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2016 Outlook of the U.S. and World Wheat Industries, 2016-2025

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ABSTRACT

This report evaluates the U.S. and world wheat markets for the 2016-2025 time 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 soft for the next ten years. World demand for both common and durum wheat are expected to remain stable however the large supplies of 2013, 2014 and 2015 will continue to pressure the market. The high price levels in 2010, 2011 and early 2012 will not be maintained because they are the result of a small wheat crop in 2010 and 2012 in the Former Soviet Union (FSU) and Argentina in 2012. The lower price levels for all commodities will also impact the wheat market. It is expected that wheat production in the FSU will return to normal in the future. World trade volumes of both durum and common 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 3.7% from 132.9 million metric tons in 2015 to 137.8 million metric tons in 2025. It is expected that the average price of HRS wheat will be about \$5.60-\$5.70 range and durum wheat prices are expected to be in the \$6.60 to \$6.80 range in 2025.

Production of all wheat classes except for white wheat in the United States is predicted to increase for the 2016-2025 period. The largest increase in production occurs for U.S. durum wheat, followed by HRW and HRS wheat. The U.S. export of common wheat is predicted to decrease slightly for the 2016-2025 period and the United States is expected to continue to import durum wheat from Canada over the period.

Production of Canadian western red spring wheat (CWRS) is predicted to decline slightly while the production of Canadian western amber durum (CWAD) wheat is predicted to increase for the 2016-2025 period. CWRS wheat exports are projected to decrease slightly, while durum wheat exports increase by 6.7%.

Common and durum wheat production in the European Union (EU) is predicted to decrease by 3.1% and increase by 10.3%, respectively, for the 2016-2025 period. The EU is expected to decrease its common wheat exports and continue to import a small amount of durum wheat.

Australia's wheat production is predicted to grow by 7.2% over the 2016-2025 period. Wheat exports are expected to increase from 17.6 million metric tons in 2013-2015 to 19.1 million metric tons in 2025.

Argentine wheat production is projected to increase by 38.4% to about 15.2 million metric tons in 2025. Wheat exports are expected to increase from 4.6 million metric tons in 2013-2015 to 8.5 million metric tons in 2025.

The FSU, China, and India were importers of wheat in the past but have exported wheat during the recent years. Wheat production in India has increased 121% since the 1980s. Most of the increase has been due to increases in yields. China's wheat production reached a recent record level in 2015 at 130 million metric tons. Production in the FSU remained below the 1980s until 2001 and 2002, when production increased 15% and 25%, respectively. Its production fell in 2003 before recovering in 2004. Russia is expected to export about 22.5 million metric tons of wheat by 2025 and Ukraine is expected to export about 17.3 million metric tons by 2025.

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

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INTRODUCTION

This report evaluates the U.S. and world wheat industries for the 2016-2025 period by using the Global Wheat Policy Simulation Model developed by Benirschka and Koo. The model is operational at the Center for Agricultural Policy and Trade Studies, NDSU.

Wheat is a differentiated product. Substitution among wheat classes is imperfect, and consumer preferences differ among countries, suggesting that characteristics of different wheat classes 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.

Wheat is produced across the world. Total world wheat production has increased from 521 million tons in 1986/87 to 617 million tons in 2015. The EU (158 million tons) was the largest producer of wheat in 2015, followed by China (130 million tons) and the FSU (117 million tons). The United States produced 66 million tons of wheat in 2015, a increase from 61 million tons in 2000. Other major wheat-producing countries are Canada, Australia, India, and Argentina. These countries produce about 79% of the total wheat produced 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 133 million tons in 2015, which is about 22% of wheat produced in that year. Major exporting countries are the United States, Canada, Australia, the EU, Russia, Ukraine, and Argentina.

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 factor is the impacts of the bio-energy industry on all commodities. A significant increase in ethanol and bio-diesel production has resulted in increases in commodity prices. In addition, recent weather problems in various countries have resulted in decreases in production which has 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 market shares.

The Uruguay Round of GATT negotiations, which became effective in 1995, have 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 through 2008 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. Carryover 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. The price level in 2009 was similar to 2006 price levels. In 2010, the small wheat crop in the FSU decreased world supplies which was followed by price increases in 2010 to about \$6.85 per bushel. Even with a larger wheat crop in 2011, prices

increased to \$6.92/ bushel. In late 2012 wheat prices increased to about \$9.20/bushel before falling about \$1.00/bushel in 2013. By 2015 wheat prices fell to the \$5.60 range.

WORLD WHEAT INDUSTRY

World wheat trade is dominated by a few exporting countries: United States, Canada, Australia, EU, FSU, and Argentina. Even though exporting countries compete with each other, the world wheat market is not perfectly competitive. In the past, some countries have used state trading agencies to market their grain. In addition, 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.

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 wheat. 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, mainly 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 2011-2015 period was 56.9 million tons, with 22.3 million tons of HRW, 13.7 million tons of HRS, 12.2 million tons of SRW, 7.0 million tons of white wheat, and 1.8 million tons of durum wheat (Table 1).

Table 1. Wheat Production by Class, 2011 to 2015 (thousand tons)

Country/Class	2011	2012	2013	2014	2015	Average	Share of Average
Argentina							
Common	15,500	9,300	10,500	12,000	10,500	11,560	2.0
Australia							
Common	29,889	22,856	27,009	24,000	25,944	25,940	4.4
Canada							
Total	25,288	27,205	37,530	29,420	27,600	29,409	5.0
Common	21,116	22,578	31,025	24,227	22,856	24,360	4.1
Durum	4,172	4,627	6,505	5,193	4,744	5,048	0.9
EU							
Total	138,182	133,949	144,582	156,525	157,977	146,243	24.7
Common	129,957	125,974	136,480	148,825	150,277	138,303	23.4
Durum	8,225	7,975	8,102	7,700	7,700	7,940	1.3
United States							
Total	54,249	61,304	58,111	55,153	55,845	56,932	9.6
HRW	21,308	27,162	20,342	20,105	22,507	22,285	3.8
HRS	10,783	13,703	13,354	15,121	15,354	13,663	2.3
SRW	12,323	11,234	15,473	12,372	9,773	12,235	2.1
White	8,555	6,986	7,363	6,084	5,966	6,991	1.2
Durum	1,280	2,218	1,578	1,471	2,245	1,759	0.3
Russia	56,240	37,720	52,091	59,000	60,928	53,196	9.0
Ukraine	21,077	10,117	17,768	22,473	23,150	28,917	3.2
Other Soviet	21,627	11,289	18,568	22,800	23,500	19,557	3.3
Sub Total	214,452	238,007	232,573	230,772	231,610	229,483	38.8
Total World							
Total	576,504	551,747	598,732	612,143	617,054	591,236	100.0

Source: USDA

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 2011-2015 period included 24.4 million tons of CWRS and 5.0 million tons of durum wheat (Table 1).

The EU produced an annual average of 138.1 million tons of soft wheat and 7.9 million tons of durum wheat during the 2011-2015 time period. France accounted for 30% of soft wheat production in the EU in 2015. 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 2015, 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 25.9 million tons for the 2011-2015 period. Wheat production is concentrated in the eastern Australian states of New South Wales and Victoria. However, in 2012 Australia produced just 22.9 million tons of wheat compared to 29.9 million metric tons in 2011 and 27.0 million metric tons in 2013.

Argentina produces wheat with characteristics of both soft and hard wheat. Argentina's average wheat production amounted to 11.6 million tons for the 2011-2015 period. Argentina has had two small wheat harvests. In 2012, yields fell by 30% and in 2009 only 80% of the planted wheat was harvested. In 2014 Argentine wheat production increased about 14% from the 2013 level however 2015 harvest was 12.5% smaller than 2014.

Table 2 shows the historical harvested area, yields, and production of the major wheat producing countries/regions in the world, by decades. Harvested wheat areas in the EU and Australia have increased 59% and 58% respectively, since the 1970s. Wheat area in the United States decreased by 16% and increased in Canada by 4%, from the 1970s level. World wheat harvested area decreased about 2%.

Yields increased by 248% in China since the 1970s and by 136% in India. The EU had yield increases of 84%. The U.S. yields increased by 58%, while Canadian yields increased by 51%. The world wheat yield increased by 81% during the five decades.

The total wheat production in 2015 increased by 257% in India and by 205% in China compared to wheat production in the 1960s. The EU production increased by 193%, but a large share of that was due to the addition of countries to the EU. Argentina increased production by 47%. The United States and Canada increased production by 33% and 57%, respectively. Figure 1 shows the changing levels of production using an index where average production over the 1960-1969 time period equals 1.00.

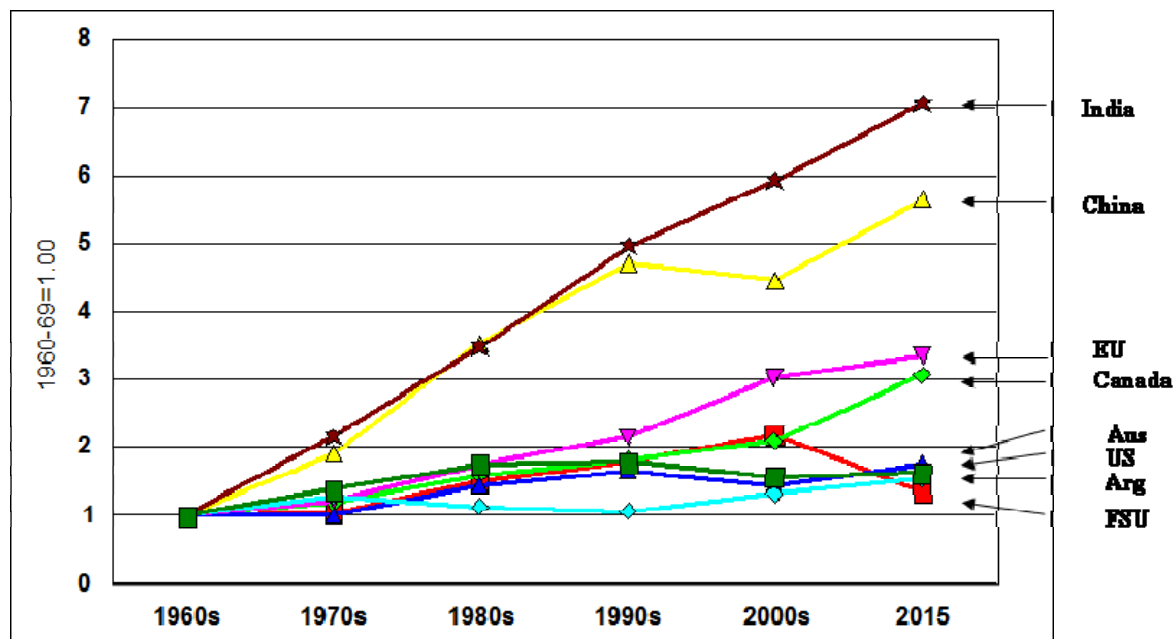


Figure 1. Changes in Wheat Production in Major Producing Countries/Regions

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

	1970	1980	1990	2000	2010	2015	% Change from 1970
Harvested Area -----1,000 hectares-----							
Argentina	4,625	5,629	5,320	6,408	4,500	3,500	-24.32
Australia	8,735	10,954	9,620	12,141	13,502	13,800	57.99
Canada	9,198	13,101	12,109	10,963	8,900	9,600	4.37
China	27,358	29,037	29,858	26,650	24,300	24,140	-11.76
EU	16,790	17,269	17,293	23,479	25,423	26,725	59.17
Russia			24,116	22,238	23,526	25,600	NA
Ukraine			6,591	6,064	5,862	7,000	NA
Other Soviet			16,338	15,043	16,696	16,211	NA
India	19,554	23,170	25,122	27,486	28,700	29,860	52.71
U.S.	23,643	26,493	24,829	21,474	19,040	19,832	-16.12
World	220,997	229,639	223,086	217,570	222,220	215,949	-2.28
Yield -----metric tons/hectare-----							
Argentina	1.53	1.80	2.27	2.53	3.11	3.00	96.08
Australia	1.29	1.37	1.76	1.82	1.87	1.88	45.74
Canada	1.80	1.84	2.27	2.42	2.60	2.72	51.11
China	1.55	2.73	3.56	3.74	4.71	5.39	247.74
EU	3.22	4.44	5.43	5.29	5.37	5.91	83.54
Russia			1.77	1.70	2.04	2.38	NA
Ukraine			3.74	3.03	2.84	3.86	NA
Other Soviet			1.28	1.29	1.28	1.82	NA
India	1.35	1.86	2.43	2.78	2.81	3.18	135.56
U.S.	2.11	2.41	2.60	2.82	3.15	3.33	57.82
World	1.68	2.14	2.55	2.67	2.91	3.04	80.95
Production -----1,000 metric tons-----							
Argentina	7,150	10,181	12,152	16,230	13,995	10,500	46.85
Australia	11,386	14,970	17,206	22,108	24,965	25,944	127.86
Canada	16,626	24,073	27,415	26,519	23,167	26,112	57.06
China	42,718	79,238	106,119	99,640	117,393	130,115	204.59
EU	53,877	76,796	93,467	124,197	136,528	157,945	193.16
Russia			42,583	37,752	47,900	60,928	NA
Ukraine			24,785	18,347	16,656	27,020	NA
Other Soviet			17,573	16,255	25,268	29,504	NA
India	26,607	42,959	61,177	76,369	81,047	94,880	256.60
U.S.	49,642	63,731	64,443	60,641	60,058	66,041	33.03
World	371,075	489,177	586,001	581,500	645,823	655,428	76.63

Source: USDA

Wheat Consumption

Different wheat classes have been used for different purposes. 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 wheat which is not fed to livestock.

Wheat Trade

Major importing countries include Algeria, Brazil, China, Egypt, Japan, Mexico, Morocco, Nigeria, South Korea, Taiwan, and Tunisia (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 has reduced wheat imports substantially, and changed from importing 12.0 million tons in 1995 to importing 2.9 million metric tons of wheat in 2013 and 500 thousand metric tons in 2014. Its average import was 1.6 million metric ton for the 2011-2015 period.

The EU and 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 Algeria, Japan, and Brazil, (Table 3).

Table 3. Wheat Imports by Country, 2010 to 2015

Country	2011	2012	2013	2014	2015	Average	Share of Average
	-----1,000 metric tons-----						%
Algeria	6,495	6,455	6,516	6,495	6,455	6,483	4.7
Brazil	5,302	5,773	4,159	5,302	5,773	5,262	3.8
China	1,955	1,991	-14	1,955	1,991	1,576	1.1
Egypt	11,418	8,123	10,375	11,418	8,123	9,891	7.2
Japan	6,354	6,598	5,301	6,354	6,598	6,241	4.5
Korea	5,057	5,295	4,636	5,057	5,295	5,068	3.7
Mexico	4,230	3,094	2,583	4,230	3,094	3,446	2.5
Morocco	3,543	3,597	3,847	3,543	3,597	3,625	2.6
Nigeria	3,048	3,348	2,640	3,048	3,348	3,087	2.2
Other	100,879	97,589	91,896	84,537	87,665	92,513	67.4
Total World	148,281	141,863	131,939	131,939	131,939	137,192	100.0

Source: USDA

The six major wheat exporting countries (United States, Canada, EU, FSU, Australia, and Argentina) supply approximately 61% of the wheat traded in the world market. Historically the United States has been the largest exporter, followed by Russia, Australia and Canada (Table 4). The United States leads in exports of HRW and SRW wheat; an average of 28.0 million metric tons of all wheat classes was exported annually from 2011 to 2015, of which 12.4 million metric tons were

HRW and 6.4 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 hard spring wheat 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, 2011 to 2015

Country	2011	2012	2013	2014	2015	Average	Share of Average
	-----1,000 metric tons-----						%
Argentina/Common	12,922	3,548	9,482	12,922	3,548	8,484	5.4
Australia/Common	24,533	18,504	18,479	24,533	18,504	20,911	13.3
Canada							
All	16,864	18,470	16,131	16,864	18,470	17,360	11.0
Common	13,272	14,239	12,865	13,272	14,239	13,577	8.6
Durum	3,592	4,231	3,266	3,592	4,231	3,782	2.4
EU							
All	9,360	17,510	18,463	9,360	17,510	14,441	9.2
Common	9,669	18,285	17,963	9,669	18,285	14,774	9.4
Durum	-309	-775	500	-309	-775	-334	NA
United States							
All	28,138	26,725	30,666	28,138	26,725	28,078	17.8
HRW	11,322	12,289	14,857	11,322	12,289	12,416	7.9
HRS	5,729	6,200	8,316	5,729	6,200	6,435	4.1
SRW	6,547	5,082	3,464	6,547	5,082	5,345	3.3
White	4,545	3,161	4,014	4,545	3,161	3,885	2.5
Durum	-6	-7	14	-6	-7	-2	NA
Russia	21,077	10,117	17,768	22,473	23,150	18,460	11.7
Ukraine	5,352	7,145	9,987	11,242	15,470	13,329	8.4
Other Soviet	-5,289	-901	-2,281	1,168	-415	-293	NA
Other Producers							
All	45,217	36,388	47,508	37,365	40,172	36,987	23.4
Total World							
All	157,393	135,656	132,876	132,876	132,876	138,335	100.0

Source: USDA

RECENT CHANGES IN U.S. WHEAT PRICES

Figure 2 shows the recent marketing year price trends for U.S. wheat. The price levels have varied from a high of \$9.97 per bushel in 2007 for durum wheat to a low of \$2.20 per bushel for SRW wheat in 2000. The prices for all of the wheat classes have recovered from the lows in 1998-1999 to the \$3.25 to \$4.20 range during the 2002 to 2005 time period, followed by a large price increase in 2006, 2007 and 2008 and 2011 and 2012 but falling in 2009, 2013, 2014 and 2015. Prices respond to changes in supply and demand; and/or major changes or shocks in the world wheat industry.

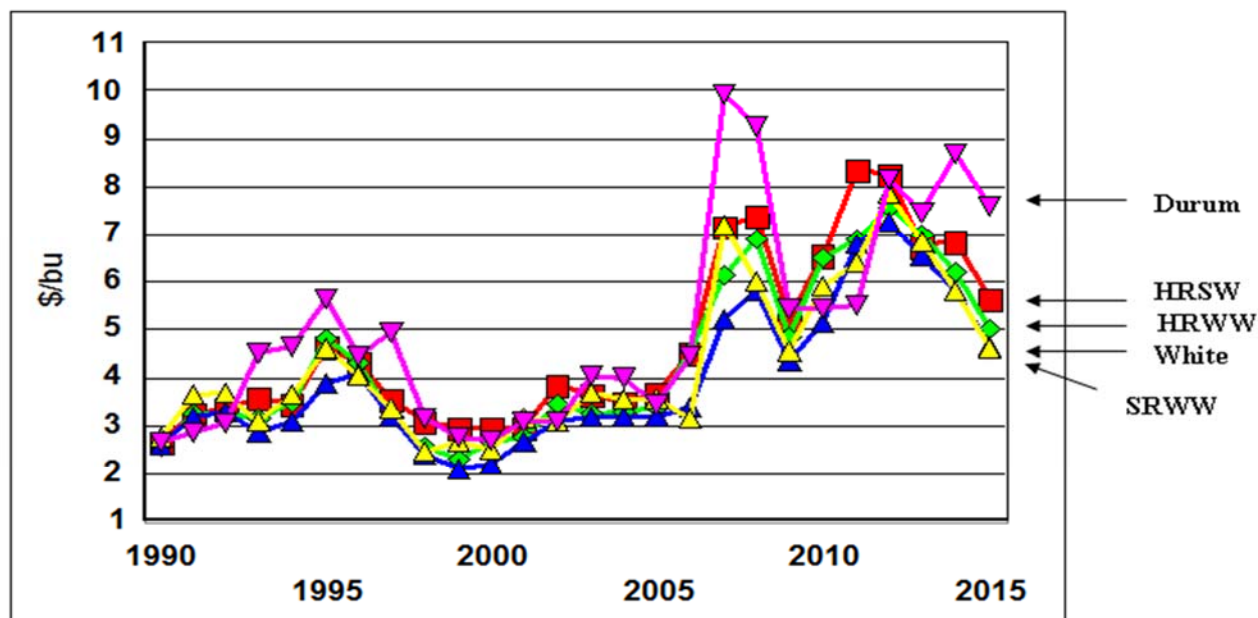


Figure 2. Historical Farm Price by Class, 1990-2015

OUTLOOK FOR THE WORLD WHEAT INDUSTRY

The Global Wheat Policy Simulation Model is used to analyze the U.S. and World wheat industries for the 2016-2025 period. 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, appendix table 1. Average weather conditions, historical rates of technological change, and current policies are also assumed to prevail during the projection period.

The model contains eight exporting countries and regions [Argentina, Australia, Canada, the United States, the European Union (EU), Russia, Ukraine, and Other Soviet Union (OSU)] and 12 importing countries and regions [Algeria, Brazil, Egypt, Japan, Mexico, Morocco, Nigeria, South Korea, Taiwan, Tunisia, Venezuela, and a Rest of the World region]. India and China have been both exporters and importers in recent years. The model forecast 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 used the predicted prices of all agricultural commodities, except wheat, from UDSA long range price forecasts. The model uses 2014 as the base year of the simulation.

Total world wheat trade for the eight major exporting countries/regions is projected to increase by 3.7% from 132.9 million metric tons in 2015 to 137.8 million metric tons in 2025. Trade of all wheat classes is expected to increase for the 2016-2025 period. HRW wheat production is predicted to increase in the U.S. faster than in other wheat class as farmers respond to lower corn and soybean prices.

United States

Figure 3 shows the projected prices for the various classes of wheat. The prices of common wheat classes are expected to fall about \$0.50 below the 2015 level before increasing about \$0.20 by 2025. The prices of HRS wheat are projected to decrease from \$5.25 in 2016 to about \$5.47 per bushel by 2025. Durum wheat is expected to rise from the \$6.50 range in 2016 to about \$6.70 per bushel in 2025.

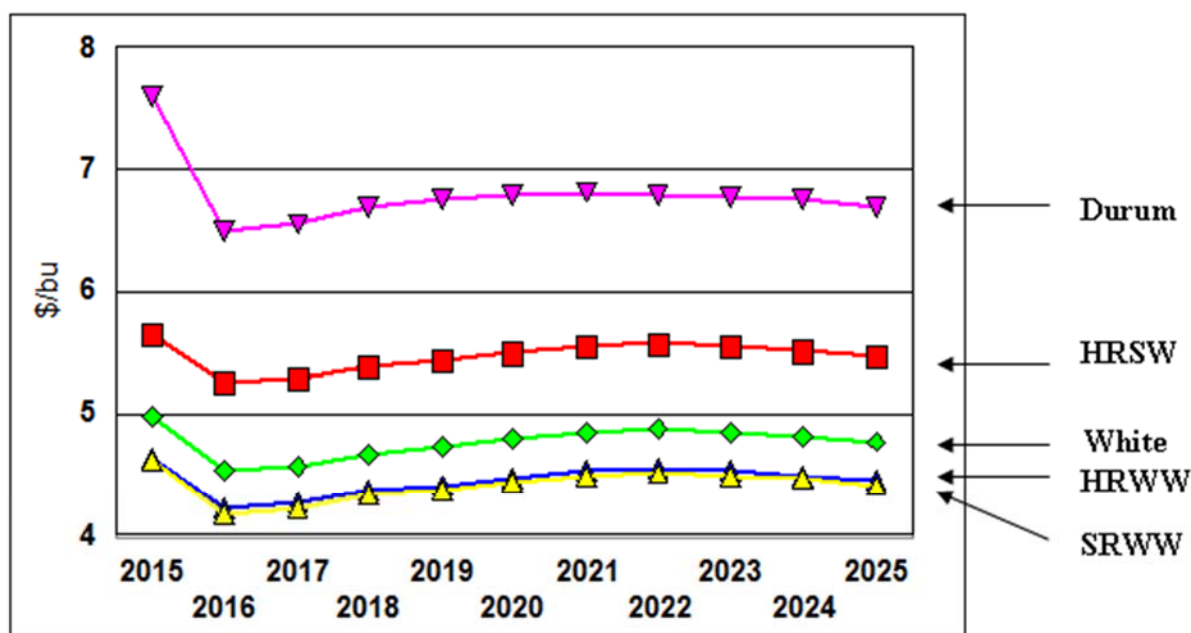


Figure 3. Projected U.S. Farm Wheat Price, by Class, 2015-2025

Table 5 shows wheat production, consumption, exports, and ending stocks in the United States. By 2025, total U.S. common wheat production is expected to grow by 3.7% above the 2013-2015 average, but is much lower than production during the late 1990s. The largest increase in production occurs for durum wheat (27.8%) followed by HRW wheat (6.6%). Production of HRS wheat is expected to increase by 5.1%. Changes in production of different classes of wheat over the 2016-2025 average are shown in Figure 4.

Table 5. Wheat Production, Consumption, Exports, and Carry-over Stocks in the United States

	Average (2013-2015)	2015	2025	% Change from the average to 2025
-----1,000 metric tons-----				
<u>Production</u>				
Common	54,605	53,600	56,627	3.7
HRW	20,985	22,507	22,363	6.6
HRS	14,610	15,354	15,348	5.1
SRW	12,539	9,773	12,730	1.5
White	6,471	5,966	6,186	-4.4
Durum	1,765	2,245	2,255	27.8
<u>Consumption</u>				
Common	30,711	30,076	31,962	4.1
Durum	1,969	2,123	2,229	13.2
<u>Exports</u>				
Common	25,712	21,203	23,668	-7.9
Durum	(263)	(109)	15	NA
<u>Carry-over</u>				
Common	20,196	25,367	26,140	29.4
Durum	744	925	984	32.3

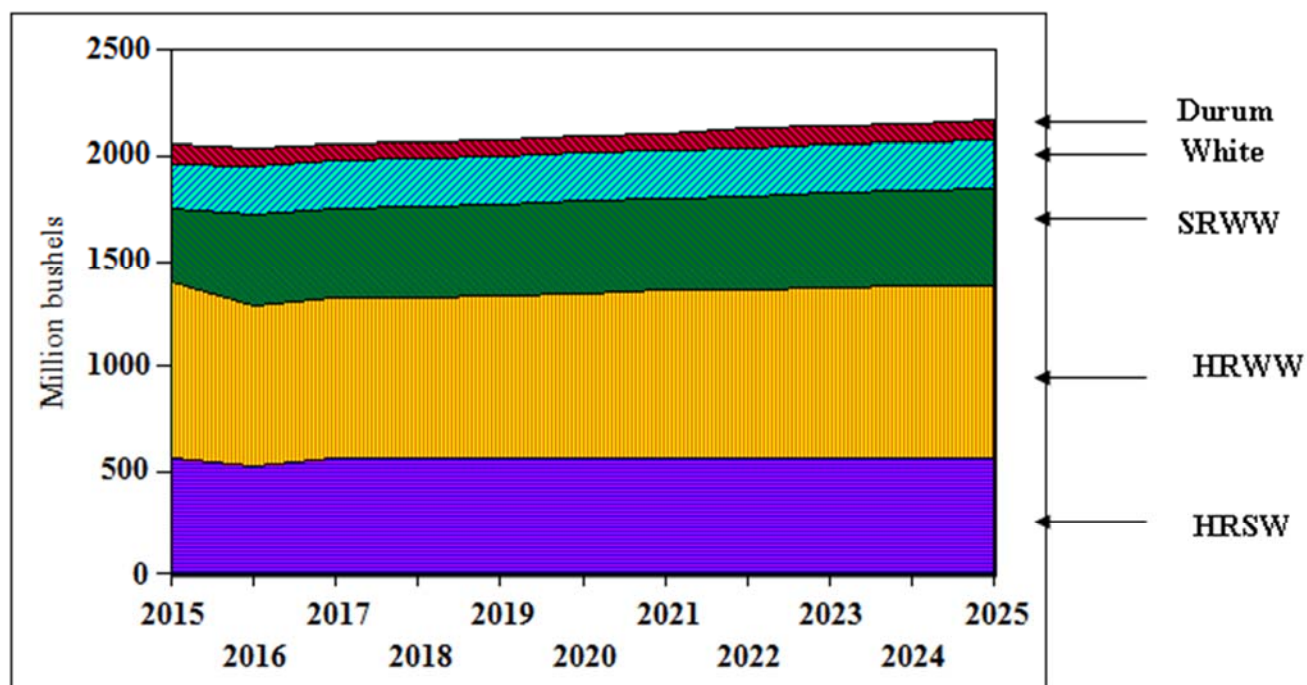


Figure 4. U.S. Wheat Production by Class, 2015-2025

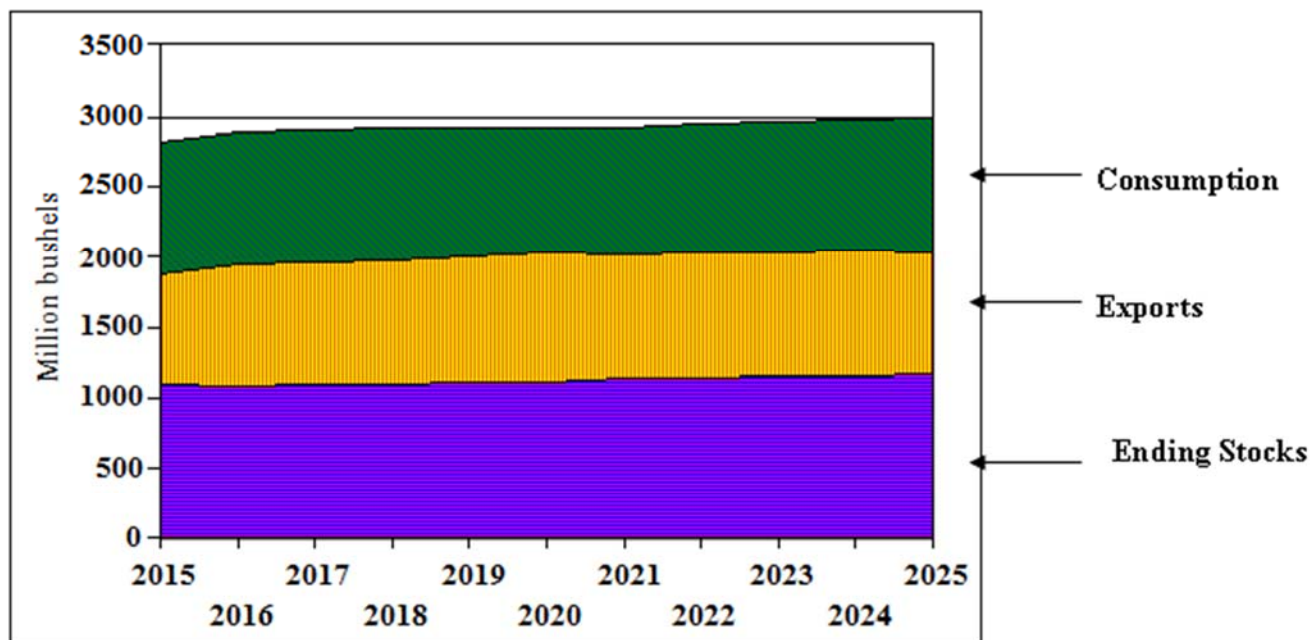


Figure 5. U.S. Common Wheat Utilization, 2015-2025

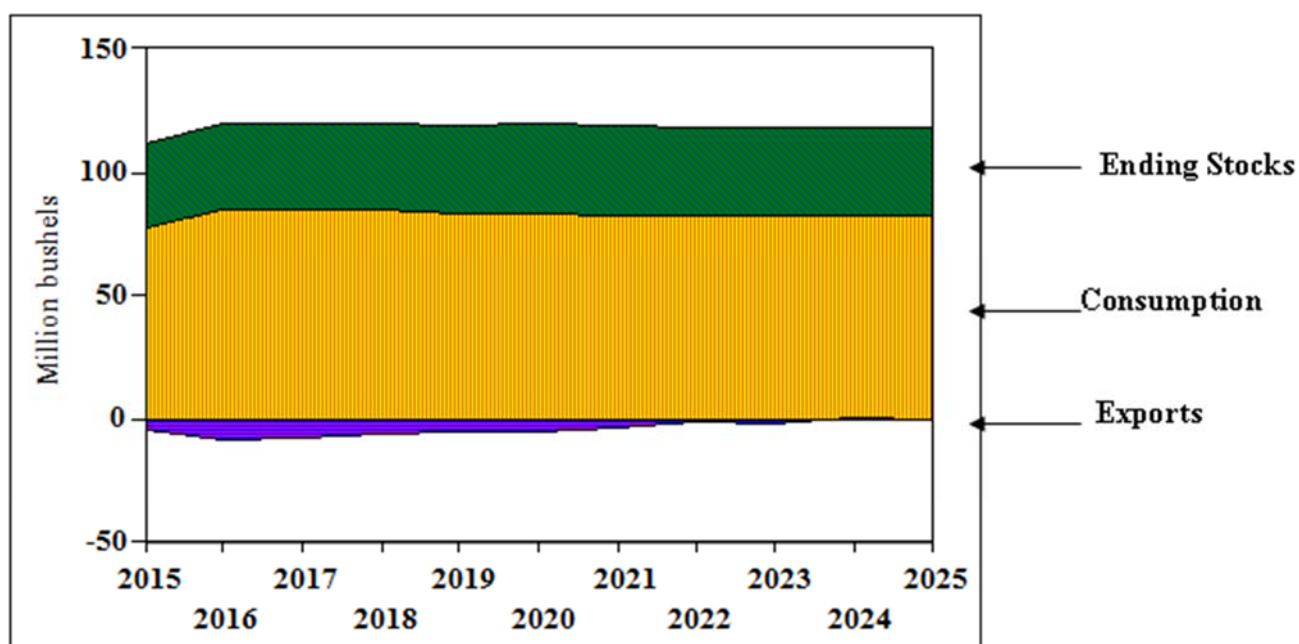


Figure 6. U.S. Durum Wheat Utilization, 2015-2025

The increased wheat production in the United States is due to increases in both harvested acres and yields. Total wheat harvested area is expected to decrease slowly from 46.3 million acres for the 2013-2015 average and 46.2 million acres in 2025, and average yield is predicted to increase from

44.8 bushels per acre to 46.8 bushels per acre over the 2016-2025 period. U.S. durum area is expected to increase 2.8% for the same time period because farmers are expected to return to a more traditional crop mix.

Common wheat consumption is expected to increase during the 2016-2025 time period. U.S. durum wheat consumption is expected to increase by 13.2 for the 2014-2024 time period (Figure 6).

The United States is expected to be net importer of durum wheat until 2024 when the United States is expected to export a small amount of durum (Table 5). Common wheat exports are predicted to decrease from 25.7 million metric tons in 2013-2015 to 23.7 million metric tons in 2025. Ending stocks are expected to increase by 29.4% for common wheat compared to the 2013-2015 average and 32.3% for durum wheat (Table 5).

Canada

CWRS wheat production is predicted to decrease by 6.1% and increase by 7.4% for CWAD, from the 2013-2015 average (Table 6). Total area for CWRS wheat is expected to decrease slightly between 2015 and 2025, while CWAD wheat area is expected to decrease from 2.3 million acres in 2015 to 2.2 million acres in 2025.

Domestic consumption of CWRS wheat is predicted to increase by 5.8%, while the consumption of durum wheat is expected to decrease by 9.5% over the 2016-2025 period. Canadian CWRS wheat exports are projected to decrease by 6.8% by 2025, and CWAD wheat exports are predicted to increase by 6.7% from 4.8 million metric tons to 5.1 million metric tons in 2025. Ending stocks are predicted to decrease by 18.1% for CWRS wheat and decrease 33.5% for CWAD wheat over the 2016-2025 period. During the preceding years, 2000-2005, ending stocks of CWAD in Canada were between 1 million and 2.8 million metric tons.

Table 6. Wheat Production, Consumption, Exports, and Carry-over Stocks in Canada

	Average (2013-2015)	2015	2025	% Change (2013-15) to 2025
<u>Production</u>	-----1,000 metric tons-----			
WRS	26,036	22,856	24,448	-6.1
WAD	5,481	4,744	5,884	7.4
<u>Consumption</u>				
WRS	8,349	8,164	8,832	5.8
WAD	825	836	747	-9.5
<u>Exports</u>				
WRS	17,351	15,825	16,168	-6.8
WAD	4,806	4,190	5,130	6.7
<u>Carry-over</u>				
WRS	6,592	4,993	5,399	-18.1
WAD	1,154	700	767	-33.5

Figure 7 shows changes in consumption, exports, and ending stocks of CWRS wheat in Canada from 2016-2025, and Figure 8 shows the utilization for CWAD wheat.

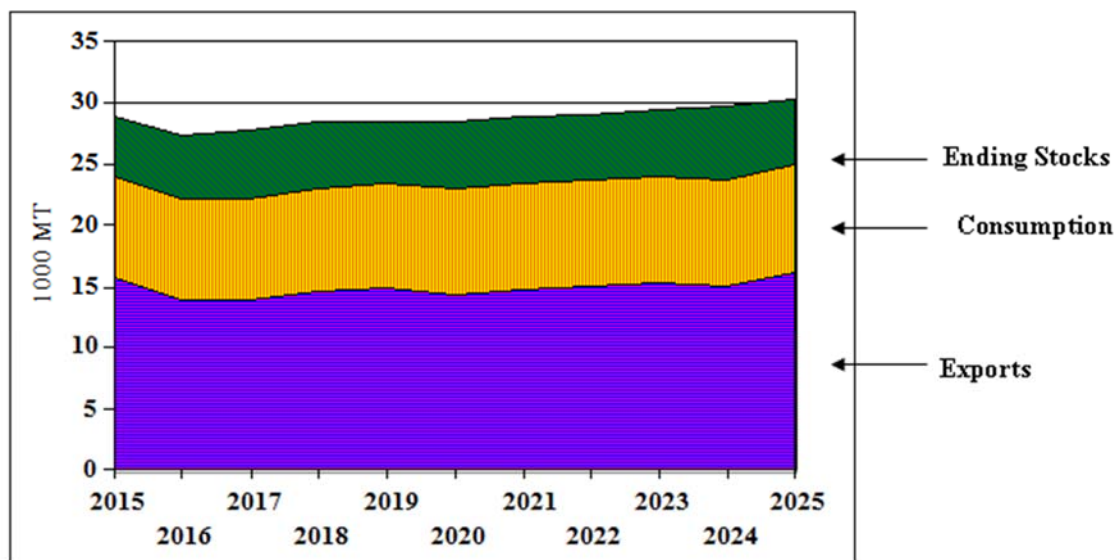


Figure 7. Canadian Western Red Spring Wheat Utilization, 2015-2025

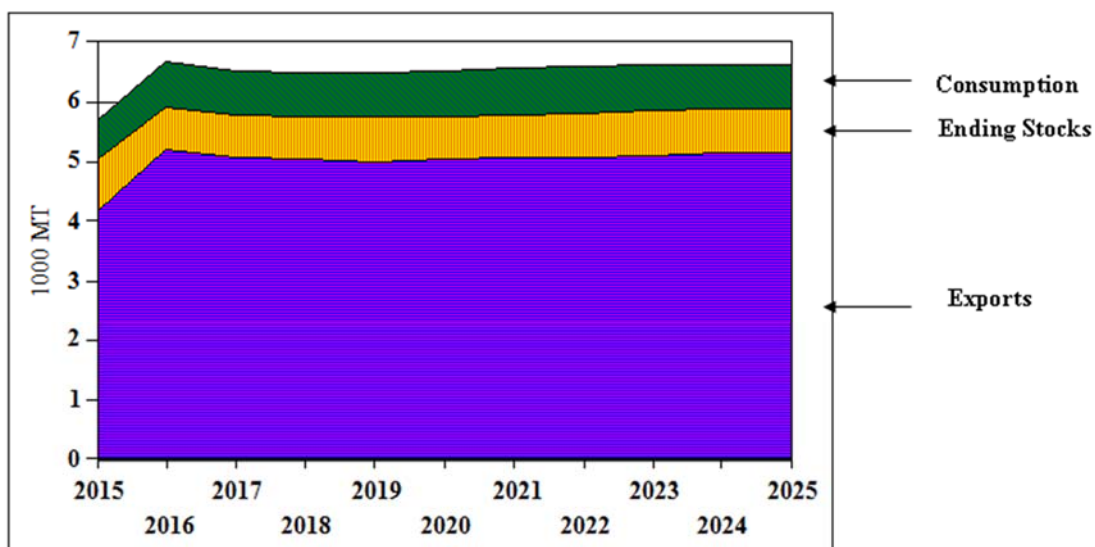


Figure 8. Canadian Western Amber Durum Wheat Utilization, 2015-2025

European Union

Table 7 presents production, consumption, exports, and ending stocks of common and durum wheat in the EU for the 2016-2025 period. Common wheat production in the EU is predicted to decrease by 3.1% from the 2013-2015 average by 2025, while durum wheat production is expected to increase by 10.3% for the same time period.

Domestic consumption of common wheat is projected to increase by 2.5%, and consumption of durum wheat is predicted to increase by 2.7% for the 2016-2025 period. Exports of common wheat in 2025 are predicted to decrease 15.9% from the 2013-2015 averages. Ending stocks are expected to decrease for both common and durum wheat.

Table 7. Wheat Production, Consumption, Exports, and Carry-over Stocks in the European Union

	Average (2013-2015)	2015	2025	% Change (2013-15) to 2025
-----1,000 metric tons-----				
<u>Production</u>				
Common	145,194	150,277	140,639	-3.1
Durum	7,834	7,700	8,640	10.3
<u>Consumption</u>				
Common	113,317	116,850	116,179	2.5
Durum	8,867	8,900	9,104	2.7
<u>Exports</u>				
Common	28,962	27,350	24,344	-15.9
Durum	-967	-850	-467	NA
<u>Carry-over</u>				
Common	13,018	17,959	10,980	-15.7
Durum	1,224	1,300	1,397	14.1

Figures 9 and 10 show changes in consumption, exports, and ending stocks of common and durum wheat for the 2016-2025 period. Common and durum wheat consumption are expected to increase slightly.

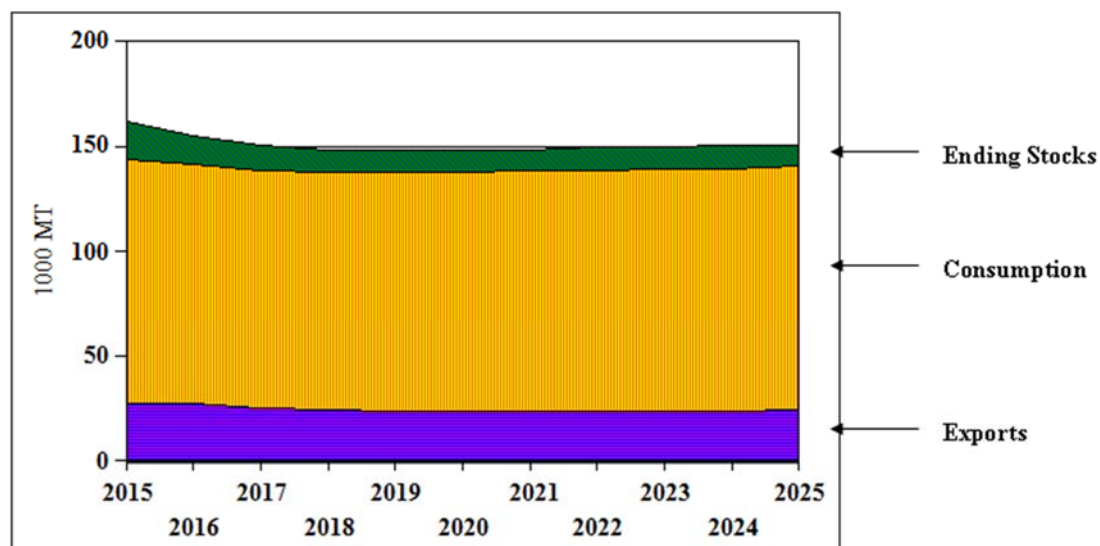


Figure 9. EU Common Wheat Utilization, 2015-2025

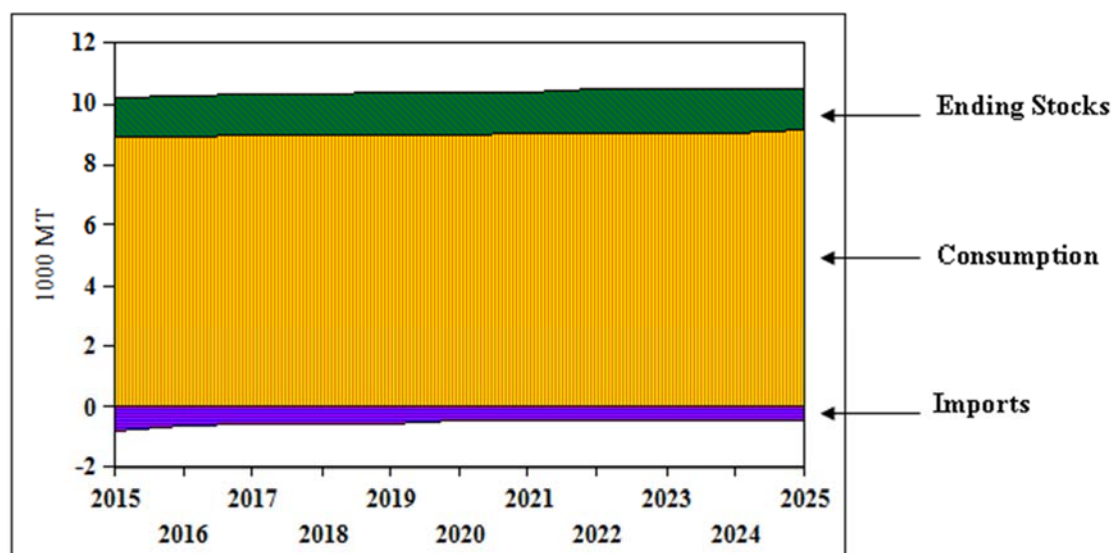


Figure 10. EU Durum Wheat Utilization, 2015-2025

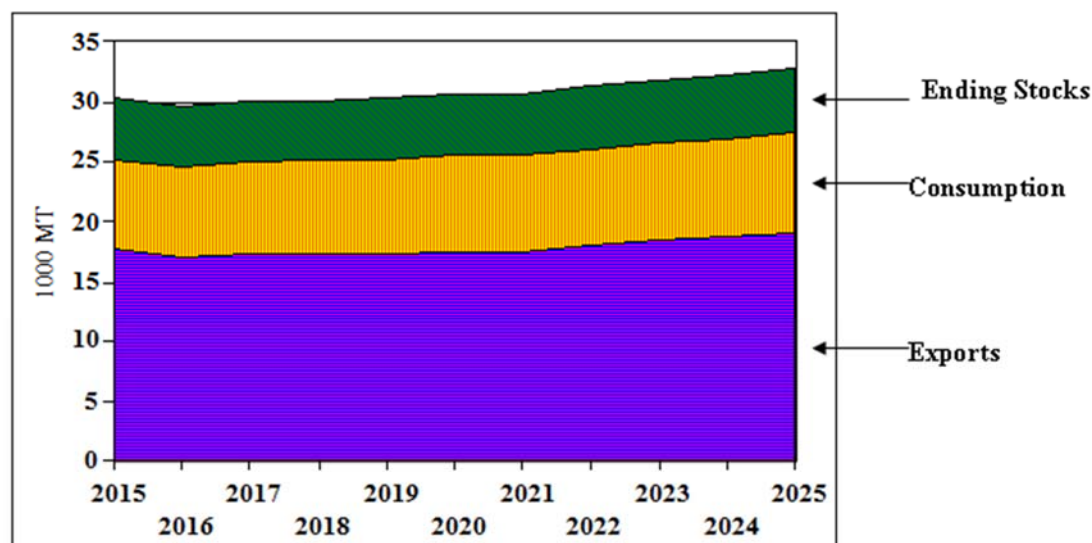


Figure 11. Australia Common Wheat Utilization, 2015-2025

Australia

Compared to the 2013-2015 average, Australian wheat production is projected to grow by 7.2% in 2025 (Table 8). Yields are expected to increase gradually at the historical trend line, while wheat area also is expected to increase slightly. Domestic wheat consumption is predicted to increase by 14.2% from the 2013-2015 average of 7.3 million metric tons to 8.3 million metric tons in 2025. Wheat consumption in Australia during the poor harvests in 2010 and 2012 decreased 24% compared to the long term average. Wheat exports also are predicted to increase from the 2013-2015 average of 17.6 million metric tons to 19.1 million metric tons in 2025. Figure 11 shows changes in consumption, exports, and ending stocks for the 2016-2025 period. The single desk exporting powers of the Australian Wheat Board were removed in July of 2008. The Wheat Exports Australia (WEA) has taken over the responsibility.

Table 8. Wheat Production, Consumption, Exports, and Carry-over Stocks in Australia, (1,000 metric tons)

	Average (2013-2015)	2015	2025	% Change (2013-15) to 2025
Production	25,651	25,944	27,510	7.2
Consumption	7,292	7,425	8,328	14.2
Exports	17,586	17,850	19,118	8.7
Carry-over	4,609	4,998	5,362	16.3

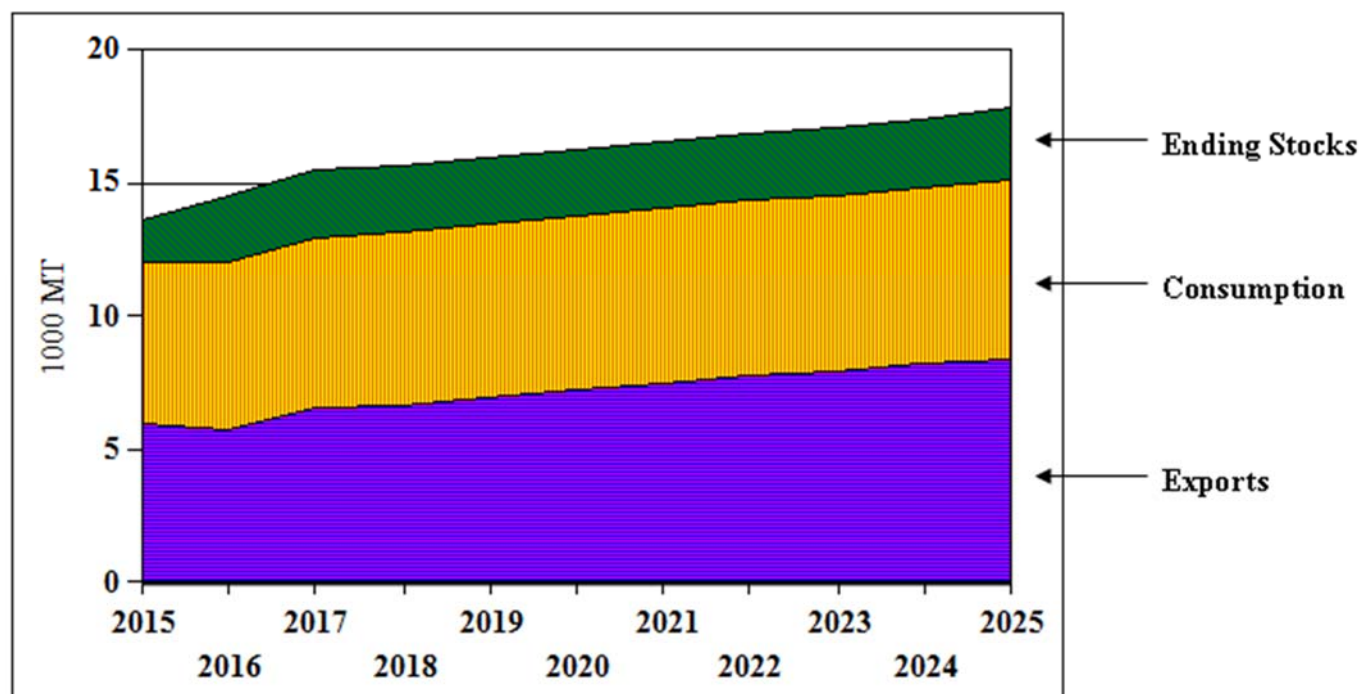


Figure 12. Argentine Common Wheat Utilization, 2015-2025

Argentina

Argentine wheat production is projected to increase by 38.4% from the 2013-2015 average of 11.0 million metric tons to 15.2 million metric tons in 2025 (Table 9). Domestic wheat consumption is expected to increase by 9.4% from 6.2 million metric tons to 6.8 million metric tons. Wheat exports are predicted to be 8.5 million metric tons in 2025, which is a 85.5% increase from the 2013-2015 average. The reason for the large increases in both production and exports is that Argentina experienced small crops in 2013. Ending stocks are expected to increase by 6.2%. Figure 12 shows changes in consumption, exports, and ending stocks for the 2016-2025 period.

Table 9. Wheat Production, Consumption, Exports, and Carry-over Stocks in Argentina

	Average (2013-2015)	2015	2025	% Change (2013-15) to 2025
	-----1,000 metric tons-----			
Production	11,000	10,500	15,229	38.4
Consumption	6,183	6,150	6,762	9.4
Exports	4,561	5,970	8,462	85.5
Carry-over	2,407	1,555	2,556	6.2

Former Soviet Union Countries

Russia exported an average of 21.1 million metric tons of wheat during the 2013-2015 time period. Russia is expected to increase exports to 22.5 million metric tons by 2025. Ukraine exported 12.1 million metric tons of wheat during 2013-2015 and is expected to increase exports to 17.3 million metric tons by 2025. The other former Soviet Republics imported less than 1 million metric tons during 2013-2015 and are expected to import about 1 million metric tons in 2025.

Table 10. Wheat Production and Exports in Russia, Ukraine and Other Former Soviet Union

	Average (2013-2015)	2015	2025	% Change (2013-15) to 2025
	-----1,000 metric tons-----			%
<u>Russia</u>				
Production	57,340	60,928	59,146	3.2
Exports	21,130	23,150	22,502	6.5
<u>Ukraine</u>				
Production	24,599	27,020	29,398	19.5
Exports	12,133	15,470	17,319	42.7
<u>Other Soviet Union</u>				
Production	29,036	29,504	32,034	10.3
Exports	<u>-509</u>	<u>-415</u>	<u>-1,078</u>	<u>NA</u>

IMPORTING COUNTRIES

Importing countries are grouped into the Asian (China, Japan, Korea, and Taiwan), North Africa (Algeria, Egypt, Morocco, and Tunisia), Nigeria, and Latin American (Mexico, Brazil, and Venezuela) regions (Table 11).

Table 11. Imports of Common and Durum Wheat by Major Importing Countries

	Average (2013-2015)	2015	2025	% Change (2013- 15) to 2025
	-----1,000 metric tons-----			%
<u>Asia</u>				
China	2,669	1,000	318	-88.1
S. Korea	3,994	4,050	4,166	4.3
Japan	5,934	5,800	5,753	-3.0
Taiwan	1,350	1,350	1,408	4.3
<u>North Africa</u>				
Algeria				
Common	5,258	5,375	6,247	18.8
Durum	2,201	2,300	2,557	17.1
Morocco	3,366	2,550	4,373	29.9
Egypt	10,610	11,150	14,247	34.3
Tunisia				
Common	965	943	1,052	8.9
Durum	583	557	571	-2.1
<u>Nigeria</u>	3,975	4,000	6,511	63.8
<u>Latin America</u>				
Brazil	5,223	5,000	5,901	13.0
Mexico	3,319	3,302	3,948	18.9
Venezuela				
Common	1,152	1,120	1,314	14.0
Durum	562	530	634	12.9

Asian Importers

Imports by Japan are projected to decrease by 3.0% over the 2016-2025 period because of population decreases (Figure 13), and Korean imports are projected to increase by 4.3% over the same time period. China imported 2.7 million metric tons of wheat annually during 2013-2015. China is projected to continue to import wheat in 2025. As China's income continues to increase, per capital consumption of wheat is expected to decrease for the time period. In the past, China has imported between 3% and 5% of its domestic demand. In the future the model expects that China will import between 2% and 3% of its domestic demand. The model projects that harvested area remains relatively constant. However, total production is projected to increase when combined with yield increases. Chinese per capita wheat consumption is falling slowly, due to higher incomes, but China's wheat imports are projected to decrease to less than 0.5 million metric tons by 2025. Taiwan is expected to increase wheat imports by 4.3% by 2025.

African Importers

North African imports of wheat are projected to increase by 26.4% from the 2013-2015 average to 2025. Egyptian imports of common wheat are projected to increase by 34.3%, from 10.6 million metric tons in 2013-2015 to 14.2 million metric tons in 2025. The increase in Egyptian imports is due to 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 18.8% from the 2013-2015 average to 6.3 million metric tons in 2025, and durum wheat imports are projected to increase by 17.1%, from 2.2 million metric tons to 2.6 million metric tons. Morocco's imports of common wheat are projected to increase by 29.9% between the 2013-2015 average and 2025. Morocco's imports are very erratic, depending on its unstable domestic production. Tunisian imports of common wheat are projected to increase by 8.9%, between the 2013-2015 average and 2025. Its durum wheat imports are projected to decrease by 2.1% from the 2013-2015 average to 2025 (Figure 18). Nigeria is expected to increase imports from 4.0 million metric tons in 2013-2015 to 6.5 million metric tons in 2025.

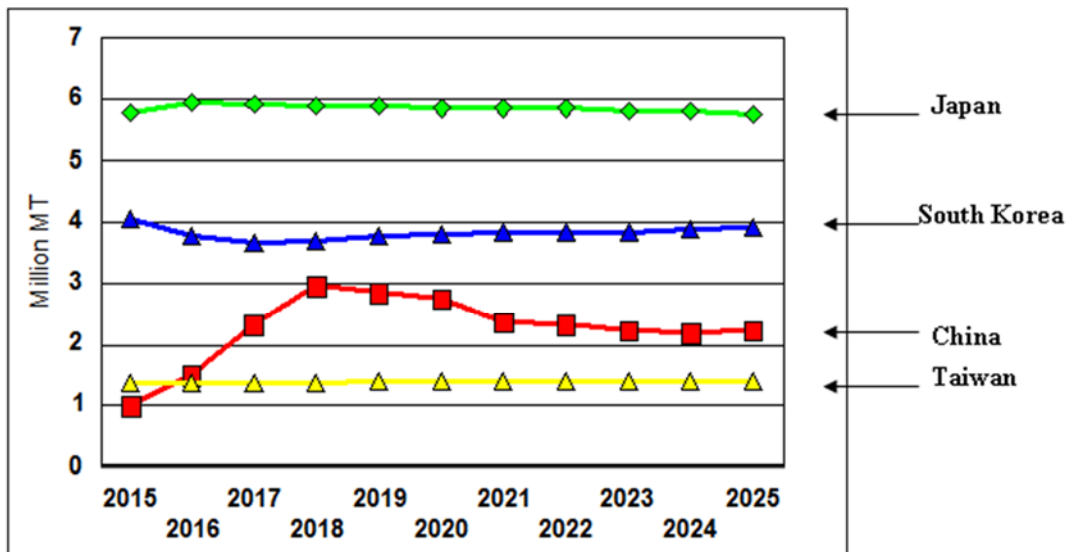


Figure 13. Common Wheat Imports by Major Asian Countries, 2015-2025

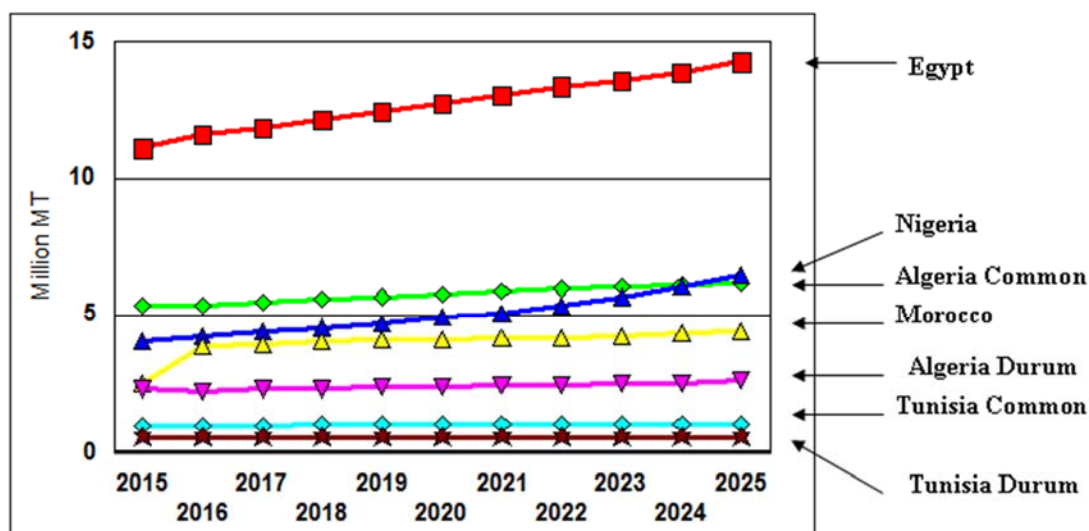


Figure 14. Common and Durum Wheat Imports by Major African Countries, 2015-2025

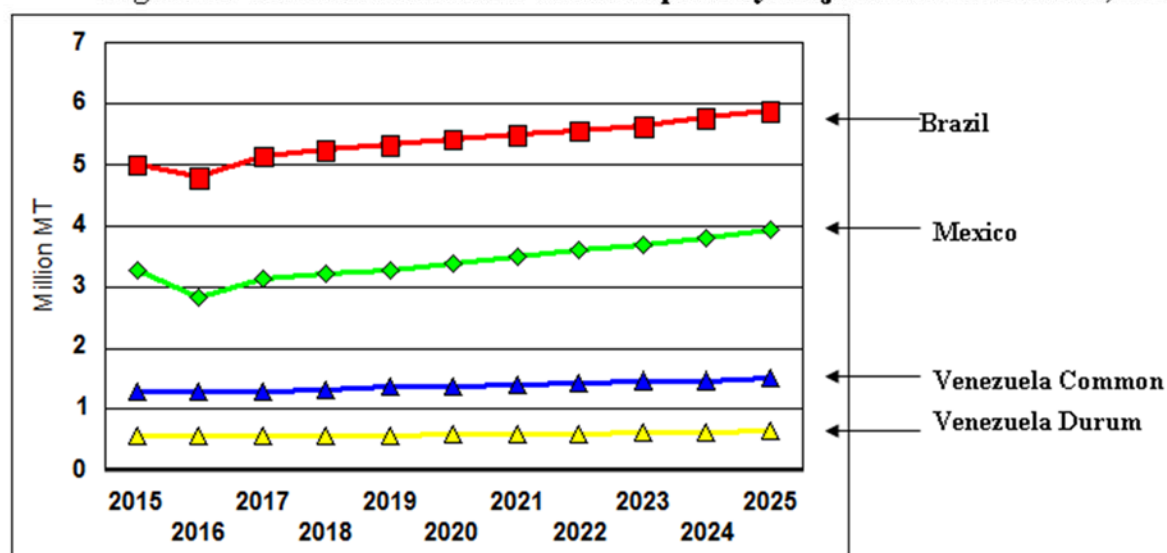


Figure 15. Common and Durum Wheat Imports by Latin American Countries, 2015-2025

Latin America Importers

Mexican imports are projected to increase by 18.9% from the 2013-2015 average of 3.3 million metric tons to 3.9 million metric tons by 2025. Venezuela is expected to import more common and durum wheat. Common wheat imports in Venezuela are projected to increase by 14.0% from 1.2 million metric tons for the 2013-2015 average to 1.3 million metric tons in 2025, and durum wheat imports are projected to increase by 12.9% (Figure 15). Brazilian imports are projected to increase to 5.9 million metric tons by 2025, which is a 13.0% increase from the 2013-2015 average. The Latin American wheat market will grow slower than the African market, and the African market is almost twice as large. Latin America will continue to be an important market for the U.S. wheat industry, but the U.S. must compete with Argentina to maintain or capture its market share in the region.

CONCLUDING REMARKS

This report evaluates the U.S. and world wheat industries for the 2016-2025 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 projections are based on a series of assumptions about the general economy, agricultural policies, normal weather conditions, and technological changes. The projections, therefore, could change significantly, depending upon changes in assumptions.

Import demand for both common and durum wheat is largely based on optimistic income growth for the year 2016-2025 (2.5% to 5% annually) in developing and developed countries. 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 slightly higher than the 2016 levels. It is expected that the average price of wheat could be near \$5.50 for HRS wheat and \$6.70 per bushel for durum wheat by 2025.

World wheat exports by the eight major exporters are projected to increase by 3.7% from 132.9 million metric tons in 2015 to 137.8 million metric tons in 2025. Durum wheat trade is expected to grow slower than common wheat trade. North Africa continues to be the growth market for wheat exports. However the impacts of the recent unrest in North Africa may be negative to United States wheat exports. Per capita consumption of wheat has increased in most Asian countries, except for Japan, South Korea and China. Wheat imports could increase in Latin America, but most of that might be supplied by Argentina.

The United States, Russia, Ukraine, Australia and Argentina are predicted to increase their production of common wheat for the 2016-2025 period. Exports of durum wheat are expected to increase for all exporting countries/regions including the United States. Consumption of common wheat is expected to increase slowly in most developed countries and 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.

Common wheat demand in Southeast Asian countries is predicted to grow slowly for the 2016-2025 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 3.2 million metric tons of wheat during 2013-2015. India could become an importer by 2025.

Chinese wheat production is expected to be 122.0 million metric tons in 2025 which is less than in 2015. In China, yields have been increasing, but area harvested is decreasing. China's long term supply and demand situation for wheat is uncertain. Rapid increases in incomes have reduced per capita consumption of cereal grains in favor of fruits, vegetables and meat. This may reduce Chinese wheat imports.

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 is expected to be strong for the 2016-2025 period. Import demand for common wheat in Mexico also is predicted to be strong for the projection period.

Import demand for wheat in North Africa could grow faster than that in Asia and Latin America for the next ten years. However, the competition among wheat exporting countries in the markets could remain strong: The United States could compete with Canada, the FSU, 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 might affect the U.S. and world wheat industries. First, a rise in protectionism stemming from high commodity prices in 2008 and 2010 in some developing countries could continue to affect the price of wheat and trade volume into the future. Secondly, per capita consumption of wheat in some Asian countries, including China, South Korea, and Japan is expected to decrease. If this trend continues, total consumption of wheat may decrease in South Korea and Japan and consequently their imports will also decrease.

Unless there is a weather disruption future prices for wheat should remain soft. World ending stocks are projected to be 14% greater in 2025 than in 2015 which would be 33% of world wheat consumption.

Appendix Tables

Population Growth Rates

%	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Canada	0.75	0.74	0.72	0.71	0.69	0.68	0.66	0.64	0.62	0.59
United States	0.73	0.72	0.72	0.71	0.71	0.70	0.69	0.68	0.67	0.66
Mexico	1.17	1.14	1.11	1.08	1.05	1.01	0.98	0.94	0.91	0.87
Argentina	0.92	0.90	0.88	0.86	0.84	0.82	0.80	0.77	0.75	0.73
Brazil	0.77	0.74	0.72	0.70	0.67	0.65	0.63	0.61	0.59	0.57
Venezuela	1.38	1.36	1.33	1.30	1.28	1.25	1.22	1.20	1.17	1.14
European Union	0.24	0.22	0.20	0.19	0.17	0.15	0.13	0.11	0.09	0.07
Russia	-0.05	-0.07	-0.09	-0.13	-0.16	-0.18	-0.21	-0.23	-0.24	-0.26
Ukraine	-0.49	-0.40	-0.19	0.03	-0.10	-0.35	-0.49	-0.50	-0.52	-0.53
Other Soviet Union	0.79	0.77	0.75	0.72	0.69	0.66	0.63	0.60	0.57	0.54
China	0.44	0.42	0.39	0.36	0.32	0.28	0.23	0.19	0.14	0.09
Japan	-0.17	-0.20	-0.22	-0.25	-0.27	-0.30	-0.32	-0.34	-0.36	-0.38
South Korea	0.13	0.12	0.10	0.08	0.07	0.05	0.03	0.01	-0.02	-0.05
Indonesia	0.91	0.88	0.85	0.82	0.79	0.76	0.74	0.72	0.69	0.67
Philippines	1.61	1.59	1.57	1.55	1.53	1.51	1.49	1.47	1.45	1.43
India	1.21	1.19	1.16	1.14	1.11	1.08	1.06	1.03	1.01	0.98
Australia	1.06	1.04	1.02	1.00	0.98	0.96	0.94	0.92	0.89	0.87
Egypt	1.79	1.74	1.70	1.65	1.61	1.57	1.54	1.51	1.48	1.45
Morocco	1.00	0.98	0.96	0.94	0.92	0.90	0.88	0.86	0.84	0.82
Algeria	1.82	1.75	1.68	1.60	1.53	1.45	1.37	1.30	1.22	1.16
Tunisia	0.88	0.85	0.82	0.78	0.74	0.70	0.66	0.61	0.57	0.52

Appendix Tables (cont)

Projected Real Exchange Rates for Baseline Countries/Regions (2010 base year), 2016-2025

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Canada	1.1	3.0	0.9	-0.3	-0.2	-0.2	-0.3	0.5	0.6	0.5
United States	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mexico	5.3	1.0	-0.8	-1.0	-1.3	-2.1	-2.3	-2.0	-1.6	-0.4
Argentina	10.8	-5.1	-3.2	-2.6	-2.8	-3.2	-2.9	-2.8	-1.1	-1.0
Brazil	21.9	-0.5	-0.5	-0.2	-0.1	-0.8	-0.8	-0.7	-0.6	-0.6
Venezuela	-51.7	-29.3	-19.8	-16.8	-12.3	-7.2	-4.0	-1.1	-0.5	-0.2
European Union	1.7	-0.6	-2.5	-1.8	-1.6	-1.6	-1.6	-1.6	-0.7	-0.5
Russia	-5.4	-1.2	1.3	0.1	0.0	-0.3	-1.2	-1.5	-1.3	-0.7
Ukraine	0.0	0.4	0.0	-9.1	-8.7	-8.1	-1.7	-1.4	-1.1	-0.9
Other Soviet Union	-11.7	-3.8	-0.4	-1.8	-1.4	-2.3	-2.4	-2.4	-2.2	-2.1
China	3.3	2.8	-0.6	-0.7	-1.3	-1.5	-1.2	-0.3	-0.3	-0.3
Japan	2.4	3.1	2.2	1.4	0.5	0.5	0.5	0.5	0.3	0.1
South Korea	2.4	0.8	-0.8	-1.0	-0.3	-0.2	-0.4	-0.6	-0.7	-0.6
Taiwan	1.9	1.4	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
Indonesia	3.9	2.1	-2.3	-1.6	-0.8	-0.7	-1.4	-1.6	-1.3	-1.0
India	-0.8	-0.6	-0.6	-0.5	-0.6	-0.6	-0.3	0.0	-0.4	-0.6
Australia	5.6	-3.3	-3.5	-1.2	-0.4	0.0	-0.3	-0.2	0.1	0.3
Egypt	-3.0	-4.2	-3.3	-3.6	-2.4	-1.1	-1.3	-1.0	-0.4	0.1
Morocco	-2.0	-3.6	-4.2	-1.0	-0.7	-0.5	-0.6	-0.6	-0.6	-0.6
Algeria	2.4	-4.9	-3.6	-1.2	-0.9	-0.8	-0.7	-0.6	-0.4	-0.4
Tunisia	-1.4	-5.9	-7.3	-3.1	-2.4	-1.6	-1.5	-1.4	-1.3	-1.3

Appendix Tables (cont)

Projected GDP Deflators GDP Annual Growth Rates

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Canada	2.29	2.65	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
United States	1.56	1.70	1.86	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Mexico	3.70	3.50	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Argentina	23.50	15.96	12.34	11.27	10.38	10.37	9.81	9.21	8.27	8.17
Brazil	5.50	5.27	5.34	5.03	4.87	4.17	4.13	4.09	4.05	4.01
Venezuela	66.22	42.35	27.53	20.72	14.99	12.14	6.96	4.32	3.27	2.66
European Union	1.31	1.56	1.70	1.77	1.82	1.88	1.89	1.90	1.89	1.88
Russia	7.47	4.72	4.42	4.07	3.72	3.54	3.53	3.53	3.53	3.50
Ukraine	7.44	6.65	6.36	6.20	5.56	5.32	4.56	4.24	3.98	3.69
Other Soviet Union	12.20	10.31	10.47	10.60	10.93	11.05	10.36	8.77	7.51	6.47
China	1.42	1.90	2.48	2.82	2.83	2.83	2.83	2.83	2.83	2.83
Japan	-0.18	0.92	0.62	0.74	0.82	0.82	0.82	0.82	0.82	0.82
South Korea	1.81	1.81	1.91	2.02	2.10	2.18	2.18	2.18	2.18	2.18
Taiwan	1.21	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80
India	5.43	5.48	5.60	5.74	5.46	5.36	5.41	5.36	5.15	5.07
Australia	2.79	2.88	2.54	2.54	2.54	2.54	2.54	2.54	2.54	2.50
Egypt	6.84	8.97	8.08	7.62	5.95	4.85	4.53	4.62	4.65	4.30
Morocco	0.82	2.85	3.11	3.14	1.79	2.3	4.03	4.58	4.29	3.58
Algeria	4.75	3.28	5.42	2.95	1.49	1.59	3.81	6.06	5.07	3.93
Tunisia	3.17	3.80	4.37	4.59	4.01	3.58	3.94	4.23	4.20	3.94

Appendix Tables (cont)

Projected Gross Domestic Growth Rates	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Canada	2.23	2.71	2.71	2.38	2.22	2.10	2.10	2.10	2.10	2.10
United States	2.96	2.84	2.67	2.50	2.40	2.30	2.30	2.30	2.30	2.30
Mexico	3.10	3.30	3.40	3.50	3.45	3.38	3.30	3.30	3.30	3.30
Argentina	0.12	0.26	0.35	0.40	0.45	1.00	1.00	1.20	1.30	1.40
Brazil	-1.00	0.98	1.73	2.21	2.26	2.29	2.32	2.35	2.38	2.50
Venezuela	-3.35	-0.50	1.00	1.50	2.00	3.00	4.00	4.00	4.00	4.00
European Union	2.07	2.01	1.83	1.76	1.74	1.75	1.71	1.68	1.64	1.64
Russia	-1.00	2.00	3.00	3.00	2.50	2.30	2.30	2.30	2.30	2.30
Ukraine	-3.96	0.14	3.98	4.35	4.40	4.40	4.50	4.50	4.50	4.50
Other Soviet Union	3.29	4.12	4.18	3.91	3.78	3.57	3.42	3.30	2.99	2.92
China	6.07	5.69	5.53	5.35	5.32	5.24	5.13	5.00	5.00	5.00
Japan	1.55	0.74	0.77	1.31	1.15	0.92	0.84	0.86	0.86	0.84
South Korea	3.38	3.40	3.40	3.18	3.03	2.91	2.79	2.66	2.54	2.63
India	8.09	8.04	8.03	8.17	8.30	8.30	8.30	7.90	7.80	7.65
Australia	2.61	2.87	2.92	2.97	2.82	2.73	2.75	2.75	2.71	2.63
Egypt	3.67	4.24	4.52	4.60	4.54	4.52	4.50	4.48	4.40	4.35
Morocco	4.38	5.00	4.75	4.48	4.07	3.50	3.50	3.30	3.00	2.85
Algeria	2.70	3.12	3.49	4.05	3.80	3.75	3.70	3.65	3.60	3.25
Tunisia	3.30	4.50	5.10	5.00	4.87	4.73	4.59	4.45	4.31	4.18

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