 2008-2018 period. Common wheat production is predicted to increase in Australia faster than in other countries, although most of the increase is due to Australia returning to normal production. Durum wheat production is predicted to increase in the United States faster than in other durum producing countries.

Figure 7 shows the projected prices for the various classes of U.S. wheat under the Base scenario. During the previous 13 years, HRS wheat price in the United States varied between \$2.54 per bushel in 1990 and \$4.61 per bushel in 1995. For the most part, prices followed U.S. and world wheat production patterns. From 1994 through 1996, decreased production in the United States and Argentina increased prices. By contrast, increased world production following this period lowered prices until 2000-2001. Smaller crops in the EU (2001) and in Canada and Australia (2002 and 2005) increased prices. The high wheat prices seen in 2007 and 2008 should not return because the recession lowered demand and increased production increased supply and carry-over stocks. All wheat prices are expected to return to more normal levels and slowly increase throughout the projection period.

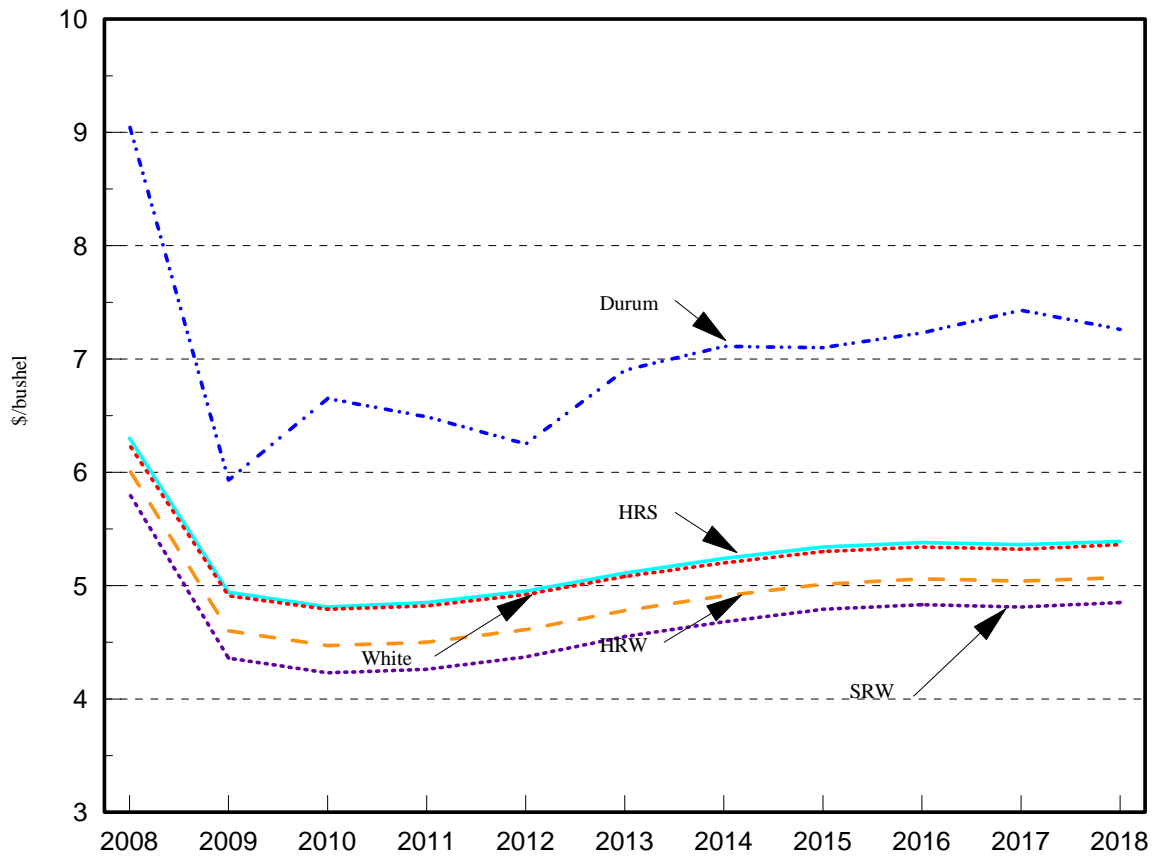


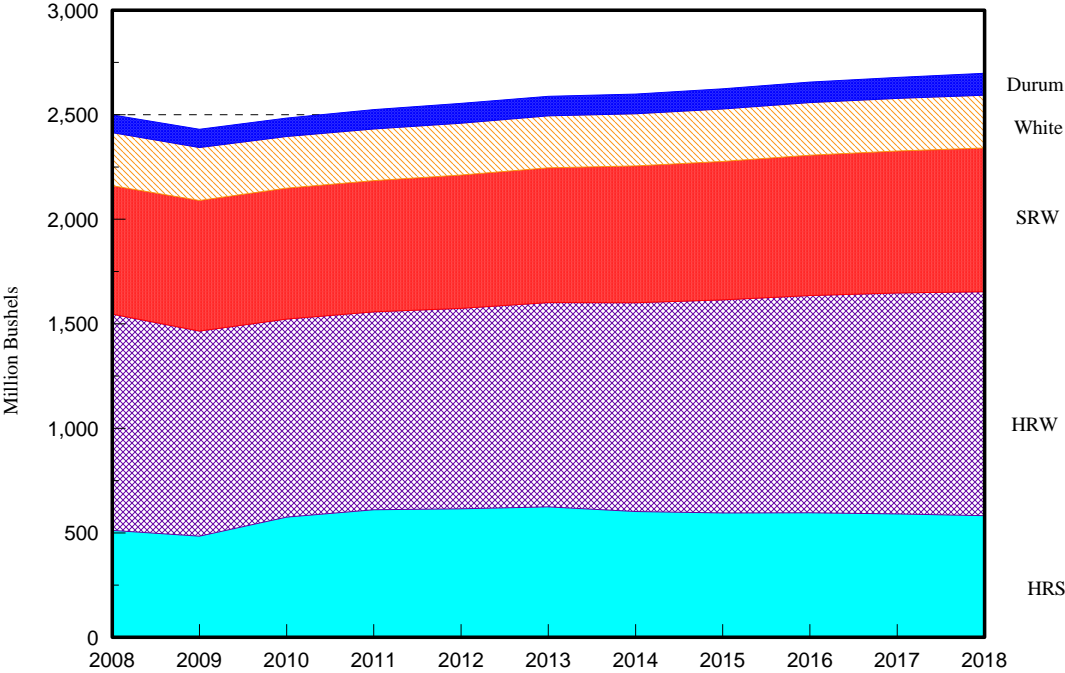
Figure 7. Projected Farm Wheat Price, by Class, 2008-2018

## United States

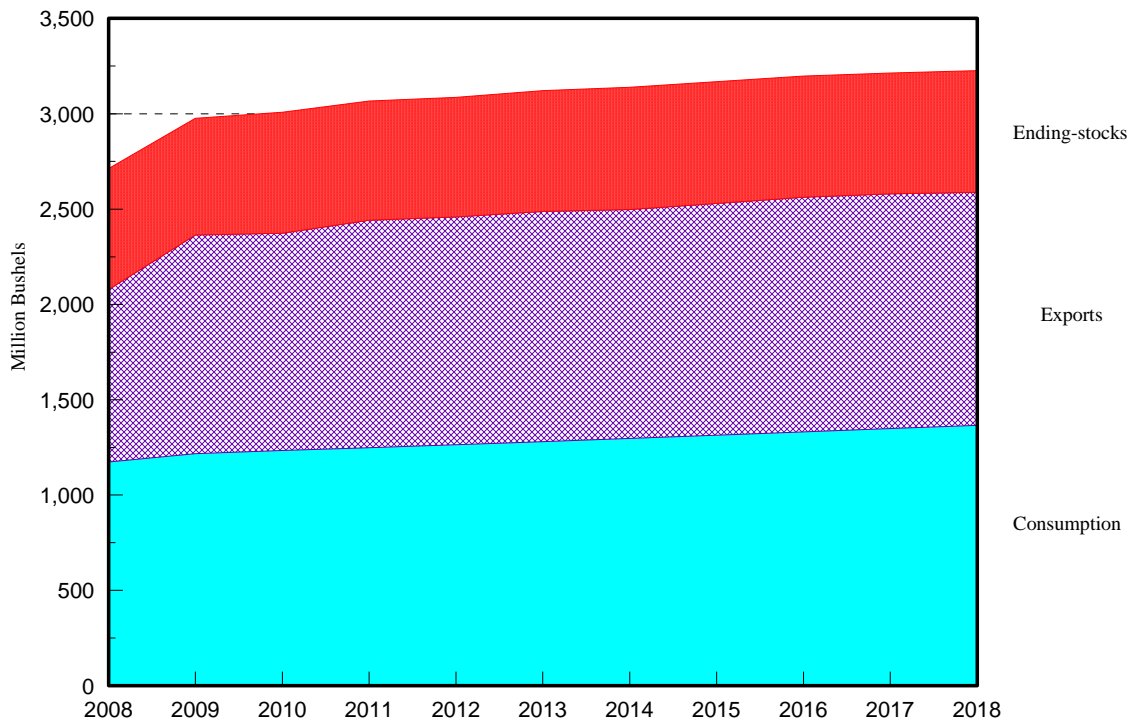
Table 6 shows wheat production, consumption, exports, and ending stocks in the United States. By 2018, total U.S. wheat production is expected to grow by 24.2% above the 2006-2008 average, but will still be much lower than production during the late 1990s. The largest increases in production occur for U.S. SRW wheat (52.0%), followed by durum wheat (50.1%) and HRS wheat (25.2%). The main reason for the large increase in SRW production is that the average 2006-2008 production was smaller than 2008 production. Production increase between 2008 and 2018 is expected to about 12%. Production of white wheat is expected to increase 3.6%. Changes in production of different classes of wheat over the 2008-2018 period are shown in Figure 8.

**Table 6. Wheat Production, Consumption, Exports, and Carry-over Stocks in the United States**

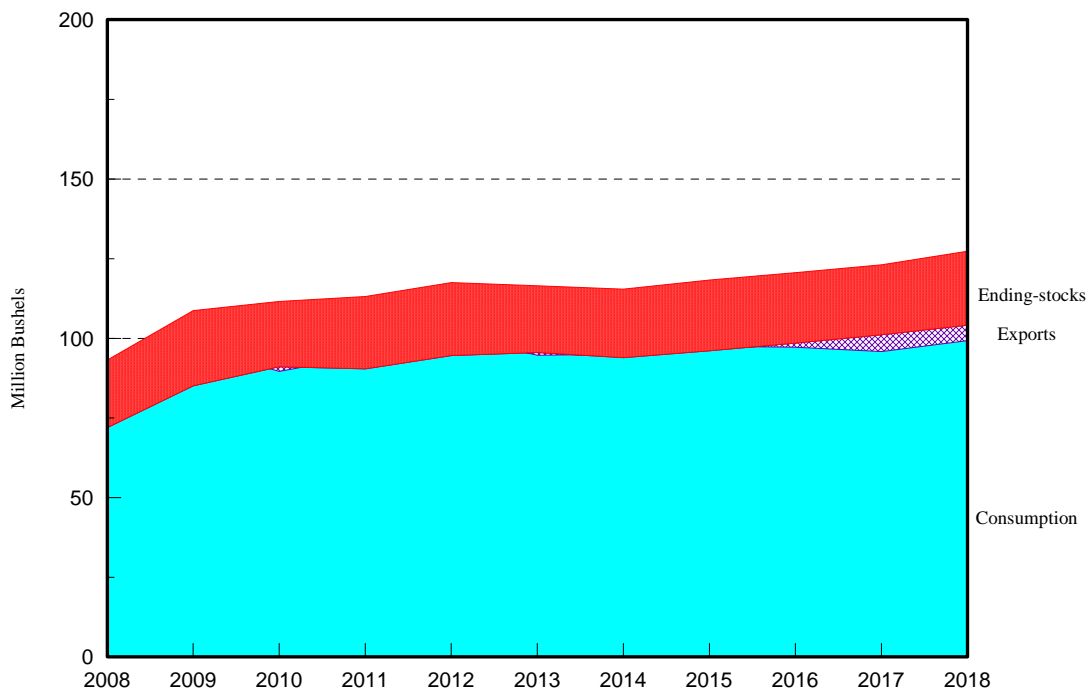
	Average (2006-2008)	2008	2018	% Change (2006-2008) to 2018
-----1,000 metric tons-----				
<u>Production</u>				
Common	56,845	65,725	70,584	24.2
HRW	24,252	28,178	29,185	20.3
HRS	12,647	13,923	15,837	25.2
SRW	12,302	16,702	18,700	52.0
White	6,619	6,922	6,859	3.6
Durum	1,911	2,311	2,869	50.1
<u>Consumption</u>				
Common	30,130	31,929	37,172	23.4
Durum	2,257	2,368	2,703	19.8
<u>Exports</u>				
Common	25,857	24,634	33,293	28.8
Durum	(167)	(408)	131	NA
<u>Carry-over</u>				
Common	12,113	17,263	17,369	43.4
Durum	464	577	632	36.2



**Figure 8. U.S. Wheat Production by Class, 2008-2018**



**Figure 9. U.S. Common Wheat Utilization, 2008-2018**



**Figure 10. U.S. Durum Wheat Utilization, 2008-2018**

Total wheat harvested area is expected to increase from 51.2 million acres for the 2006-2008 average to 57.6 million acres in 2018, and average yield is predicted to increase from 41.3



bushels per acre to 46.8 bushels per acre over the 2008-2018 period. U.S. durum area is expected increase 0.9 million acres.

Common wheat consumption is expected to grow slightly faster than durum wheat consumption. U.S. wheat consumption is projected to grow 16.0% for common wheat (Figure 9) and 14.0% for U.S. durum wheat for the 2008-2018 period (Figure 10).

U.S. durum exports are projected to increase to 131 thousand metric tons in 2018 (Table 6). Common wheat exports are predicted to increase from 25.9 million metric tons in 2006-2008 to 33.3 million metric tons in 2018. Ending stocks are expected to increase by 43.4% for common wheat and increase by 36.2% for durum wheat (Table 6).

## **Canada**

The production and consumption of CWRS wheat in 2008 was larger than the three-year average (Table 7). By 2018, CWRS and CWAD wheat production is predicted to increase by 5.9% and 5.4%, respectively, from the 2006-2008 average. Total area for CWRS wheat is expected to increase from 8.0 million hectares in 2008 to 8.1 million hectares in 2018, while CWAD wheat area is expected to remain level near the 2.0 million hectares range.

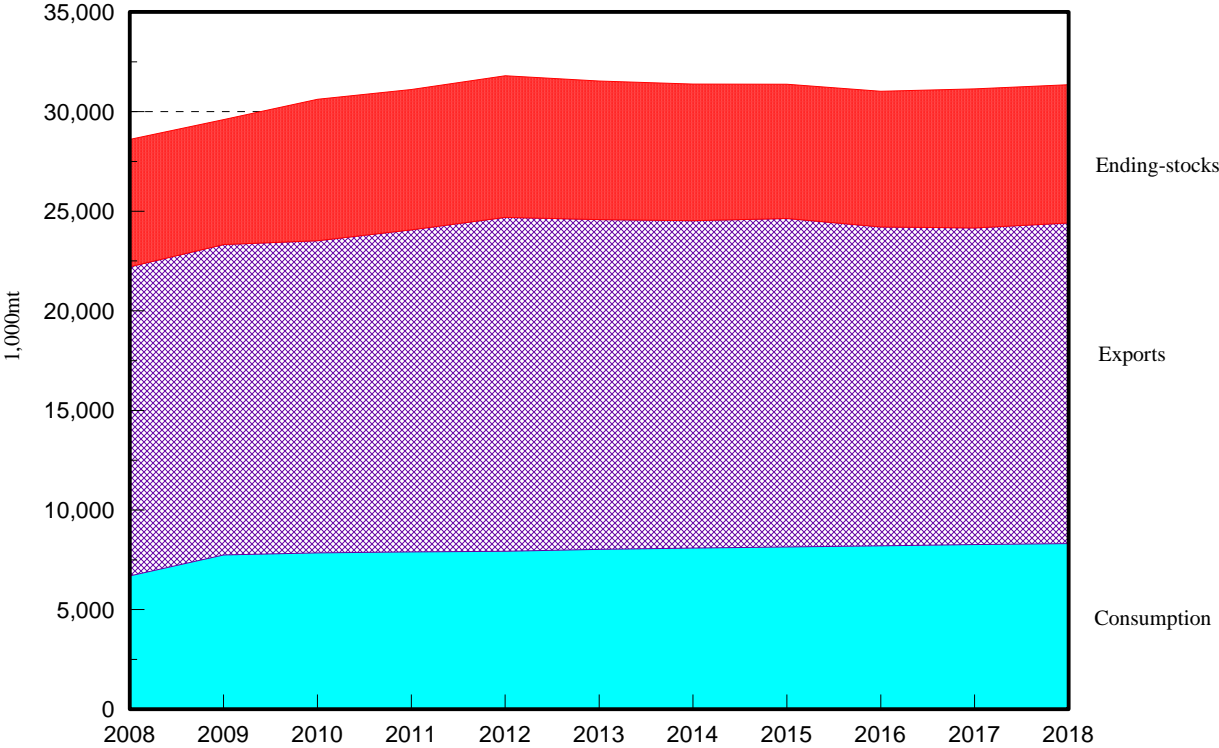
Domestic consumption of CWRS wheat is predicted to increase by 20.3%, while the consumption of durum wheat is expected to increase by 3.1% over the 2008-2018 period. Canadian CWRS wheat exports are projected to increase by 9.0% by 2018, and CWAD wheat exports are predicted to decrease by 1.8% from 3.5 million metric tons to 3.4 million metric tons in 2018.

Ending stocks are predicted to increase by 16.42% for CWRS wheat and by 21.3% for WAD wheat over the 2008-2018 period.

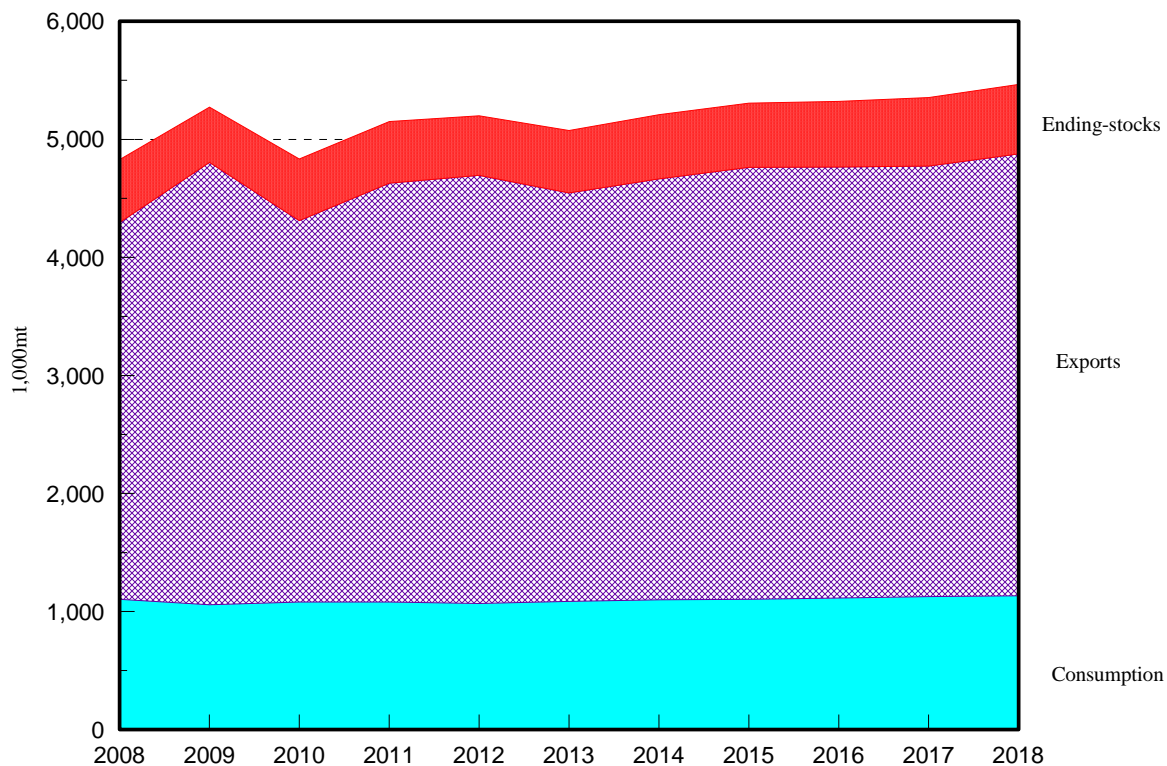
**Table 7. Wheat Production, Consumption, Exports, and Carry-over Stocks in Canada**

	Average (2006-2008)	2008	2018	% Change (2006-08) to 2018
<u>Production</u>				
-----1,000 metric tons-----				
WRS	23,066	23,882	24,436	5.9
WAD	4,337	4,728	4,571	5.4
<u>Consumption</u>				
WRS	6,668	6,697	8,022	20.3
WAD	1,053	1,103	1,085	3.1
<u>Exports</u>				
WRS	15,186	15,508	16,558	9.0
WAD	3,523	3,192	3,461	-1.8
<u>Carry-over</u>				
WRS	5,987	6,394	6,966	16.4
WAD	436	533	529	21.2

Figure 11 shows changes in consumption, exports, and ending stocks of CWRS wheat in Canada from 2007 to 2017, and Figure 12 shows the trends for CWAD wheat.



**Figure 11. Canadian Western Red Spring Wheat Utilization, 2008-2018**



**Figure 12. Canadian Western Amber Durum Wheat Utilization, 2008-2018**

## European Union

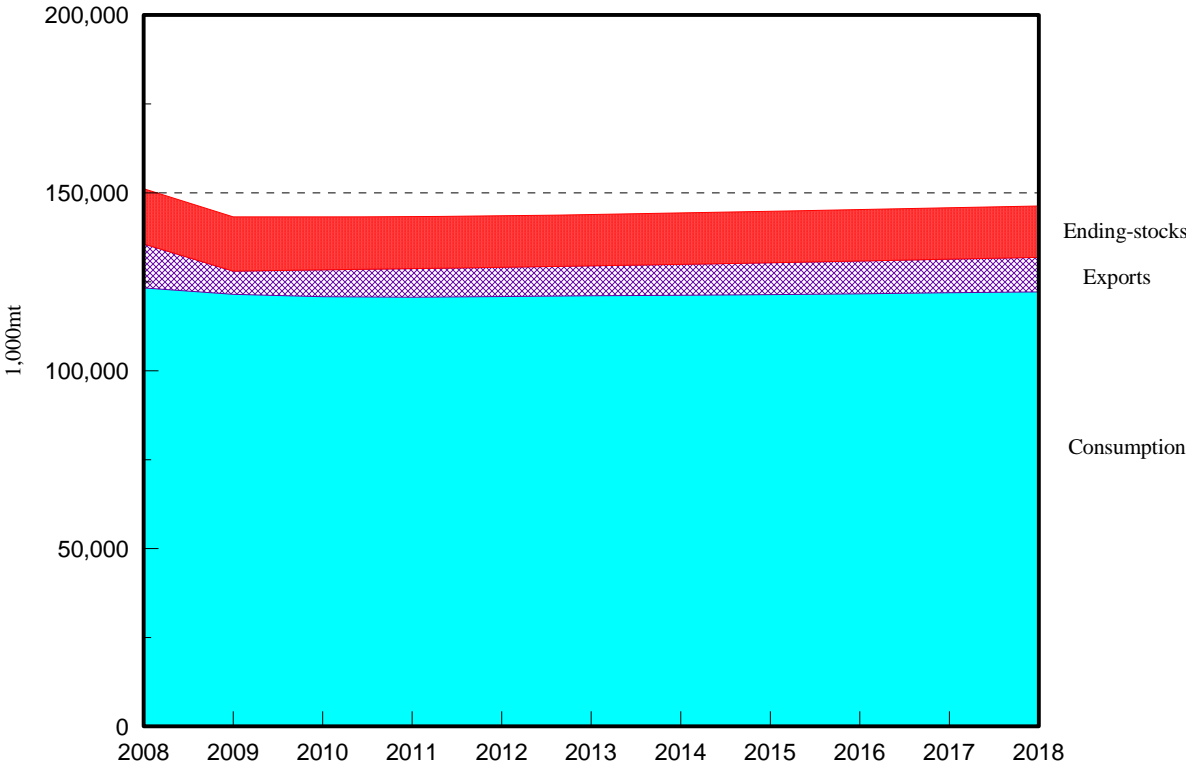
Table 8 presents production, consumption, exports, and ending stocks of common and durum wheat in the EU for the 2008-2018 period. Common wheat production in the EU is predicted to increase by 6.7% from the 2006-2008 average by 2018, while durum wheat production is expected to increase by 12.8% for the same time period.

Domestic consumption of common wheat is projected to increase by 4.7%, and consumption of durum wheat is predicted to increase by 5.0% for the period. Compared to the 2006-2008 averages, exports of durum wheat are predicted to increase but decrease from the 2008 levels. Exports of common wheat are also expected to increase from the 2006-2008 averages and decrease from the 2008 levels. The reason for the decrease is the changing structure of the EU. The new member countries are not exporting countries so their wheat imports reduces net exports of the EU. Ending stocks are expected to increase for common wheat and decrease for durum wheat.

**Table 8. Wheat Production, Consumption, Exports, and Carry-over Stocks in the European Union**

	Average (2006-2008)	2008	2018	% Change (2006-08) to 2018
<u>Production</u>				
-----1,000 metric tons-----				
Common	123,565	141,698	131,867	6.7
Durum	8,117	8,816	9,157	12.8
<u>Consumption</u>				
Common	116,720	123,303	122,154	4.7
Durum	8,192	8,197	8,604	5.0
<u>Exports</u>				
Common	8,594	12,350	9,679	12.6
Durum	417	650	574	37.8
<u>Carry-over</u>				
Common	12,750	15,563	14,514	13.8
Durum	887	887	826	-6.8

Figures 13 and 14 show changes in consumption, exports, and ending stocks of common and durum wheat for the 2008-2018 period. For common wheat, production and consumption are expected to increase slightly. Production and consumption of durum wheat are also predicted to increase for the period.



**Figure 13. EU Common Wheat Utilization, 2008-2018**

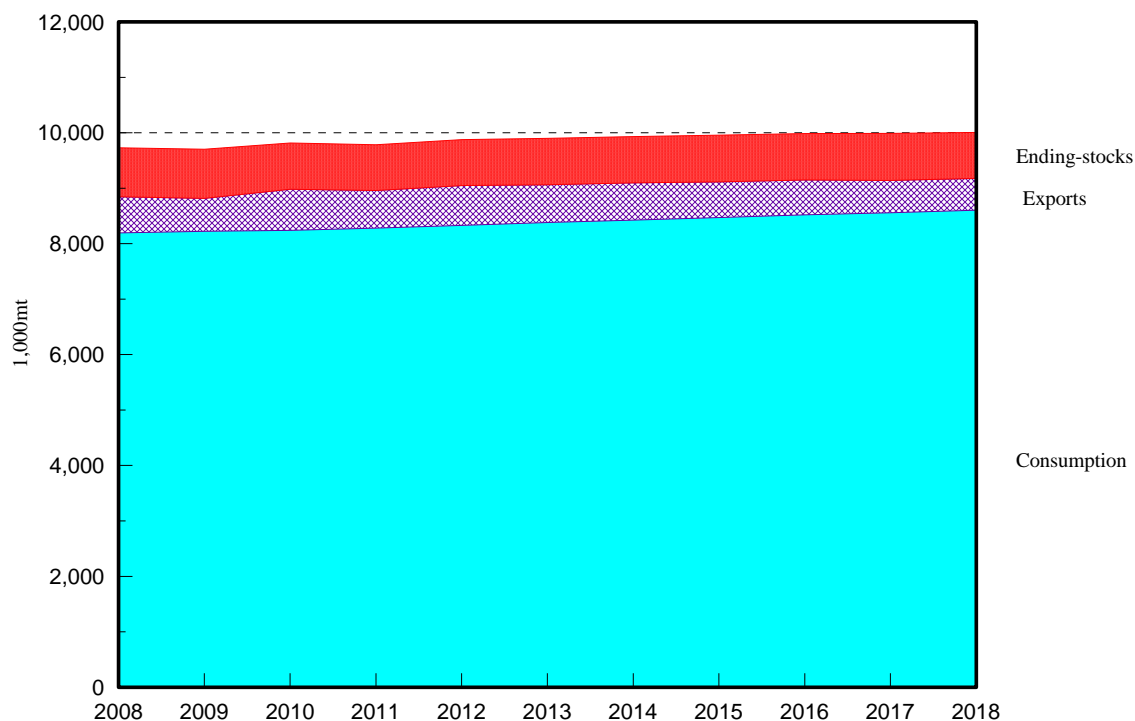


Figure 14. EU Durum Wheat Utilization, 2008-2018

### Australia

Compared to the 2006-2008 average, Australia’s wheat production is projected to grow by 89.0% by 2018 (Table 9). Much of that increase is due to the small crops in 2006, 2007 and 2008. Yields are expected to increase gradually at the historical trend line, while wheat area is expected to increase slightly. Domestic wheat consumption is predicted to increase by 4.2% from the 2006-2008 average of 6.7 million metric tons to 7.0 million metric tons in 2018. Wheat exports are also predicted to increase from the 2006-2008 average of 9.7 million metric tons to 20.7 million metric tons in 2018. Figure 15 shows changes in consumption, exports, and ending stocks for the 2008-2018 period.

**Table 9. Wheat Production, Consumption, Exports, and Carry-over Stocks in Australia, (1,000 metric tons)**

	Average (2006-2008)	2008	2018	% Change (2006-08) to 2018
Production	14,653	20,020	2,769	89.0
Consumption	6,683	6,450	6,963	4.2
Exports	9,651	12,925	20,667	114.1
Carry-over	4,246	4,478	4,716	11.1

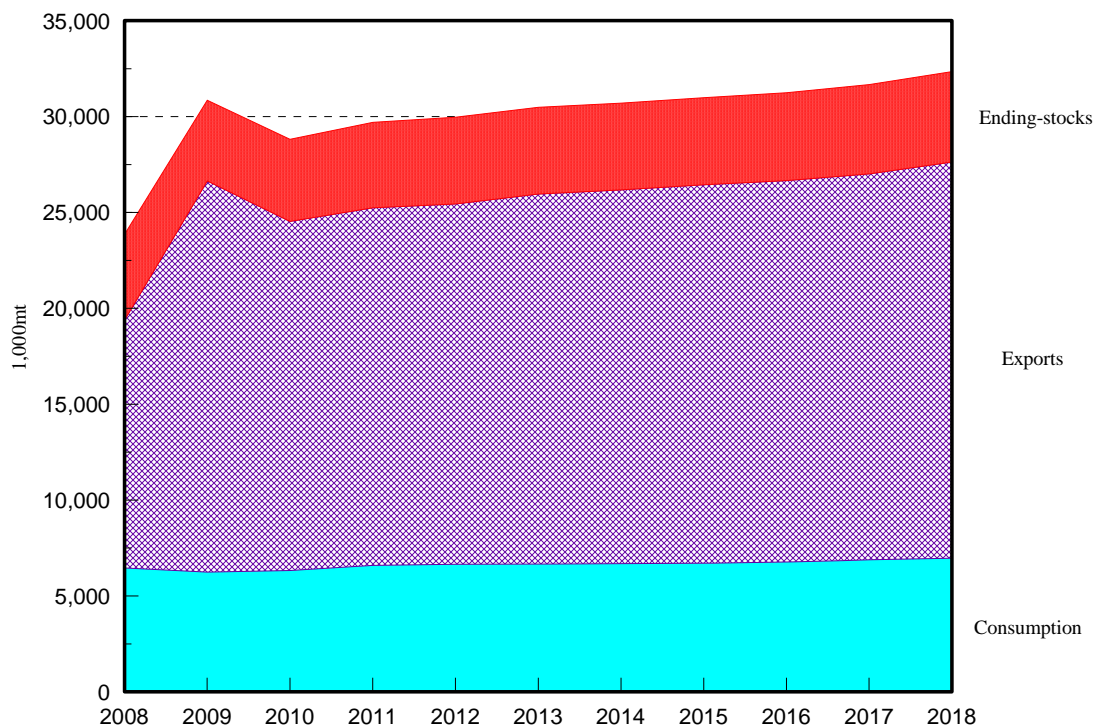


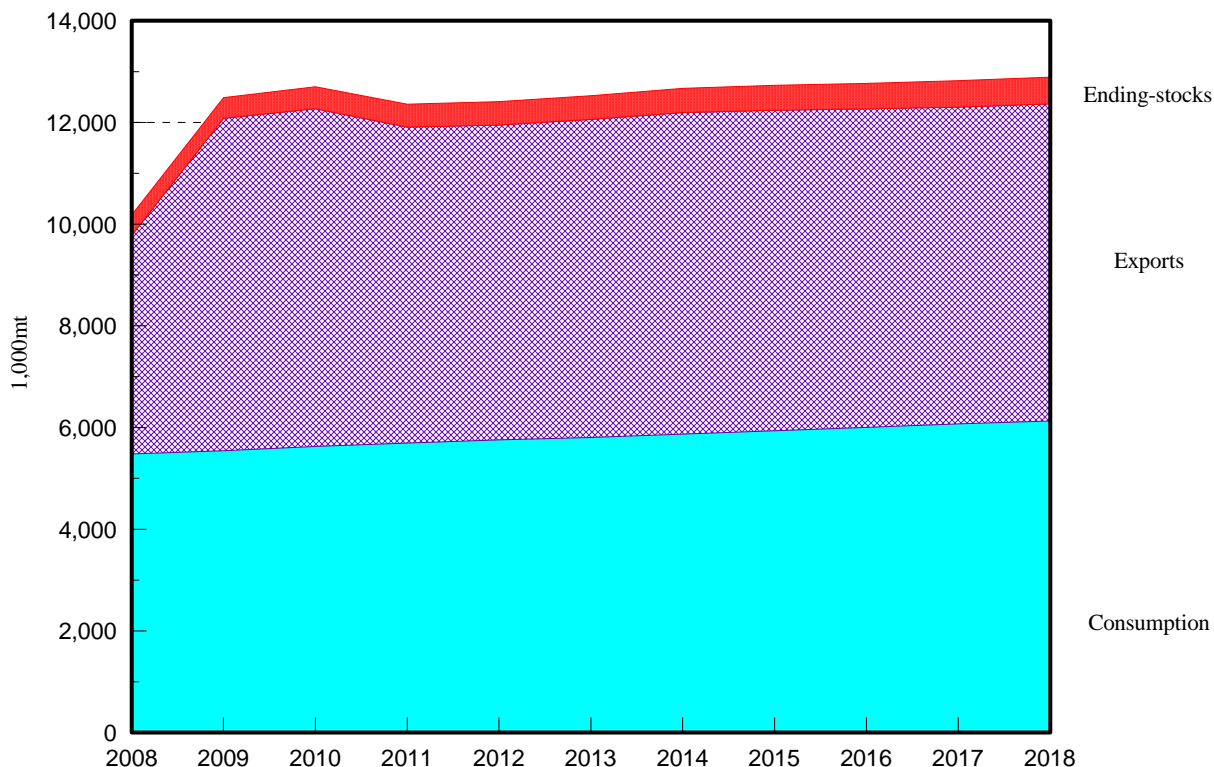
Figure 15. Australian Common Wheat Utilization, 2008-2018

## Argentina

Argentine wheat production is projected to decrease by 9.4% from the 2006-2008 average of 13.7 million metric tons to 12.4 million metric tons by 2018 (Table 10), but increase by 30.3% from 2008. Domestic wheat consumption is expected to increase 16.3% from 5.3 million metric tons to 6.1 million metric tons. Wheat exports are predicted to total 6.2 million metric tons in 2018, which is a 26.0% decrease from the 2006-2008 average. Ending stocks are expected to increase by 13.5%. Figure 16 shows changes in consumption, exports, and ending stocks for the 2008-2018 period.

**Table 10. Wheat Production, Consumption, Exports, and Carry-over Stocks in Argentina, (1,000 metric tons)**

	Average (2006-2008)	2008	2018	% Change (2006-08) to 2018
Production	13,667	9,492	12,376	-9.4
Consumption	5,270	5,480	6,129	16.3
Exports	8,429	4,295	6,237	-26.0
Carry-over	463	404	525	13.5



**Figure 16. Argentine Common Wheat Utilization, 2008-2018**

### Former Soviet Union

The FSU became an exporter of wheat in 2001 and is projected to continue exporting wheat, however they imported both common and durum wheat in 2008. The FSU exported 4.6 million metric tons of wheat in 2001 and 21 million metric tons in 2002 but imported a small amount of wheat in 2003. In 2008, the FSU imported 16.1 million metric tons of wheat. By 2018, exports of common wheat are expected to be about 18 million metric tons. (Table 11). Per capita consumption of wheat is expected to increase by 13.9% between 2007 and 2018.

**Table 11. Wheat Production and Exports in the Former Soviet Union (1,000 metric tons)**

	Average (2006-2008)	2008	2018	% Change (2006-08) to 2018
	-----1,000 metric tons-----			%
Production	97,468	84,977	130,554	33.9
Exports of Common	18,975	(16,116)	17,979	-5.3
Exports of Durum	300	(300)	389	29.7

## Importing Countries

Importing countries are grouped into the Asian (China, Japan, Korea, and Taiwan), North African (Algeria, Egypt, Morocco, and Tunisia), and Latin American (Mexico, Brazil, and Venezuela) regions (Table 12).

**Table 12. Imports of Common and Durum Wheat by Major Importing Countries**

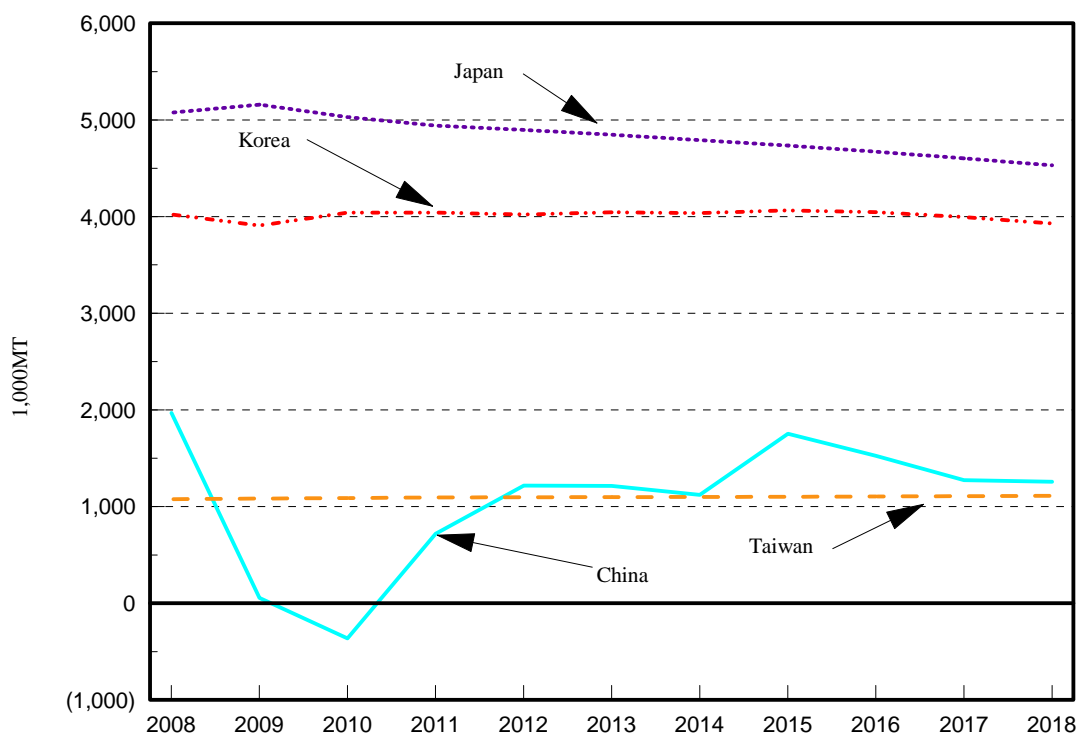
Wheat	Average	2008	2018	% Change
	(2006-2008)			(2006-08) to
	-----1,000 metric tons-----			2018
				%
<u>Asia</u>				
China	2,241	1,970	1,256	-44.0
S. Korea	3,457	4,020	3,927	13.6
Japan	5,256	5,075	4,529	-13.5
India	(2,765)	50	2,909	NA
Taiwan	1,144	1,075	1,111	-2.9
<u>North Africa</u>				
Algeria				
Common	3,512	3,670	4,145	18.0
Durum	1,917	1,930	2,199	14.7
Morocco	3,203	3,900	3,558	11.1
Egypt	7,357	7,790	9,938	35.1
Tunisia				
Common	900	900	974	8.2
Durum	500	500	581	16.2
<u>Latin America</u>				
Brazil	7,614	8,200	7,321	-3.8
Mexico	2,496	2,550	3,455	38.4
Venezuela				
Common	1,226	1,315	1,622	32.3
Durum	424	425	488	15.2

## Asian Importers

Asian imports of wheat are projected to decrease by 47% between the 2006-2008 average and 2018. The main reason for the increase in Asian imports is in 2006-2008 India was a net exporter. Over the past 10 years, India has been either a net importer or net exporter of wheat, depending upon its production and carry-over stocks. From 1994 to 1996, India exported an average of 692 thousand metric tons per year. For 1997 through 1999, India's imports of wheat were 1.7 million metric tons per year. India imported an average of 50 thousand metric tons of wheat during 2006-2008; at the same time, the carry-over stocks fell from 21.5 million metric tons in 2000 to 2.0 million metric tons in 2004. Historically, India has had a carry-over ranging from 5 to 7 million metric tons. India is expected to become an importer of wheat later in the projection



period. Imports by Japan and Korea are projected to decrease by 13.5 and increase by 13.6%, respectively, over the 2008-2018 period (Figure 17). Japan's population is stable and the per capita consumption of wheat is slowly decreasing, reducing the demand for wheat in Japan. China imported 2,241 million metric tons of wheat during 2006-2008. China is projected to continue importing wheat in the future.



**Figure 17. Common Wheat Import by Major Asian Countries, 2008-2018**

### African Importers

North African imports of wheat are projected to increase by 23.0% from the 2006-2008 average to 2018. Egyptian imports of common wheat are projected to increase by 35.1%, from 7.4 million metric tons to 9.9 million metric tons. The increase in Egyptian imports is due the population growth in the country. Algeria is expected to import both common and durum wheat. Algerian imports of common wheat are projected to increase by 18.0% from 3.5 million metric tons for the 2006-2008 average to 4.1 million metric tons in 2018, and durum wheat imports are projected to increase by 14.7%, from 1.9 million metric tons to 2.2 million metric tons. Algerian imports of both common and durum wheat in recent years have been lower than the long-term average; however, it is expected that imports will return to this level. Morocco's imports of common wheat are projected to increase by 11.1%. Tunisian imports of common wheat are projected to increase by 8.2%, from 0.90 million metric tons to 1.0 million metric tons, from the 2006-2008 average to 2018. Its durum wheat imports are projected to increase by 16.2% from the

2006-2008 average to 2018 (Figure 18). This clearly indicates that the African wheat market will grow faster than the Asian market for the next ten years and will remain an important market for the U.S. wheat industry.

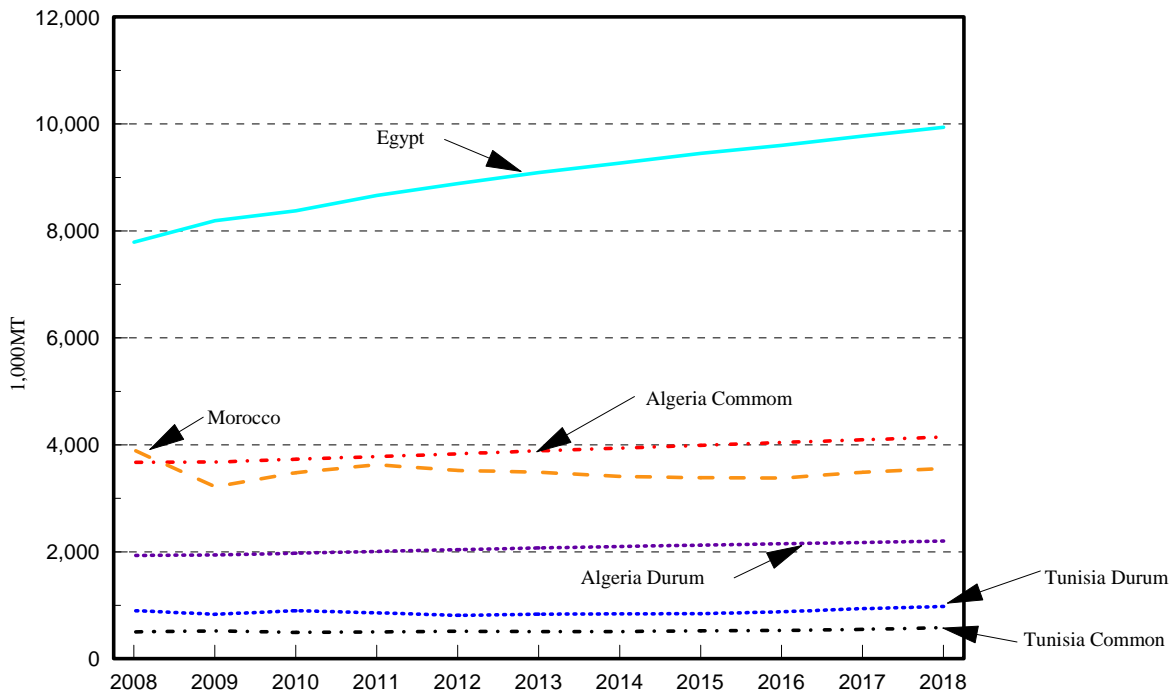
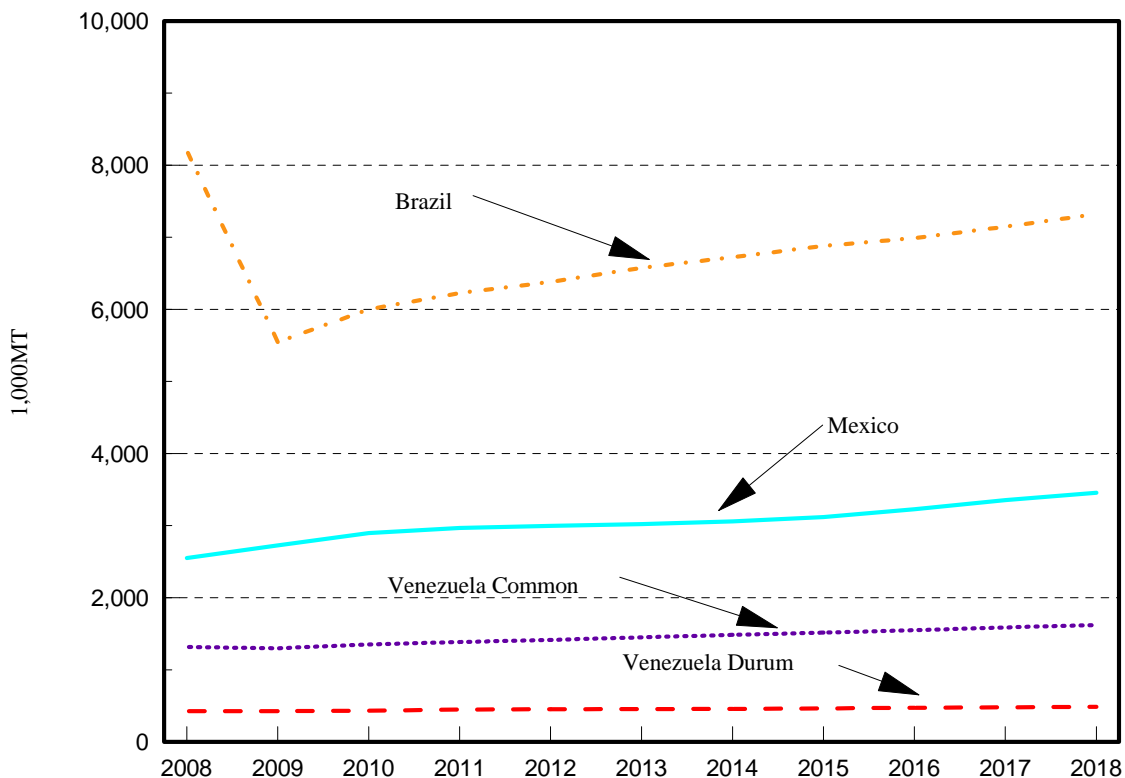


Figure 18. Common and Durum Wheat Imports by Major African Countries, 2008-2018

### Latin America Importers

Mexican imports are projected to increase by 38.4% from the 2006-2008 average of 2.5 million metric tons to 3.5 million metric tons by 2018. Venezuela is expected to import more common and durum wheat. Common wheat imports in Venezuela are projected to increase by 32.3% from 1.2 million metric tons for the 2006-2008 average to 1.6 million metric tons in 2018, and durum wheat imports are projected to increase by 15.2% (Figure 19). Brazilian imports are projected to decrease to 7.3 million metric tons by 2018, which is a 3.8% decrease from the 2006-2008 average. The Latin American wheat market will grow faster than the Asian market but slower than the African market. Latin America is an important market for the U.S. wheat industry, but the U.S. must compete with Argentina to maintain or capture market share in the region.



**Figure 19. Common and Durum Wheat Imports by Latin American Countries, 2008-2018**

### CONCLUDING REMARKS

This report evaluates the U.S. and world wheat industries for the 2008-2018 period using the Global Wheat Policy Simulation Model, which is operational at The Center for Agricultural Policy and Trade Studies, North Dakota State University. The baseline projections are based on a series of assumptions about the general economy, agricultural policies, normal weather conditions, and technological changes. The baseline projections, therefore, could change significantly, depending upon changes in agricultural policies or weather conditions.

Import demand for both common and durum wheat is largely based on optimistic income growth (2.5% to 6% annually) in developing and developed countries, which was provided by Global Insight. However, if the predicted income growth is not realized, import demand could grow slower than predicted and estimated prices could be lower.

Prices for common wheat in the near future are predicted to be lower than the 2008 levels. Prices were higher in 2007 and 2008 than in 2006 due to generally small crops in exporting countries, primarily Australia and strong demand in the United States. The weak dollar also influence wheat prices in the United States because of strong export demand. It is expected that the average price of wheat will return to \$4.90-\$5.40 range for HRS wheat. U.S. durum wheat prices are expected to decrease to about \$6.00 per bushel in 2009 and slowly increase to about \$7.40 in

2018. Short term prices for both common and durum wheat are well below the levels in early 2008, but these prices could strengthen into the future.

World wheat exports by the five major exporters is projected to increase by 23.9% from 71.1 million metric tons in 2008 to 90.6 million metric tons in 2018. Durum wheat trade is expected to grow slower than common wheat trade. Africa continues to be the growth market for wheat exports. Per capita consumption of wheat has increased in most Asian countries, except for China. Chinese wheat production is expected to be 2% lower in 2018 than in 2008. Wheat imports should increase in Latin America, but most of those will be supplied by Argentina.

The U.S., Argentina, Canada and Australia are predicted to increase their production of common wheat for the 2008-2018 period while exports for all exporters except Argentina will increase. World consumption of common wheat is expected to increase slowly in most developed countries while consumption will increase faster in North Africa and Latin America. Production and exports of common wheat in the EU are predicted to increase slowly during the projection period due to changes in the Common Agricultural Policy. Durum wheat production in the United States is expected to return to normal historical levels.

Common wheat demand in Southeast Asian countries is predicted to grow slowly for the 2008-2018 period. Over the past 10 years, India has been either a net importer or net exporter of wheat, depending on its production and carry-over stocks. India exported an average of 2.8 million metric tons of wheat during 2006-2008, however they import a small amount of wheat in 2008. India should import about 2 million metric tons per year in the future.

China's production peaked in 1997 and has been decreasing until 2008. In China, yields have been increasing, but area harvested is decreasing. China has been lowering the carry-over stocks to limit imports, however that reduction has ended. China's long term supply and demand situation for wheat is very uncertain. Rapid increases in incomes have reduced per capita consumption of cereal grains in favor of fruits, vegetables and meat. Whether that trend will continue or increase is unknown.

Egypt, the largest importer of common wheat in the North Africa region, is predicted to increase its imports of common wheat. Import demand for both common and durum wheat in other countries in the region is also expected to increase.

Import demand for common wheat in Venezuela and Mexico is expected to be strong for the 2008-2018 period. Import demand for durum wheat in Venezuela is also predicted to be strong for the projection period.

Import demand for wheat in Asia will grow faster than that in North Africa and Latin America for the next ten years. This is mainly due to the Indian imports during the later forecast period. However, the competition among wheat exporting countries in the markets will remain strong: The United States will compete with Canada and the EU in the African market, with Canada and Argentina in the Latin American market, and with Canada and Australia in the Asian market.

There are a few variables, which will affect the U.S. and world wheat industries. They are a rise in protectionism stemming from high commodity prices in 2008 in some developing countries.

This will affect the price of wheat and trade volume. The second variable is decreasing per capita consumption of wheat in some Asian countries, including China and Japan. If this trend continues, total consumption of wheat may decrease in the countries and consequently their import demand.

## References

- Benirschka, Martin, and Won W. Koo. *World Wheat Policy Simulation Model: Description and Computer Program Documentation*. Department of Agricultural Economics, North Dakota State University, Fargo, December 1995.
- Food and Agricultural Policy Research Institute. *FAPRI 2009: U.S. and World Agricultural Outlook*. Staff Report 09-FSR1, Iowa State University and University of Missouri-Columbia, January 2009.
- International Monetary Fund. *International Financial Statistics CD-ROM*. Washington, DC, January 2009.
- International Wheat Council. *World Grain Statistics*. London, United Kingdom, various issues.
- Statistics Canada. *Grain Trade of Canada*. Ottawa: Statistics Canada. Catalogue 22-201, annual, various issues.
- United Nations. *FAO Production Yearbook*, various years, Rome, Italy.
- U.S. Department of Agriculture, Agricultural Stabilization and Conservation Service. Program Data (computer files), Washington, DC, 2009.
- U.S. Department of Agriculture, Economic Research Service. *Wheat Situation and Outlook Report*. Washington, DC, various issues.
- U.S. Department of Agriculture, Economic Research Service. *PS&D View* (computer files).

# **Appendix**

World Wheat Policy Simulation Model (Common Wheat and Durum Wheat)

2008 base

United States - Nominal Market Prices (U.S. dollars/bushel)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
HRW Wheat	7.31	5.39	5.21	5.26	5.40	5.63	5.81	5.95	6.01	5.99	6.03
Durum Wheat	9.10	5.97	6.69	6.53	6.29	6.94	7.15	7.14	7.27	7.47	7.30

United States - Nominal Farm Prices (U.S. dollars/bushel)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
HRS Wheat	6.30	4.94	4.81	4.85	4.95	5.11	5.24	5.34	5.38	5.36	5.39
HRW Wheat	5.81	4.36	4.23	4.26	4.37	4.55	4.68	4.79	4.83	4.81	4.85
SRW Wheat	6.24	4.91	4.79	4.82	4.92	5.08	5.20	5.30	5.34	5.32	5.36
White Wheat	6.02	4.60	4.47	4.50	4.61	4.78	4.91	5.01	5.06	5.04	5.07
Durum Wheat	9.06	5.93	6.65	6.49	6.25	6.90	7.11	7.10	7.23	7.43	7.26

United States - Wheat Area Planted (million acres)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
HRS Wheat	13.4	13.3	15.5	14.6	14.7	14.9	14.3	14.1	14.1	13.9	13.7
HRW Wheat	31.2	31.7	30.7	30.5	30.7	30.9	31.2	31.5	31.8	32.0	32.2
SRW Wheat	11.2	11.2	11.0	11.0	11.0	11.1	11.2	11.2	11.3	11.3	11.4
White Wheat	4.5	4.4	4.3	4.3	4.3	4.3	4.4	4.4	4.4	4.4	4.4
Durum Wheat	2.7	2.8	2.8	2.9	3.0	2.9	3.0	3.0	3.1	3.2	3.3
All Wheat	63.1	63.3	64.2	63.3	63.7	64.2	64.0	64.3	64.7	64.9	65.0

United States - All Wheat Seed Use (bushels/acre planted)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
All Wheat	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81

United States - Wheat Seed Use (million bushels)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	109.1	109.5	111.2	109.3	109.8	110.8	110.5	110.8	111.4	111.7	111.6
Durum Wheat	4.9	5.0	5.0	5.3	5.4	5.3	5.4	5.5	5.6	5.7	6.0
All Wheat	114.0	114.5	116.2	114.6	115.2	116.1	115.8	116.3	117.0	117.4	117.6

United States - Wheat Area Harvested (million acres)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Hard Red Spring	12.8	12.5	14.8	15.7	15.8	15.9	15.4	15.2	15.1	15.0	14.7
Hard Red Winter	25.9	24.6	23.6	23.4	23.5	23.8	24.2	24.5	24.7	25.0	25.1
Soft Red Winter	10.1	10.3	10.2	10.2	10.2	10.3	10.3	10.4	10.5	10.5	10.5
White	4.3	4.2	4.1	4.1	4.1	4.1	4.1	4.2	4.2	4.2	4.2
Durum	2.6	2.6	2.6	2.7	2.8	2.7	2.7	2.8	2.9	2.9	3.1
All Wheat	55.7	54.2	55.2	56.1	56.4	56.9	56.7	57.0	57.4	57.5	57.6

United States - Wheat Yield (bushels/acre harvested)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Hard Red Spring	39.91	38.59	38.91	38.95	39.03	39.11	39.19	39.27	39.34	39.42	39.50
Hard Red Winter	39.91	39.94	40.15	40.43	40.73	41.05	41.37	41.69	42.01	42.32	42.64
Soft Red Winter	60.88	60.39	61.50	61.60	62.34	62.67	63.26	63.69	64.22	64.68	65.19
White	59.59	60.43	60.19	60.26	60.24	60.24	60.24	60.24	60.24	60.24	60.24
Durum	32.85	33.98	34.21	34.29	34.35	34.40	34.44	34.48	34.51	34.54	34.55
All Wheat	44.88	44.83	44.97	45.02	45.29	45.49	45.81	46.06	46.30	46.55	46.81



United States - Wheat Production (million bushels)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Hard Red Spring	511.5	483.6	574.6	610.4	614.9	623.5	601.5	594.9	595.7	590.4	581.8
Hard Red Winter	1035.2	981.7	947.4	946.6	959.3	977.6	999.2	1019.8	1039.5	1057.0	1072.2
Soft Red Winter	613.6	624.8	626.9	627.2	637.9	644.4	654.2	662.2	671.1	679.0	687.0
White	254.3	252.7	246.8	247.6	248.1	248.9	249.8	250.5	251.2	251.7	252.0
Durum	84.9	87.5	87.9	92.7	94.8	93.6	94.4	96.8	98.4	100.9	105.4
All Wheat	2499.5	2430.3	2483.6	2524.6	2555.0	2588.0	2599.1	2624.3	2655.9	2679.0	2698.5

United States - Common Wheat Supply and Utilization (million bushels)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Carry-in Stocks	297.5	634.2	612.2	634.8	625.4	626.9	634.0	641.1	639.2	635.1	633.8
Production	2414.6	2342.8	2395.7	2431.9	2460.2	2494.4	2504.7	2527.5	2557.6	2578.1	2593.1
Net Exports	905.0	1147.0	1140.0	1193.9	1195.2	1206.9	1201.4	1216.3	1230.9	1231.3	1223.1
Exports	980.0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	75.0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1173.0	1217.8	1233.0	1247.3	1263.5	1280.3	1296.2	1313.1	1330.7	1348.2	1365.6
Food	867.0	876.0	887.2	901.1	914.4	927.8	941.6	955.7	970.2	985.0	1000.0
Seed	76.0	109.5	111.2	109.3	109.8	110.8	110.5	110.8	111.4	111.7	111.6
Feed	230.0	232.3	234.6	237.0	239.3	241.7	244.1	246.6	249.1	251.5	254.1
Carry-out Stocks	634.2	612.2	634.8	625.4	626.9	634.0	641.1	639.2	635.1	633.8	638.1

United States - Common Wheat Stocks-to-Use Ratio (percent) and Per Capita Food Use (bushels)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Per Capita Food Use	2.92	2.92	2.93	2.95	2.97	2.99	3.01	3.03	3.05	3.07	3.09
Stocks-to-Use Ratio	54.06	50.27	51.49	50.14	49.61	49.52	49.46	48.68	47.73	47.01	46.73

United States - Durum Wheat Supply and Utilization (million bushels)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Carry-in Stocks	8.3	21.2	23.6	20.5	22.7	22.9	21.0	21.5	22.2	22.1	21.9
Production	84.9	87.5	87.9	92.7	94.8	93.6	94.4	96.8	98.4	100.9	105.4
Net Exports	-15.0	-12.4	1.5	-4.2	-6.1	0.8	-1.1	-1.4	1.3	5.3	4.8
Exports	20.0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	35.0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	87.0	97.5	89.6	94.6	100.7	94.7	95.0	97.5	97.2	95.8	99.3
Food	83.0	92.4	84.6	89.3	95.3	89.4	89.6	92.1	91.7	90.1	93.3
Seed	4.0	5.0	5.0	5.3	5.4	5.3	5.4	5.5	5.6	5.7	6.0
Feed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carry-out Stocks	21.2	23.6	20.5	22.7	22.9	21.0	21.5	22.2	22.1	21.9	23.2

United States - Durum Wheat Stocks-to-Use Ratio (percent) and Per Capita Food Use (bushels)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Per Capita Food Use	0.28	0.31	0.28	0.29	0.31	0.29	0.29	0.29	0.29	0.28	0.29
Stocks-to-Use Ratio	24.33	24.25	22.84	24.03	22.74	22.14	22.64	22.75	22.71	22.84	23.33



## Canada - Wheat Area Harvested (1000 hectares)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
CWRS Wheat	8018	8013	8384	8236	8454	8315	8277	8276	8164	8152	8132
CWAD Wheat	2012	2047	1878	1983	1994	1941	1978	2006	2004	2003	2031
All Wheat	10030	10060	10262	10219	10448	10256	10255	10282	10167	10154	10163

## Canada - Wheat Yield (metric tons/hectare)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
CWRS Wheat	2.90	2.89	2.90	2.92	2.93	2.94	2.95	2.96	2.97	2.99	3.00
CWAD Wheat	2.35	2.32	2.33	2.34	2.35	2.36	2.37	2.38	2.39	2.39	2.40
All Wheat	2.85	2.78	2.80	2.80	2.82	2.83	2.84	2.85	2.86	2.87	2.88

## Canada - Canadian Western Red Spring Wheat Supply and Utilization (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Carry-in Stocks	4717	6394	6275	7104	7049	7109	6966	6860	6745	6811	6983
Production	23882	23197	24349	24013	24745	24436	24419	24514	24275	24334	24370
Net Exports	15508	15579	15673	16171	16758	16558	16440	16484	16007	15899	16093
Exports	15800	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	292	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	6697	7737	7847	7897	7927	8022	8086	8143	8203	8263	8317
Food	4383	4369	4433	4460	4489	4547	4591	4628	4671	4701	4736
Seed	760	838	824	845	832	832	828	828	816	815	813
Feed	2586	2530	2591	2592	2606	2643	2667	2687	2716	2747	2767
Carry-out Stocks	6394	6275	7104	7049	7109	6966	6860	6745	6811	6983	6943

## Canada - Western Red Spring Wheat Stocks-to-Use Ratio (percent) Per Capita Food Use (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Per Capita Food Use	130.06	128.59	129.41	129.15	128.99	129.64	129.89	129.96	130.17	130.04	130.09
Stocks to Use Ratio	95.47	81.09	90.52	89.26	89.69	86.83	84.83	82.83	83.03	84.50	83.48

## Canada - Canadian Western Amber Durum Wheat Supply and Utilization (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Carry-in Stocks	100	533	466	520	522	504	529	543	544	557	579
Production	4728	4739	4368	4631	4677	4571	4679	4764	4778	4796	4885
Net Exports	3192	3750	3233	3549	3626	3461	3566	3660	3652	3648	3743
Exports	3200	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	8	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1103	1056	1080	1080	1069	1085	1099	1103	1113	1126	1133
Food	278	284	280	282	288	288	293	299	304	308	322
Seed	211	213	201	209	210	206	208	210	210	210	212
Feed	614	559	599	589	571	591	597	594	599	608	599
Carry-out Stocks	533	466	520	522	504	529	543	544	557	579	588

## Canada - Western Amber Durum Wheat Stocks-to-Use Ratio (percent) Per Capita Food Use (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Per Capita Food Use	8.25	8.35	8.17	8.18	8.27	8.22	8.29	8.38	8.46	8.52	8.84
Stocks to Use Ratio	48.35	44.08	48.14	48.34	47.21	48.70	49.38	49.31	50.10	51.46	51.93

## Canada - All Wheat Supply and Utilization (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Carry-in Stocks	4817	6927	6740	7623	7571	7614	7494	7402	7289	7368	7562
Production	28610	27935	28717	28645	29423	29007	29099	29278	29053	29130	29255
Net Exports	18700	19329	18906	19720	20384	20019	20006	20144	19659	19547	19836
Exports	19000	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	300	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	7800	8793	8927	8977	8995	9107	9185	9247	9315	9389	9450
Food	4661	4653	4713	4742	4777	4836	4884	4927	4974	5009	5058
Seed	971	1052	1025	1054	1041	1037	1036	1038	1027	1025	1025
Feed	3200	3089	3189	3181	3177	3234	3264	3282	3314	3355	3366
Carry-out Stocks	6927	6740	7623	7571	7614	7494	7402	7289	7368	7562	7531

## Canada - All Wheat Stocks-to-Use Ratio (percent) Per Capita Food Use (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Per Capita Food Use	138.31	136.94	137.58	137.32	137.26	137.87	138.18	138.34	138.63	138.56	138.93
Stocks to Use Ratio	88.81	76.65	85.40	84.34	84.64	82.29	80.59	78.83	79.10	80.54	79.70

## Canada - Wheat Exports (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	15508	15579	15673	16171	16758	16558	16440	16484	16007	15899	16093
Durum Wheat	3192	3750	3233	3549	3626	3461	3566	3660	3652	3648	3743

## European Union - Nominal Producer Prices (ECU/metric ton)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	143.36	135.68	137.81	140.05	142.10	143.95	145.70	147.43	149.16	150.89	152.61
Durum Wheat	158.39	158.66	158.67	159.13	159.18	159.19	159.10	159.12	159.06	159.07	159.00

## European Union - Wheat Area Harvested (1000 hectares)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	23972	23233	23239	23243	23241	23237	23234	23229	23227	23226	23228
Durum Wheat	2900	2900	2928	2927	2949	2949	2948	2948	2948	2940	2934
All Wheat	26772	26134	26167	26170	26190	26186	26182	26176	26174	26167	26162

## European Union - Wheat Yield (metric tons/hectare)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	5.90	5.50	5.51	5.53	5.55	5.57	5.59	5.61	5.63	5.66	5.68
Durum Wheat	3.04	3.04	3.05	3.06	3.07	3.08	3.09	3.09	3.10	3.11	3.12
All Wheat	5.62	5.22	5.23	5.25	5.27	5.29	5.31	5.33	5.35	5.37	5.39

## European Union - Common Wheat Supply and Utilization (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Carry-in Stocks	9518	15563	15235	14851	14601	14488	14451	14436	14438	14451	14480
Production	141698	127698	128000	128465	128938	129416	129897	130368	130860	131358	131867
Net Exports	12350	6576	7578	8024	8210	8394	8727	8967	9221	9438	9679
Exports	17950	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	5600	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	123303	121450	120806	120692	120841	121059	121184	121399	121625	121891	122154
Food	59303	59309	58598	58504	58646	58816	58903	59015	59137	59277	59429
Feed	64000	62141	62208	62188	62195	62243	62281	62384	62488	62614	62725
Carry-out Stocks	15563	15235	14851	14601	14488	14451	14436	14438	14451	14480	14514

European Union - Common Wheat Stocks-to-Use Ratio (percent) Per Capita Food Use (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Per Capita Food Use	137.52	137.38	135.59	135.26	135.48	135.80	135.93	136.15	136.40	136.72	137.09
Stocks to Use Ratio	12.62	12.54	12.29	12.10	11.99	11.94	11.91	11.89	11.88	11.88	11.88

European Union - Durum Wheat Supply and Utilization (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Carry-in Stocks	917	886	885	833	827	826	836	833	841	839	848
Production	8816	8820	8931	8953	9047	9074	9097	9121	9147	9150	9157
Net Exports	650	597	742	678	718	683	672	641	631	582	574
Exports	1050	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	400	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	8197	8223	8242	8280	8330	8381	8427	8472	8517	8560	8604
Food	8197	8223	8242	8280	8330	8381	8427	8472	8517	8560	8604
Feed	0	0	0	0	0	0	0	0	0	0	0
Carry-out Stocks	886	885	833	827	826	836	833	841	839	848	826

European Union - Durum Wheat Stocks-to-Use Ratio (percent) Per Capita Food Use (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Per Capita Food Use	19.01	19.05	19.07	19.14	19.24	19.35	19.45	19.55	19.65	19.74	19.85
Stocks to Use Ratio	10.81	10.76	10.10	9.99	9.91	9.97	9.89	9.92	9.85	9.90	9.60

European Union - All Wheat Supply and Utilization (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Carry-in Stocks	10435	16449	16120	15684	15428	15314	15286	15270	15279	15291	15328
Production	150514	136518	136931	137418	137986	138490	138994	139489	140006	140509	141024
Net Exports	13000	7173	8320	8702	8928	9077	9399	9609	9852	10020	10253
Exports	19000	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	6000	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	131500	129673	129048	128972	129171	129439	129612	129871	130142	130451	130759
Food	67500	67533	66840	66784	66976	67197	67331	67487	67654	67837	68034
Feed	64000	62141	62208	62188	62195	62243	62281	62384	62488	62614	62725
Carry-out Stocks	16449	16120	15684	15428	15314	15286	15270	15279	15291	15328	15340

European Union - All Wheat Stocks-to-Use Ratio (percent) Per Capita Food Use (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Per Capita Food Use	156.53	156.43	154.67	154.40	154.73	155.15	155.38	155.69	156.05	156.46	156.93
Stocks to Use Ratio	12.51	12.43	12.15	11.96	11.86	11.81	11.78	11.76	11.75	11.75	11.73

European Union - Wheat Net Exports (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	12350	6576	7578	8024	8210	8394	8727	8967	9221	9438	9679
Durum Wheat	650	597	742	678	718	683	672	641	631	582	574

Australia - Nominal Wheat Export Prices (Australian dollars/metric ton)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	383.36	397.70	367.51	350.95	353.81	369.56	381.54	391.18	395.29	393.80	397.10
Durum Wheat	508.41	464.13	499.74	460.62	433.50	480.27	496.24	495.55	505.26	519.75	507.14

## Australia - Nominal Domestic Prices (Australian dollars/metric ton)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	346.65	358.95	333.05	318.85	321.30	334.82	345.09	353.36	356.88	355.61	358.44

## Australia - Wheat Area Harvested (1000 hectares), Yield (metric tons/hectare), and Production (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Area Harvested	13000	12387	12511	12557	12640	12729	12812	12892	12965	13035	13110
Yield	1.54	2.13	1.97	2.02	2.02	2.04	2.04	2.05	2.06	2.08	2.11
Production	20020	26364	24619	25419	25506	25963	26180	26459	26704	27082	27694

## Australia - Wheat Supply and Utilization (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Carry-in Stocks	3853	4478	4201	4282	4456	4522	4525	4528	4537	4578	4652
Production	20020	26364	24619	25419	25506	25963	26180	26459	26704	27082	27694
Net Exports	12925	20402	18213	18652	18792	19299	19503	19747	19892	20134	20667
Consumption	6450	6239	6325	6593	6648	6662	6674	6703	6771	6874	6963
Food	2700	2729	2764	2988	3007	2989	2967	2960	2992	3055	3107
Feed	3750	3510	3561	3605	3641	3673	3707	3742	3780	3818	3856
Carry-out Stocks	4478	4201	4282	4456	4522	4525	4528	4537	4578	4652	4716

## Australia - Wheat Stocks-to-Use Ratio (percent) and Per Capita Food Use (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Per Capita Food Use	132.05	131.86	131.98	141.04	140.34	137.94	135.43	133.68	133.67	135.12	136.01
Stocks-to-Use Ratio	69.43	67.33	67.70	67.59	68.03	67.92	67.84	67.69	67.61	67.67	67.73

## Argentina - Wheat Area Planted and Harvested (1000 hectares), Yield (metric tons/hectare), and Production (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Area Planted	4200	5191	4638	4624	4626	4660	4707	4747	4780	4806	4830
Area Harvested	4200	4939	4972	4808	4811	4842	4887	4894	4895	4899	4912
Yield	2.26	2.45	2.47	2.48	2.49	2.49	2.50	2.50	2.51	2.51	2.52
Production	9492	12087	12292	11926	11960	12066	12204	12249	12280	12317	12376

## Argentina - Wheat Supply and Utilization (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Carry-in Stocks	679	404	410	433	449	460	468	478	490	503	515
Production	9492	12087	12292	11926	11960	12066	12204	12249	12280	12317	12376
Net Exports	4295	6538	6644	6216	6194	6252	6327	6306	6265	6235	6237
Exports	4300	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	5480	5543	5625	5694	5754	5806	5867	5932	6001	6070	6129
Carry-out Stocks	404	410	433	449	460	468	478	490	503	515	525

## Argentina - Wheat Stocks-to-Use Ratio (percent) and Per Capita Consumption (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Per Capita Consumption	136.87	137.00	137.56	137.83	137.90	137.77	137.88	138.09	138.43	138.76	138.89
Stocks-to-Use Ratio	7.37	7.39	7.70	7.88	8.00	8.06	8.15	8.26	8.38	8.49	8.57







India - Wheat Supply and Utilization (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Carry-in Stocks	6410	7160	7164	7167	7171	7174	7178	7182	7185	7189	7192
Production	79200	79031	79017	79077	79600	80407	80964	81877	82892	83999	85188
Net Imports	50	2180	853	-343	-1059	-1483	-2168	-2492	-2719	-2861	-2909
Exports	50	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	77600	76847	78160	79416	80655	81887	83129	84365	85607	86857	88093
Carry-out Stocks	7160	7164	7167	7171	7174	7178	7182	7185	7189	7192	7196

India - Wheat Stocks-to-Use Ratio (percent) and Per Capita Consumption (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Per Capita Consumption	65.00	66.71	66.81	66.87	66.92	66.96	67.00	67.05	67.10	67.15	67.20
Stocks-to-Use Ratio	9.23	9.32	9.17	9.03	8.90	8.77	8.64	8.52	8.40	8.28	8.17

Japan - Wheat Production (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	834.00	825.66	817.40	809.23	801.14	793.13	785.19	777.34	769.57	761.87	754.25

Japan - Per Capita Wheat Production (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	6.57	6.52	6.46	6.42	6.37	6.33	6.29	6.25	6.21	6.18	6.15

Japan - Per Capita Wheat Imports (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	40.05	40.70	39.76	39.18	38.93	38.65	38.37	38.06	37.72	37.32	36.93

Japan - Wheat Imports (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	5075	5158	5028	4942	4896	4845	4791	4734	4670	4600	4529

South Korea - Per Capita Wheat Imports (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	81.49	79.18	81.68	81.50	80.92	81.20	80.95	81.37	80.90	79.77	78.35

South Korea - Wheat Imports (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	4020	3906	4040	4041	4021	4043	4037	4064	4046	3994	3927

Mexico - Wheat Area Harvested (1000 hectares), Yield (metric tons/hectare), and Production (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Area Harvested	770	730	728	726	727	725	725	726	730	735	740
Yield	5.06	5.10	5.12	5.15	5.18	5.21	5.24	5.26	5.29	5.32	5.35
Production	3896	3718	3727	3738	3763	3775	3793	3819	3865	3910	3957

Mexico - Wheat Supply and Utilization (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Carry-in Stocks	214	414	412	416	413	404	392	380	370	364	360
Production	3896	3718	3727	3738	3763	3775	3793	3819	3865	3910	3957
Net Imports	2550	2723	2894	2969	2997	3021	3058	3119	3225	3353	3455
Exports	1050	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	3600	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	6250	6444	6617	6711	6769	6807	6863	6949	7096	7266	7417
Carry-out Stocks	414	412	416	413	404	392	380	370	364	360	355

Mexico - Wheat Stocks-to-Use Ratio (percent) and Per Capita Consumption (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Stocks-to-Use Ratio	6.62	6.39	6.29	6.15	5.97	5.76	5.54	5.32	5.13	4.96	4.78
Per Capita Consumption	54.86	55.92	56.78	56.95	56.82	56.53	56.39	56.51	57.11	57.90	58.53

Morocco - Wheat Area Harvested (1000 hectares), Yield (metric tons/hectare), and Production (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Area Harvested	2800	2804	2704	2741	2714	2730	2729	2733	2731	2727	2718
Yield	1.25	1.53	1.56	1.54	1.63	1.67	1.73	1.78	1.84	1.87	1.90
Production	3500	4282	4211	4211	4429	4551	4731	4876	5033	5091	5164

Morocco - Wheat Supply and Utilization (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Carry-in Stocks	1261	1261	1267	1274	1280	1286	1293	1299	1306	1312	1319
Production	3500	4282	4211	4211	4429	4551	4731	4876	5033	5091	5164
Net Imports	3900	3216	3477	3627	3521	3486	3408	3385	3377	3487	3558
Exports	100	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Exports	100	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	7400	7492	7682	7832	7944	8031	8133	8255	8403	8571	8714
Carry-out Stocks	1261	1267	1274	1280	1286	1293	1299	1306	1312	1319	1325

Morocco - Wheat Stocks-to-Use Ratio (percent) and Per Capita Consumption (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Per Capita Consumption	218.34	217.77	220.06	221.15	221.18	220.49	220.29	220.64	221.70	223.25	224.18
Stocks-to-Use Ratio	17.04	16.92	16.58	16.34	16.19	16.10	15.98	15.82	15.62	15.39	15.21

Morocco - Wheat Exports (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	-3900	-3216	-3477	-3627	-3521	-3486	-3408	-3385	-3377	-3487	-3558

Former Soviet Union - Wheat Production (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
All Wheat	114735	116227	117738	119268	120819	122389	123980	125592	127225	128879	130554

Former Soviet Union - Per Capita Wheat Production (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
All Wheat	390.84	396.40	402.00	407.66	413.38	419.20	425.13	431.17	437.33	443.63	450.06

## Former Soviet Union - Per Capita Wheat Imports (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	-81.28	-38.43	-48.76	-48.24	-46.55	-52.61	-55.04	-57.53	-59.64	-62.68	-62.05
Durum Wheat	-1.02	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07

## Former Soviet Union - Wheat Net Imports (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	-23830	-11249	-14261	-14094	-13583	-15340	-16032	-16737	-17329	-18188	-17979
Durum Wheat	-300	-321	-342	-362	-383	-384	-385	-386	-387	-388	-389
All Wheat	-24130	-11569	-14602	-14456	-13967	-15725	-16417	-17123	-17716	-18576	-18368

## Tunisia - Wheat Production (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	750.00	757.50	765.08	772.73	780.45	788.26	796.14	804.10	812.14	820.26	828.47
Durum Wheat	500.00	505.00	510.05	515.15	520.30	525.51	530.76	536.07	541.43	546.84	552.31
All Wheat	1250.00	1262.50	1275.13	1287.88	1300.76	1313.76	1326.90	1340.17	1353.57	1367.11	1380.78

## Tunisia - Per Capita Wheat Production (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	71.07	71.07	71.09	71.11	71.14	71.18	71.23	71.30	71.39	71.49	71.62
Durum Wheat	47.38	47.38	47.39	47.41	47.43	47.45	47.49	47.53	47.59	47.66	47.75

## Tunisia - Per Capita Wheat Imports (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	84.44	77.95	83.26	79.16	73.90	75.17	75.03	74.74	77.11	81.78	84.19
Durum Wheat	46.91	48.66	45.81	45.89	46.59	45.79	45.49	46.17	46.63	47.80	50.20

## Tunisia - Wheat Imports (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	900	831	896	860	811	832	839	843	877	938	974
Durum Wheat	500	519	493	499	511	507	508	521	530	548	581
All Wheat	1400	1349	1389	1359	1322	1340	1347	1364	1408	1487	1555

## Taiwan - Per Capita Wheat Imports (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	46.19	46.48	46.65	46.75	46.77	46.73	46.74	46.76	46.84	46.98	47.13

## Taiwan - Wheat Imports (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	1075	1082	1088	1093	1095	1096	1098	1100	1103	1107	1111

## Venezuela - Per Capita Wheat Imports (kilograms)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	47.60	46.99	48.22	48.69	48.96	49.50	49.89	50.22	50.67	51.25	51.66
Durum Wheat	15.39	15.43	15.43	15.65	15.69	15.51	15.39	15.37	15.43	15.47	15.55

Venezuela - Wheat Imports (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	1315	1298	1352	1386	1415	1451	1484	1515	1549	1588	1622
Durum Wheat	425	426	433	446	453	455	458	463	472	479	488
All Wheat	1740	1724	1785	1832	1868	1906	1941	1978	2021	2067	2111

Rest of the World - Wheat Imports (1000 metric tons)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Common Wheat	57780	58105	57676	57078	55915	57581	57843	57917	58555	59256	59112
Durum Wheat	1350	1445	1513	1521	1528	1536	1544	1551	1559	1567	1575