



United States  
Department of  
Agriculture

Office of the  
Chief Economist

World Agricultural  
Outlook Board

Long-term  
Projections Report  
OCE-2014-1

February 2014

# USDA Agricultural Projections to 2023

## Interagency Agricultural Projections Committee

World Agricultural Outlook Board, Chair  
Economic Research Service  
Farm Service Agency  
Foreign Agricultural Service  
Agricultural Marketing Service  
Office of the Chief Economist  
Office of Budget and Program Analysis  
Risk Management Agency  
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National Institute of Food and Agriculture

*USDA Long-term Projections*



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## Long-term Projections on the Internet

***USDA Agricultural Projections to 2023*** is available in both pdf and Microsoft Word formats at:

[www.usda.gov/oce/commodity/projections/](http://www.usda.gov/oce/commodity/projections/)

and also at:

[www.ers.usda.gov/publications/oce-usda-agricultural-projections/oce141.aspx](http://www.ers.usda.gov/publications/oce-usda-agricultural-projections/oce141.aspx)

Data from the new USDA long-term projections are available electronically at:

[usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1192](http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1192)

Information on USDA's long-term projections process may be found at:

[www.ers.usda.gov/topics/farm-economy/agricultural-baseline-projections/usdas-long-term-projections-process.aspx](http://www.ers.usda.gov/topics/farm-economy/agricultural-baseline-projections/usdas-long-term-projections-process.aspx)

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**USDA Agricultural Projections to 2023.** Office of the Chief Economist, World Agricultural Outlook Board, U.S. Department of Agriculture. Prepared by the Interagency Agricultural Projections Committee. Long-term Projections Report OCE-2014-1, 97 pp.

### **Abstract**

This report provides projections for the agricultural sector to 2023. Projections cover agricultural commodities, agricultural trade, and aggregate indicators of the sector, such as farm income. The projections are based on specific assumptions about macroeconomic conditions, policy, weather, and international developments, with no domestic or external shocks to global agricultural markets. The 2008 Farm Act was assumed to be extended and remain in effect through the projection period. The projections are one representative scenario for the agricultural sector for the next decade and reflect a composite of model results and judgment-based analyses. The projections in this report were prepared during October through December 2013 and, thus, do not reflect the subsequently enacted Agricultural Act of 2014.

In the near term, the agricultural sector continues to respond to high prices for many farm commodities in recent years. Global agricultural production of most major crops remains high, for example, and prices initially fall. Following those near-term adjustments, longrun developments for global agriculture reflect steady world economic growth and continued global demand for biofuels. Those factors combine to support longer run increases in consumption, trade, and prices of agricultural products. Thus, following reductions from 2013 levels through 2016, farm cash receipts and the value of U.S. agricultural exports grow beyond 2016. Although farm production expenses also increase beyond 2015, net farm income remains historically high.

**Keywords:** Projections, crops, livestock, biofuel, ethanol, biodiesel, trade, farm income, U.S. Department of Agriculture, USDA

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## USDA Long-term Projections: Background

USDA's long-term agricultural projections presented in this report are a departmental consensus on a longrun scenario for the agricultural sector. These projections provide a starting point for discussion of alternative outcomes for the sector.

The projections in this report were prepared during October through December 2013, with the 2008 Farm Act assumed to be extended and remain in effect through the projection period. Therefore, the projections do not reflect the subsequently enacted Agricultural Act of 2014. As such, the scenario presented in this report is not a USDA forecast about the future. Instead, it is a conditional, longrun scenario about what would be expected to happen under a continuation of 2008 farm legislation and other specific assumptions. Critical long term assumptions are made for U.S. and international macroeconomic conditions, U.S. and foreign agricultural and trade policies, and growth rates of agricultural productivity in the United States and abroad. The report assumes that there are no domestic or external shocks that would affect global agricultural supply and demand. Normal weather is assumed. Changes in any of these assumptions can significantly affect the projections, and actual conditions that emerge will alter the outcomes.

The report uses as a starting point the short-term projections from the November 2013 *World Agricultural Supply and Demand Estimates* report. The macroeconomic assumptions were completed in October 2013.

The projections analysis was conducted by interagency committees in USDA and reflects a composite of model results and judgment-based analyses. The Economic Research Service had the lead role in preparing the departmental report. The projections and the report were reviewed and cleared by the Interagency Agricultural Projections Committee, chaired by the World Agricultural Outlook Board. USDA participants in the projections analysis and review include the World Agricultural Outlook Board; the Economic Research Service; the Farm Service Agency; the Foreign Agricultural Service; the Agricultural Marketing Service; the Office of the Chief Economist; the Office of Budget and Program Analysis; the Risk Management Agency; the Natural Resources Conservation Service; and the National Institute of Food and Agriculture.

### **USDA Contacts for Long-term Projections**

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### **Acknowledgments**

The report coordinators, on behalf of the Interagency Agricultural Projections Committee, thank the many analysts in different agencies of USDA for their contributions to the long-term projections analysis and to the preparation and review of this report.

# USDA Agricultural Projections to 2023

## Interagency Agricultural Projections Committee

### Introduction and Projections Overview

This report provides longrun projections for the agricultural sector to 2023. Major forces and uncertainties affecting future agricultural markets are discussed, such as prospects for long-term global economic growth and population trends. Projections cover production and consumption for agricultural commodities, global agricultural trade and U.S. exports, commodity prices, and aggregate indicators of the sector, such as farm income.

The projections are a conditional scenario based on specific assumptions about the macroeconomy, agricultural and trade policies, the weather, and international developments. The report assumes that there are no domestic or external shocks that would affect global agricultural markets. Normal weather with trend crop production yields is generally assumed. Provisions of the Food, Conservation, and Energy Act of 2008 (the 2008 Farm Act), the Energy Independence and Security Act of 2007, and the Energy Improvement and Extension Act of 2008 are assumed to be extended and remain in effect through the projection period (see box below for further discussion of U.S. agricultural policy assumptions). Thus, the projections are not intended to be a forecast of what the future will be, but instead are a description of what would be expected to happen under these very specific circumstances and assumptions. As such, the projections provide a neutral reference scenario that can serve as a point of departure for discussion of alternative farm-sector outcomes that could result under different domestic or international assumptions.

The projections in this report were prepared during October through December 2013 and reflect a composite of model results and judgment-based analyses. Short-term projections used as a starting point in this report are from the November 2013 *World Agricultural Supply and Demand Estimates* report. The macroeconomic assumptions were completed in October 2013.

In the near term, the agricultural sector continues to respond to high prices for many farm commodities in recent years. Global agricultural production of most major crops remains high, for example, and prices initially fall. Following those near-term adjustments, longrun developments for global agriculture reflect steady world economic growth and continued global demand for biofuels. Those factors combine to support longer run increases in consumption, trade, and prices of agricultural products. Thus, following reductions from 2013 levels through 2016, farm cash receipts and the value of U.S. agricultural exports grow beyond 2016. Although farm production expenses also increase beyond 2015, net farm income remains historically high.

#### U.S. Policy Assumptions

USDA's long-term projections in this report reflect analysis conducted during October through December 2013. Therefore, the projections do not reflect the subsequently enacted Agricultural Act of 2014. Instead, the 2008 Farm Act was assumed to be extended and remain in effect through the projection period.

## Key Assumptions and Implications

**Major assumptions underlying the projections and selected implications include:**

### *Economic Growth*

- Global economic growth is assumed to average 3.2 percent annually over the next decade. Relatively weak economic growth is assumed for developed countries, but stronger growth is assumed in developing countries. As a result, developing countries become a larger part of the world economy. Relatively high growth rates in China, India, and other areas of developing Asia, Africa, and Latin America underpin the anticipated macroeconomic gains for developing countries.
- Among developed countries, Japan's economic growth continues to face constraints from long-term structural rigidities, a political process that makes economic reform difficult, and an aging population. Growth in the European Union (EU) will be limited by continuing Eurozone financial difficulties.
- The U.S. economy is projected to grow at an average rate of about 2.6 percent over the next decade. The U.S. share of global gross domestic product (GDP) falls from about 26 percent currently to less than 25 percent at the end of the projection period.
- Steady global economic growth supports longer term gains in world food demand, global agricultural trade, and U.S. agricultural exports. Economic growth in developing countries is especially important because food consumption and feed use are particularly responsive to income growth in those countries, with movement away from traditional staple foods and increased diversification of diets.

### *Population*

- Stronger global economic growth over the next decade contributes to the continued slowing of population gains around the world as birth rates decline. Growth in global population is projected to average about 1.0 percent per year compared with an average annual rate of 1.2 percent in the last decade.
- Population growth rates in most developing countries are projected to slow, although they remain above those in the rest of the world. As a consequence, the share of world population accounted for by developing countries continues to rise, accounting for 82 percent in 2023.
- Population gains in developing countries, along with increased urbanization and expansion of the middle class, are particularly important for the projected growth in global food demand. Populations in developing countries, in contrast to those in more-developed countries, tend to be both younger and undergoing more rapid urbanization, factors that generally lead to the expansion and diversification of food consumption.



### ***Value of the U.S. Dollar***

- Following a 10-year depreciation of the U.S. dollar from 2002 to 2011, a moderate appreciation has recently occurred, with further appreciation projected for the next decade. Nonetheless, the dollar remains relatively weak compared to the past two decades.
- The low-valued dollar will continue as a facilitating factor for gains in U.S. agricultural exports. Although trade competition will continue to be strong, the United States will remain competitive in global agricultural markets, with export gains contributing to longrun increases in cash receipts for U.S. farmers.

### ***Oil Prices***

- After declining in 2014, both nominal and real crude oil prices are assumed to increase over the next decade as global economic activity improves. By the end of the projection period, the nominal refiner acquisition cost for crude oil imports is projected to be near \$150 per barrel, compared with about \$101 projected for 2014.
- Increases in crude oil prices raise production costs in the agricultural sector.

### ***U.S. Agricultural Policy***

- The 2008 Farm Act is assumed to be extended through the projection period. The analysis was completed before the subsequent enactment of the Agricultural Act of 2014.
- Acreage enrolled in the Conservation Reserve Program (CRP) is projected to decline to about 26 million acres in 2014 before rising back to close to its legislated maximum under the 2008 Farm Act of 32 million acres toward the end of the projections.
- Lower crop prices projected over the next several years lead to sharply higher direct Government payments to farmers in 2015 through 2017, mostly reflecting large payments under the Average Crop Revenue Election (ACRE) program of the 2008 Farm Act. Beyond 2017, direct Government payments are lower and below the average of 2001-10. Consequently, the sector relies more on the market for its income. The CRP and fixed direct payments are the largest Government payments to the U.S. agricultural sector after 2017.

### ***U.S. Biofuels***

- Limited additional growth is projected for ethanol production, with increases much smaller than occurred in 2000-2010. Nonetheless, high levels of domestic corn-based ethanol production continue over the next decade, with about 35 percent of total corn use projected to go to ethanol production,
- The 10-percent ethanol “blend wall” and projected declines in overall gasoline consumption in the United States are assumed to significantly slow any expected expansion in ethanol production over the next decade. Most gasoline in the United States continues to be a 10-percent ethanol blend (E10). Infrastructural and other constraints severely limit

growth in the E15 (15-percent ethanol blend) market. The E85 (85-percent ethanol blend) market, while growing, remains very small.

- The \$1-per-gallon tax credit for blending biodiesel expired at the end of 2013 and is assumed to be unavailable in the projections.
- The biomass-based diesel use mandate, as administered by the U.S. Environmental Protection Agency (EPA), rose to 1.28 billion gallons for 2013 and is assumed to remain at that level throughout the projection period.
- As suggested in EPA's final rule for the Renewable Fuel Standard (RFS) for 2013 (and subsequently supported by the proposed 2014 RFS rule), the projections assume that EPA will adjust the advanced biofuel and total renewable fuel mandates to reflect market conditions. As a consequence, the projections assume the nonspecific advanced biofuel mandate remains low. Thus, while some biodiesel production above its own mandate is assumed to meet a portion of the nonspecific advanced biofuel mandate, that additional volume of biodiesel is small.
- Soybean oil, other first-use vegetable oils, corn oil extracted from distillers grains, animal fats, and recycled vegetable oil are used as feedstocks to produce biodiesel in the projections, with soybean oil assumed to account for about half of total biodiesel production.

### ***International Policy***

- Trade projections assume that countries comply with existing bilateral and multilateral agreements affecting agriculture and agricultural trade. The report incorporates effects of trade agreements, sanitary and phytosanitary restrictions, and domestic policies in place in November 2013.
- Domestic agricultural and trade policies in individual foreign countries are assumed to continue to evolve along their current paths, based on the consensus judgment of USDA's regional and commodity analysts. In particular, long-term economic and trade reforms in many developing countries are assumed to continue.
- The projections assume that Russia will continue to use policies to stimulate its domestic pork and poultry production and to limit its reliance on imports.

### ***International Biofuels***

- Global expansion of biofuel production is projected to continue during the next decade, although at a slower pace than over the last half decade. As a result, demand for biofuel feedstocks also grows at a slower pace.
- The largest biofuel producers include the United States, Brazil, the EU, and Argentina. The EU remains the world's largest importer of biofuels throughout the projection period. Argentina and Brazil continue to be the world's dominant biofuel exporters—Argentina mostly in soybean oil-based biodiesel and Brazil in sugarcane-based ethanol.

## *Prices*

- Prices for many major crops are projected to decline in the near term as global production responds to high prices of recent years. Nonetheless, after these initial price declines, long-term growth in global demand for agricultural products, a low-valued dollar, and continued biofuel demand, particularly in the United States, the EU, Brazil, and Argentina, hold prices for corn, oilseeds, and many other crops above pre-2007 levels.
- Prices in the livestock sector initially reflect responses to reduced feed costs as improved livestock-sector net returns provide economic incentives for expansion. Prices for hog and broilers generally decline in the first half of the projection period as production levels for those meats rise. In contrast, beef cattle prices rise as beef production continues to decline for several years. Increases in beef cattle, hog, and broiler prices are generally less than the general inflation rate in the later years of the projections. After declining in 2014-16, nominal farm-level milk prices are projected to gradually rise over the rest of the projection period, with increases less than the overall rate of inflation largely reflecting efficiency gains in production.
- High commodity prices led to record values of U.S. agricultural exports and U.S. net farm income in 2013. Projected reductions in prices for most major crops over the next several years result in declines in export values and farm cash receipts through 2016. Export values and cash receipts then grow over the rest of the projection period as prices increase. Although farm production expenses also increase beyond 2015, net farm income remains historically high.

## Macroeconomic Assumptions

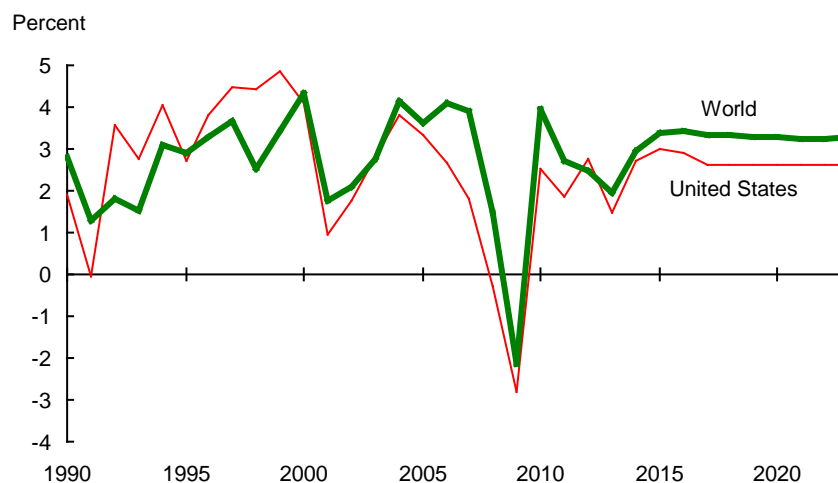
Macroeconomic assumptions underlying USDA's long-term projections include relatively strong, above-average growth in developing countries. As a result, developing countries become a larger part of the world economy. In contrast, relatively weak longrun growth is assumed in developed countries (especially Japan and the European Union (EU)). The macroeconomic assumptions were completed in October 2013.

Global gross domestic product (GDP) is projected to increase at an average annual rate of around 3.2 percent over the next decade. The strongest growth is anticipated in developing countries. China and India are expected to remain among the world's fastest growing economies, although they will experience a slowing from the high rates of the past decades. Robust economic growth is also anticipated across developing regions, including Latin America, the Middle East, and Africa, the countries of the former Soviet Union, and other countries in East and Southeast Asia. The developed countries' share of global real GDP is projected to be 58 percent in 2023, the end of the projection period, down from 65 percent in 2013.

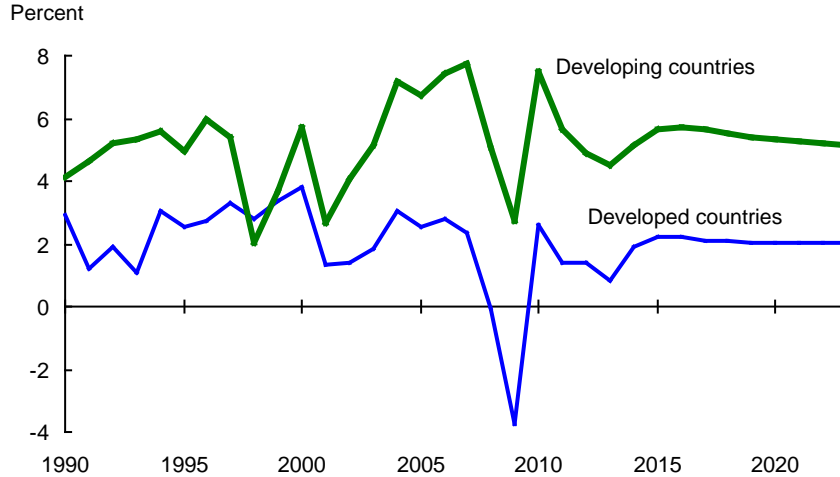
Following the 2007-09 recession, U.S. economic growth averaged 2.2 percent during 2010-13. Stronger growth for the U.S. economy of near 3 percent is assumed for the next several years, before moving to longer term growth of 2.6 percent. With U.S. growth slower than the rest of the world throughout the projection period, the U.S. share of world GDP falls from slightly more than 26 percent in 2013 to less than 25 percent by 2023.

The slow recovery in the United States and other developed economies has several important implications. Inflation is likely to remain subdued for some years to come as excess capacity remains in the economies. Interest rates are also likely to remain at relatively low rates, before moving back toward historical averages. Following a long-term depreciation from 2002 to 2011, the U.S. dollar is expected to appreciate moderately over the next decade, although remaining at a low level compared with the past two decades.

**U.S. and world gross domestic product (GDP) growth**



### Gross domestic product (GDP) growth: Developing countries projected to grow more than double the rate of developed countries

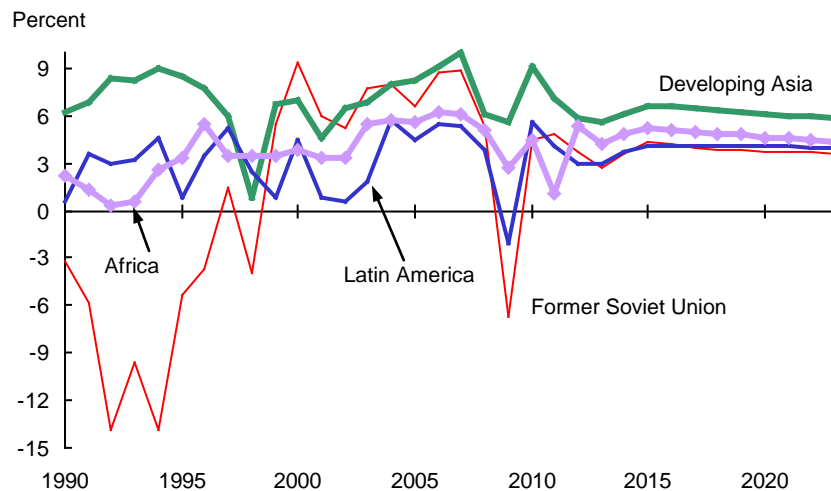


### Agricultural Implications

World economic growth is concentrated in developing countries, with growth in those countries projected at more than twice the rate of developed countries in 2013-23. High income-related propensities for consumption of food and agricultural products in developing countries combine with population gains to boost global food and feed demand over the projection period. Also, continued biofuel demand will remain an important factor shaping the projections for global use, world trade, and agricultural commodity prices. Supporting the outlook for U.S. agricultural exports is the cumulative effect of the weaker U.S. dollar since 2002 and the dollar's continued relatively low level through the projection period.

- Developing countries will have a growing role in the global economy and food demand, and will continue to account for most of the growth in U.S. agricultural exports. High income growth, along with associated gains in consumption and imports of food and feed, drives this result. As incomes rise in developing countries and more consumers enter the middle class, diets tend to be diversified, with increased relative consumption of meat, dairy products, and processed foods (including vegetable oils). These consumption changes move import demand toward feedstuffs and high-value food products.
- Although small appreciation is assumed for the U.S. dollar over the projection period, the overall depreciation of the dollar during the past decade has made U.S. agricultural exports more competitive in international markets. Among agricultural products, U.S. exports of bulk commodities and horticultural products tend to be the most sensitive to the value of the U.S. dollar because they face more global trade competition.

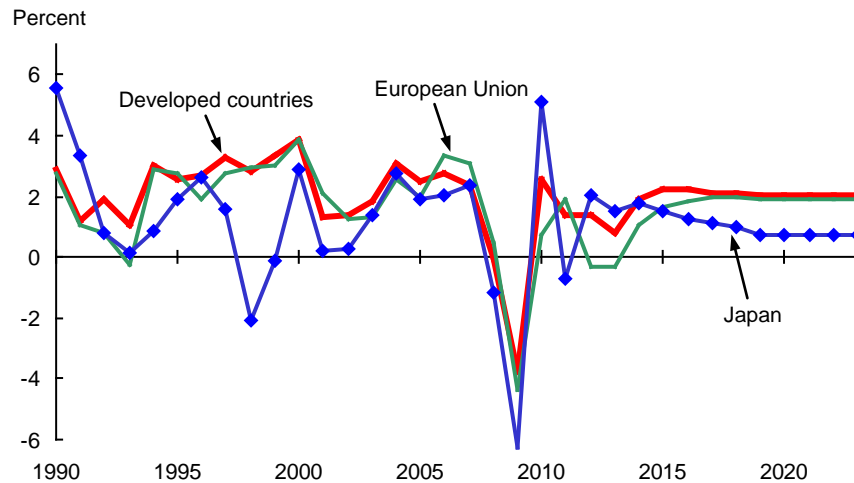
**Growth in gross domestic product (GDP) for developing economies and the former Soviet Union**



Economic growth in developing countries is projected to average 5.3 percent annually during 2013-23. Among developing countries and countries of the former Soviet Union (FSU), Asian countries are projected to grow the fastest, African countries the next fastest, and Latin American and FSU countries the slowest. However, all developing regions are projected to grow faster than any developed country. Average annual growth is projected to be 7.2 percent in China and 7.0 percent in India, while the rest of the developing economies average 4.1 percent annual growth over the projection period.

- Continued strong growth in China, India, and the rest of Asia make this region an increasingly important part of the global economy, with developing Asia's share of world GDP rising to 24 percent by the end of the projection period. Even so, relatively high oil prices by historical standards modestly constrain economic growth in developing Asia. The manufacturing sector in Asian countries is far more dependent on energy for GDP growth than are the more developed economies.
- China's economic growth has been consistently the strongest in Asia, averaging over 10 percent between 2001 and 2010. Although China's economic growth is expected to slow over the next decade, the country is expected to account for about 13 percent of the world economy in 2023, up from about 9 percent currently.
- India's projected average economic growth of 7.0 percent per year puts it in the top tier of high-growth countries. Nonetheless, India remains a low-income country.
- Economic growth in Africa, the poorest region in the world, is projected to average 4.7 percent a year over the projection period, with broad-based growth across a wide spectrum of countries and sub-regions. This high growth rate (by historical standards) is likely to improve standards of living and limit the growth of poverty.
- Latin America sustains projected growth of almost 4 percent a year. An overall improvement in macroeconomic policies has attracted foreign capital inflows (particularly foreign direct investment to Chile, Colombia, and Brazil) and sustained growth in the region. Growth in Mexico is projected to average 4 percent per year.
- The countries of the FSU are projected to have sustainable economic growth averaging 3.8 percent annually for the next decade. Continuing relatively high oil prices benefit Russia and other energy-rich FSU countries.

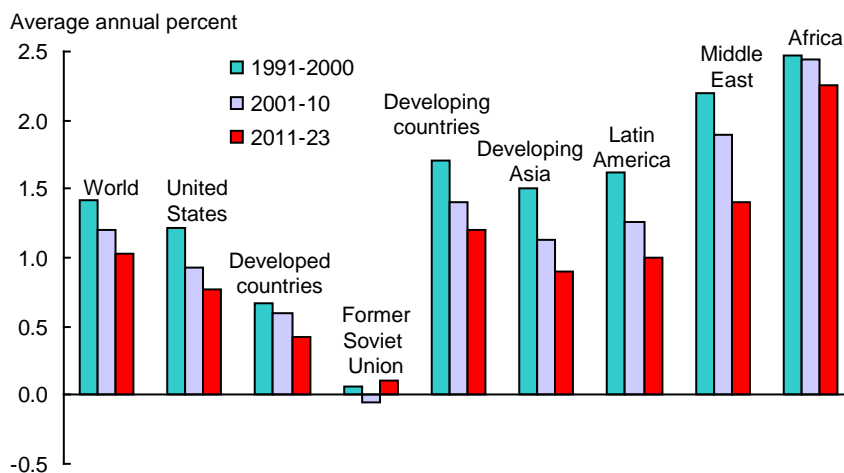
**Growth in gross domestic product (GDP) for developed countries, European Union, and Japan**



Developed economies are projected to grow about 2 percent annually, on average, from 2013 to 2023. Prospects are for both the EU and Japan to grow at lower rates than the United States in coming years. Canada’s growth is projected to be similar to that of the United States.

- Economic growth for the EU is projected at about 1.6 percent per year in the next decade. Continuing difficulties in overcoming Eurozone financial problems remain a constraint on EU growth prospects. Additionally, structural rigidities, particularly inflexible labor laws and an expensive social security system, constrain the outlook for EU economic growth. Although unemployment is expected to decline from double-digit rates during the projection period, benefits of economic integration are limited by continued restrictions on labor mobility among EU countries.
- The projections assume economic growth in Japan averages 1.1 percent per year, a continuation of the slow growth and deflationary environment that Japan has experienced since the 1990s. Results from economic initiatives to boost growth and overcome deflation have been limited to date. Reforms needed to overcome long-term structural rigidities have not yet been implemented. Monetary easing as a means for ending deflation has had only limited success. Japan continues to be faced with a declining working-age population. Increasing integration with the other economies of Asia, especially China, will mitigate some of the growth constraints in the Japanese economy. Nonetheless, Japan is a heavily trade-dependent country and its trade-dependent sectors have declined significantly over the past 20 years. A doubling of the consumption tax, which is scheduled to be phased in during 2014-16, could be a further negative fiscal shock to the economy. Slow growth prospects in Japan relative to high growth for the other major Asian countries suggest that Japan’s importance in the global economy will diminish throughout the projection period.

### Population growth continues to slow



Source: U.S. Department of Commerce, U.S. Census Bureau, International Data Base at <http://www.census.gov/population/international/data/idb/informationGateway.php>

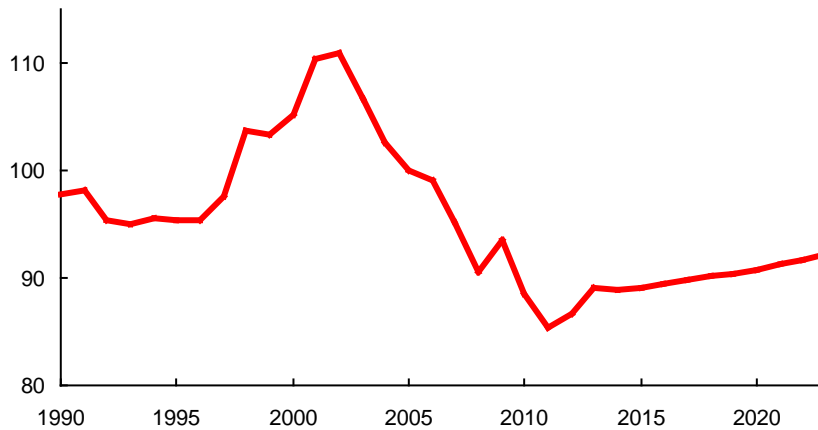
World population growth is projected to continue slowing over the next decade, rising about 1.0 percent per year for the projection period compared to an annual rate of 1.2 percent in 2001-10.

- Developed countries have very low projected rates of population growth, at 0.4 percent over 2013-23. The projected annual average population growth rate for the United States of about 0.8 percent is the highest among developed countries, in part reflecting immigration.
- Population growth rates in developing economies are projected to be sharply lower than rates in 1990-2010, but remain above those in the rest of the world. As a result, the share of global population accounted for by developing countries increases to 82 percent by 2023, compared to 79 percent in 2000.
- China and India together accounted for 36 percent of the world's population in 2013. China's population growth rate slows from 1.0 percent per year in 1991-2000 to less than 0.4 percent in 2013-23, with its share of global population falling. The population growth rate in India is projected to decline from 1.8 percent to 1.2 percent per year over the same period, increasing its share of world population.
- Brazil's population growth rate falls from 1.6 percent per year in 1991-2000 to 1.0 percent annually in 2013-23. The population growth rate in Indonesia is projected to decline from 1.7 percent to 0.9 percent per year over the same period. Although Sub-Saharan Africa's population growth rate declines from 2.6 percent to 2.4 percent per year between the same periods, this region continues to have the highest population growth rate of any region in the world and its population decline is modest relative to other regions of the world.
- Countries with declining populations include Greece, Germany, most central European countries, Russia, Ukraine, and Japan.



### U.S. agricultural trade-weighted dollar remains low<sup>1</sup>

Index values, 2005=100

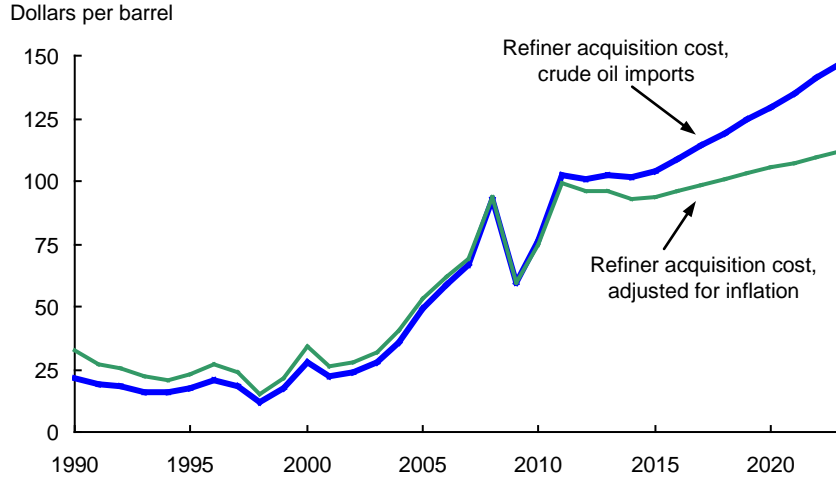


<sup>1</sup> Real U.S. agricultural trade-weighted dollar exchange rate, using U.S. agricultural export weights, based on 192 countries.

The U.S. dollar is projected to maintain a low value through the projection period compared to 1990-2010.

- The U.S. trade-weighted dollar depreciated between 2002 and 2011. In 2012 and 2013 the dollar appreciated, mostly due to the weakness of the euro. A slow appreciation of the dollar is projected over the next decade. Strong GDP growth in the United States relative to the EU and Japan will tend to mitigate any tendencies toward appreciation of the euro and yen relative to the U.S. dollar. The euro could weaken more if Eurozone financial problems continue, pushing the dollar toward further appreciation. The yen is projected to depreciate relative to the U.S. dollar over the projection period as the Bank of Japan continues to fight deflation.
- In June 2010, the Chinese Central Bank announced that it would allow increased flexibility in the exchange rate of the yuan relative to the U.S. dollar. From July 2010 to July 2013, there was a 13.5-percent real appreciation of the yuan. The projections assume that China allows its real exchange rate to continue to appreciate at a measured pace. The yuan will likely also play a larger role in trade finance in Asia, but implications for its exchange value relative to the dollar are unclear.

### U.S. crude oil prices



Prices for crude oil are assumed to remain historically high over the next decade. Recently, oil prices have been constrained by high oil production in countries that are not part of the Organization of the Petroleum Exporting Countries (OPEC), relatively slow growth in energy demand due to conservation in developed countries, and slowing economic growth in developing economies. Another restraining factor on oil prices recently has been reduced oil imports in the United States because of increased domestic oil and natural-gas production using horizontal drilling and hydraulic fracturing (fracking) technology. Crude oil prices are projected to rise somewhat faster than the general inflation rate beyond 2014, reflecting sustained global economic growth and a slowdown in production gains from new technology.

Table 1. U.S. macroeconomic assumptions

Item	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>Gross Domestic Product</b>												
Nominal, billion dollars	16,245	16,755	17,551	18,458	19,392	20,314	21,279	22,291	23,351	24,461	25,624	26,843
Real, billion 2009 chain-weighted dollars	15,471	15,703	16,127	16,611	17,092	17,537	17,993	18,460	18,940	19,433	19,938	20,456
percent change	2.8	1.5	2.7	3.0	2.9	2.6	2.6	2.6	2.6	2.6	2.6	2.6
<b>Disposable personal income</b>												
Nominal, billion dollars	12,246	12,664	13,208	13,855	14,534	15,246	15,993	16,777	17,599	18,462	19,366	20,315
percent change	3.9	3.4	4.3	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
Nominal per capita, dollars	38,965	40,006	41,426	43,141	44,918	46,756	48,658	50,637	52,697	54,840	57,071	59,392
percent change	3.1	2.7	3.5	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Real, billion 2009 chain-weighted dollars	11,552	11,760	12,030	12,367	12,713	13,069	13,435	13,811	14,198	14,595	15,004	15,424
percent change	2.0	1.8	2.3	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Real per capita, 2009 chained dollars	36,756	37,150	37,731	38,506	39,290	40,079	40,875	41,685	42,513	43,356	44,216	45,094
percent change	1.3	1.1	1.6	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
<b>Personal consumption expenditures</b>												
Real, billion 2009 chain-weighted dollars	10,518	10,696	10,964	11,271	11,575	11,864	12,161	12,465	12,777	13,096	13,424	13,759
percent change	2.2	1.7	2.5	2.8	2.7	2.5	2.5	2.5	2.5	2.5	2.5	2.5
<b>Inflation measures</b>												
GDP chained price index, 2009=100	105.0	106.7	108.8	111.1	113.5	115.8	118.3	120.8	123.3	125.9	128.5	131.2
percent change	1.7	1.6	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
CPI-U, 1982-84=100	229.6	233.0	237.5	242.7	248.3	254.2	260.3	266.6	273.0	279.5	286.2	293.1
percent change	2.1	1.5	1.9	2.2	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4
PPI, finished goods 1982=100	194.2	196.5	199.5	203.1	207.1	211.3	215.5	219.8	224.2	228.7	233.3	237.9
percent change	1.9	1.2	1.5	1.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
PPI, crude goods 1982=100	241.3	246.2	249.8	242.8	233.4	236.2	239.7	244.5	250.6	256.9	263.3	269.9
percent change	-3.2	2.0	1.5	-2.8	-3.9	1.2	1.5	2.0	2.5	2.5	2.5	2.5
<b>Crude oil price, \$/barrel</b>												
EIA refiner acquisition cost, imports	101.1	102.4	101.3	103.8	109.0	114.4	119.3	124.4	129.7	135.2	141.0	147.0
percent change	-1.5	1.3	-1.1	2.5	5.0	5.0	4.3	4.3	4.3	4.3	4.3	4.3
Real 2009 chain-weighted dollars	96.3	96.0	93.0	93.4	96.1	98.8	100.9	103.0	105.2	107.4	109.7	112.0
percent change	-3.2	-0.3	-3.1	0.4	2.8	2.8	2.1	2.1	2.1	2.1	2.1	2.1
<b>Labor compensation per hour nonfarm business, 2005=100</b>												
percent change	1.9	1.5	2.5	3.0	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
<b>Interest rates, percent</b>												
3-month Treasury bills	0.1	0.1	0.1	0.5	1.4	3.2	3.9	4.0	4.0	4.0	4.0	4.0
3-month AA nonfinancial commercial paper	0.2	0.2	0.3	0.8	1.7	3.5	4.3	4.7	4.7	4.7	4.7	4.7
Bank prime rate	3.3	3.3	3.3	3.7	4.7	6.2	6.9	7.0	7.0	7.0	7.0	7.0
10-year Treasury bonds	1.8	2.4	3.2	3.8	4.5	5.0	5.5	5.6	5.6	5.6	5.6	5.6
Moody's Aaa bond yield index	3.7	4.2	4.5	4.8	5.5	6.3	6.3	6.4	6.4	6.4	6.4	6.4
<b>Labor and population</b>												
Civilian unemployment rate, percent	8.1	7.6	7.5	6.7	6.5	6.0	5.8	5.6	5.6	5.6	5.6	5.6
Nonfarm payroll employees, millions	133.7	135.7	138.2	140.4	142.2	143.5	144.7	145.8	147.0	148.2	149.4	150.5
percent change	1.7	1.5	1.8	1.6	1.3	0.9	0.8	0.8	0.8	0.8	0.8	0.8
Total population, millions	314.3	316.5	318.8	321.2	323.6	326.1	328.7	331.3	334.0	336.6	339.3	342.1
percent change	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8

Domestic macroeconomic assumptions were completed in October 2013. CPI-U is the consumer price index for all urban consumers. PPI is the producer price index. EIA is the Energy Information Administration, U.S. Department of Energy.

Table 2. Global real GDP growth assumptions

Region/country	GDP share		Per capita		Average							
	GDP, 2012	2010-2012	GDP, 2012	2012	2013	2014	2015	2016	2017	1991-2000	2001-2010	2013-2023
	<i>Bil. 2005 dollars</i>	<i>Percent</i>	<i>2005 dollars</i>	<i>Percent change in real GDP</i>								
World	54,226	100.0	7,766	2.5	2.0	3.0	3.4	3.4	3.3	2.8	2.6	3.2
North America	15,489	28.6	44,435	2.7	1.5	2.7	3.0	2.9	2.6	3.4	1.7	2.6
Canada	1,258	2.3	36,671	2.0	1.7	2.3	2.7	2.7	2.6	2.9	1.9	2.4
United States	14,231	26.3	45,283	2.8	1.5	2.7	3.0	2.9	2.6	3.5	1.7	2.6
Latin America	3,569	6.5	5,927	3.0	3.0	3.7	4.0	4.0	4.1	3.2	3.2	3.9
Mexico	1,000	1.8	8,701	3.6	2.8	4.0	4.2	4.1	4.1	3.5	1.9	4.0
Caribbean & Central America	373	0.7	4,514	2.9	3.0	3.7	4.0	3.9	3.9	3.1	3.2	3.8
South America	2,195	4.0	5,427	2.7	3.1	3.6	4.0	4.0	4.1	3.0	3.8	3.9
Argentina	284	0.5	6,741	3.0	2.3	2.5	3.0	3.7	4.1	4.7	4.6	3.8
Brazil	1,139	2.1	5,538	1.5	2.7	3.5	4.0	4.0	4.0	2.6	3.6	3.8
Other	771	1.4	4,927	4.5	3.9	4.1	4.3	4.2	4.2	3.3	4.0	4.1
Europe	15,381	29.0	28,044	-0.2	-0.2	1.1	1.7	1.9	2.0	2.2	1.4	1.6
European Union	14,545	27.4	28,011	-0.3	-0.3	1.1	1.6	1.9	2.0	2.2	1.2	1.6
Other Europe	836	1.6	28,643	2.2	1.3	1.9	2.2	2.1	2.2	1.9	1.8	2.0
Former Soviet Union	1,323	2.4	4,691	3.8	2.7	3.6	4.3	4.2	4.0	-4.0	5.4	3.8
Russia	980	1.8	6,877	3.8	2.4	3.3	4.0	4.1	3.8	-3.6	4.9	3.6
Ukraine	97	0.2	2,170	2.5	0.1	2.8	3.6	3.8	4.0	-7.7	4.5	3.5
Other	245	0.4	2,593	4.2	4.8	5.3	5.6	4.8	4.7	-3.2	8.6	4.5
Asia and Oceania	15,141	27.4	3,932	4.4	4.1	4.6	4.8	4.8	4.7	3.5	4.4	4.6
East Asia	11,011	20.0	7,087	4.3	4.0	4.4	4.6	4.6	4.5	3.2	4.1	4.3
China	4,504	7.9	3,353	7.5	7.3	7.3	7.5	7.6	7.5	10.5	10.5	7.2
Hong Kong	233	0.4	32,556	2.8	3.1	4.1	5.0	4.6	3.9	4.0	4.1	3.8
Japan	4,690	8.8	36,823	2.0	1.5	1.8	1.5	1.3	1.1	1.2	0.9	1.1
South Korea	1,081	2.0	22,133	2.6	1.6	3.0	4.0	3.8	3.5	6.2	4.2	3.1
Taiwan	466	0.9	20,066	2.5	2.8	4.0	4.9	4.7	4.0	6.2	3.9	3.6
Southeast Asia	1,328	2.4	2,135	5.0	5.0	5.6	5.7	5.5	5.3	5.2	5.1	5.1
Burma	58	0.1	1,063	6.0	7.0	6.9	7.3	6.9	7.0	6.5	5.2	6.7
Cambodia	10	0.0	649	6.8	6.8	7.3	8.3	8.1	8.0	6.9	7.9	7.6
Indonesia	426	0.8	1,715	6.2	6.0	6.1	6.4	6.1	5.7	4.4	5.2	5.5
Malaysia	188	0.3	6,443	4.3	4.7	5.1	4.9	4.7	4.6	7.2	4.6	4.7
Philippines	142	0.3	1,373	4.6	6.6	5.5	5.4	5.0	4.9	2.9	4.8	5.1
Thailand	221	0.4	3,297	5.2	4.0	5.7	5.1	5.0	4.8	4.6	4.4	4.7
Vietnam	83	0.2	906	5.4	5.2	6.4	7.1	6.9	6.6	7.6	7.3	6.5
South Asia	1,723	3.1	1,051	5.6	5.0	6.1	6.9	7.2	7.1	5.2	7.3	6.7
Bangladesh	91	0.2	567	6.2	6.0	5.8	6.5	6.8	6.4	4.8	5.8	6.1
India	1,411	2.5	1,171	5.7	5.1	6.3	7.2	7.5	7.4	5.5	7.8	7.0
Pakistan	149	0.3	784	3.7	3.6	4.0	4.5	4.5	5.5	4.0	4.7	4.6
Oceania	1,080	2.0	30,061	3.0	2.6	3.3	2.9	2.7	2.6	3.3	3.0	2.7
Australia	930	1.7	42,239	3.0	2.6	3.3	2.8	2.7	2.6	3.4	3.1	2.7
New Zealand	122	0.2	28,207	2.5	2.6	2.9	3.0	2.9	2.8	2.9	2.6	2.7
Middle East	1,998	3.7	6,693	2.8	2.6	3.6	4.3	4.5	4.5	3.9	4.2	3.9
Iran	256	0.5	3,240	-2.0	-2.8	0.6	2.1	2.9	3.1	3.8	5.4	2.1
Iraq	84	0.2	2,689	7.0	5.2	5.7	6.1	6.0	5.8	12.2	5.9	5.6
Saudi Arabia	402	0.7	15,162	4.7	4.2	4.7	4.9	4.7	4.8	2.8	3.2	4.3
Turkey	631	1.1	7,914	2.9	3.2	4.1	4.9	5.0	4.7	3.8	4.0	4.1
Other	625	1.2	7,606	2.9	2.9	3.1	3.9	4.2	4.4	4.9	4.7	3.8
Africa	1,326	2.4	1,260	5.3	4.3	4.8	5.2	5.1	5.0	2.8	4.8	4.7
North Africa	419	0.8	2,472	7.8	3.5	3.8	4.8	5.0	4.9	3.7	4.5	4.4
Egypt	137	0.3	1,632	2.2	2.1	2.6	4.7	4.7	4.6	4.3	5.1	4.1
Morocco	81	0.2	2,517	2.7	4.5	4.7	5.2	5.2	4.6	2.5	4.9	4.2
Sub-Saharan Africa	906	1.6	1,027	4.2	4.6	5.3	5.4	5.2	5.0	2.4	5.0	4.9
South Africa	306	0.6	6,270	2.5	2.1	3.5	3.8	3.9	4.0	1.8	3.5	4.0
West African Community	263	0.5	822	3.8	4.0	4.1	4.8	5.1	5.0	2.9	4.0	4.8
Other Sub-Saharan Africa	338	0.6	657	4.1	5.3	5.8	6.0	5.8	5.8	2.6	6.2	5.5

Source: Historical data from various sources; compiled in the International Macroeconomic Data Set, U.S. Department of Agriculture, Economic Research Service. International macroeconomic assumptions were based on information available in August 2013.

Table 3. Population growth assumptions

Region/country	Population in							Average		
	2013	2012	2013	2014	2015	2016	2017	1991-2000	2001-2010	2013-2023
	<i>Millions</i>							<i>Percent change</i>		
World <sup>1</sup>	7,059	1.1	1.1	1.1	1.1	1.1	1.0	1.4	1.2	1.0
North America	351	0.7	0.7	0.7	0.7	0.8	0.8	1.2	0.9	0.8
Canada	35	0.8	0.8	0.8	0.8	0.7	0.7	1.1	0.8	0.7
United States	317	0.7	0.7	0.7	0.7	0.8	0.8	1.2	0.9	0.8
Latin America	609	1.1	1.1	1.1	1.1	1.0	1.0	1.6	1.3	1.0
Mexico	116	1.1	1.1	1.1	1.0	1.0	1.0	1.6	1.2	1.0
Caribbean & Central America	84	1.0	1.0	1.0	1.0	1.0	1.0	1.7	1.2	0.9
South America	409	1.1	1.1	1.1	1.1	1.0	1.0	1.6	1.3	1.0
Argentina	43	1.0	1.0	1.0	0.9	0.9	0.9	1.2	1.0	0.9
Brazil	208	1.1	1.1	1.1	1.0	1.0	1.0	1.6	1.3	1.0
Other	158	1.2	1.2	1.2	1.1	1.1	1.1	1.8	1.3	1.1
Europe	550	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2
European Union	520	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.1
Other Europe	29	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.1	0.2
Former Soviet Union	282	0.2	0.2	0.2	0.2	0.1	0.1	0.1	-0.1	0.1
Russia	143	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.3	-0.1
Ukraine	45	-0.6	-0.6	-0.6	-0.6	-0.6	-0.7	-0.5	-0.8	-0.7
Other	95	0.8	0.8	0.8	0.8	0.8	0.8	0.6	0.7	0.7
Asia and Oceania	3,887	1.0	1.0	0.9	0.9	0.9	0.9	1.4	1.1	0.8
East Asia	1,560	0.4	0.4	0.4	0.4	0.3	0.3	0.9	0.5	0.3
China	1,350	0.5	0.5	0.5	0.4	0.4	0.4	1.0	0.5	0.3
Hong Kong	7	0.4	0.4	0.4	0.4	0.3	0.3	1.6	0.6	0.3
Japan	127	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	0.3	0.1	-0.2
South Korea	49	0.2	0.2	0.2	0.2	0.1	0.1	0.9	0.4	0.1
Taiwan	23	0.3	0.3	0.3	0.2	0.2	0.2	0.9	0.4	0.2
Southeast Asia	629	1.2	1.2	1.1	1.1	1.1	1.1	1.8	1.4	1.0
Burma	55	1.1	1.1	1.0	1.0	1.0	1.0	1.6	1.2	1.0
Cambodia	15	1.7	1.7	1.7	1.6	1.6	1.5	2.8	1.6	1.5
Indonesia	251	1.0	1.0	1.0	0.9	0.9	0.9	1.7	1.3	0.9
Malaysia	30	1.6	1.5	1.5	1.5	1.4	1.4	2.6	2.0	1.4
Philippines	106	1.9	1.9	1.8	1.8	1.8	1.7	2.2	2.1	1.7
Thailand	67	0.6	0.5	0.5	0.5	0.5	0.4	1.2	0.7	0.4
Vietnam	92	1.1	1.0	1.0	1.0	1.0	0.9	1.6	1.2	0.9
South Asia	1,662	1.4	1.4	1.4	1.3	1.3	1.3	2.0	1.6	1.3
Bangladesh	164	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.6
India	1,221	1.3	1.3	1.3	1.2	1.2	1.2	1.8	1.5	1.2
Pakistan	193	1.6	1.5	1.5	1.5	1.5	1.5	2.5	1.9	1.4
Oceania	36	1.3	1.2	1.2	1.2	1.2	1.1	1.4	1.4	1.1
Australia	22	1.1	1.1	1.1	1.1	1.1	1.0	1.2	1.2	1.0
New Zealand	4	0.9	0.9	0.8	0.8	0.8	0.8	1.1	1.1	0.8
Middle East	303	1.4	1.4	1.5	1.5	1.5	1.5	2.2	1.9	1.4
Iran	80	1.3	1.2	1.2	1.2	1.2	1.2	1.7	1.1	1.1
Iraq	32	2.4	2.3	2.3	2.2	2.2	2.1	2.3	2.7	2.1
Saudi Arabia	27	1.5	1.5	1.5	1.5	1.5	1.5	2.9	1.9	1.4
Turkey	81	1.2	1.2	1.1	1.1	1.1	1.0	1.8	1.5	1.0
Other	83	1.5	1.3	1.6	1.8	1.9	1.9	3.1	2.9	1.7
Africa	1,077	2.4	2.4	2.3	2.3	2.3	2.3	2.5	2.4	2.2
North Africa	173	1.6	1.9	1.7	1.7	1.6	1.5	1.7	1.8	1.5
Egypt	85	2.0	1.9	1.9	1.8	1.8	1.7	1.7	2.1	1.7
Morocco	33	1.1	1.1	1.0	1.0	1.0	1.0	1.6	1.2	1.0
Sub-Saharan Africa	904	2.5	2.5	2.5	2.4	2.4	2.4	2.6	2.6	2.4
South Africa	49	-0.4	-0.4	-0.5	-0.2	0.1	0.1	1.6	0.9	0.0
West African Community	328	2.6	2.6	2.6	2.6	2.6	2.5	2.6	2.7	2.5
Other Sub-Saharan Africa	528	2.7	2.7	2.6	2.6	2.5	2.5	2.8	2.7	2.5

1/ Totals for the world include countries not otherwise listed in the table.

Source: U.S. Department of Commerce, U.S. Census Bureau, <http://www.census.gov/population/international/data/idb/informationGateway.php>.

The population assumptions were completed in July 2013 based on the June 2013 update from the U.S. Census Bureau.

## **Agricultural Trade**

Global demand for agricultural products is projected to continue rising during the 2014-2023 projection period. At the same time, world production of agricultural products is projected to increase more rapidly than world population, enabling a small increase in average world per capita use of most agricultural products. During this period, world trade in agricultural products is projected to continue rising rapidly.

While most agricultural prices have fallen from recent high levels and are projected to fall further during the initial years of the projections, prices remain above pre-2007 levels during the coming decade. The main contributing factors are rising per capita incomes and increasing populations in low- and middle-income developing countries that stimulates world demand for grains, oilseeds, cotton, and livestock products.

World agricultural production is projected to continue rising in the coming decade as technological enhancements and area expansion more than offset the effects of lower prices. However, a number of factors are expected to slow the rate of production growth. Many countries have a limited ability to expand planted area, and the expansion that does occur takes place on land with lower productive capacity. The growth rate for world-average crop yields has been slowing for nearly 2 decades, and is projected to slow further in the next 10 years. Reduced public funding for research and development over last 25 years contributed to this slowdown. Also, water constraints in some countries are impeding the expansion of irrigation. Where irrigation water is pumped from deep wells, the energy cost of pumping is projected to continue to increase due to falling water tables. Costs of other production inputs such as fertilizers and chemicals are also likely to remain high.

### **General International Assumptions**

Trade projections to 2023 are founded on assumptions concerning trends in foreign area, yields, and use as well as the assumption that countries comply with existing bilateral and multilateral agreements affecting agriculture and agricultural trade. The projections incorporate the effects of trade agreements, sanitary and phytosanitary restrictions, and domestic policies in place or authorized by November 2013. International macroeconomic assumptions were completed in October 2013.

Domestic agricultural and trade policies in individual foreign countries are assumed to evolve along their current paths, based on the consensus judgment of USDA analysts. In particular, long-term economic and trade reforms in many developing countries are assumed to continue. Similarly, the development and use of technology and changes in consumer preferences are assumed to continue evolving based on past performance and analysts' judgments regarding future developments.

During the past year, world production of most crops has recovered from weather-induced production shortfalls experienced in recent years. As a result, world stocks of many commodities have begun to rise from low levels, and prices have reversed their upward trends. For some commodities in some countries, stocks have become quite large. Policies in China have led to the accumulation of large cotton stocks there. Similarly, Thailand and India currently hold unusually large rice stocks. How these countries draw down stocks to more normal levels will have implications for world cotton and rice markets.

Low- and middle-income countries are projected to account for a large majority of the increase in world agricultural consumption and imports over the next decade. In the projections, about 80 percent of the increase in global consumption of meat, 83 percent for grains and oilseeds, and most of the growth in cotton use comes from developing countries. Furthermore, demand for agricultural products in these countries increases faster than production. As a result, they account for about 90 percent of the total increase in world imports of meat, and over 95 percent of the increase in grains and oilseeds. The main factors that contribute to the rapid increase in developing countries' demand are their high population and income growth rates, accompanied by increased urbanization and expansion of the middle class.

The combined region of Africa and the Middle East is projected to have some of the strongest growth in food demand and agricultural trade over the coming decade. With rapid increases in population and per capita incomes, the region is projected to account for most of the increase in world poultry imports and over one-fifth of the growth in beef imports. Strong policy support for domestically produced meat also motivates growth in feed grain and protein meal imports, especially by countries where land constraints or agroclimatic conditions limit an expansion of domestic crop production. As a result, the region's share of the increase in world imports is projected to be about 17 percent for coarse grains, 50 percent for wheat, and 64 percent for rice.

Mexico is projected to be another large growth market for imports of meat, grains, and oilseeds. A sustained increase in Mexico's per capita meat demand over the next decade provides incentives to expand livestock production in that country as well as to import more meat and animal feed. Imports of beef are projected to more than double, while pork and poultry imports rise by 35 and 65 percent. Mexico accounts for about one-fourth of the growth in world pork and poultry imports. For corn, Mexico is second only to China in projected import growth over the next 10 years.

Since 2008/09, China has become a sustained net importer of pork, corn, rice, wheat, beef, pork, rapeseed meal, and rapeseed oil. In the projections, net imports are expected to continue rising for all but rice and wheat. China has also emerged as an importer of sorghum in the last 2 years and is projected to remain a sorghum importer in the next decade. For another group of commodities, China has been a net importer for at least the last decade. These commodities include cotton, soybeans, rapeseed, barley, soybean oil, and palm oil. Net imports of all these products are projected to continue rising. China's aggregate net imports of grains, oilseeds, and cotton are projected to rise 61 percent (58 million tons) by 2023. For meats, net imports are expected to rise 73 percent (6.4 million tons).

Countries that have traditionally exported a large quantity and a wide range of agricultural products, such as Argentina, Australia, Brazil, Canada, the European Union (EU), and the United States, are expected to remain important exporters during the coming decade. But countries that have made significant investments in their agricultural sectors and are pursuing policies intended to encourage agricultural production, including Russia, Ukraine, and Kazakhstan, are expected to have an increasing presence in export markets for agricultural commodities.

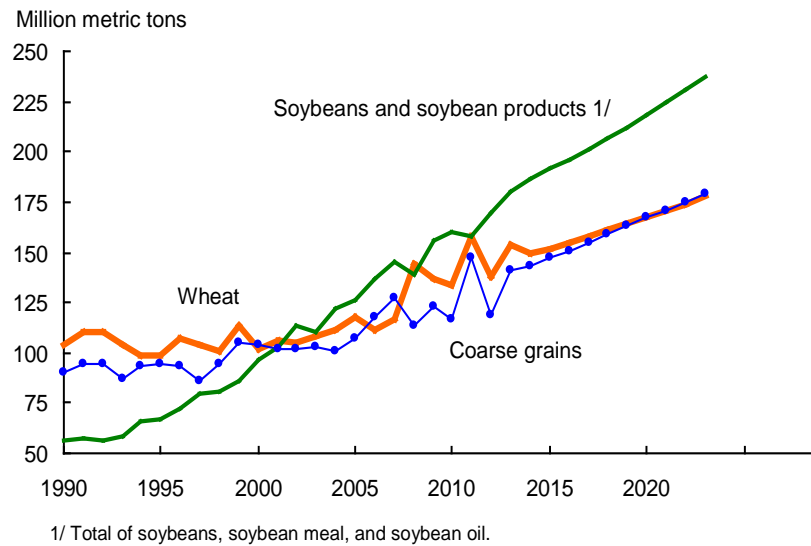
Global expansion of biofuel production is projected to continue during the next decade, although at a slower pace than over the last half decade. As a result, demand for biofuel feedstocks also continues to grow. The largest biofuels producers include the United States, Brazil, the EU, and Argentina. The growth rates for their production of ethanol and of biodiesel each drop to less than 3 percent per year. For ethanol this is less than half the rate of the last 5 years; for biodiesel it is only about 10 percent of the growth over the past half-decade.

The EU remains the world's largest importer of biofuels throughout the projection period. Biodiesel imports, especially from Argentina, account for a majority of total EU biofuels imports. Brazil supplies much of the EU's ethanol imports. The EU is also projected to import oilseeds and vegetable oils for biodiesel feedstock use, mainly from Ukraine, Russia, and Indonesia.

Argentina and Brazil continue to be the world's dominant biofuel exporters, with Argentina specializing in soybean oil-based biodiesel and Brazil in sugarcane-based ethanol. Exports from these countries grow steadily in the projections but are constrained as both countries increase their domestic use of biofuels.



### Global trade: Wheat, coarse grains, and soybeans and soybean products

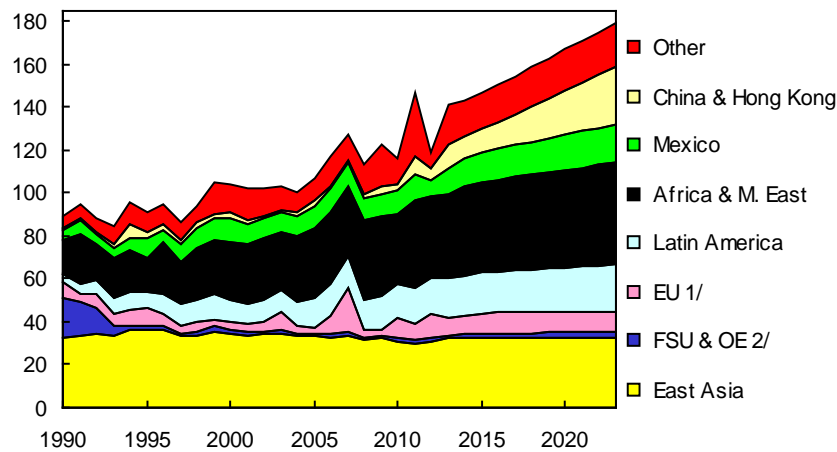


Global trade in soybeans and soybean products has risen rapidly since the early 1990s, and has surpassed global trade in wheat and total coarse grains (corn, barley, sorghum, rye, oats, millet, and mixed grains). Continued strong growth in global demand for vegetable oil and protein meal, particularly in China and other Asian countries, is expected to maintain soybean and soybean-products trade well above either wheat or coarse grain trade throughout the next decade.

- Globally, the total area planted to grains, oilseeds, and cotton is projected to expand an average of 0.5 percent per year. Area expands more rapidly in countries with a reserve of available land and policies that allow farmers to respond to prices. Such countries include Russia, Ukraine, Brazil, Argentina, some other countries in South America, and some countries in Sub-Saharan Africa. On the other hand, in many countries area expansion is less than half that rate, and cropped area even contracts in some countries. Over half of the projected growth in global production of grains, oilseeds, and cotton is derived from rising yields, even though growth in crop yields is projected to continue slowing.
- The market impact of slower yield growth is partially offset by slower growth in world population. Nonetheless, population growth is a significant factor driving overall growth in demand for agricultural products. Additionally, rising per capita income in most countries supplements population gains in the demand for vegetable oils, meats, horticulture, dairy products, and grains. World per capita use of vegetable oils is projected to rise 6.5 percent over the next 10 years, compared with 15 percent for meats and 7 percent for total coarse grains. In contrast, per capita wheat use does not rise, and per capita rice consumption drops 1 percent.
- Increasing demand for grains, oilseeds, and other crops provide incentives to expand the global area under cultivation and the intensity of cropping the land. The largest projected increases in the area planted to field crops are in the former Soviet Union (FSU) and Sub-Saharan Africa. Large expansions are also projected for Brazil, Indonesia, and Argentina, including some uncultivated land brought into soybean and palm oil production in response to increased world demand for vegetable oils.

## Global coarse grain imports

Million metric tons



1/ Excludes intra-EU trade.

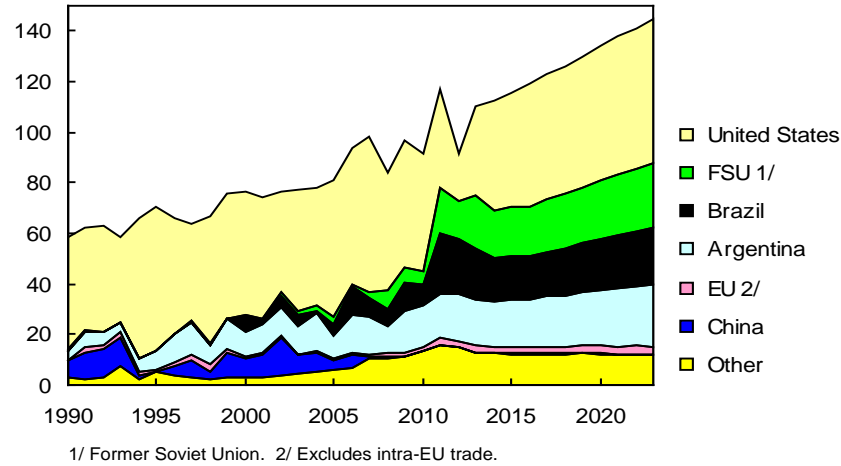
2/ Former Soviet Union and Other Europe; prior to 1999, includes Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia.

World coarse grain trade is projected to increase by 36 million tons (25 percent) from 2014/15 to 2023/24. Corn is expected to gain an increasing share of world coarse grain trade. The expansion of livestock production in feed-deficit countries continues to be the principal driver of growth in coarse grain imports. Key growth markets include China, Mexico, and Africa and the Middle East.

- China's corn imports are projected to rise steadily and reach 22 million tons by 2023/24. China's strengthening domestic demand for corn is driven by structural change and growth in its livestock sectors, as well as by rising industrial use. The increase in China's imports accounts for nearly half of the projected growth in world corn trade. China's sorghum imports have increased sharply over the last two years, and moderate growth is projected from 2014/15's level of 1.5 million tons.
- Imports by Africa and the Middle East account for about 17 percent of the growth in world coarse grain trade through 2023/24, as rising populations and increasing incomes sustain strong demand growth for livestock products.
- Mexico's corn imports are projected to rise from 11.0 million tons in 2014/15 to 15.5 million in 2023/24. During the same period, Mexico's sorghum imports remain at about 2 million tons. Altogether, the growth in Mexico's coarse grain imports represents more than one-eighth of the increase in global coarse grain trade during the coming decade. This reflects increased meat consumption, which stimulates an expansion in domestic meat production as well as increased coarse grain imports.
- Southeast Asian corn imports rise 37 percent to 12 million tons by 2023/24 in response to increased demand from livestock producers. The region accounts for 10 percent of the growth in world corn imports.
- In East Asia, environmental constraints on expanding livestock production and increasing imports of selected cuts of meat greatly limit the growth in coarse grain imports. The region currently accounts for nearly one-fourth of world coarse grain imports, but the import share is projected to fall.

## Global corn exports

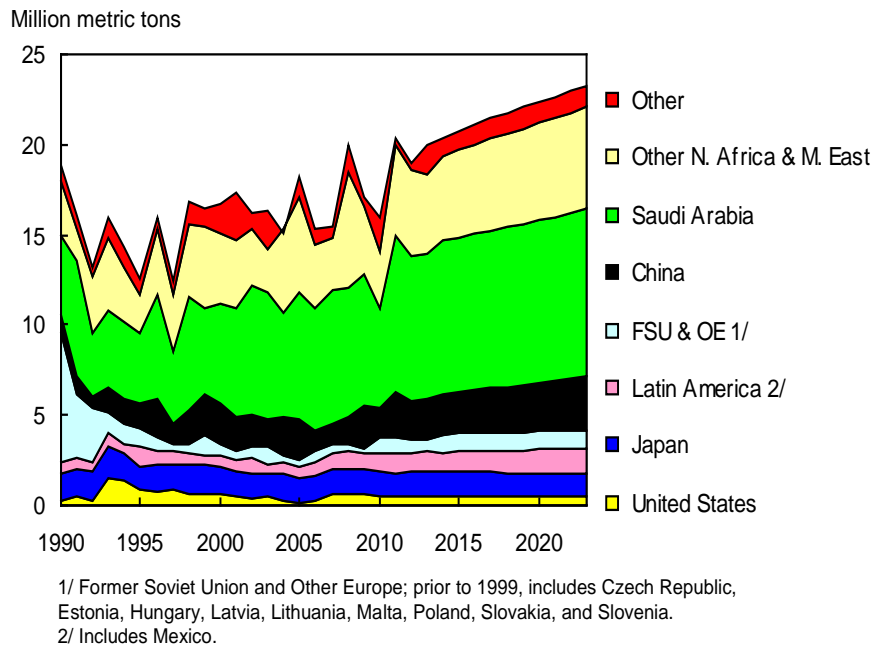
Million metric tons



U.S. corn exports are expected to rebound from the weather-induced production shortfalls and reduced exports of the past several years. U.S. corn exports are expected to increase to 57 million tons by 2023/24. However, the U.S. share of world corn exports only rises to 40 percent, well below the 52 percent average share during the previous 10 years.

- FSU corn exports, mostly from Ukraine, rise 7 million tons (38 percent) to nearly 26 million tons by 2023/24. Favorable resource endowments, increasing economic openness, wider use of hybrid seed, and greater investment in agriculture all stimulate corn production in this region. Although FSU feed use of corn rises rapidly in the projections, the region's corn exports increase twice as much as those from any exporting country or region other than the United States. The FSU becomes the world's second-largest corn exporter, surpassing shipments from Argentina and Brazil.
- Argentina's corn sector is projected to stagnate in the early years of the projections due to the continuation of quantitative export controls.
- Brazil's corn exports during the last several years have been double the pre-2011/12 levels. Production of second-crop corn following soybeans, a large share of which is produced in Mato Grosso, has risen in response to high prices. This corn is not in a good location to meet domestic demand, and tends to be exported when port capacity is not occupied with soybeans. However, Brazil's corn exports are constrained by high transport costs. During the latter part of the projection period, corn exports are projected to increase in response to improved export infrastructure and increasing world prices.
- In the EU, corn used for ethanol production is projected to increase during the coming decade, but at a much slower pace. In the projections the EU becomes a larger net importer of corn. However, it maintains exports of about 3 million tons as it takes advantage of its lower transportation costs to parts of North Africa and the Middle East.
- Corn exports from the Other Europe (OE) region, mostly from Serbia to the EU, continue to rise.

## Global barley imports

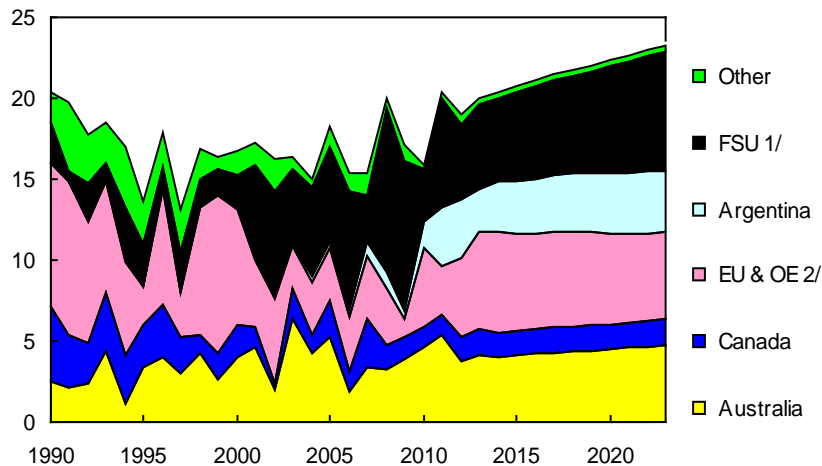


Global barley trade is projected to expand by 2.9 million tons (14 percent) during the projection period and reaches 23.3 million tons by 2023/24. Rising demand for both malting and feed barley underpins this trade increase.

- Feed barley imports by North African and Middle Eastern countries are expected to grow steadily over the next decade. This region accounts for nearly two-thirds of the projected growth in world total barley imports, and by 2023/24, these countries account for about two-thirds of world barley imports.
- Saudi Arabia remains by far the world's leading importer of barley, accounting for about 40 percent of world imports in 2023/24. Saudi Arabia's barley imports are used primarily as feed for sheep, goats, and camels. Among other countries in the Middle East, Iran is projected to experience the fastest growth in barley imports over the next decade.
- Total imports by other countries in North Africa and the Middle East are projected to grow more slowly, but still account for about a fifth of the increase in world barley trade.
- International demand for malting barley is boosted by strong growth in beer demand in some developing countries, most notably China—the world's largest malting-barley importer. China's domestic malting-barley production is increasing, but imports also rise during the projection period. Australia and Canada are China's main sources of malting barley imports.

## Global barley exports

Million metric tons

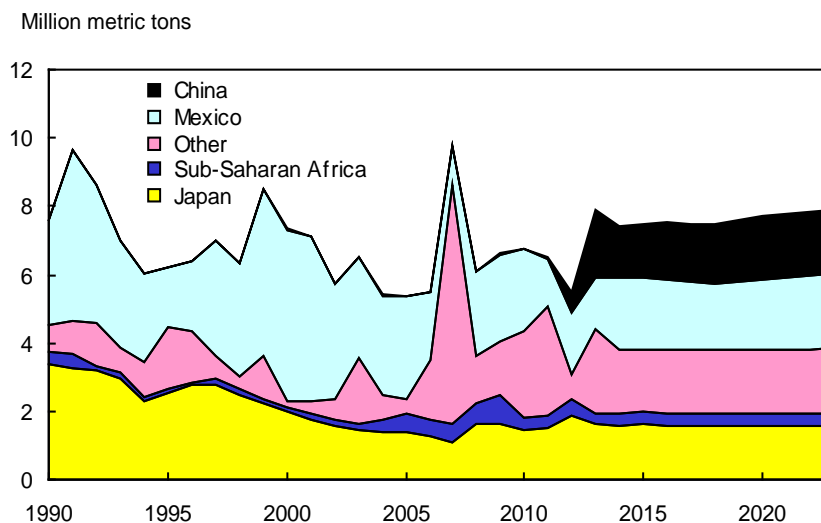


1/ Former Soviet Union and Other Europe; prior to 1999, includes Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia.  
2/ Excludes intra-EU trade.

The EU, Australia, Argentina, Russia, and Ukraine are expected to be the major barley exporters during the coming decade.

- The EU's barley exports have risen in recent years and are projected to remain above 5 million tons during the coming decade.
- Australia's barley exports are expected to partially recover in 2013/14 from a drought-reduced harvest in 2012 and to rise slowly during the coming decade. Australia is projected to remain the world's second-largest barley exporter, following the EU.
- Argentina's barley exports have risen sharply in recent years and are projected to remain large in the coming decade. Export restrictions for wheat have caused a shift in winter grains production from wheat to barley. Expansion in barley area has occurred in the southern part of the country, and barley has been used for double-cropping with soybeans in the central region. Other South American countries and Saudi Arabia are the main buyers of Argentina's feed barley. Argentine malting barley is mostly exported to Brazil.
- Barley exports by the FSU are projected to reach 7.4 million tons by 2023/24, with Russia accounting for 3.4 million tons and Ukraine accounting for 3.1 million tons. Kazakhstan is expected to increase exports, especially to Iran. Growth in barley exports by the FSU countries are projected to account for 74 percent of the increase in world exports over the projection period.
- Malting barley commands a substantial price premium over feed barley. Malting barley's price premium is expected to influence planting decisions in Canada and Australia where malting barley's share of total barley area is expected to rise during the next 10 years. However, Canada's total area planted to all barley continues to decline as demand for canola increases and canola remains more profitable.

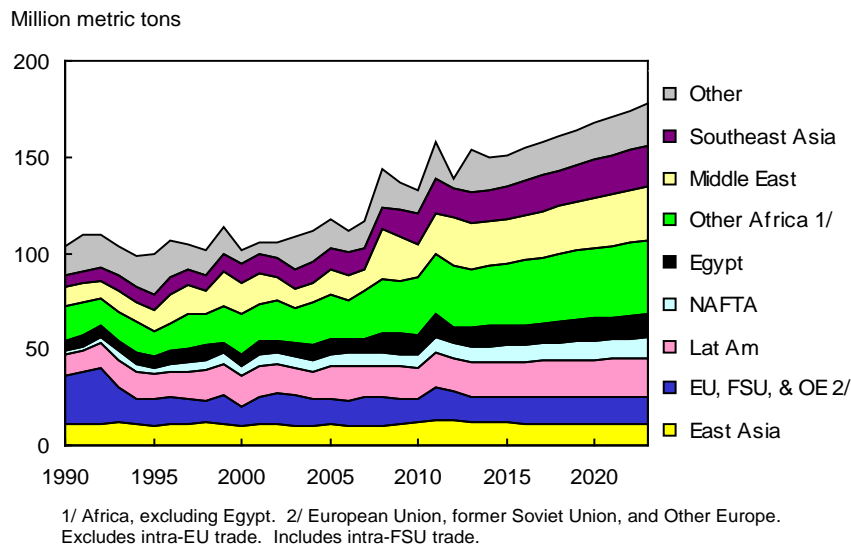
## Global sorghum imports



World sorghum trade is expected to remain nearly flat during the coming decade. Exporter's supplies are constrained by sorghum's low profitability compared to alternative crops. World sorghum imports are projected to trend slowly upward from around 7.4 million tons in 2014/15 to 7.9 million tons in 2023/24. U.S. exports to Mexico, Japan, and China account for the bulk of world sorghum trade. However, Argentine exports have risen in recent years, and that country is projected to maintain its increased share of world exports.

- Mexico's sorghum imports are projected to remain near 2 million tons during the coming decade. Many Mexican livestock producers have a slight preference for feeding sorghum, while U.S. livestock feeders mostly use corn, thus facilitating U.S. sorghum shipments to Mexico. Historically, Mexico has often accounted for 30-40 percent of world sorghum imports, but its share is projected to be slightly less than 30 percent in the next 10 years.
- Sorghum imports by Japan—currently the world's second-largest importer—are projected to remain stable over the next decade.
- China's sorghum imports jumped in the past 2 years and are projected to grow slowly, surpassing Japan to become the second-largest importer.
- U.S. sorghum exports rebounded in 2013/14 from low levels during the preceding 2 years and are projected to remain close to 4 million tons during the next 10 years. Although exports remain well below historical highs, the United States continues to be the leading sorghum exporter.
- Argentina is expected to continue to be the world's second-largest sorghum exporter during the coming decade. Argentina's exports are projected to rise very slowly to 2.5 million tons. Production of new sorghum varieties with lower tannin content enables Argentina to gain a slightly larger share of the international market. The primary markets for Argentine sorghum are Japan, Chile, Europe, and other countries in South America.
- Australia's exports are projected to remain slightly less than 1 million tons as the country remains the world's third-largest sorghum exporter.

## Global wheat imports

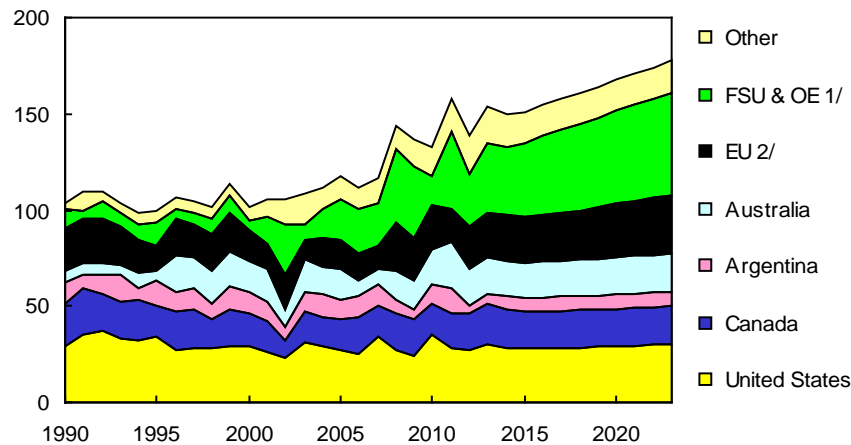


World wheat trade (which includes flour) is projected to expand by nearly 28 million tons (19 percent) between 2014/15 and 2023/24, rising to 177.5 million tons. Growth in wheat imports is concentrated in those developing countries where income and population gains drive increases in demand. The largest growth markets include the 15 countries of the Economic Community of West African States, other Sub-Saharan Africa countries, Egypt, other countries in the North Africa and the Middle East region, Indonesia, and Pakistan.

- In many developing countries, almost no change in per capita wheat consumption is expected, but imports are projected to expand modestly because of population growth and limited potential to expand wheat production. As incomes rise in Indonesia, Vietnam, and some other Asian countries, consumers shift marginally from rice to wheat.
- Egypt remains the world's largest wheat-importing country, with imports climbing to 12 million tons by 2023/24. Imports by Indonesia grow rapidly to nearly 10 million tons and it replaces Brazil as the second-largest wheat importing country.
- Imports by Vietnam and Bangladesh are both projected to rise rapidly, increasing by a total of 1.5 million tons. Partially offsetting this increase are lower projected imports by Japan and South Korea.
- Imports by countries in Africa and the Middle East rise 14 million tons and account for half of the total increase in world wheat trade. Saudi Arabia has adopted a policy to phase out wheat production by 2016 because of water scarcity concerns, so its imports are projected to rise to 3.8 million tons by 2023/24.
- Historically, India has been a large wheat importer in some years and a large exporter in others. In the past 2 years, India has exported significant amounts of wheat, partially as a result of high price-support policies and excess government stocks. These policies are expected to continue in some form, although exports are projected to decline during the coming decade.

## Global wheat exports

Million metric tons



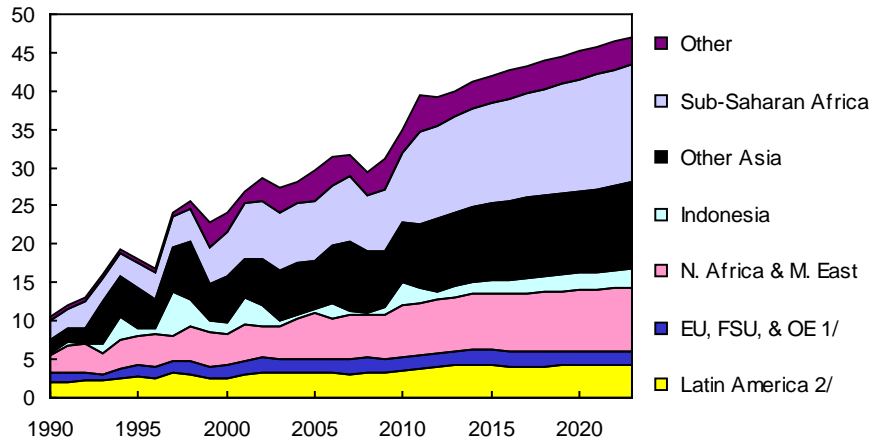
The five largest traditional wheat exporters (United States, Australia, EU, Argentina, and Canada) are projected to account for more than 60 percent of world trade in 2023/24, compared with nearly 70 percent during the last decade. This decrease in share is mostly due to increased exports from the FSU.

- U.S. wheat exports are projected to generally be in a 28- to 30-million-ton range during the coming decade. However, the U.S. share of world exports declines over the projection period.
- Canada's wheat area continues to decline slowly in response to more favorable returns for canola. As a result, little change is projected for Canadian wheat exports. Eliminating the Canadian Wheat Board's state trading monopoly is assumed to result in redirection of some of Canada's wheat exports to the United States due to transportation and market considerations.
- In Argentina, some area traditionally planted to wheat shifts to barley in response to government policies and increased double-cropping of barley. Exports rebound in 2013/14 and 2014/15 after production shortfalls the previous 2 years, but then remain flat during the rest of the projection period.
- The EU is the only traditional exporter whose market share is projected to increase. EU wheat exports are projected to trend upward and surpass 30 million tons by 2023/24, as less wheat is fed to livestock due to relatively low feed grain prices.
- The upward trend in wheat exports from Russia, Ukraine, and Kazakhstan was interrupted by droughts in 2010 and 2012. However, exports from those countries are expected to recover and rise more than 50 percent, climbing to 52 million tons by 2023/24 and accounting for two-thirds of the projected increase in world wheat trade. Rising domestic feed use prevents even more rapid export growth. Although not explicitly reflected in the projections, continued year-to-year volatility in wheat production and trade is likely because of the region's highly variable weather and yields.



## Global rice imports

Million metric tons



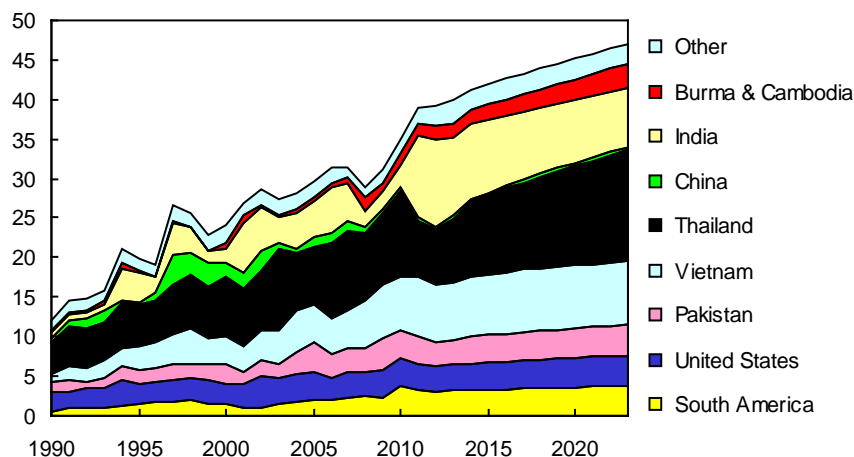
1/ European Union, former Soviet Union, and Other Europe. 2/ Includes Mexico.

Global rice trade is projected to grow 1.5 percent per year from 2014/15 to 2023/24. In 2023/24, this trade reaches 47 million tons, 35 percent above the average of the last half decade. The main factors driving this expansion in trade are a steady growth in demand—largely due to population and income growth in developing countries—and the inability of several key importers to significantly boost production. Since the mid-1990s, world trade as a share of world consumption has risen above its 4-percent-average over the previous half century, to nearly 8 percent currently, and this upward trend is expected to continue.

- In Africa and the Middle East, strong demand growth is driven by rapidly expanding population and income, while production growth is limited. In North Africa and the Middle East, production is primarily limited by climate. In Sub-Saharan Africa, expanding production is constrained by infrastructure deficiencies and resource limitations. Altogether, the entire region accounts for two-thirds of the increase in world rice trade during the projections.
- China became the world's largest rice importer in 2012/13. In the projections, China's imports trend slowly downward, but remain historically large as China imports lower-priced rice, primarily from Vietnam. However, by the end of the projections, Indonesia's rice imports surpass China's and Indonesia becomes the largest rice-importing country.
- Bangladesh's imports rise rapidly from low levels in the past several years to 1.6 million tons by 2023/24.
- Other major importing countries—Iran, Iraq, Philippines, and Saudi Arabia—each take more than 1.5 million tons. These 4 countries have limited ability to expand rice production and are expected to account for more than 16 percent of the projected increase in global rice imports.
- In Canada and the United States, immigration continues to support slightly higher per capita consumption and modest import growth.
- Imports by the FSU are projected to remain in the 400- to 500-thousand-ton range as a result of strong production growth and a declining population that more than offset slowly rising per capita consumption.

## Global rice exports

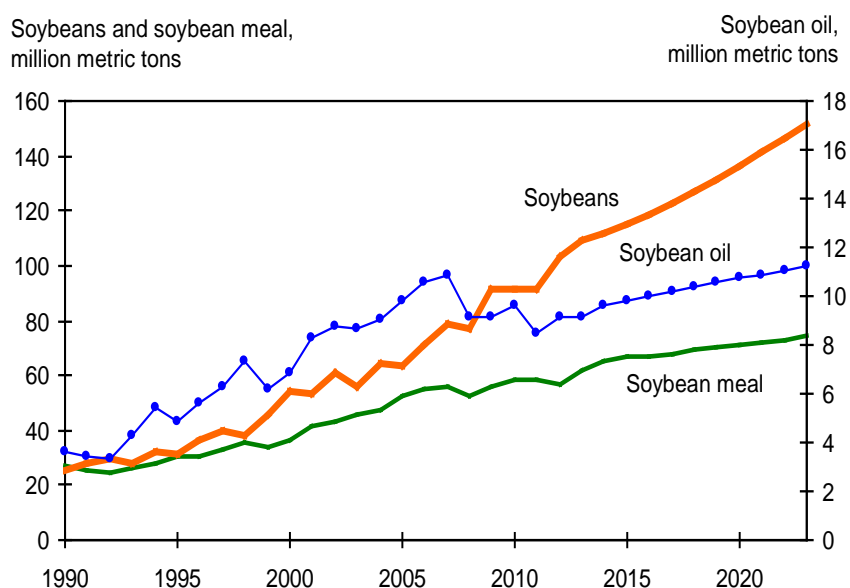
Million metric tons



Asia continues to supply most of the world's rice exports throughout the projection period.

- Thailand and Vietnam, typically the world's largest rice-exporting countries, account for more than 47 percent of world rice exports and for more 87 percent of the growth in world exports in the coming decade. In Thailand, increasing production combined with a drawdown in large stocks enable Thailand's exports to rise 4.4 million tons, to 13.9 million by 2023/24. Vietnam's export expansion is smaller, rising from 7.5 to 8.2 million tons. In both countries, per capita consumption declines as incomes rise and strong yield growth each contribute to increasing exports.
- India typically has been the third- or fourth-largest rice exporter since the mid-1990s, but its exports have been volatile, primarily due to government policies and fluctuating stock levels. In September 2011, the Indian Government eased an export ban on non-basmati rice, and exports jumped from less than 3 million tons to 11 million tons, making India the leading rice exporter in crop years 2011/12 to 2013/14. Although projected exports retreat from the peak as stocks are slowly drawn down, they remain historically large for the next decade.
- Pakistan and the United States have each been exporting between 3 and 4 million tons in recent years. Pakistan's continued yield growth and declining per capita consumption enable it to achieve a minor increase in rice exports during the coming decade. However, it loses market share and drops to be the world's fifth-largest exporter.
- Modest expansion in U.S. rice exports through the projection period is attributable to increasing yields and slow growth in domestic use. The U.S. export share is projected at about 8 percent during the coming decade.
- Rice exports from China have declined in recent years but are projected to increase from 0.31 to 0.44 million tons by 2023. Little change in production is expected. Declining area is expected to be offset by higher yields as China allows the use of genetically modified rice. Reductions in per capita consumption, a result of continued diet diversification resulting from higher incomes, are expected to offset population growth. China's rice stocks are projected to remain large during the projection period.
- Australia's exports have recovered from the extremely low, drought-reduced levels shipped during much of the past decade. Exports are projected to stabilize at about 0.5 million tons.

## Global exports: Soybeans, soybean meal, and soybean oil

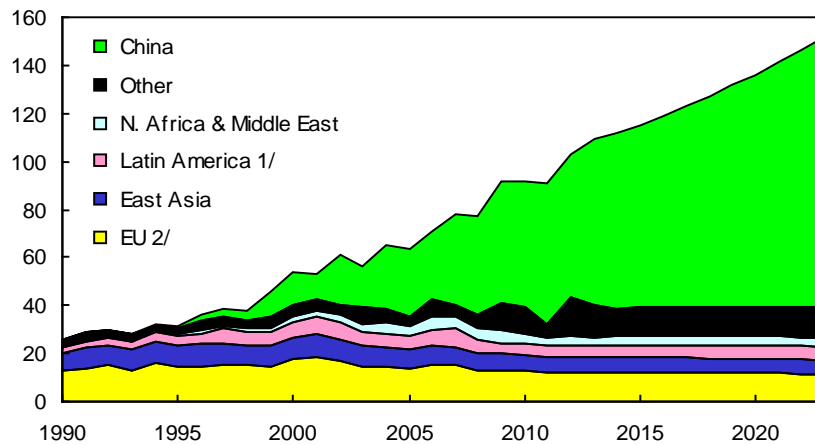


Economic and population growth in developing countries are projected to boost demand for vegetable oils for food consumption and for protein meals used in livestock production. Global vegetable oil used for biodiesel production also is projected to increase, although at a slower pace than in recent years.

- Many countries with limited opportunities to expand oilseed production, such as some countries in North Africa, the Middle East, and South Asia, have invested heavily in crushing capacity. As a result, their import demand for oilseeds has grown rapidly, and this growth is projected to continue. During the next decade, global soybean trade is projected to increase by 36 percent, soybean oil by 17 percent, and soybean meal by 14 percent.
- China's robust demand for both vegetable oil and oilseed meals will maintain its pattern of importing soybeans to be crushed domestically. China also imports large volumes of oils.
- Argentina, Brazil, and the United States currently account for nearly 85 percent of the world's aggregate exports of soybeans, soybean meal, and soybean oil. This share climbs to 87 percent by 2023/24. Brazil's share of world exports of soybeans and soybean products (mostly soybeans) climbs to more than 36 percent, as area expansion and yield growth boost soybean production faster than in other exporting countries. In Argentina, uncertainties about grain policies cause farmers to keep more land in soybean production. Argentina's share of world exports of soybeans and soybean products (mostly products) climbs slightly to 25 percent.
- The U.S. share of global exports of soybeans and soybean products declines from 29 percent to 25 percent by 2023/24.
- The EU continues expanding biodiesel production, but at a slower pace than in recent years. Production of rapeseed oil, the EU's primary biodiesel feedstock, increases but imports of rapeseed and rapeseed oil also rise. Small increases in EU soybean meal and soybean oil imports are projected.

## Global soybean imports

Million metric tons

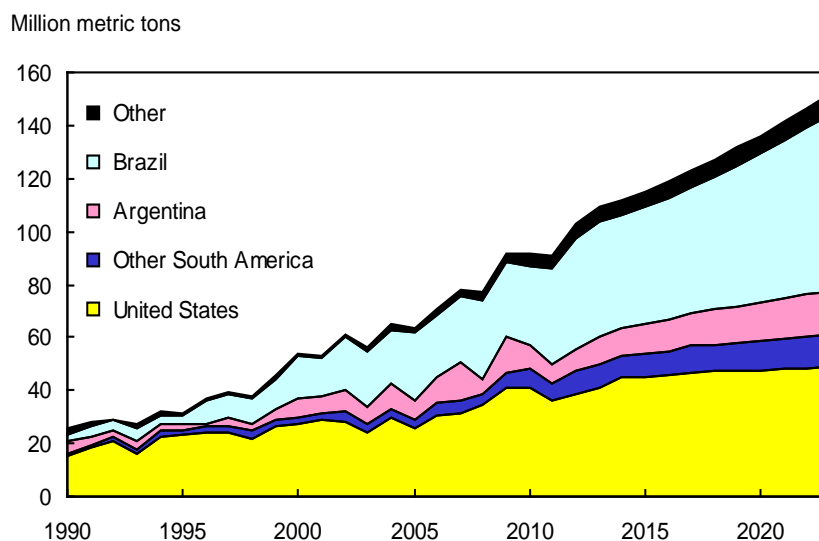


1/ Includes Mexico. 2/ Excludes intra-EU trade.

World soybean trade is projected to rise rapidly during the next 10 years, climbing 40 million tons (36 percent), to 152 million tons.

- China's soybean imports have risen sharply and now account for more than half of world trade. The projections assume that Chinese policies will emphasize production of grains over soybeans, allowing increases in soybean imports to fill the shortfall in domestic soybean production. China continues to add oilseed crushing capacity that will contribute to strong gains in soybean imports. Some surplus soybean meal will be exported to other Asian countries.
- EU soybean imports declined over the past decade due to decreases in internal grain prices and increases in grain and rapeseed meal feeding. These trends are projected to continue, although at a slower pace, with soybean imports declining slightly.
- Imports of soybeans and soybean meal by East Asia (Japan, South Korea, and Taiwan) are influenced by a continuing shift from importing feedstuffs for domestic meat production to importing meat and other livestock products. As a result, this region's projected small expansion in soybean and soybean meal imports reflects slowly rising livestock production.
- Egypt is projected to slowly increase soybean imports in an effort to improve feed efficiency and to meet increased per capita demand for vegetable oils. Many other countries in the North Africa and Middle East region also have a limited ability to expand soybean production, and so they increase imports to fill their growing feed and food needs.
- Mexico's soybean imports are projected to increase 9 percent to 4 million tons. These imports will support the production of soybean meal for the Mexican poultry and pork industries, and of soybean oil for domestic food consumption.

## Global soybean exports

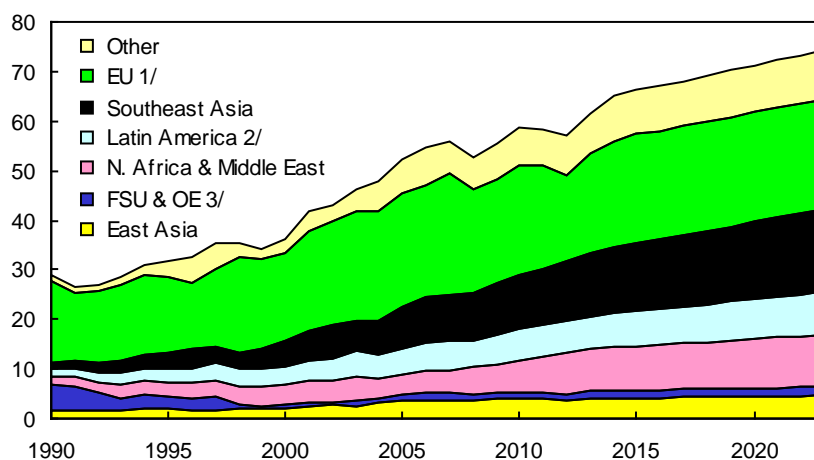


The three leading soybean exporters—the United States, Brazil, and Argentina—accounted for slightly more than 90 percent of world trade prior to 2010/11. In recent years, exports from Uruguay, Paraguay, Bolivia, Ukraine, and a few other countries have increased. However, their growth is projected to slow, and the trade share held by the traditional exporters is projected to remain around 87 percent.

- Brazilian soybean exports are projected to rise 24.2 million tons (57 percent) to 66.5 million tons during the 2014/15 to 2023/24 projection period, enabling the country to strengthen its position as the world’s leading exporter of soybeans. Soybeans remain more profitable to produce than other crops in most areas of Brazil. With increasing soybean plantings in the Cerrado region and expansion extending into the “Amazon Legal” region, the increase in area planted to soybeans is projected to average about 1.8 percent per year during the coming decade.
- Argentina’s export tax rates are higher for soybeans than for soybean products, a policy that favors domestic crushing of soybeans and exporting of the resulting products. However, in response to increasing world demand for soybeans for crushing, Argentina’s soybean exports have risen sharply and are projected to continue doing so, rising about 57 percent to more than 16 million tons by 2023/24. Most of Argentina’s soybean exports go to China.
- Other South American countries, principally Uruguay, Paraguay, and Bolivia, also expand area planted to soybeans. Exports by these countries increase 47 percent, to 12.5 million tons.
- Although Ukraine’s soybean exports are small, the country is expected to respond to international prices for oilseeds by increasing production of rapeseed and soybeans. Ukraine soybean exports are projected to rise nearly 80 percent to 3 million tons.

## Global soybean meal imports

Million metric tons



1/ Excludes intra-EU trade.

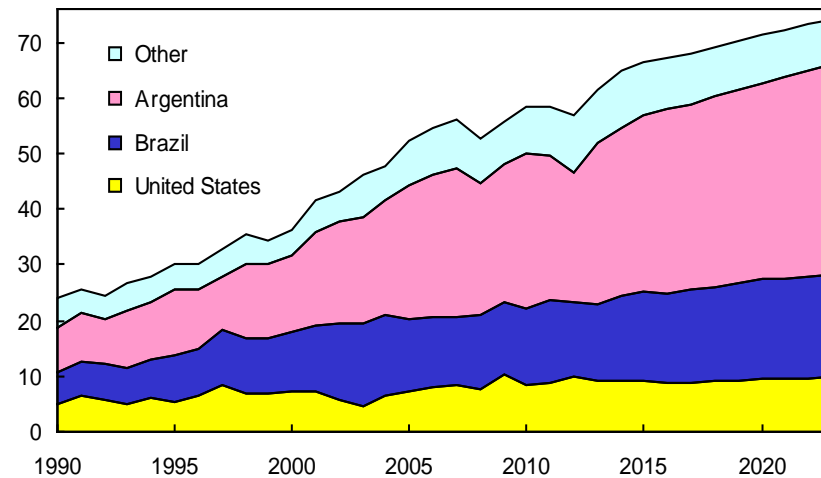
2/ Includes Mexico. 3/ Former Soviet Union and Other Europe; prior to 1999, includes Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia.

World soybean meal trade is projected to climb by more than 9 million tons (14 percent), to 74 million tons by 2023/24. In a number of countries, soybean meal use is boosted by continued growth in the demand for livestock products, limited capability to increase domestic oilseed production, and low world prices for protein meals relative to feed grains.

- The EU remains the world's largest soybean meal importer throughout the projections, despite increased domestic feeding of grains and rapeseed meal. Although abundant supplies of low-cost rapeseed meal are expected to be available as a result of EU biodiesel production, nutritional considerations limit the inclusion of rapeseed meal in livestock rations. As a result, the EU is expected to continue large imports of soybean meal.
- The regions of Southeast Asia, Latin America, North Africa, and the Middle East become larger importers of soybean meal due to increasing demand for livestock feed. Imports by Southeast Asia, especially Vietnam, climb rapidly and account for 38 percent of the projected increase in world soybean meal trade. Imports by countries in North Africa and the Middle East are projected to rise 2 million tons, and account for 22 percent of the increase in world trade. Soybean meal imports by Latin American countries other than Argentina and Brazil increase by 1.7 million tons, with much of that trade being between countries within the region.
- Strong growth in soybean meal imports is also projected for many other countries. Mexico's growing demand for protein feed is expected to boost imports. Russia's rising soybean meal imports are linked to livestock production at larger, more modern facilities.

## Global soybean meal exports

Million metric tons

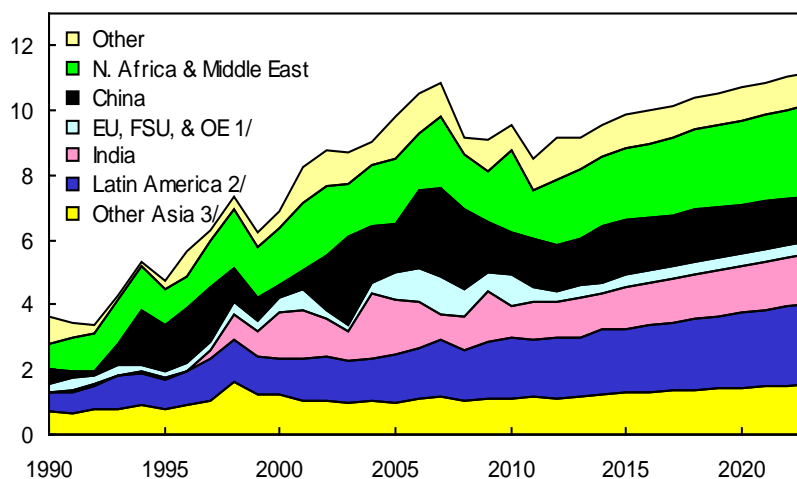


Argentina, Brazil, and the United States remain the three largest exporters of soybean meal. Together, their share of world exports rises slightly to 89 percent over the next 10 years. Argentina, the world's largest soybean meal exporter, increases its share of the world market from around 45 percent in recent years to 51 percent in 2023/24.

- Argentina imposes higher export taxes on soybeans than on soybean products. That policy has provided an incentive for the country to develop a large oilseed-crushing capacity. With Argentina's low soybean production costs and its export incentives for soybean products, soybean meal exports are projected to continue their robust growth.
- In Brazil, strong growth in soybean meal consumption due to the rapid expansion of poultry and pork production limits increases in soybean meal exports. Also, Brazil's soybean-crushing capacity is not expected to grow as quickly as in the past due to strong trade competition from Argentina. Brazil's share of world soybean meal exports remains in the 23-25 percent range.
- U.S. soybean meal exports trend slowly upward beyond 2017/18 to nearly 10 million tons. Meanwhile, the U.S. share of world soybean meal exports declines slightly to about 13 percent.
- India's soybean meal exports decline as domestic use strengthens and export competition from South America intensifies. Exports fall from around 4 million tons in most recent years, to 1.4 million in 2023/24, as rapidly increasing poultry, egg, and milk production use more of India's domestic soybean meal production.
- The EU continues to be a small but steady exporter of soybean meal to Russia and other Eastern European countries, where livestock production is expected to increase significantly.

## Global soybean oil imports

Million metric tons



1/ European Union, former Soviet Union, and Other Europe.  
2/ Includes Mexico. 3/ Asia excluding India and China.

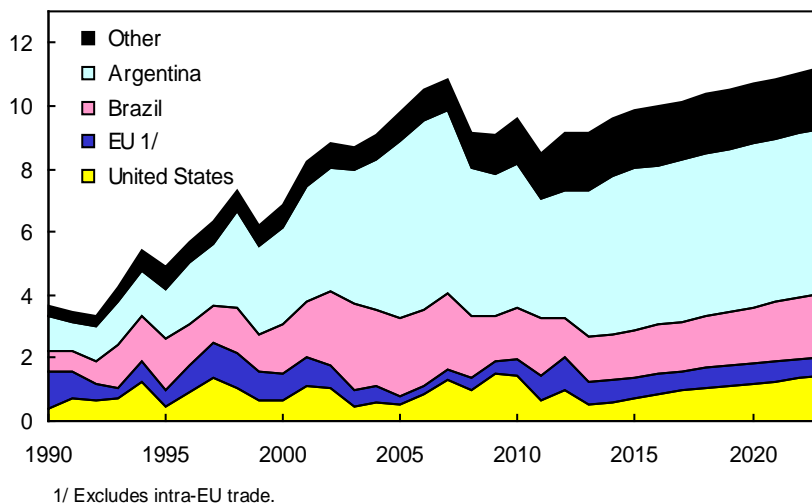
World soybean oil imports climb 1.6 million tons (17 percent) to 11.2 million tons over the 2014/15 to 2023/24 projection period, bolstered by rising food and industrial use. Growth in world soybean oil trade will be constrained by competition with palm oil, which is the leading vegetable oil traded internationally.

- India is projected to replace China as the world's largest soybean oil importing country. In the projections, India's soybean oil imports climb 42 percent to 1.6 million tons in 2023/24. Factors contributing to the continued growth of India's soybean oil imports include burgeoning demand for vegetable oils and limited area for expanding oilseed production. Low yields, associated with excessive monsoon rainfall and low input use, also inhibit growth of oilseed production.
- In 2008, in response to high domestic food price inflation and high world prices, India reduced import tariffs to zero on crude edible oils, which had been 40 percent for soybean oil and 75-85 percent for other oils. For the projections, it is assumed that India's tariffs on crude soybean oil and other vegetable oils will rise moderately, but remain well below pre-2008 levels.
- With a rapid increase in China's soybean imports for crushing in recent years, the country's soybean oil imports have declined to about 1.5 million tons per year. Imports are projected to remain in the 1.4 to 1.8 million ton range in the coming decade.
- Income and population growth in North Africa, the Middle East, and Latin America contribute to gains in soybean oil demand and imports. The North Africa and Middle East region is projected to remain the largest importing region, followed by Latin America.



## Global soybean oil exports

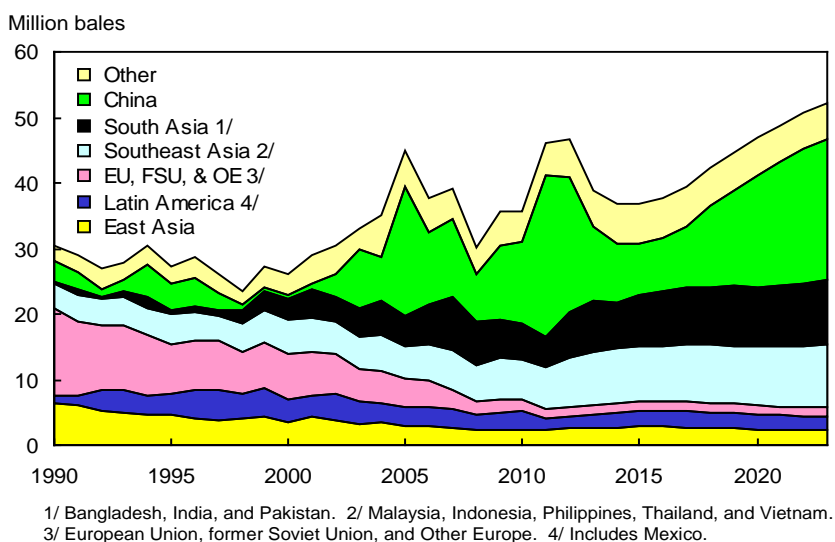
Million metric tons



Argentina and Brazil are by far the world's largest soybean oil exporters, and their combined shipments are projected to account for about two-thirds of world soybean oil exports during the coming decade.

- Soybean oil exports from Argentina—the world's largest exporter—are projected to climb modestly to 5.2 million tons by 2023/24. Argentina's strength as a soybean oil exporter reflects the country's large crushing capacity, its small domestic market for soybean oil, and an export tax structure that favors exports of soybean products rather than soybeans. Gains in Argentine soybean production due to extensive double cropping, further adjustments in crop-pasture rotations, and the expansion onto marginal lands in the northwest part of the country, also have contributed to increased soybean production and crushing. Argentina's soybean oil exports declined during the last half decade due to weather-related production shortfalls and increased biodiesel production. Although soybean oil exports have begun to rise again, slow growth is projected as more soybean oil will be used to produce biodiesel.
- Brazil's projected increase in soybean oil exports accounts for much of the rest of the global increase in soybean oil trade. Brazil also is projected to use more soybean oil for biodiesel production, but the expansion of soybean production into new areas of cultivation is expected to enable the country to increase soybean oil exports as well.
- U.S. soybean oil exports in 2013/14 were the lowest in a decade, mostly due to the 2012 drought. Exports rise steadily in the projections and reach 1.4 million tons by 2023/24, approaching the 2009/10 record. The United States is expected to remain the world's third-largest soybean oil exporter. U.S. imports of canola oil from Canada and palm oil from Southeast Asia are projected to continue to grow strongly, augmenting the U.S. edible oil supply.

## Global cotton imports

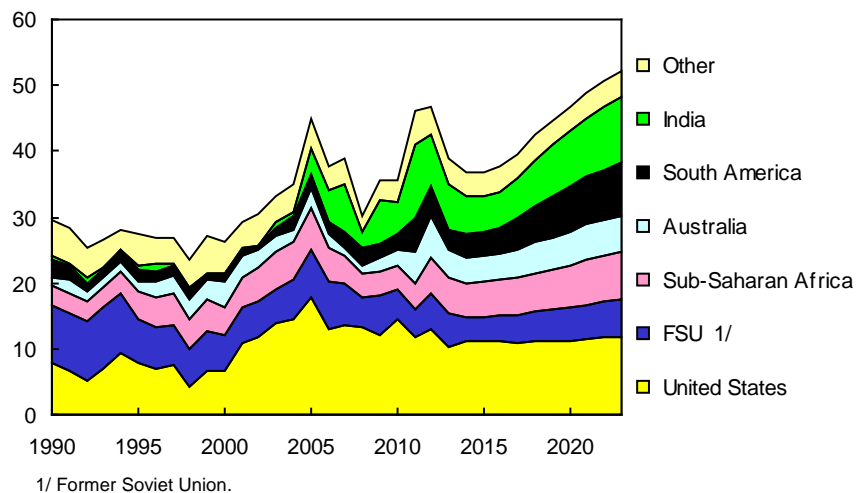


World cotton trade is projected to trend upward at a rapid 3.8-percent growth rate between 2014/15 and 2023/24. Contraction is expected in the short run, however, as China—the largest importer—halts and then reverses its accumulation of stocks. But, by 2017/18 world trade growth resumes, and by 2020/21 the 2012/13 record-high in world cotton trade is expected to be surpassed.

- China’s cotton imports are expected to decline during the early portion of the projection period, falling to less than 40 percent of its peak levels. In 2013, China signaled its intentions to reform its cotton price supports, likely reversing its accumulation of stocks. Imports are expected to resume growth in 2017, driving world trade higher.
- China’s reforms are expected to allow it to recover part of the share of world cotton consumption lost between 2009 and 2013, when some of China’s textile production and cotton imports shifted to other countries. Bangladesh, Turkey, Vietnam, and Pakistan have been major beneficiaries of this shift. Bangladesh has vied with Turkey to be become the world’s second-largest cotton importer in recent years and is projected to attain this position after 2015 as its textile industry continues growing rapidly.
- Turkey and Vietnam are expected to be the third- and fourth-largest importers by 2023. Turkey’s share of world consumption has strengthened recently, but is expected to again slowly erode in coming years. In contrast, Vietnam quadrupled its share of world consumption between 2003 and 2013. Vietnam’s textile sector and cotton imports are expected to grow, albeit more slowly, in the coming years, and by 2023 Vietnam’s imports are expected to surpass Turkey’s for the first time.
- Pakistan has become a major cotton importer in recent years. Cotton imports are projected to remain high even though new *Bacillus thuringiensis* (*Bt*) cotton varieties specific to Pakistan’s cotton-growing conditions stimulate additional production. Pakistan’s imports exceed Vietnam’s through 2018, but begin declining in later years, while Vietnam’s continue to expand.

## Global cotton exports

Million bales

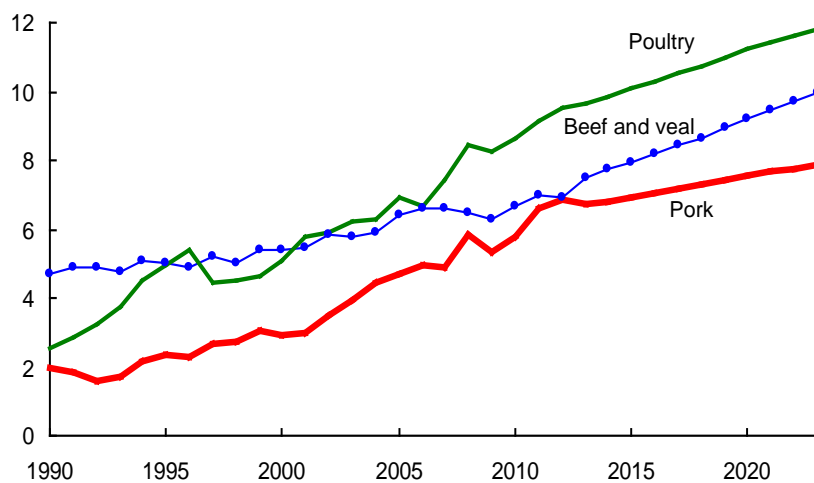


Globalization is expected to continue to move raw cotton production to countries with favorable resource endowments and technology. Expansion is projected for traditional producers with large land bases suitable for cotton production, including the United States, Brazil, and Sub-Saharan Africa, as well as for the traditional low-cost producing countries of India and Pakistan.

- The U.S. share of world cotton production has fallen sharply with the spread of new technology around the world in recent years, and its share is expected to continue falling in the long run, although far more slowly. Nonetheless, the United States is the world's leading cotton exporter throughout the projections. However, the U.S. share of world trade continues its recent decline, and by 2023 the U.S. share of 23 percent is nearly half of its 2008 share. U.S. exports rise slightly to 11.7 million bales by 2023/24, growing only 0.8 percent annually.
- Improved cotton yields in India, in part due to the adoption of *Bt* cotton, have raised India's production and exports. Yield growth is projected to continue as the gains from *Bt* cotton are further enhanced by improved cultivation practices. The increase in output is expected to enable India to continue as the world's second-largest cotton exporter.
- Brazil's cotton exports are projected to increase the fastest among the major exporters between 2014 and 2023 as the area planted to cotton continues a long-term upward trend. Within a few years, Brazil overtakes Central Asia as the third-largest source of cotton exports.
- Exports from the 15 countries of the Economic Community of West African States are projected to experience sustained growth during the coming decade. Improvements in technical and financial infrastructure, and the adoption of *Bt* cotton will help boost production and exports. Exports from the other countries in Sub-Saharan Africa also are projected to increase. In total, Sub-Saharan Africa is expected to account for about 14 percent of world trade, compared with about 10 percent during 2009-2013.
- Government policies in the Central Asian countries of the FSU promoting investment in textile industries have contributed to more exports of textile products rather than to exports of raw cotton. As a result, the region's cotton exports change very little. The expected sustained reduction in grain prices will permit the region to shift some area back to cotton, maintaining its share of world cotton trade at about 11 percent, slightly below its 2009-2013 level.

## Meat exports 1/

Million metric tons



1/ Major exporters (see tables 14-16).

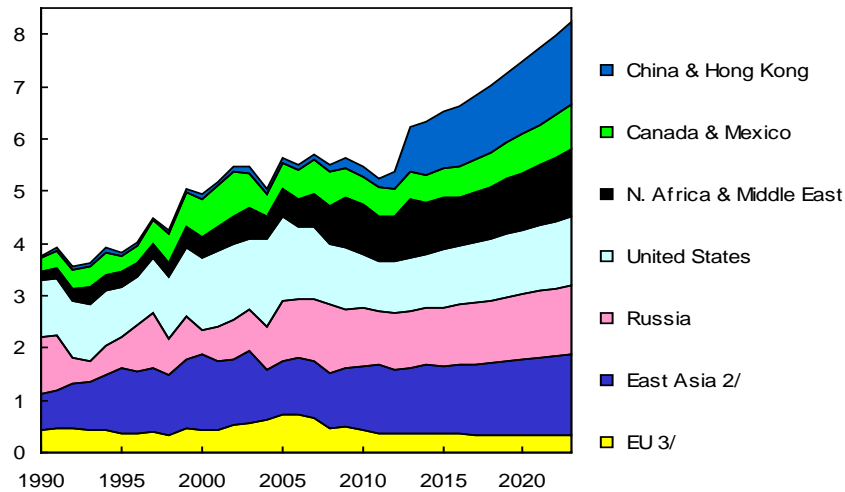
Global meat consumption continues to increase with poultry consumption rising faster than pork or beef consumption. World meat consumption is projected to increase about 1.9 percent per year during 2014-2023 and meat shipments from major exporters rise 2.2 percent per year. The projected growth rates of exports from major exporters of beef, pork, and poultry meat are 2.8, 1.6, and 2.0 percent per year, respectively. During this period, exports rise 2.2 million tons for beef, 1.0 million for pork, and 2.0 million for poultry.

World meat trade increases nearly 22 percent in the projections, driven primarily by rising incomes and population in developing countries. However, Russia's aggregate meat imports decline, reflecting policies that stimulate domestic meat production and curb imports.

- Beef exports from Asian countries, mostly India, increased sharply after 2009. Developing countries' demand for India's lower priced beef is projected to continue rising rapidly. India's rising exports account for 36 percent of the increase in world beef exports.
- Australia has generally been the world's second-largest beef exporter, after Brazil. Australia's beef herd is in a rebuilding phase and exports are projected to stagnate during the coming decade. In the projections, Australia's exports are surpassed by those from India and the United States, and Australia drops to become the fourth-largest exporter.
- Canada's cow herd contracted significantly in recent years but given strong expected returns, producers are projected to rebuild herds. As a result, Canada's net beef exports are projected to rise steadily, although not surpassing levels of the previous decade.
- Argentina's beef herd is recovering after a sharp contraction following 2005 export restrictions, and exports are expected to rise slowly in the projection period.
- The projections assume no changes in Brazil's foot-and-mouth-disease (FMD) status. However, Brazil's pork exports are expected to be competitive in price-sensitive markets such as Russia, China, and Hong Kong. Brazil is projected to remain the largest exporter of poultry products due to competitive production costs and it accounts for 46 percent of the increase in world poultry exports.

## Beef imports 1/

Million metric tons



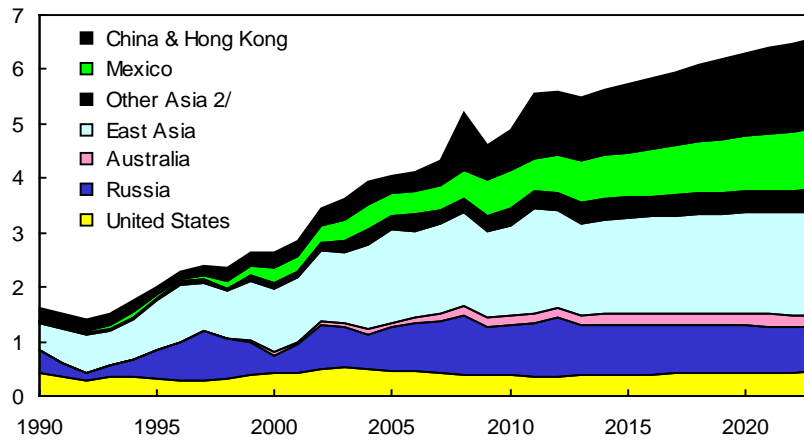
1/ Selected importers. 2/ Japan, Korea, & Taiwan. 3/ Excludes intra-EU trade.

Between 2014 and 2023, imports by major beef importing countries are projected to increase nearly 2.3 million tons (34 percent) and reach 9.1 million tons. Exports of lower priced beef from India and Brazil to a number of low- and middle-income countries account for nearly two-thirds of the projected increase in world beef trade.

- During the next 10 years, Russian beef imports are projected to fluctuate around 1.2 million tons, as rising consumer demand is mostly offset by expanding Russian beef production. Russia remains a market for EU and South American beef exports.
- Beef imports by China and Hong Kong are projected to increase 55 percent in the coming decade, as increasing incomes and rising demand for beef outpace growth in production.
- Imports of grain-fed beef by higher income countries are projected to rise steadily. U.S. beef exports to these countries increase after 2014.
- U.S. beef imports, primarily of grass-fed, lean beef for use in ground beef and processed products, rise slowly during the projection period. The United States is projected to be the world's largest beef importer and accounts for 13 percent of the increase in world imports.
- The Middle East, with a relatively fast-growing population, and Asia, with rapid income growth, are projected to be growing markets for beef. Together, the two regions account for nearly two-thirds of the increase in world beef imports through 2023.
- Strong growth in Mexican beef imports is projected to resume over the next several years. Much of Mexico's imports consist of higher valued, grain-fed beef from the United States.

### Pork imports 1/

Million metric tons



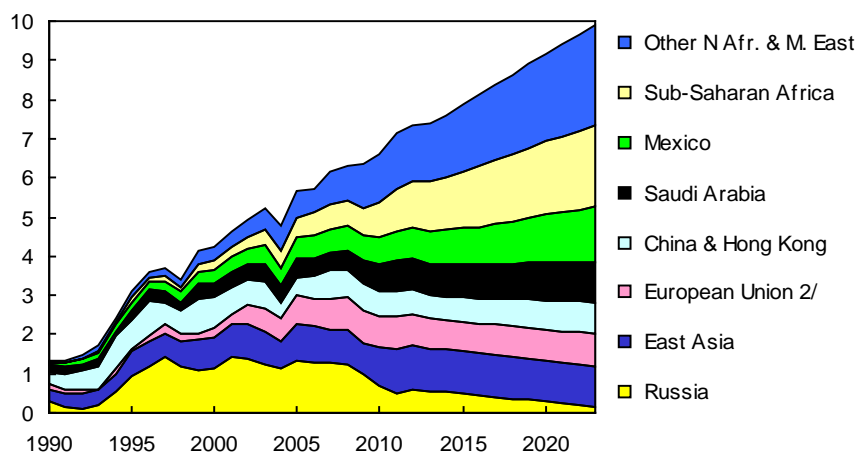
1/ Selected importers. 2/ Excludes China and Hong Kong.

World pork imports are projected to continue to rise, increasing by 1.05 million tons (19 percent) from 2014 to 2023.

- Japan is projected to remain the world's largest pork importer during the coming decade, although growth is small due to Japan's aging and declining population.
- Russia's pork imports are projected to decline steadily during the next 10 years, reflecting the country's policies to stimulate domestic meat production and reduce reliance on imports. By 2023, Russian pork imports are projected to decline more than 10 percent to about 0.8 million tons.
- In the projections, pork imports by China and Mexico each surpass those of Russia. Since 2009, China's pork imports have risen sharply and are projected to continue rising steadily. China's pork imports are projected to rise about 50 percent to 1.2 million tons by 2023, and account for two-fifths of the increase in world imports.
- Mexican pork imports also rise rapidly, increasing 0.3 million tons (35 percent) between 2014 and 2023. Increases in income and population are the primary drivers of Mexico's increasing demand for pork. Mexico accounts for nearly one-fifth of the growth in global pork imports during the coming decade.
- Some higher income countries in East Asia increase pork imports to satisfy demand for selected cuts of pork. Combined, Hong Kong, Japan, and South Korea account for one-fourth of the increase in world pork imports during the projection period.
- Pork imports by the Central America and Caribbean region grow more rapidly on a percentage basis than imports by any other country or region, although from a small base. Income growth and an expanding population boost demand, while growth in pork production is limited by the region's need to import most feedstuffs.

### Poultry imports 1/

Million metric tons



1/ Selected importers. 2/ Excludes intra-EU trade.

Poultry meat imports by major importers are projected to increase by 2.2 million tons (30 percent) during the projection period, reaching nearly 10 million tons by 2023. Strong import growth is projected for much of the world except, most notably, Russia (where policies constrain imports) and Japan.

- Poultry imports by Africa and the Middle East currently account for 47 percent of imports by the major importers. Gains in income and population boost demand in the projections. In addition, ongoing animal-disease concerns in a number of countries are expected to slow growth in production and to increase demand for imports. As a result, growth in the region's imports account for nearly 80 percent of the increase in world imports between 2014 and 2023, and for 57 percent of the global total in 2023.
- Rising consumer incomes increase poultry demand and imports in Mexico and in the Central America and Caribbean region. Poultry products remain less expensive than beef or pork, further stimulating demand. Mexico's domestic poultry production continues to increase during the projection period, but rises at a slower rate than consumption, with the result that imports rise by more than a half million tons (65 percent).
- Russia's poultry imports are projected to decline steadily. The projections assume that Russian policies will limit poultry imports to stimulate domestic production. High poultry prices and slower income growth inhibit growth in per capita poultry consumption.
- China's rising consumption of poultry meat is met by expanding domestic production. The country's increase in poultry exports slightly exceeds the increase in imports.
- Fully cooked products are projected to account for most poultry exports from China and Thailand. With higher unit costs, most of these products are marketed to higher income countries in Asia, Europe, and the Middle East. In addition, Thailand's exports to the EU are expected to rise because trade to that market in uncooked chicken has been reopened.

Table 4. Coarse grains trade long-term projections

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
	<i>Imports, million metric tons</i>											
<b>Importers</b>												
Former Soviet Union <sup>1</sup>	0.8	0.9	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.3	1.3
Other Europe	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
European Union <sup>2</sup>	11.8	8.4	8.7	9.3	9.5	9.5	9.6	9.6	9.6	9.6	9.5	9.5
Middle East	22.7	22.2	23.6	24.2	24.6	25.0	25.4	25.6	25.9	26.2	26.6	26.9
North Africa	12.5	13.7	14.5	14.7	15.0	15.2	15.3	15.5	15.7	15.8	15.9	16.0
Sub-Saharan Africa <sup>3</sup>	2.5	2.9	3.2	3.3	3.4	3.5	3.7	3.8	4.0	4.2	4.3	4.5
Japan	17.8	18.5	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7	18.7
South Korea	8.3	9.1	9.3	9.4	9.4	9.4	9.4	9.5	9.5	9.5	9.6	9.6
Taiwan	4.5	4.5	4.5	4.5	4.5	4.6	4.6	4.6	4.6	4.6	4.6	4.6
China	5.6	11.3	9.8	11.0	12.1	14.2	16.4	18.5	20.6	22.7	24.7	26.8
Other Asia & Oceania	8.2	8.3	9.2	9.6	10.0	10.4	10.8	11.1	11.5	11.9	12.2	12.6
Mexico	7.5	12.3	13.4	13.9	14.4	14.8	15.3	15.8	16.4	17.0	17.5	18.1
Central America & Caribbean	5.0	5.5	5.5	5.5	5.6	5.6	5.6	5.7	5.8	5.9	6.0	6.1
Brazil	1.1	1.2	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Other South America	10.4	11.8	11.9	12.2	12.5	12.8	13.1	13.5	13.8	14.2	14.5	14.8
Other foreign <sup>4</sup>	-7.1	6.9	4.5	4.5	4.5	4.5	4.5	4.5	4.6	4.6	4.6	4.6
United States	6.5	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
<b>Total trade</b>	<b>118.7</b>	<b>141.1</b>	<b>143.0</b>	<b>147.1</b>	<b>150.6</b>	<b>154.7</b>	<b>158.6</b>	<b>162.8</b>	<b>167.1</b>	<b>171.1</b>	<b>175.2</b>	<b>179.3</b>
	<i>Exports, million metric tons</i>											
<b>Exporters</b>												
European Union <sup>2</sup>	7.3	9.3	8.9	8.7	8.6	8.9	8.9	8.9	8.8	8.7	8.8	8.9
China	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Argentina	24.4	22.6	23.3	24.0	24.3	25.6	26.3	27.0	28.2	28.9	29.7	30.4
Australia	5.2	5.2	5.1	5.2	5.3	5.3	5.4	5.5	5.6	5.7	5.8	5.9
Brazil	22.0	20.0	17.1	17.5	17.5	17.8	18.7	19.5	20.2	21.0	21.9	22.8
Canada	5.0	4.5	4.4	4.4	4.4	4.4	4.3	4.3	4.3	4.4	4.4	4.4
South Africa	1.9	2.0	1.9	1.6	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.2
Other Europe	0.5	1.6	1.8	1.9	2.0	2.1	2.2	2.3	2.3	2.4	2.5	2.6
Russia	4.3	5.1	4.4	4.6	4.9	4.9	5.1	5.2	5.4	5.6	5.8	6.0
Ukraine	15.0	20.4	19.1	19.7	20.0	20.8	21.6	22.4	23.4	24.3	25.1	26.0
Other Former Soviet Union <sup>5</sup>	4.9	6.1	5.2	5.5	5.8	6.1	6.3	6.5	6.8	7.1	7.4	1.7
Other foreign	7.3	3.8	4.4	4.1	3.8	3.7	3.6	3.4	3.1	2.8	2.5	8.1
United States	20.7	40.4	47.3	49.8	52.3	53.6	54.9	56.1	57.4	58.7	60.0	61.2
	<i>Percent</i>											
U.S. trade share	17.5	28.6	33.0	33.9	34.8	34.7	34.6	34.5	34.4	34.3	34.2	34.1

<sup>1</sup>Covers FSU-12. Includes intra-FSU trade.

<sup>2</sup>Excludes intra-EU trade.

<sup>3</sup>Includes South Africa.

<sup>4</sup>Includes unaccounted, which can be negative.

<sup>5</sup>Covers FSU-12 except for Russia and Ukraine. Includes intra-FSU trade.

The projections were completed in November 2013.



Table 5. Corn trade long-term projections

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
<i>Imports, million metric tons</i>												
<b>Importers</b>												
European Union <sup>1</sup>	11.3	8.0	8.3	8.9	9.1	9.1	9.2	9.2	9.2	9.2	9.2	9.1
Former Soviet Union <sup>2</sup>	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Egypt	5.0	5.7	6.0	6.2	6.3	6.5	6.5	6.6	6.7	6.7	6.8	6.8
Morocco	1.9	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2
Other North Africa	4.2	4.5	4.6	4.6	4.7	4.7	4.8	4.8	4.9	4.9	4.9	5.0
Iran	3.5	4.1	4.5	4.7	4.8	4.8	4.8	4.8	4.9	4.9	4.9	5.0
Saudi Arabia	2.1	2.3	2.4	2.4	2.5	2.5	2.5	2.6	2.6	2.6	2.7	2.7
Turkey	1.7	0.8	0.9	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Other Middle East	3.3	3.6	3.8	4.0	4.0	4.0	4.1	4.1	4.2	4.2	4.2	4.2
Japan	14.4	15.5	15.6	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7
South Korea	8.2	9.0	9.2	9.3	9.3	9.3	9.3	9.4	9.4	9.4	9.4	9.5
Taiwan	4.3	4.3	4.4	4.3	4.4	4.4	4.4	4.5	4.5	4.5	4.5	4.5
China	2.7	7.0	6.0	7.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0
Indonesia	2.7	2.2	2.4	2.4	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.9
Malaysia	3.1	3.4	3.5	3.5	3.6	3.6	3.7	3.7	3.8	3.8	3.9	3.9
Other Asia & Oceania	2.3	2.7	3.3	3.6	3.9	4.2	4.4	4.6	4.9	5.2	5.4	5.6
Canada	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Mexico	5.6	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5
Central America & Caribbean	5.0	5.5	5.5	5.5	5.6	5.6	5.6	5.7	5.8	5.9	6.0	6.1
Brazil	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Other South America	8.5	10.1	10.3	10.6	10.9	11.1	11.4	11.8	12.1	12.4	12.7	13.1
Sub-Saharan Africa <sup>3</sup>	2.0	2.4	2.7	2.8	2.9	3.0	3.2	3.3	3.5	3.6	3.8	4.0
Other foreign <sup>4</sup>	-5.9	4.7	3.5	3.5	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.6
United States	4.1	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
<b>Total trade</b>	<b>91.5</b>	<b>110.4</b>	<b>112.2</b>	<b>115.9</b>	<b>119.0</b>	<b>122.7</b>	<b>126.4</b>	<b>130.1</b>	<b>134.0</b>	<b>137.7</b>	<b>141.3</b>	<b>145.0</b>
<i>Exports, million metric tons</i>												
<b>Exporters</b>												
European Union <sup>1</sup>	2.1	3.0	2.5	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.1	3.2
China	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Argentina	19.0	18.0	17.9	18.4	18.6	19.8	20.4	21.1	22.2	22.8	23.4	24.1
Brazil	22.0	20.0	17.1	17.5	17.5	17.7	18.6	19.5	20.1	21.0	21.8	22.7
South Africa	1.9	2.0	1.9	1.6	1.5	1.5	1.4	1.4	1.3	1.3	1.2	1.2
Other Europe	0.5	1.6	1.8	1.9	2.0	2.1	2.2	2.2	2.3	2.4	2.5	2.5
Former Soviet Union <sup>2</sup>	15.0	20.8	18.6	19.3	19.6	20.5	21.3	22.1	23.0	23.9	24.8	25.7
Other foreign	12.3	9.3	9.0	8.9	8.9	8.8	8.8	8.8	8.7	8.5	8.4	8.2
United States	18.6	35.6	43.2	45.7	48.3	49.5	50.8	52.1	53.3	54.6	55.9	57.2
<i>Percent</i>												
<b>U.S. trade share</b>	<b>20.3</b>	<b>32.2</b>	<b>38.5</b>	<b>39.5</b>	<b>40.6</b>	<b>40.4</b>	<b>40.2</b>	<b>40.0</b>	<b>39.8</b>	<b>39.7</b>	<b>39.5</b>	<b>39.4</b>

<sup>1</sup>Excludes intra-EU trade.<sup>2</sup>Covers FSU-12. Includes intra-FSU trade.<sup>3</sup>Includes South Africa.<sup>4</sup>Includes unaccounted, which can be negative.

The projections were completed in November 2013.

Table 6. Barley trade long-term projections

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
	<i>Imports, million metric tons</i>											
<b>Importers</b>												
Former Soviet Union <sup>1</sup>	0.5	0.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Japan	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
China	2.2	2.2	2.3	2.3	2.4	2.5	2.6	2.6	2.7	2.8	2.8	2.9
Latin America <sup>2</sup>	1.0	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.3	1.3
Saudi Arabia	8.0	8.0	8.5	8.5	8.6	8.7	8.8	8.9	9.0	9.1	9.2	9.3
Iran	1.5	1.0	0.8	0.9	1.0	1.1	1.1	1.1	1.1	1.2	1.2	1.2
Other Middle East	1.9	2.0	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.5
Morocco	0.2	0.3	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6
Other North Africa	1.2	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Other foreign <sup>3</sup>	0.7	1.8	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4
United States	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
<b>Total trade</b>	<b>19.0</b>	<b>20.0</b>	<b>20.4</b>	<b>20.8</b>	<b>21.1</b>	<b>21.5</b>	<b>21.8</b>	<b>22.1</b>	<b>22.4</b>	<b>22.6</b>	<b>23.0</b>	<b>23.3</b>
	<i>Exports, million metric tons</i>											
<b>Exporters</b>												
European Union <sup>4</sup>	4.9	6.0	6.2	5.9	5.8	6.0	5.9	5.8	5.6	5.5	5.4	5.4
Argentina	3.6	2.6	3.1	3.3	3.4	3.5	3.6	3.6	3.7	3.7	3.8	3.8
Australia	3.8	4.1	4.0	4.1	4.2	4.2	4.3	4.4	4.5	4.6	4.6	4.7
Canada	1.4	1.7	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7
Russia	2.2	2.5	2.6	2.7	2.8	2.8	2.8	2.9	3.0	3.1	3.3	3.4
Ukraine	2.1	2.2	2.2	2.3	2.4	2.5	2.6	2.7	2.9	3.0	3.0	3.1
Other Former Soviet Union <sup>5</sup>	0.2	0.5	0.4	0.4	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9
Turkey	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other foreign	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
United States	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	<i>Percent</i>											
<b>U.S. trade share</b>	<b>1.0</b>	<b>1.1</b>	<b>1.1</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>0.9</b>	<b>0.9</b>

<sup>1</sup>Covers FSU-12. Includes intra-FSU trade.

<sup>2</sup>Includes Mexico.

<sup>3</sup>Includes unaccounted.

<sup>4</sup>Excludes intra-EU trade.

<sup>5</sup>Covers FSU-12 except Russia and Ukraine. Includes intra-FSU trade.

The projections were completed in November 2013.

Table 7. Sorghum trade long-term projections

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
<b>Importers</b>	<i>Imports, million metric tons</i>											
Japan	1.9	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Mexico	1.8	1.5	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.2	2.2
North Africa & Middle East	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
South America	1.3	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Sub-Saharan Africa <sup>1</sup>	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
China	0.6	2.0	1.5	1.6	1.6	1.7	1.7	1.8	1.8	1.8	1.9	1.9
Other <sup>2</sup>	-0.9	1.2	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
<b>Total trade</b>	5.5	7.9	7.4	7.5	7.5	7.5	7.5	7.6	7.7	7.8	7.9	7.9
<b>Exporters</b>	<i>Exports, million metric tons</i>											
Argentina	1.8	2.0	2.2	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.5	2.5
Australia	1.2	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9
Other foreign	0.6	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7
United States	1.9	4.6	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
<b>U.S. trade share</b>	<i>Percent</i>											
	35.1	57.7	51.3	50.9	50.6	50.9	50.8	50.2	49.5	49.0	48.5	48.1

<sup>1</sup>Includes South Africa.

<sup>2</sup>EU and the rest of the world. Excludes intra-EU trade. Includes unaccounted. The projections were completed in November 2013.

Table 8. Wheat trade long-term projections

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
	<i>Imports, million metric tons</i>											
<b>Importers</b>												
Morocco	3.8	2.0	3.0	3.3	3.4	3.4	3.4	3.4	3.5	3.5	3.5	3.5
Egypt	8.3	9.5	10.2	10.1	10.3	10.7	11.0	11.3	11.5	11.8	12.0	12.2
Other North Africa	10.0	10.4	10.5	10.6	10.8	10.9	11.1	11.2	11.4	11.5	11.7	11.8
Saudi Arabia	1.9	2.7	2.9	2.9	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8
Iran	6.2	4.5	2.4	2.5	2.6	2.6	2.7	2.8	2.9	3.0	3.0	3.1
Iraq	3.9	3.2	3.5	3.5	3.7	3.8	3.9	4.0	4.2	4.3	4.4	4.6
Other Middle East	9.4	9.8	10.3	10.2	10.5	10.7	10.9	11.1	11.3	11.5	11.6	11.8
West African Community <sup>1</sup>	6.6	6.8	7.0	7.1	7.4	7.6	7.7	7.9	8.1	8.3	8.6	8.8
Other Sub-Saharan Africa <sup>2</sup>	11.0	11.2	11.5	11.8	12.2	12.5	12.8	13.2	13.6	14.0	14.3	14.7
Mexico	3.8	4.0	4.0	4.1	4.1	4.1	4.2	4.2	4.3	4.3	4.4	4.4
Central America & Caribbean	3.7	3.7	3.9	3.9	4.0	4.0	4.1	4.1	4.1	4.2	4.2	4.3
Brazil	7.4	7.7	7.5	7.5	7.6	7.7	7.7	7.8	7.8	7.8	7.9	8.0
Other South America	6.9	6.9	6.9	6.9	7.1	7.1	7.2	7.3	7.4	7.4	7.5	7.5
European Union <sup>3</sup>	5.3	4.5	4.6	4.4	4.5	4.5	4.5	4.5	4.5	4.6	4.6	4.6
Other Europe	1.6	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Former Soviet Union <sup>4</sup>	7.5	6.9	7.1	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.8
Japan	6.6	6.0	5.9	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
South Korea	5.4	4.3	4.4	4.3	4.1	4.1	4.1	4.1	4.1	4.1	4.0	4.0
Philippines	3.6	3.6	3.6	3.7	3.9	4.0	4.0	4.1	4.2	4.3	4.4	4.5
Indonesia	7.1	7.2	7.4	7.7	8.0	8.2	8.4	8.7	9.0	9.3	9.6	9.9
China	3.0	8.5	4.8	4.6	4.7	4.7	4.8	4.9	5.0	5.2	5.3	5.5
Bangladesh	2.7	3.0	3.0	3.1	3.2	3.3	3.3	3.4	3.5	3.6	3.7	3.8
Malaysia	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7
Thailand	1.8	1.9	1.9	2.0	2.1	2.2	2.3	2.3	2.4	2.5	2.5	2.6
Vietnam	1.7	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9
Pakistan	0.1	0.9	0.4	0.1	0.1	0.1	0.3	0.5	0.6	0.8	0.9	1.1
Other Asia & Oceania	6.6	7.1	7.2	7.4	7.7	8.0	8.3	8.6	8.9	9.2	9.6	9.9
Other foreign <sup>5</sup>	-2.4	8.2	6.8	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6
United States	3.3	4.1	3.8	4.1	4.4	4.6	4.9	5.0	5.2	5.3	5.4	5.6
<b>Total trade</b>	<b>138.3</b>	<b>153.7</b>	<b>149.7</b>	<b>151.1</b>	<b>154.6</b>	<b>157.7</b>	<b>160.9</b>	<b>164.2</b>	<b>167.5</b>	<b>170.8</b>	<b>174.2</b>	<b>177.5</b>
	<i>Exports, million metric tons</i>											
<b>Exporters</b>												
European Union <sup>3</sup>	22.6	24.0	24.5	24.5	24.9	25.2	25.8	26.8	27.8	28.7	29.7	30.7
Canada	19.0	21.5	20.1	19.2	19.4	19.4	19.4	19.5	19.6	19.7	19.8	19.8
Australia	19.0	19.0	18.0	18.3	18.4	18.6	18.8	19.0	19.1	19.3	19.5	19.6
Argentina	3.6	4.5	7.0	7.1	7.2	7.4	7.4	7.5	7.5	7.4	7.4	7.3
Russia	11.3	16.0	15.8	18.1	19.9	21.3	22.7	23.8	24.7	25.6	26.5	27.5
Ukraine	7.2	10.0	9.8	10.1	10.7	11.2	11.6	12.0	12.4	12.8	13.2	13.6
Other Former Soviet Union <sup>6</sup>	7.5	8.7	8.8	8.9	9.3	9.5	9.7	10.0	10.2	10.5	10.9	11.2
Other Europe	0.7	0.8	0.8	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0
India	6.8	6.5	4.0	3.1	2.5	2.2	1.9	1.7	1.5	1.3	1.1	0.9
China	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Turkey	3.4	3.5	3.5	3.5	3.7	3.8	4.0	4.1	4.2	4.3	4.4	4.5
Other foreign	8.9	8.2	8.4	8.6	8.7	8.9	9.0	9.2	9.4	9.5	9.7	9.9
United States	27.4	29.9	27.9	27.9	27.9	28.2	28.4	28.7	29.1	29.5	29.9	30.3
	<i>Percent</i>											
U.S. trade share	19.8	19.5	18.6	18.5	18.0	17.9	17.7	17.5	17.4	17.3	17.2	17.1

<sup>1</sup>Economic Community of West African States.<sup>2</sup>Includes South Africa.<sup>3</sup>Excludes intra-EU trade.<sup>4</sup>Covers FSU-12. Includes intra-FSU trade.<sup>5</sup>Includes unaccounted, which can be negative.<sup>6</sup>Covers FSU-12 except for Russia and Ukraine. Includes intra-FSU trade.

The projections were completed in November 2013.

Table 9. Rice trade long-term projections

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
	<i>Imports, million metric tons</i>											
<b>Importers</b>												
Canada	0.35	0.35	0.35	0.35	0.36	0.36	0.36	0.37	0.37	0.38	0.38	0.38
Mexico	0.73	0.75	0.76	0.76	0.77	0.78	0.79	0.80	0.81	0.81	0.82	0.83
Central America/Caribbean	1.43	1.56	1.69	1.71	1.63	1.64	1.66	1.67	1.69	1.71	1.72	1.73
Brazil	0.70	0.75	0.64	0.65	0.65	0.66	0.66	0.66	0.67	0.67	0.68	0.68
Other South America	1.17	1.12	1.28	1.16	1.07	1.05	1.03	1.02	1.00	0.98	0.96	0.95
European Union <sup>1</sup>	1.20	1.20	1.26	1.27	1.27	1.28	1.29	1.29	1.30	1.31	1.32	1.32
Former Soviet Union <sup>2</sup>	0.40	0.43	0.47	0.49	0.48	0.47	0.46	0.44	0.43	0.42	0.40	0.38
Other Europe	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Bangladesh	0.04	0.25	0.32	0.44	0.56	0.70	0.84	0.98	1.13	1.29	1.45	1.62
China	3.10	3.40	3.30	3.30	3.28	3.20	3.10	3.00	2.90	2.70	2.55	2.40
Japan	0.70	0.70	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
South Korea	0.60	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41
Indonesia	1.00	1.50	1.60	1.70	1.80	1.90	2.00	2.10	2.20	2.30	2.40	2.50
Malaysia	1.05	1.10	1.14	1.17	1.21	1.26	1.28	1.29	1.31	1.33	1.35	1.37
Philippines	1.40	1.10	1.32	1.52	1.56	1.57	1.58	1.60	1.63	1.63	1.64	1.66
Other Asia & Oceania	2.67	2.66	2.74	2.72	2.71	2.70	2.69	2.69	2.68	2.73	2.91	3.05
Iraq	1.45	1.40	1.34	1.39	1.41	1.44	1.48	1.51	1.54	1.57	1.60	1.63
Iran	1.80	1.75	1.76	1.76	1.79	1.82	1.83	1.84	1.85	1.86	1.87	1.87
Saudi Arabia	1.23	1.25	1.27	1.33	1.35	1.37	1.40	1.42	1.44	1.47	1.49	1.51
Other N. Africa & M. East	2.16	2.23	2.36	2.37	2.43	2.48	2.53	2.58	2.63	2.67	2.72	2.76
West African Community <sup>3</sup>	8.06	8.21	8.37	8.62	8.90	9.10	9.30	9.50	9.70	9.96	10.10	10.20
Other Sub-Saharan Africa <sup>4</sup>	2.98	3.26	3.30	3.27	3.36	3.44	3.54	3.63	3.73	3.83	3.92	4.02
South Africa	0.93	0.98	1.01	1.01	1.02	1.04	1.07	1.08	1.10	1.12	1.14	1.16
Other foreign <sup>5</sup>	3.25	2.68	3.05	3.02	3.08	3.13	3.19	3.18	3.16	3.16	3.14	3.11
United States	0.64	0.70	0.67	0.67	0.67	0.68	0.68	0.69	0.69	0.69	0.70	0.70
<b>Total imports</b>	<b>39.14</b>	<b>39.84</b>	<b>41.23</b>	<b>41.90</b>	<b>42.59</b>	<b>43.29</b>	<b>43.96</b>	<b>44.57</b>	<b>45.18</b>	<b>45.80</b>	<b>46.46</b>	<b>47.09</b>
	<i>Exports, million metric tons</i>											
<b>Exporters</b>												
Australia	0.50	0.52	0.43	0.46	0.49	0.50	0.50	0.51	0.52	0.53	0.53	0.53
Argentina	0.53	0.55	0.53	0.57	0.60	0.62	0.64	0.65	0.67	0.68	0.70	0.72
Other South America	2.42	2.69	2.65	2.64	2.69	2.81	2.86	2.90	2.96	3.00	3.04	3.07
European Union <sup>1</sup>	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.21	0.21
China	0.34	0.35	0.31	0.34	0.33	0.35	0.35	0.37	0.41	0.41	0.42	0.44
India	11.00	10.00	9.50	9.25	8.90	8.66	8.40	8.15	7.95	7.78	7.52	7.30
Pakistan	3.00	3.00	3.43	3.47	3.53	3.64	3.61	3.70	3.75	3.80	3.85	3.90
Thailand	7.00	8.00	9.50	10.00	10.70	11.00	11.70	12.15	12.50	13.00	13.50	13.90
Vietnam	7.20	7.50	7.50	7.65	7.70	7.80	7.80	7.90	8.00	7.98	8.08	8.20
Burma	0.75	0.75	0.75	0.80	0.85	0.90	0.95	1.00	1.13	1.25	1.38	1.50
Cambodia	0.98	1.00	1.12	1.14	1.17	1.29	1.37	1.45	1.52	1.59	1.66	1.73
Egypt	0.85	0.85	0.82	0.80	0.77	0.76	0.75	0.74	0.73	0.73	0.72	0.71
Other foreign	0.98	1.24	1.05	1.05	1.11	1.16	1.19	1.17	1.15	1.11	1.09	1.07
United States	3.40	3.19	3.43	3.52	3.56	3.59	3.64	3.67	3.70	3.75	3.78	3.81
<b>Total exports</b>	<b>39.14</b>	<b>39.84</b>	<b>41.23</b>	<b>41.90</b>	<b>42.59</b>	<b>43.29</b>	<b>43.96</b>	<b>44.57</b>	<b>45.18</b>	<b>45.80</b>	<b>46.46</b>	<b>47.09</b>
	<i>Percent</i>											
U.S. trade share	8.7	8.0	8.3	8.4	8.3	8.3	8.3	8.2	8.2	8.2	8.1	8.1

<sup>1</sup>Excludes intra-EU trade.<sup>2</sup>Covers FSU-12. Includes intra-FSU trade.<sup>3</sup>Economic Community of West African States.<sup>4</sup>Excludes South Africa.<sup>5</sup>Includes unaccounted.

The projections were completed in November 2013.

Table 10. Soybean trade long-term projections

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
<i>Imports, million metric tons</i>												
<b>Importers</b>												
European Union <sup>1</sup>	12.5	12.1	12.1	12.2	12.1	12.0	12.0	11.9	11.8	11.7	11.7	11.6
Japan	2.9	2.8	2.7	2.7	2.6	2.5	2.5	2.4	2.3	2.3	2.2	2.1
South Korea	1.1	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0
Taiwan	2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Mexico	3.4	3.6	3.7	3.7	3.8	3.8	3.8	3.9	3.9	3.9	4.0	4.0
Former Soviet Union <sup>2</sup>	0.7	1.0	1.0	0.9	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.7
N. Africa & Middle East	3.6	3.6	3.7	3.7	3.8	3.8	3.8	3.9	3.9	3.9	4.0	4.0
China	59.9	69.0	72.8	75.9	79.7	83.7	87.9	92.2	96.9	101.8	107.0	112.3
Malaysia	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Indonesia	1.9	2.1	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.5	2.5	2.5
Other	14.1	11.2	9.1	9.3	9.4	9.5	9.7	9.8	9.9	10.0	10.2	10.3
<b>Total imports</b>	<b>103.0</b>	<b>109.6</b>	<b>111.6</b>	<b>115.0</b>	<b>118.8</b>	<b>122.9</b>	<b>127.1</b>	<b>131.5</b>	<b>136.2</b>	<b>141.2</b>	<b>146.3</b>	<b>151.7</b>
<i>Exports, million metric tons</i>												
<b>Exporters</b>												
Argentina	7.9	9.7	10.4	11.0	11.7	12.3	13.0	13.7	14.3	15.0	15.6	16.3
Brazil	41.9	44.0	42.3	44.3	46.0	47.4	50.1	52.8	56.0	59.4	63.0	66.5
Other South America	8.8	9.0	8.5	8.9	9.4	9.8	10.2	10.7	11.1	11.6	12.0	12.5
Ukraine	1.3	1.9	1.7	1.7	1.9	2.1	2.2	2.4	2.5	2.7	2.8	3.0
Other foreign	4.1	3.8	4.1	4.2	4.2	4.3	4.3	4.4	4.5	4.5	4.6	4.6
United States	38.9	41.2	44.6	44.9	45.6	46.9	47.2	47.6	47.8	48.0	48.3	48.7
<b>Total exports</b>	<b>103.0</b>	<b>109.6</b>	<b>111.6</b>	<b>115.0</b>	<b>118.8</b>	<b>122.9</b>	<b>127.1</b>	<b>131.5</b>	<b>136.2</b>	<b>141.2</b>	<b>146.3</b>	<b>151.7</b>
<i>Percent</i>												
U.S. trade share	37.8	37.6	40.0	39.0	38.4	38.2	37.1	36.2	35.1	34.0	33.0	32.1

<sup>1</sup>Excludes intra-EU trade.<sup>2</sup>Covers FSU-12. Includes intra-FSU trade.

The projections were completed in November 2013.

Table 11. Soybean meal trade long-term projections

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
<i>Imports, million metric tons</i>												
<b>Importers</b>												
European Union <sup>1</sup>	17.3	20.1	21.6	22.1	21.9	22.0	22.1	22.1	22.1	22.1	22.0	22.0
Former Soviet Union <sup>2</sup>	1.0	1.1	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2
Other Europe	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Canada	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2
Japan	1.8	2.2	2.4	2.3	2.4	2.4	2.5	2.5	2.6	2.6	2.6	2.8
Southeast Asia	12.1	12.8	13.2	13.7	14.1	14.3	14.7	15.1	15.5	15.9	16.3	16.7
Mexico	1.3	1.5	1.5	1.5	1.6	1.6	1.7	1.7	1.7	1.8	1.8	1.9
Other Latin America	6.3	6.7	6.9	7.1	7.3	7.5	7.7	7.8	8.0	8.2	8.4	8.6
North Africa & Middle East	8.3	8.3	8.6	8.8	9.0	9.2	9.5	9.7	9.9	10.2	10.4	10.6
Other	7.4	7.4	8.1	8.2	8.3	8.3	8.4	8.5	8.6	8.6	8.7	8.8
<b>Total imports</b>	<b>57.0</b>	<b>61.7</b>	<b>64.9</b>	<b>66.5</b>	<b>67.2</b>	<b>68.1</b>	<b>69.3</b>	<b>70.2</b>	<b>71.3</b>	<b>72.2</b>	<b>73.2</b>	<b>74.2</b>
<i>Exports, million metric tons</i>												
<b>Exporters</b>												
Argentina	23.5	29.0	30.4	31.9	32.9	33.4	34.2	34.5	35.4	36.2	37.1	37.8
Brazil	13.2	13.6	15.3	16.2	16.1	16.6	17.0	17.7	17.9	18.0	18.2	18.5
Other South America	3.3	3.6	3.5	3.5	3.6	3.6	3.7	3.8	3.8	3.9	4.0	4.1
China	1.4	1.1	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
India	4.1	3.6	4.2	3.5	3.2	2.9	2.7	2.4	2.1	1.9	1.6	1.4
European Union <sup>1</sup>	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Other foreign	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
United States	10.0	9.3	9.1	9.0	8.9	8.9	9.1	9.3	9.4	9.6	9.7	9.8
<b>Total exports</b>	<b>57.0</b>	<b>61.7</b>	<b>64.9</b>	<b>66.5</b>	<b>67.2</b>	<b>68.1</b>	<b>69.3</b>	<b>70.2</b>	<b>71.3</b>	<b>72.2</b>	<b>73.2</b>	<b>74.2</b>
<i>Percent</i>												
U.S. trade share	17.6	15.1	14.0	13.5	13.2	13.0	13.1	13.2	13.2	13.3	13.3	13.3

<sup>1</sup>Excludes intra-EU trade.<sup>2</sup>Covers FSU-12. Includes intra-FSU trade.

The projections were completed in November 2013.

Table 12. Soybean oil trade long-term projections

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
<i>Imports, million metric tons</i>												
<b>Importers</b>												
China	1.4	1.5	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.4
India	1.1	1.2	1.1	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.5	1.6
Other Asia	1.1	1.2	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.5
Latin America	1.8	1.8	2.0	2.0	2.0	2.1	2.2	2.2	2.3	2.4	2.4	2.5
North Africa & Middle East	2.0	2.1	2.1	2.2	2.3	2.4	2.5	2.5	2.6	2.7	2.7	2.8
European Union <sup>1</sup>	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Other	1.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1
<b>Total imports</b>	<b>9.2</b>	<b>9.2</b>	<b>9.6</b>	<b>9.9</b>	<b>10.0</b>	<b>10.1</b>	<b>10.4</b>	<b>10.5</b>	<b>10.7</b>	<b>10.9</b>	<b>11.0</b>	<b>11.2</b>
<i>Exports, million metric tons</i>												
<b>Exporters</b>												
Argentina	4.1	4.7	5.0	5.1	5.1	5.1	5.2	5.2	5.2	5.2	5.2	5.2
Brazil	1.3	1.5	1.5	1.5	1.6	1.5	1.6	1.7	1.8	1.9	2.0	2.1
European Union <sup>1</sup>	1.0	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Other foreign	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
United States	1.0	0.5	0.6	0.7	0.8	1.0	1.0	1.1	1.2	1.3	1.3	1.4
<b>Total exports</b>	<b>9.2</b>	<b>9.2</b>	<b>9.6</b>	<b>9.9</b>	<b>10.0</b>	<b>10.1</b>	<b>10.4</b>	<b>10.5</b>	<b>10.7</b>	<b>10.9</b>	<b>11.0</b>	<b>11.2</b>
<i>Percent</i>												
U.S. trade share	10.9	5.7	6.4	7.4	8.4	9.4	10.0	10.5	11.1	11.7	12.2	12.7

<sup>1</sup>Excludes intra-EU trade.

The projections were completed in November 2013.

Table 13. All cotton trade long-term projections

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
<i>Imports, million bales</i>												
<b>Importers</b>												
European Union <sup>1</sup>	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Former Soviet Union <sup>2</sup>	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4
Brazil	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Mexico	0.9	1.2	1.2	1.2	1.3	1.3	1.3	1.2	1.1	1.0	1.0	0.9
Japan	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2
South Korea	1.3	1.3	1.3	1.4	1.4	1.3	1.3	1.2	1.2	1.2	1.2	1.2
China	20.3	11.0	8.6	7.5	7.6	9.2	12.0	14.1	16.7	18.6	20.0	21.1
Indonesia	2.6	2.7	2.8	2.8	2.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Vietnam	2.4	2.7	2.8	3.0	3.1	3.3	3.5	3.6	3.6	3.8	3.9	4.1
Thailand	1.5	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8
Pakistan	2.2	2.7	2.9	3.2	3.6	3.7	3.8	3.9	3.7	3.7	3.7	3.8
India	1.2	1.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Bangladesh	3.6	3.7	4.0	4.3	4.5	4.7	4.8	5.0	5.2	5.4	5.6	5.9
Taiwan	0.9	1.0	1.1	1.1	1.1	1.1	1.0	1.0	1.0	0.9	0.9	0.9
Other Asia & Oceania	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Turkey	3.8	4.1	4.3	4.3	4.3	4.3	4.2	4.1	4.1	4.0	3.9	3.9
Other	2.6	2.2	2.4	2.5	2.5	2.5	2.5	2.4	2.3	2.3	2.3	2.2
<b>Total imports</b>	<b>46.7</b>	<b>39.0</b>	<b>36.8</b>	<b>36.9</b>	<b>37.6</b>	<b>39.5</b>	<b>42.5</b>	<b>44.6</b>	<b>46.8</b>	<b>48.8</b>	<b>50.6</b>	<b>52.0</b>
<i>Exports, million bales</i>												
<b>Exporters</b>												
Former Soviet Union <sup>2</sup>	5.4	4.9	3.6	3.8	3.9	4.1	4.4	4.7	5.1	5.3	5.5	5.6
Australia	6.2	4.2	3.9	3.9	3.7	4.4	4.7	4.9	5.1	5.4	5.5	5.5
Argentina	0.3	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5
Brazil	4.3	2.8	3.3	3.5	3.8	4.3	5.1	5.9	6.3	6.6	7.0	7.4
Other Latin America	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
Pakistan	0.5	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
India	7.7	7.0	5.7	5.3	5.4	6.1	7.1	7.8	8.5	9.0	9.6	10.0
Egypt	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
West African Community <sup>3</sup>	3.5	3.6	3.5	3.6	3.7	3.8	3.9	4.1	4.3	4.5	4.7	4.9
Other Sub-Saharan Africa <sup>4</sup>	2.0	1.9	1.8	1.8	1.8	1.9	2.0	2.0	2.1	2.2	2.3	2.4
Other foreign	3.3	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.1	3.2
<b>United States</b>	<b>13.0</b>	<b>10.4</b>	<b>11.1</b>	<b>11.1</b>	<b>11.1</b>	<b>10.9</b>	<b>11.1</b>	<b>11.1</b>	<b>11.2</b>	<b>11.4</b>	<b>11.6</b>	<b>11.7</b>
<b>Total exports</b>	<b>46.7</b>	<b>39.0</b>	<b>36.8</b>	<b>36.9</b>	<b>37.6</b>	<b>39.5</b>	<b>42.5</b>	<b>44.6</b>	<b>46.8</b>	<b>48.8</b>	<b>50.6</b>	<b>52.0</b>
<i>Percent</i>												
<b>U.S. trade share</b>	<b>27.9</b>	<b>26.7</b>	<b>30.0</b>	<b>30.1</b>	<b>29.5</b>	<b>27.6</b>	<b>26.2</b>	<b>24.9</b>	<b>23.9</b>	<b>23.4</b>	<b>23.0</b>	<b>22.5</b>

<sup>1</sup>Excludes intra-EU trade.<sup>2</sup>Covers FSU-12. Includes intra-FSU trade.<sup>3</sup>Economic Community of West African States.<sup>4</sup>Includes South Africa.

The projections were completed in November 2013.



Table 14. Beef trade long-term projections

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
<i>Imports, thousand metric tons, carcass weight</i>												
<b>Importers</b>												
Japan	737	767	781	785	788	788	793	802	807	812	812	814
South Korea	370	370	398	393	400	410	429	460	494	524	551	584
Taiwan	116	135	135	137	137	138	140	142	144	146	148	150
Philippines	121	117	115	115	117	119	121	124	127	130	133	136
China	99	400	475	495	531	570	603	635	674	712	748	784
Hong Kong	241	450	550	602	634	660	683	702	725	754	782	806
Other Asia	301	346	379	398	422	460	491	517	544	573	603	635
European Union <sup>1</sup>	348	350	350	348	347	345	343	341	340	338	336	335
Russia	1,023	1,000	1,020	1,040	1,064	1,094	1,122	1,143	1,164	1,181	1,198	1,213
Other Europe	58	64	64	65	65	66	67	67	69	69	70	70
Egypt	250	215	230	226	237	249	263	274	285	295	305	315
Other N. Africa & M. East	743	704	739	780	811	852	891	935	987	1,026	1,065	1,105
Mexico	215	225	235	248	268	291	329	368	416	453	495	534
Canada	301	320	315	316	317	319	320	321	322	323	324	326
United States	1,007	1,024	1,027	1,089	1,134	1,157	1,168	1,202	1,213	1,245	1,287	1,324
Major importers	5,930	6,487	6,814	7,036	7,273	7,516	7,760	8,032	8,309	8,581	8,858	9,129
<i>Exports, thousand metric tons, carcass weight</i>												
<b>Exporters</b>												
Australia	1,407	1,530	1,545	1,510	1,495	1,493	1,490	1,496	1,500	1,503	1,506	1,506
New Zealand	517	547	536	536	547	552	555	560	563	567	572	576
India	1,411	1,650	1,750	1,830	1,924	2,015	2,110	2,201	2,290	2,380	2,470	2,561
Other Asia	125	121	120	127	138	148	155	163	174	186	196	209
European Union <sup>1</sup>	297	260	270	211	213	214	214	213	212	212	212	212
Argentina	164	180	220	260	265	257	252	261	273	291	312	336
Brazil	1,524	1,800	1,940	2,021	2,094	2,164	2,223	2,289	2,358	2,425	2,490	2,554
Canada	335	320	325	363	394	415	438	452	465	472	480	487
United States	1,113	1,115	1,043	1,081	1,108	1,162	1,224	1,290	1,353	1,416	1,482	1,548
Major exporters	6,893	7,522	7,749	7,939	8,177	8,419	8,662	8,924	9,189	9,452	9,719	9,988

<sup>1</sup>Excludes intra-EU trade.

The projections were completed in November 2013.

Table 15. Pork trade long-term projections

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	<i>Imports, thousand metric tons, carcass weight</i>											
<b>Importers</b>												
Japan	1,259	1,240	1,250	1,277	1,286	1,301	1,306	1,312	1,321	1,323	1,327	1,330
China	730	750	785	822	858	899	954	1,004	1,056	1,101	1,142	1,194
Hong Kong	414	400	410	415	429	438	447	455	464	471	479	487
South Korea	502	400	425	431	442	452	466	482	495	511	527	544
Russia	1,070	900	920	908	902	899	889	878	859	842	826	812
Mexico	706	785	810	830	865	909	946	981	1,009	1,042	1,072	1,097
Central America/Caribbean	96	118	119	124	133	143	150	155	162	169	177	185
Canada	241	235	240	242	248	254	260	266	272	278	283	288
United States	364	389	390	396	402	408	414	420	425	431	437	443
Major importers	5,382	5,217	5,349	5,444	5,564	5,703	5,831	5,952	6,062	6,168	6,270	6,379
	<i>Exports, thousand metric tons, carcass weight</i>											
<b>Exporters</b>												
Brazil	661	600	610	622	628	632	636	640	646	651	656	661
Canada	1,243	1,245	1,235	1,226	1,242	1,254	1,270	1,283	1,299	1,316	1,332	1,350
Mexico	95	110	117	123	127	130	133	137	140	144	148	151
European Union <sup>1</sup>	2,175	2,204	2,200	2,222	2,238	2,262	2,294	2,324	2,347	2,374	2,397	2,423
China	235	250	265	286	303	313	325	337	349	360	370	383
United States	2,441	2,292	2,390	2,427	2,495	2,585	2,654	2,722	2,767	2,812	2,857	2,901
Major exporters	6,850	6,701	6,817	6,906	7,032	7,175	7,312	7,442	7,549	7,657	7,760	7,869

<sup>1</sup>Excludes intra-EU trade.

The projections were completed in November 2013.

Table 16. Poultry trade long-term projections<sup>1</sup>

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	<i>Imports, thousand metric tons, ready to cook</i>											
Importers												
Russia	579	554	544	493	426	390	358	324	278	229	181	133
European Union <sup>2</sup>	822	760	760	756	764	772	778	783	788	792	797	801
Canada	144	147	153	155	157	158	160	161	162	164	165	166
Mexico	776	835	852	912	967	1,032	1,091	1,150	1,220	1,286	1,348	1,409
Central America/Caribbean	368	378	392	405	415	431	440	451	462	475	489	503
Japan	877	860	855	857	854	848	843	836	830	825	820	816
Hong Kong	300	270	255	260	269	282	295	308	321	334	347	360
China	302	313	335	358	367	377	387	398	409	425	438	453
South Korea	130	120	125	126	125	124	124	124	126	127	128	128
Saudi Arabia	799	810	825	837	861	889	912	939	973	994	1,014	1,032
Other Middle East	1,317	1,406	1,503	1,557	1,630	1,702	1,781	1,854	1,927	2,005	2,089	2,177
North Africa	138	70	86	156	189	225	257	288	319	348	378	406
West African Community <sup>3</sup>	282	303	315	400	433	467	492	522	562	592	617	648
Other Sub-Saharan Africa	519	567	620	639	678	696	739	772	795	813	843	873
Major importers	7,353	7,393	7,620	7,910	8,135	8,393	8,655	8,909	9,172	9,408	9,653	9,906
	<i>Exports, thousand metric tons, ready to cook</i>											
Exporters												
European Union <sup>2</sup>	1,245	1,235	1,235	1,265	1,252	1,234	1,222	1,213	1,203	1,194	1,186	1,176
Brazil	3,678	3,755	3,805	3,943	4,064	4,180	4,299	4,412	4,523	4,639	4,753	4,867
China	411	415	415	415	433	459	483	497	515	528	545	560
Thailand	538	540	580	629	671	706	751	792	838	885	922	964
United States	3,661	3,692	3,778	3,825	3,862	3,941	4,000	4,072	4,138	4,180	4,225	4,272
Major exporters	9,533	9,637	9,813	10,076	10,282	10,520	10,754	10,986	11,218	11,425	11,629	11,839

<sup>1</sup>Broilers and turkeys only.<sup>2</sup>Excludes intra-EU trade.<sup>3</sup>Economic Community of West African States.

The projections were completed in November 2013.

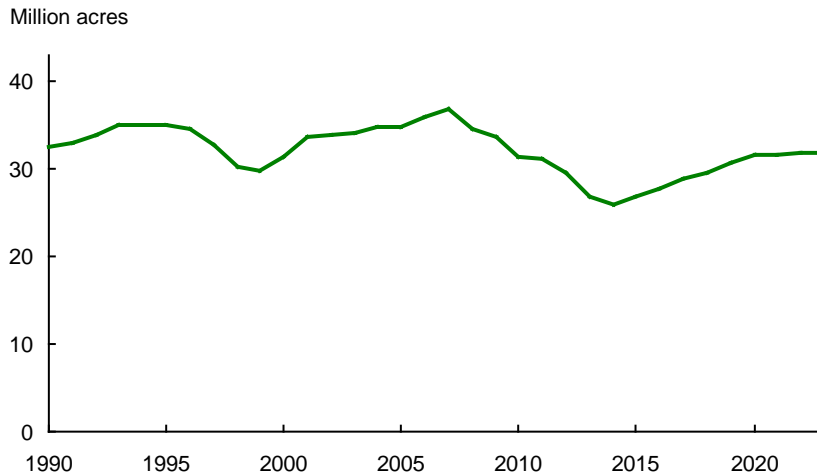
## U.S. Crops

Planted area for major field crops has been relatively high in recent years in response to high prices. As U.S. and global supplies rebound and prices decline for most crops, U.S. planted acreage for these crops is projected to fall over the next several years in response to lower producer returns.

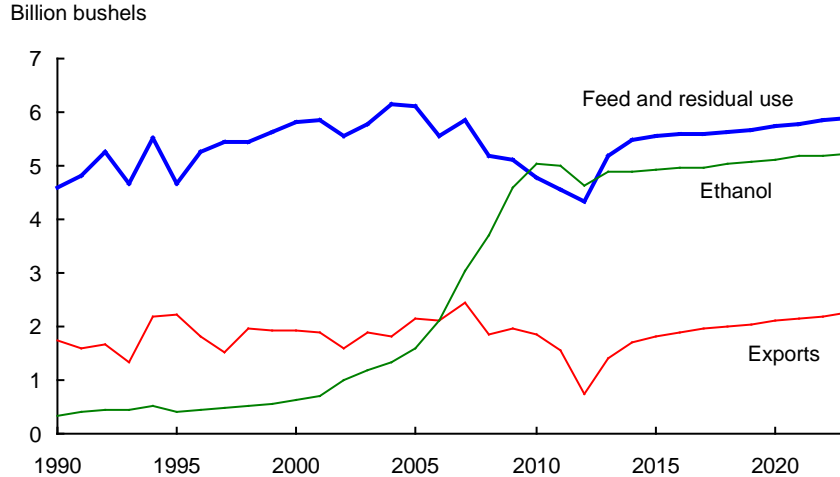
Over the longer run, steady global economic growth provides a foundation for continuing strong crop demand. Although corn-based ethanol production in the United States has rebounded from 2012's decline, the pace of further expansion slows. Nonetheless, the combination of world economic growth, a continued low-valued dollar, and some further expansion of global biofuels production supports longer run gains in world consumption and trade of crops. Prices are projected to fall from recent record highs but remain above pre-2007 levels for many crops.

Agricultural programs of The Food, Conservation, and Energy Act of 2008 (the 2008 Farm Act) are assumed to be extended through the projection period. Acreage enrolled in the Conservation Reserve Program (CRP) is projected to decline to 26 million acres in 2014 before rising back to close to 32 million acres by the end of the projection period.

**Conservation Reserve Program (CRP) acreage**



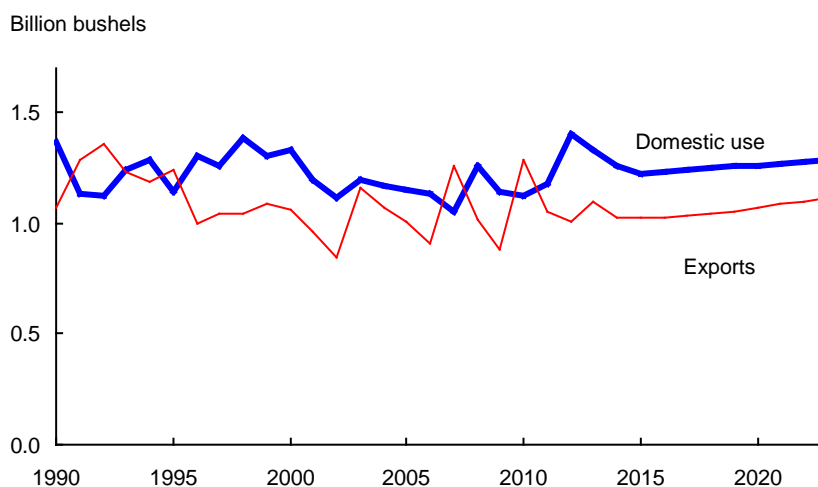
### U.S. corn: Feed and residual use, ethanol, and exports



U.S. corn production has rebounded from the weather-reduced 2012 crop, resulting in declining prices and increased domestic use and exports in the 2013/14 season. Moderate growth in demand is projected over the next decade.

- Ethanol production in the United States is based almost entirely on corn as the feedstock. Only small growth is projected for corn-based ethanol production over the next 10 years. This projection reflects declining overall gasoline consumption in the United States (which is mostly a 10-percent ethanol blend (E10)), infrastructural and other constraints on growth in the E15 (15-percent ethanol blend) market, and the small size of the E85 (85-percent ethanol blend) market. Nonetheless, a strong presence for ethanol in the sector continues, with about 35 percent of total corn use expected to go to ethanol production during the projection period.
- Lower corn prices and increasing meat production underlie projected gains in feed and residual corn use. Also supporting gains in feed use of corn is a slowdown in the growth of production of distillers grains, a co-product of dry mill ethanol production, as the corn-based ethanol expansion moderates.
- Food and industrial use of corn (other than ethanol production) is projected to rise over the next decade. Use of corn for high fructose corn syrup (HFCS) is supported by growing HFCS exports to Mexico as domestic use slows. Slower increases for glucose and dextrose use reflect consumer dietary concerns and changes in tastes and preferences. Other food uses of corn are also projected to rise more slowly than population increases. Starch use of corn, such as in the production of drywall and paper, responds to economic growth and industrial demand, rising faster than population throughout the projection period.
- U.S. corn exports increase during the projection period, in response to strong global demand for feed grains to support growth in meat production. Export gains are particularly strong to China. The United States resumes being the world's largest corn exporter, following the sharp reduction in U.S. corn exports after the 2012 drought, and accounts for an average of about 40 percent of global corn trade over the projection period. Strong trade competition from Argentina, Brazil, and the FSU as well as the use of corn for ethanol production in the United States combine to hold the U.S. trade share well below its 1970-2000 average of 71 percent.

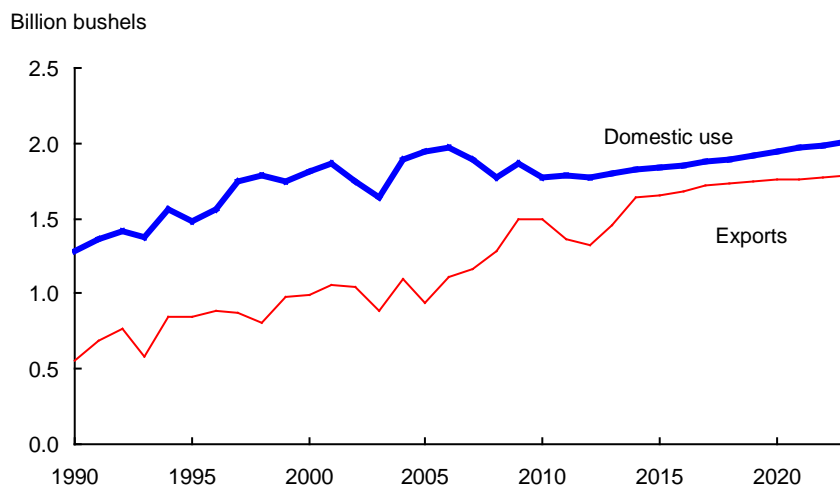
### U.S. wheat: Domestic use and exports



Following a small projected increase in 2014, wheat plantings are projected to decline over the following years, continuing a long-term general downward trend since the early 1980s. Relatively weak overall demand growth for wheat is projected.

- Domestic demand for wheat reflects a relatively mature market. Food use of wheat is projected to show moderate gains, generally in line with U.S. population increases.
- Feed use of wheat, a lower value market for the crop, declines in the early years of the projections from the high volume of the past 2 years as corn supplies recover from drought-reduced 2012 levels. Wheat feed use remains steady through the rest of the projection period as prices relative to corn allow a moderate level of wheat in feed rations.
- U.S. imports of wheat are projected to rise through the projection period due to increases from Canada. The end of the Canadian Wheat Board's monopoly for wheat and barley as well as transportation and other market factors are expected to result in more wheat shipped to the United States.
- U.S. wheat exports initially fall to 1,025 million bushels in the initial years of the projections before growing moderately for the remainder of the decade. U.S. wheat trade faces competition from countries of the FSU, whose wheat exports rise from 23 percent to 29 percent of global trade over the next decade. EU wheat exports grow from a global market share of 16 percent to 17 percent by 2023/24. For the same time period, the U.S. market share declines from 19 percent to 17 percent.

### U.S. soybeans: Domestic use and exports

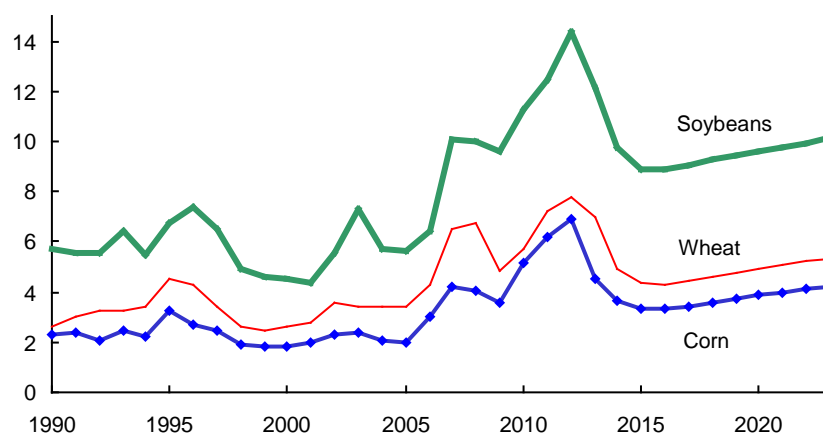


U.S. soybean plantings remain near 78 million acres over most of the projection period. Growth in both domestic use and export demand lead to increases in prices, allowing soybeans to compete with corn and other crops for land use.

- Lower U.S. livestock production since the 2008 peak and increased availability of distillers grains and canola meal have lowered demand for soybean meal as a livestock feed in recent years, thereby generally reducing domestic soybean crush. As increases in meat production resume and growth in distillers grains and canola meal slow, domestic demand for soybean meal and thus soybean crush is projected to grow in the coming decade.
- Strong global demand for soybeans, particularly in China, boosts soybean trade over the projection period—China accounts for all of the increase in world soybean imports. Even though U.S. soybean exports are projected to rise, competition from South America leads to a reduction in the U.S. share of global soybean trade from 38 percent in 2013/14 to about 32 percent in 2023/24. Brazil continues to be the largest exporter of soybeans.
- U.S. exports of soybean oil and soybean meal also face strong competition from South America. Argentina, in particular, is a competitive exporter of soybean products because its graduated export taxes favor exports of soybean products over soybeans. Increasing biodiesel production in Argentina, however, limits the country's soybean oil export growth, allowing the U.S. global export share to increase. However, Argentina is projected to account for about half of global soybean meal exports over the next decade. Brazil remains the second largest soybean meal exporter.
- Soybean oil used to produce methyl esters (biodiesel) in the United States is projected at 5.0 billion pounds over the next decade, supporting the production of almost 700 million gallons of biodiesel annually. This use reflects the mandate of 1.28 billion gallons of biomass-based diesel use starting in 2013 and assumed to continue through the projections. Some additional demand for biodiesel to meet a portion of the Renewable Fuel Standard's advanced biofuel mandate is also assumed. Soybean oil is assumed to account for about half of total biodiesel production. Other feedstocks used to produce biodiesel include corn oil extracted from distillers grains, other first-use vegetable oils, animal fats, and recycled vegetable oils.

### U.S. farm-level prices: Corn, wheat, and soybeans

Dollars per bushel

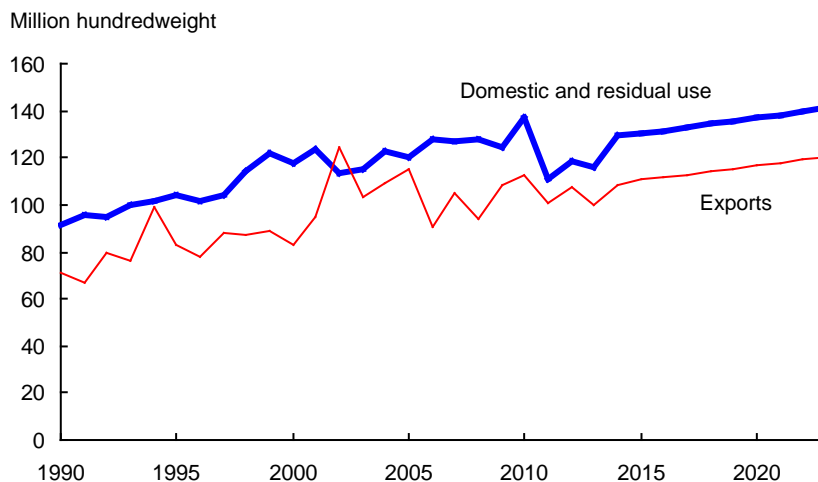


Market responses to high crop prices in recent years, both in the United States and in other countries, are projected to lower prices over the next couple of years. Nonetheless, U.S. prices for corn, wheat, and soybeans are projected to remain historically high, above pre-2007 levels. The continuing influence of several long-term factors—including global growth in population and per capita income, a low-valued U.S. dollar, increasing costs for crude petroleum, and rising biofuel production—underlies these price projections.

- Corn prices are projected to decline through 2015/16, but then begin increasing in 2016/17 as ending stocks tighten due to growth in feed use, exports, and demand for corn by ethanol producers.
- Soybean prices initially fall from recent highs but then rise moderately after 2015/16, reflecting strengthening demand for soybeans and soybean products.
- Wheat prices decline through 2016/17, reflecting rising wheat stocks and falling corn prices. Wheat prices increase through the remainder of the projection period with export growth, moderate gains in food use, and declining stocks. Rising imports and increasing global competition limit price increases for wheat.



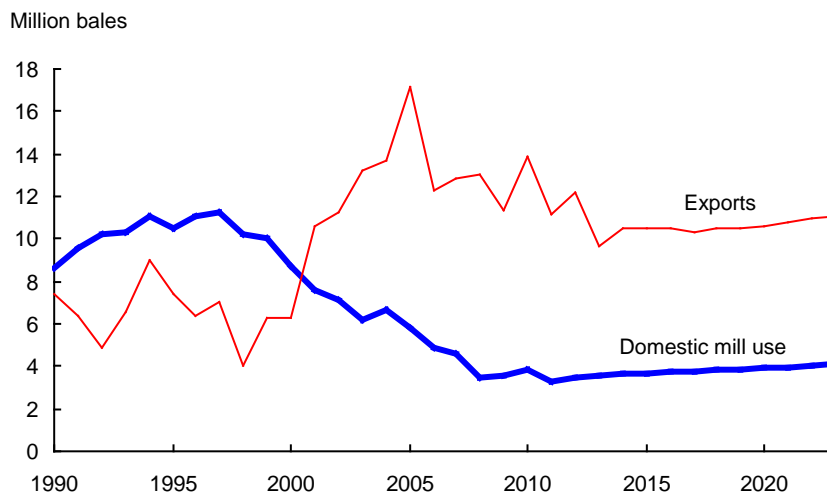
### U.S. rice: Domestic and residual use and exports



U.S. acreage planted to long-grain rice is projected to rise moderately through the projection period, but plantings for medium- and short-grain rice hold flat.

- Domestic use of rice is projected to grow slightly faster than population growth. Moderate expansion in U.S. food use of rice is projected to continue over the next decade. U.S. rice imports are projected to expand over the next decade, but at a slower rate than in the past. Asian aromatic varieties, classified as long-grain rice, are expected to continue to account for most of U.S. imports.
- U.S. rice exports are projected to rebound from a low level in 2013/14 and then increase over the next decade. Continued growth of U.S. rough-rice exports to Latin America (nearly all long-grain rice) is projected to account for most of the expansion of U.S. rice exports. Overall, the U.S. market share of global rice trade is projected at about 8 percent in the next decade.
- After near-term market adjustments in 2014, prices for rice are projected to rise moderately through most of the projection period.

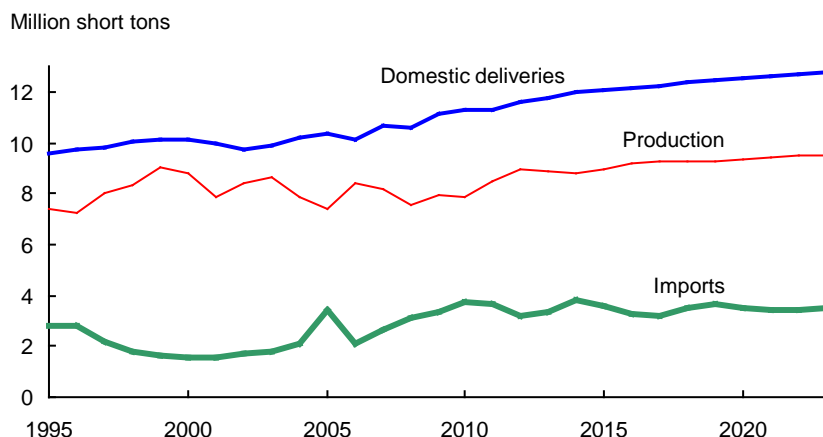
### U.S. upland cotton: Domestic mill use and exports



Upland cotton plantings are projected to increase almost a million acres in 2014 to 11 million as prices for competing crops fall more than do cotton prices. Acreage falls to 10 million in 2015 and remains near that level for the remainder of the projection period, as world and U.S. cotton prices are projected below the recent 5-year average. U.S. mill use of upland cotton is projected to rise moderately while cotton exports increase in the second half of the projections.

- A decline in U.S. mill use of cotton since the late 1990s reflected a gradual, long-term movement of spinning capacity to developing countries. Continued increases in U.S. imports of apparel from Asia will reduce domestic apparel production and lower the apparel industry's demand for fabric and yarn produced in the United States. However, U.S. mill use is projected to grow somewhat over the next decade in response to rising demand for U.S. textile product exports, mainly to other countries in the Western Hemisphere. Nonetheless, even with this growth, domestic mill use is projected to represent about 27 percent of total use at the end of the projection period, down from more than 60 percent in the late 1990s.
- U.S. upland cotton exports are projected to rise from 2013/14's low level to about 10.5 million bales for several years, before showing moderate additional growth over the remainder of the projections. The United States remains the world's largest exporter of cotton, although the U.S. share of global cotton trade falls below 23 percent by the end of the projection period, compared to an average of more than 37 percent in 2000-2010. China is the world's largest importer of cotton.

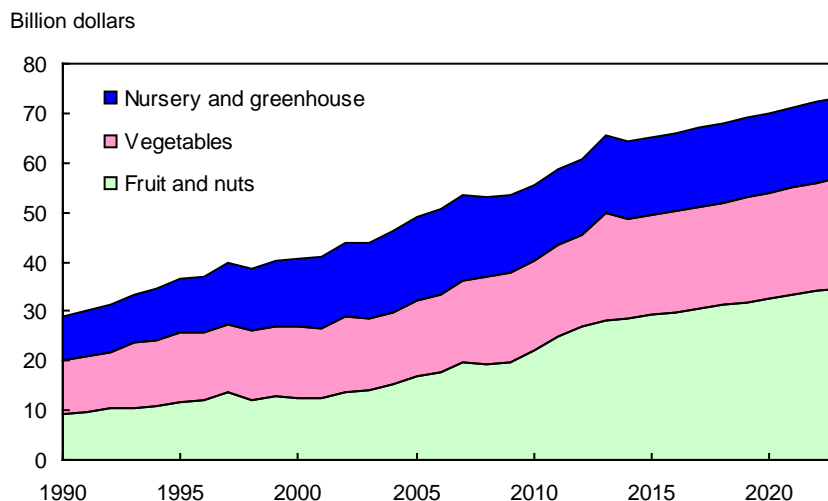
### U.S. sugar: Domestic production, use, and imports



The two primary influences on the U.S. sugar market in the projections are continued low world sugar prices and large supplies of sugar in Mexico available for export to the United States.

- World sugar prices are projected to average 17.74 cents per pound between 2014/15 and 2019/20, levels that would not provide support for U.S. sugar sector. Beyond then, however, world sugar prices are projected to be higher.
- Mexico's harvested area for sugarcane grew in recent years in response to high returns and is expected to top out at 844,000 hectares in 2014/15. After that, declines in Mexican sugarcane returns lead to lower area. Nonetheless, sugar production averages 6.317 million tons, raw value (MTRV) in 2014/15-2023/24, about 17 percent higher than the average for 2007/08-2011/12.
- Mexico's consumption of high fructose corn syrup (HFCS) is expected to resume growth after a lull in 2012/13 due to unusually-high corn prices. By 2023/24, annual HFCS consumption is projected at 2.735 million metric tons, dry weight—about 85 percent more than forecasted for 2013/14—and will comprise about 41 percent of combined sugar and HFCS consumption in Mexico.
- The combination of Mexico's improved sugar production prospects and declining sugar consumption makes more Mexican sugar available for export. Annual exports to the U.S. market are expected to average 1.768 million MTRV, or 1.949 million short tons, raw value (STRV). This projection contrasts with 1.364 million STRV, the estimated average for 2007/08-2012/13, the first 6 years since the full implementation of the sweetener provisions of the North American Free Trade Agreement (NAFTA). Over the long term, imports from Mexico are expected to constitute between 10.6 and 16.9 percent of annual U.S. sugar supply, or on average 12.8 percent. The corresponding average for 2007/08-2012/13 is estimated at 10.3 percent.
- Moderate growth is projected for U.S. sugar production over the next decade. There is no growth and not much year-to-year variation in either U.S. sugarbeet harvest area (1.182 million acres) or U.S. sugarcane harvest area (835,000 acres). Almost all production growth is attributable to steady gains in sugar crop yields and improved sucrose recovery. Beet sugar production grows 12.2 percent from 2014/15 through 2023/24 to 5.647 million STRV, while cane sugar production grows only 3.5 percent over the same period to 3.882 million STRV.
- U.S. sugar consumption is expected to increase about 6.5 percent from 2014/15 (11.806 million STRV) to 2023/24 (12.574 million STRV). All growth is attributable to the expected increase in population over the same time period.
- Sugar purchases by USDA's Commodity Credit Corporation (CCC) for re-sale to ethanol producers are projected for 2014/15, 2017/18, and 2018/19 for a total of 568,000 STRV.

## Value of U.S. horticultural production

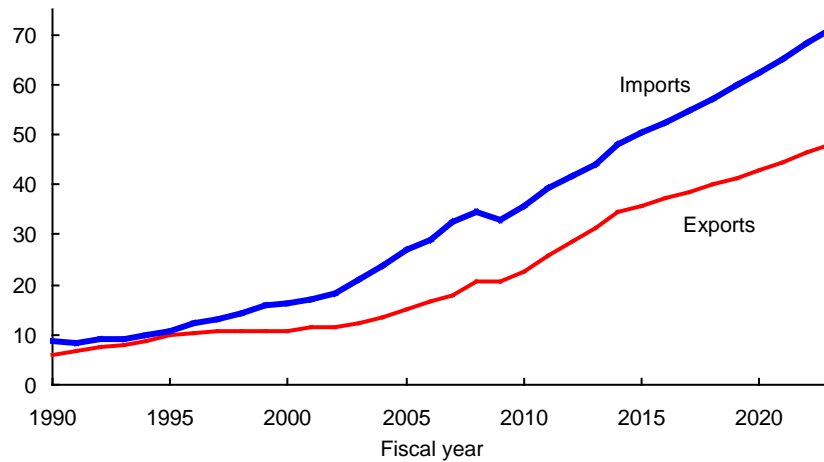


Farm sales of horticultural crops are projected to grow by 1.2 percent annually over the next decade, reaching \$74 billion in calendar year 2023, up from \$66 billion in 2013.

- The value of farm production of fruit and tree nuts is projected to grow at an annual rate of 2.2 percent over the next decade, largely due to sales growth of tree nuts and noncitrus fruits. Fruit and tree nuts are projected to rank first among horticultural crops in terms of farm sales value with a share of 47 percent. Farm sales value of vegetables and pulses is projected to grow 0.2 percent per year, while farm sales of greenhouse and nursery crops are projected to increase at an annual rate of 0.5 percent.
- The volume of U.S. farm production of horticultural crops is projected to rise by 0.4 percent annually. Vegetables lead this growth at an annual rate of 0.5 percent, reaching 132 billion pounds in 2023 as processing production averages 1.5-percent growth. Fruit and nut production expands by 0.2 percent per year to 71 billion pounds in 2023 as noncitrus production growth more than offsets citrus production declines.
- Producer prices for vegetables initially decline from high 2013 levels and then are projected to rise less than the inflation rate, at only 0.7 percent per year, due to strong processing vegetable production. Producer prices for fresh fruits rise by 1.9 percent per year due to slower production growth than for vegetables and due to higher citrus prices as citrus production declines.
- U.S. per capita use of fruits and tree nuts increases from 295 pounds in 2013 to 305 pounds by 2023, an annual average growth rate of 0.3 percent. Per capita use of vegetables initially drops in 2013 due to smaller potato and pulse crops, and then levels off to an average 386 pounds. The total supply of fruits, nuts, and vegetables over the next decade, both domestic and imported, is projected to grow at an average rate of 1.2 percent per year.

### Value of U.S. horticultural trade

Billion dollars



The U.S. trade deficit in horticultural crops and products is projected to expand from \$12.8 billion in fiscal year (FY) 2013 (October 2012 to September 2013) to \$23.1 billion in FY 2023.

- Imports increasingly supplement domestic production of horticultural crops and products. By FY 2023, imports are projected to supply 50 percent of domestic fruit and nut use and 25 percent of vegetable use, in terms of farm weight. In 2013, these shares were 42 percent and 19 percent, respectively.
- The export market becomes more important for U.S. horticultural producers. In FY 2023, exports are projected to be the destination for 27 percent of U.S. fruit and nut production, up from 23 percent in 2013, while 20 percent of vegetable production will be sold in foreign markets, up from 16.7 percent in 2013.
- The value of U.S. horticultural imports is projected to increase by 4.9 percent annually over the next decade, compared with 7.9 percent on average during the past 13 years, reaching \$71.1 billion in FY 2023. Fruit and nut imports account for \$24.5 billion, while vegetable imports account for \$17.8 billion.
- Exports of U.S. horticultural products are projected to reach \$48.1 billion in FY 2023, up an average of 4.4 percent annually from 2013. Of this amount, fruit and nuts contribute \$23 billion, and vegetables contribute \$9.5 billion. Exports of other horticultural products total \$15.6 billion by 2023, up from \$9.7 billion in 2013.

Table 17. U.S. corn long-term projections

Item	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Area (million acres):												
Planted acres	97.2	95.3	93.5	91.0	89.0	88.0	88.0	88.0	88.5	88.5	88.5	88.5
Harvested acres	87.4	87.2	86.1	83.6	81.6	80.6	80.6	80.6	81.1	81.1	81.1	81.1
Yield:												
Bushels per harvested acre	123.4	160.4	165.6	167.6	169.6	171.6	173.6	175.6	177.6	179.6	181.6	183.6
Supply and use (million bushels):												
Beginning stocks	989	824	1,887	2,607	2,877	2,807	2,612	2,437	2,262	2,167	2,067	1,967
Production	10,780	13,989	14,260	14,010	13,840	13,830	13,990	14,155	14,405	14,565	14,730	14,890
Imports	162	25	25	25	25	25	25	25	25	25	25	25
Supply	11,932	14,837	16,172	16,642	16,742	16,662	16,627	16,617	16,692	16,757	16,822	16,882
Feed & residual	4,333	5,200	5,500	5,550	5,575	5,600	5,625	5,675	5,725	5,775	5,850	5,900
Food, seed, & industrial	6,044	6,350	6,365	6,415	6,460	6,500	6,565	6,630	6,700	6,765	6,805	6,850
Ethanol and by-products	4,648	4,900	4,900	4,925	4,950	4,975	5,025	5,075	5,125	5,175	5,200	5,225
Domestic use	10,377	11,550	11,865	11,965	12,035	12,100	12,190	12,305	12,425	12,540	12,655	12,750
Exports	731	1,400	1,700	1,800	1,900	1,950	2,000	2,050	2,100	2,150	2,200	2,250
Total use	11,108	12,950	13,565	13,765	13,935	14,050	14,190	14,355	14,525	14,690	14,855	15,000
Ending stocks	824	1,887	2,607	2,877	2,807	2,612	2,437	2,262	2,167	2,067	1,967	1,882
Stocks/use ratio, percent	7.4	14.6	19.2	20.9	20.1	18.6	17.2	15.8	14.9	14.1	13.2	12.5
Price (dollars per bushel):												
Farm price	6.89	4.50	3.65	3.30	3.35	3.45	3.60	3.75	3.85	3.95	4.10	4.20

Note: Marketing year beginning September 1 for corn.

Table 18. U.S. sorghum long-term projections

Item	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Area (million acres):												
Planted acres	6.2	8.1	6.5	6.2	6.0	5.8	5.8	5.8	5.8	5.8	5.8	5.8
Harvested acres	5.0	6.7	5.5	5.2	5.0	4.9	4.9	4.9	4.9	4.9	4.9	4.9
Yield:												
Bushels per harvested acre	49.8	62.2	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1	65.1
Supply and use (million bushels):												
Beginning stocks	23	15	31	39	38	34	33	32	31	30	29	33
Production	247	416	358	339	326	319	319	319	319	319	319	319
Imports	10	0	0	0	0	0	0	0	0	0	0	0
Supply	279	431	389	378	364	353	352	351	350	349	348	352
Feed & residual	93	100	80	70	60	50	50	50	50	50	45	45
Food, seed, & industrial	95	120	120	120	120	120	120	120	120	120	120	120
Domestic use	188	220	200	190	180	170	170	170	170	170	165	165
Exports	76	180	150	150	150	150	150	150	150	150	150	150
Total use	264	400	350	340	330	320	320	320	320	320	315	315
Ending stocks	15	31	39	38	34	33	32	31	30	29	33	37
Stocks/use ratio, percent	5.7	7.8	11.1	11.2	10.3	10.3	10.0	9.7	9.4	9.1	10.5	11.7
Price (dollars per bushel):												
Farm price	6.33	4.20	3.40	3.10	3.15	3.20	3.35	3.50	3.60	3.70	3.80	3.90

Note: Marketing year beginning September 1 for sorghum.

Table 19. U.S. barley long-term projections

Item	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Area (million acres):												
Planted acres	3.6	3.5	3.1	3.1	3.0	3.0	2.9	2.9	2.9	2.9	2.9	2.9
Harvested acres	3.2	3.0	2.7	2.7	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5
Yield:												
Bushels per harvested acre	67.9	71.7	70.0	70.6	71.2	71.9	72.5	73.1	73.8	74.4	75.0	75.7
Supply and use (million bushels):												
Beginning stocks	60	80	80	85	93	91	92	88	87	84	83	85
Production	220	215	189	191	185	187	181	183	185	186	188	189
Imports	23	25	25	25	25	25	25	25	25	25	25	25
Supply	304	320	294	301	303	303	298	296	297	295	296	299
Feed & residual	59	75	45	45	50	50	50	50	55	55	55	60
Food, seed, & industrial	155	155	154	153	152	151	150	149	148	147	146	145
Domestic use	214	230	199	198	202	201	200	199	203	202	201	205
Exports	9	10	10	10	10	10	10	10	10	10	10	10
Total use	223	240	209	208	212	211	210	209	213	212	211	215
Ending stocks	80	80	85	93	91	92	88	87	84	83	85	84
Stocks/use ratio, percent	35.9	33.3	40.7	44.7	42.9	43.6	41.9	41.6	39.4	39.2	40.3	39.1
Price (dollars per bushel):												
Farm price	6.43	6.00	4.60	3.70	3.60	3.70	3.80	3.95	4.05	4.10	4.25	4.35

Note: Marketing year beginning June 1 for barley.



Table 20. U.S. oats long-term projections

Item	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Area (million acres):												
Planted acres	2.8	3.0	2.8	2.7	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Harvested acres	1.0	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Yield:												
Bushels per harvested acre	61.3	64.0	64.1	64.4	64.7	65.0	65.3	65.6	65.9	66.2	66.5	66.8
Supply and use (million bushels):												
Beginning stocks	55	36	38	50	55	55	55	55	55	55	55	55
Production	64	66	71	64	65	65	65	66	66	66	67	67
Imports	93	95	100	100	100	100	100	100	100	100	100	100
Supply	212	197	209	214	220	220	220	221	221	221	222	222
Feed & residual	98	80	80	80	85	85	85	85	85	85	85	85
Food, seed, & industrial	76	77	77	77	78	78	78	79	79	79	80	80
Domestic use	174	157	157	157	163	163	163	164	164	164	165	165
Exports	1	2	2	2	2	2	2	2	2	2	2	2
Total use	176	159	159	159	165	165	165	166	166	166	167	167
Ending stocks	36	38	50	55	55	55	55	55	55	55	55	55
Stocks/use ratio, percent	20.5	23.9	31.4	34.6	33.3	33.3	33.3	33.1	33.1	33.1	32.9	32.9
Price (dollars per bushel):												
Farm price	3.89	3.50	2.35	1.95	1.95	2.00	2.10	2.20	2.25	2.30	2.35	2.40

Note: Marketing year beginning June 1 for oats.

Table 21. U.S. wheat long-term projections

Item	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Area (million acres):												
Planted acres	55.7	56.2	57.0	56.0	54.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0
Harvested acres	48.9	45.2	48.5	47.7	46.0	44.3	44.3	44.3	44.3	44.3	44.3	44.3
Yield:												
Bushels per harvested acre	46.3	47.1	45.8	46.2	46.6	47.0	47.4	47.8	48.2	48.6	48.9	49.3
Supply and use (million bushels):												
Beginning stocks	743	718	565	642	745	794	770	758	753	745	739	725
Production	2,266	2,130	2,220	2,205	2,145	2,080	2,100	2,120	2,135	2,155	2,165	2,185
Imports	123	150	140	150	160	170	180	185	190	195	200	205
Supply	3,131	2,998	2,925	2,997	3,050	3,044	3,050	3,063	3,078	3,095	3,104	3,115
Food	945	950	957	964	971	979	987	995	1,003	1,011	1,019	1,027
Seed	73	73	76	73	70	70	70	70	70	70	70	70
Feed & residual	388	310	225	190	190	190	190	190	190	190	190	190
Domestic use	1,407	1,333	1,258	1,227	1,231	1,239	1,247	1,255	1,263	1,271	1,279	1,287
Exports	1,007	1,100	1,025	1,025	1,025	1,035	1,045	1,055	1,070	1,085	1,100	1,115
Total use	2,414	2,433	2,283	2,252	2,256	2,274	2,292	2,310	2,333	2,356	2,379	2,402
Ending stocks	718	565	642	745	794	770	758	753	745	739	725	713
Stocks/use ratio, percent	29.7	23.2	28.1	33.1	35.2	33.9	33.1	32.6	31.9	31.4	30.5	29.7
Price (dollars per bushel):												
Farm price	7.77	7.00	4.90	4.35	4.30	4.45	4.60	4.75	4.90	5.05	5.20	5.35

Note: Marketing year beginning June 1 for wheat.

Table 22. U.S. soybeans and products long-term projections

Item	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
<b>Soybeans</b>												
Area (million acres):												
Planted	77.2	76.5	78.0	77.8	77.5	78.0	78.0	78.0	78.0	78.0	78.0	78.0
Harvested	76.2	75.7	77.0	76.7	76.5	77.0	77.0	77.0	77.0	77.0	77.0	77.0
Yield: bushels per harvested acre	39.8	43.0	45.2	45.6	46.1	46.5	46.9	47.4	47.8	48.3	48.7	49.2
Supply (million bushels)												
Beginning stocks, September 1	169	141	170	203	232	245	243	240	237	239	240	242
Production	3,034	3,258	3,480	3,500	3,525	3,580	3,615	3,650	3,685	3,720	3,750	3,785
Imports	36	15	15	15	15	15	15	15	15	15	15	15
Total supply	3,239	3,413	3,665	3,718	3,772	3,840	3,873	3,905	3,937	3,974	4,005	4,042
Disposition (million bushels)												
Crush	1,689	1,685	1,705	1,720	1,735	1,755	1,780	1,800	1,825	1,850	1,870	1,890
Seed and residual	90	109	116	116	117	118	118	118	118	119	119	119
Exports	1,320	1,450	1,640	1,650	1,675	1,725	1,735	1,750	1,755	1,765	1,775	1,790
Total disposition	3,098	3,243	3,461	3,486	3,527	3,597	3,633	3,668	3,698	3,733	3,764	3,799
Carryover stocks, August 31												
Total ending stocks	141	170	203	232	245	243	240	237	239	240	242	243
Stocks/use ratio, percent	4.6	5.2	5.9	6.7	6.9	6.8	6.6	6.5	6.5	6.4	6.4	6.4
Price (dollars per bushel)												
Soybean price, farm	14.40	12.15	9.75	8.85	8.90	9.05	9.25	9.45	9.60	9.75	9.95	10.15
<b>Soybean oil (million pounds)</b>												
Beginning stocks, October 1	2,540	1,705	1,635	1,970	2,155	2,190	2,135	2,095	2,065	2,075	2,130	2,170
Production	19,820	19,380	19,625	19,815	20,005	20,255	20,560	20,810	21,115	21,425	21,675	21,925
Imports	205	250	160	170	180	190	200	210	220	230	240	250
Total supply	22,565	21,335	21,420	21,955	22,340	22,635	22,895	23,115	23,400	23,730	24,045	24,345
Domestic disappearance	18,660	18,550	18,100	18,200	18,300	18,400	18,500	18,600	18,700	18,800	18,900	19,000
Biodiesel <sup>1</sup>	4,600	5,600	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Food, feed, and other industrial	14,060	12,950	13,100	13,200	13,300	13,400	13,500	13,600	13,700	13,800	13,900	14,000
Exports	2,200	1,150	1,350	1,600	1,850	2,100	2,300	2,450	2,625	2,800	2,975	3,150
Total demand	20,860	19,700	19,450	19,800	20,150	20,500	20,800	21,050	21,325	21,600	21,875	22,150
Ending stocks, September 30	1,705	1,635	1,970	2,155	2,190	2,135	2,095	2,065	2,075	2,130	2,170	2,195
Soybean oil price (dollars per lb)	0.471	0.420	0.370	0.350	0.355	0.358	0.360	0.365	0.368	0.370	0.370	0.370
<b>Soybean meal (thousand short tons)</b>												
Beginning stocks, October 1	300	275	300	300	300	300	300	300	300	300	300	300
Production	39,875	40,060	40,435	40,885	41,235	41,685	42,235	42,785	43,360	43,885	44,410	44,935
Imports	250	165	165	165	165	165	165	165	165	165	165	165
Total supply	40,425	40,500	40,900	41,350	41,700	42,150	42,700	43,250	43,825	44,350	44,875	45,400
Domestic disappearance	29,100	29,950	30,600	31,150	31,600	32,050	32,400	32,750	33,125	33,500	33,875	34,250
Exports	11,050	10,250	10,000	9,900	9,800	9,800	10,000	10,200	10,400	10,550	10,700	10,850
Total demand	40,150	40,200	40,600	41,050	41,400	41,850	42,400	42,950	43,525	44,050	44,575	45,100
Ending stocks, September 30	275	300	300	300	300	300	300	300	300	300	300	300
Soybean meal price (dollars per ton)	468.11	395.00	310.00	277.50	277.50	283.50	291.50	299.00	305.00	311.00	320.00	329.50
Crushing yields (pounds per bushel)												
Soybean oil	11.73	11.50	11.51	11.52	11.53	11.54	11.55	11.56	11.57	11.58	11.59	11.60
Soybean meal	47.22	47.54	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50
Crush margin (dollars per bushel)	2.18	2.07	1.87	1.77	1.78	1.81	1.83	1.87	1.90	1.92	1.94	1.97

Note: Marketing year beginning September 1 for soybeans; October 1 for soybean oil and soybean meal.

<sup>1</sup>History based on data reported by the U.S. Department of Energy, Energy Information Administration.

Table 23a. U.S. rice long-term projections, total rice, rough basis

Item	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Area (thousand acres):												
Planted	2,699	2,485	2,900	2,900	2,915	2,930	2,945	2,960	2,975	2,990	3,005	3,020
Harvested	2,678	2,464	2,874	2,874	2,889	2,904	2,919	2,934	2,949	2,963	2,978	2,993
Yield:												
Pounds per harvested acre	7,449	7,660	7,648	7,686	7,722	7,758	7,797	7,832	7,871	7,908	7,945	7,985
Supply and use (million hundredweight):												
Beginning stocks	41.1	36.2	30.9	34.1	34.9	35.6	36.3	36.5	36.7	36.9	36.6	36.3
Production	199.5	188.7	219.8	220.9	223.1	225.3	227.6	229.8	232.1	234.3	236.6	239.0
Imports	21.1	22.0	21.0	21.1	21.2	21.3	21.5	21.6	21.7	21.8	21.9	22.1
Total supply	261.6	246.9	271.7	276.1	279.2	282.2	285.3	287.9	290.5	293.0	295.2	297.4
Domestic use and residual	118.1	116.0	129.6	130.3	131.6	132.9	134.3	135.7	137.1	138.4	139.8	141.3
Exports	107.1	100.0	108.0	111.0	112.0	113.0	114.5	115.5	116.5	118.0	119.0	120.0
Total use	225.2	216.0	237.6	241.3	243.6	245.9	248.8	251.2	253.6	256.4	258.8	261.3
Ending stocks	36.2	30.9	34.1	34.9	35.6	36.3	36.5	36.7	36.9	36.6	36.3	36.1
Stocks/use ratio, percent	16.1	14.3	14.4	14.4	14.6	14.8	14.7	14.6	14.6	14.3	14.0	13.8
Price (dollars per hundredweight):												
Average farm price	14.87	15.70	15.30	15.60	15.70	15.80	15.90	16.00	16.00	16.10	16.20	16.30

Note: Marketing year beginning August 1 for rice.

Table 23b. U.S. rice long-term projections, long-grain rice, rough basis

Item	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Area (thousand acres):												
Planted	1,994	1,780	2,200	2,200	2,215	2,230	2,245	2,260	2,275	2,290	2,305	2,320
Harvested	1,979	1,765	2,180	2,180	2,195	2,210	2,225	2,240	2,255	2,269	2,284	2,299
Yield:												
Pounds per harvested acre	7,285	7,311	7,348	7,384	7,421	7,458	7,496	7,533	7,571	7,609	7,647	7,685
Supply and use (million hundredweight):												
Beginning stocks	24.3	21.9	18.4	21.5	22.5	23.2	23.8	24.2	24.4	24.5	24.3	24.1
Production	144.2	129.0	160.2	161.0	162.9	164.8	166.8	168.7	170.7	172.6	174.6	176.7
Imports	18.7	19.5	18.5	18.6	18.7	18.8	18.9	19.0	19.0	19.1	19.2	19.3
Total supply	187.2	170.4	197.1	201.1	204.0	206.8	209.5	211.9	214.2	216.2	218.2	220.1
Domestic use & residual	89.2	84.0	100.1	100.6	101.8	103.0	104.3	105.4	106.7	107.9	109.1	110.4
Exports	76.1	68.0	75.5	78.0	79.0	80.0	81.0	82.0	83.0	84.0	85.0	86.0
Total use	165.3	152.0	175.6	178.6	180.8	183.0	185.3	187.4	189.7	191.9	194.1	196.4
Ending stocks	21.9	18.4	21.5	22.5	23.2	23.8	24.2	24.4	24.5	24.3	24.1	23.7
Stocks/use ratio, percent	13.2	12.1	12.2	12.6	12.8	13.0	13.1	13.0	12.9	12.7	12.4	12.0
Price (dollars per hundredweight):												
Average farm price	14.40	15.00	14.50	14.90	15.00	15.00	15.10	15.20	15.30	15.40	15.40	15.50

Note: Marketing year beginning August 1 for rice.

Table 23c. U.S. rice long-term projections, medium- and short-grain rice, rough basis

Item	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Area (thousand acres):												
Planted	705	705	700	700	700	700	700	700	700	700	700	700
Harvested	699	699	694	694	694	694	694	694	694	694	694	694
Yield:												
Pounds per harvested acre	7,914	8,539	8,582	8,625	8,668	8,711	8,755	8,798	8,842	8,887	8,931	8,976
Supply and use (million hundredweight):												
Beginning stocks	14.7	12.2	10.4	10.5	10.3	10.2	10.3	10.2	10.1	10.3	10.1	10.2
Production	55.3	59.7	59.6	59.9	60.2	60.5	60.8	61.1	61.4	61.7	62.0	62.3
Imports	2.3	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.7	2.7	2.7	2.7
Total supply	72.1	74.4	72.5	72.9	73.0	73.3	73.7	73.9	74.2	74.7	74.8	75.2
Domestic use & residual	28.9	32.0	29.5	29.7	29.8	29.9	30.1	30.2	30.4	30.5	30.7	30.8
Exports	31.0	32.0	32.5	33.0	33.0	33.0	33.5	33.5	33.5	34.0	34.0	34.0
Total use	59.9	64.0	62.0	62.7	62.8	62.9	63.6	63.7	63.9	64.5	64.7	64.8
Ending stocks	12.2	10.4	10.5	10.3	10.2	10.3	10.2	10.1	10.3	10.1	10.2	10.3
Stocks/use ratio, percent	20.4	16.2	16.9	16.4	16.3	16.4	16.0	15.9	16.1	15.7	15.7	16.0
Price (dollars per hundredweight):												
Average farm price	16.00	17.30	17.30	17.40	17.50	17.60	17.60	17.70	17.80	17.90	18.00	18.10

Note: Marketing year beginning August 1 for rice.

Table 24. U.S. upland cotton long-term projections

Item	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Area (million acres):												
Planted acres	12.1	10.1	11.0	10.0	9.9	9.8	9.9	10.0	10.0	10.1	10.2	10.2
Harvested acres	9.1	7.6	9.4	8.5	8.4	8.3	8.4	8.5	8.5	8.6	8.7	8.7
Yield:												
Pounds per harvested acre	869	790	795	800	805	810	815	820	825	830	835	840
Supply and use (thousand bales):												
Beginning stocks	3,081	3,705	2,944	4,409	4,424	4,289	4,204	4,169	4,284	4,349	4,464	4,529
Production	16,535	12,479	15,600	14,200	14,100	14,000	14,300	14,500	14,600	14,900	15,100	15,200
Imports	6	5	5	5	5	5	5	5	5	5	5	5
Supply	19,622	16,189	18,549	18,614	18,529	18,294	18,509	18,674	18,889	19,254	19,569	19,734
Domestic use	3,478	3,580	3,630	3,680	3,730	3,780	3,830	3,880	3,930	3,980	4,030	4,080
Exports	12,190	9,650	10,500	10,500	10,500	10,300	10,500	10,500	10,600	10,800	11,000	11,100
Total use	15,668	13,230	14,130	14,180	14,230	14,080	14,330	14,380	14,530	14,780	15,030	15,180
Ending stocks	3,705	2,944	4,409	4,424	4,289	4,204	4,169	4,284	4,349	4,464	4,529	4,544
Stocks/use ratio, percent	23.6	22.3	31.2	31.2	30.1	29.9	29.1	29.8	29.9	30.2	30.1	29.9
Price (dollars per pound):												
Farm price	0.725	0.740	0.640	0.620	0.620	0.620	0.640	0.660	0.680	0.700	0.715	0.730

Note: Marketing year beginning August 1 for upland cotton.

Table 25. U.S. sugar long-term projections

Item	Units	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
<b>Sugarbeets</b>													
Planted area	1,000 acres	1,230	1,208	1,178	1,217	1,248	1,254	1,246	1,232	1,226	1,227	1,229	1,216
Harvested area	1,000 acres	1,204	1,183	1,134	1,173	1,203	1,208	1,200	1,187	1,181	1,182	1,184	1,172
Yield	Tons/acre	29.3	27.8	26.5	26.6	26.7	26.8	26.9	27.0	27.1	27.2	27.3	27.4
Production	Mil. s. tons	35.2	32.8	30.0	31.2	32.1	32.4	32.3	32.1	32.0	32.2	32.3	32.1
<b>Sugarcane</b>													
Harvested area	1,000 acres	851	825	850	833	834	835	832	831	832	834	835	836
Yield	Tons/acre	35.8	35.8	34.8	35.0	35.2	35.4	35.5	35.6	35.8	36.0	36.1	36.3
Production	Mil. s. tons	30.5	29.5	29.5	29.2	29.3	29.5	29.5	29.6	29.8	30.0	30.2	30.3
<b>Supply:</b>													
Beginning stocks	1,000 s. tons	1,979	2,183	2,082	2,240	2,500	2,504	2,311	2,329	2,536	2,552	2,563	2,576
Production	1,000 s. tons	8,977	8,878	8,783	8,963	9,170	9,270	9,289	9,292	9,341	9,424	9,512	9,529
Beet sugar	1,000 s. tons	5,078	5,025	5,032	5,257	5,438	5,512	5,527	5,520	5,541	5,595	5,655	5,647
Cane sugar	1,000 s. tons	3,899	3,853	3,751	3,706	3,732	3,757	3,762	3,771	3,799	3,829	3,858	3,882
Total imports	1,000 s. tons	3,224	3,372	3,848	3,597	3,244	3,219	3,507	3,626	3,466	3,436	3,414	3,529
TRQ imports	1,000 s. tons	957	1,332	963	838	844	1,233	1,467	1,393	1,237	1,188	1,140	1,096
Imports from Mexico	1,000 s. tons	2,124	1,920	2,485	2,359	2,000	1,587	1,641	1,832	1,828	1,848	1,874	2,033
Other imports	1,000 s. tons	143	120	400	400	400	400	400	400	400	400	400	400
Total supply	1,000 s. tons	14,180	14,433	14,713	14,800	14,915	14,992	15,107	15,247	15,342	15,412	15,489	15,634
<b>Use:</b>													
Exports	1,000 s. tons	274	250	250	250	250	250	250	250	250	250	250	250
Domestic deliveries	1,000 s. tons	11,596	11,785	12,016	12,050	12,161	12,249	12,349	12,461	12,540	12,598	12,663	12,784
Miscellaneous	1,000 s. tons	-26	0	0	0	0	0	0	0	0	0	0	0
Total use	1,000 s. tons	11,844	12,035	12,266	12,300	12,411	12,499	12,599	12,711	12,790	12,848	12,913	13,034
CCC surplus disbursements <sup>1</sup>	1,000 s. tons	153	316	207	0	0	183	178	0	0	0	0	0
Ending stocks	1,000 s. tons	2,183	2,082	2,240	2,500	2,504	2,311	2,329	2,536	2,552	2,563	2,576	2,600
<b>Raw sugar price:</b>													
New York (No. 16)	Cents/lb.	20.41	21.10	20.76	21.17	21.53	20.69	20.69	21.76	22.89	23.76	23.84	24.10
Raw sugar loan rate	Cents/lb.	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75
Beet sugar loan rate	Cents/lb.	24.09	24.09	24.09	24.09	24.09	24.09	24.09	24.09	24.09	24.09	24.09	24.09
<b>Grower prices:</b>													
Sugarbeets	Dol./ton	54.16	47.36	48.25	47.62	47.98	47.83	47.16	47.89	49.61	51.18	50.24	48.06
Sugarcane	Dol./ton	42.22	42.76	41.83	42.19	42.58	41.80	41.77	42.87	44.07	44.99	45.14	45.40

Note: Marketing year beginning October 1 for sugar.

<sup>1</sup>CCC is the Commodity Credit Corporation, U.S. Department of Agriculture.

Table 26. Horticultural crops long-term supply and use projections, calendar years

Item	Unit	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>Production area<sup>1</sup></b>													
Fruit, nuts, and vegetables	1,000 acres	10,707	10,602	10,626	10,652	10,680	10,711	10,743	10,778	10,815	10,854	10,895	10,939
Fruit and tree nuts	1,000 acres	4,017	4,175	4,177	4,179	4,183	4,187	4,192	4,197	4,203	4,210	4,218	4,227
Vegetables	1,000 acres	6,690	6,427	6,449	6,473	6,498	6,524	6,552	6,581	6,612	6,644	6,677	6,712
<b>Supply</b>													
<b>Production, farm weight</b>													
Fruit and nuts	Mil. lbs.	69,246	69,610	68,664	68,892	69,124	69,359	69,600	69,843	70,090	70,341	70,595	70,852
Citrus	Mil. lbs.	23,362	22,348	21,106	21,034	20,963	20,891	20,820	20,750	20,679	20,609	20,539	20,469
Noncitrus	Mil. lbs.	40,517	41,916	42,105	42,296	42,489	42,681	42,877	43,073	43,271	43,469	43,667	43,867
Tree nuts	Mil. lbs.	5,367	5,346	5,453	5,562	5,673	5,786	5,902	6,020	6,141	6,263	6,389	6,516
Vegetables <sup>2</sup>	Mil. lbs.	130,391	125,769	126,339	126,926	127,531	128,153	128,792	129,450	130,127	130,822	131,536	132,270
Fresh market	Mil. lbs.	41,256	39,489	39,274	39,064	38,858	38,657	38,461	38,269	38,082	37,900	37,723	37,551
Processing	Mil. lbs.	37,990	37,846	38,414	38,990	39,575	40,168	40,771	41,382	42,003	42,633	43,273	43,922
Potatoes	Mil. lbs.	46,279	43,974	44,062	44,150	44,238	44,327	44,416	44,504	44,593	44,683	44,772	44,862
Pulses	Mil. lbs.	4,867	4,460	4,589	4,722	4,859	5,000	5,145	5,295	5,448	5,606	5,769	5,936
Total fruit, nuts, vegetables	Mil. lbs.	199,637	195,378	195,003	195,818	196,655	197,512	198,392	199,293	200,217	201,163	202,131	203,122
<b>Imports, farm weight</b>													
Fruit, nuts, and vegetables	Mil. lbs.	59,298	63,422	65,457	67,560	69,733	71,977	74,296	76,691	79,165	81,722	84,363	87,092
Fruit and tree nuts	Mil. lbs.	35,592	38,827	39,983	41,173	42,400	43,663	44,964	46,305	47,685	49,107	50,571	52,079
Vegetables	Mil. lbs.	23,706	24,595	25,474	26,387	27,333	28,314	29,331	30,386	31,480	32,615	33,792	35,012
<b>Use</b>													
<b>Exports, farm weight</b>													
Fruit, nuts, and vegetables	Mil. lbs.	36,092	36,792	37,646	38,520	39,416	40,333	41,272	42,234	43,219	44,228	45,261	46,320
Fruit and tree nuts	Mil. lbs.	15,749	15,770	16,098	16,434	16,777	17,128	17,487	17,854	18,230	18,614	19,007	19,409
Vegetables	Mil. lbs.	20,342	21,022	21,548	22,087	22,639	23,205	23,785	24,379	24,989	25,614	26,254	26,910
<b>Domestic use<sup>3</sup></b>													
Fruit, nuts, and vegetables	Mil. lbs.	222,844	222,008	222,814	224,859	226,972	229,156	231,416	233,751	236,163	238,656	241,232	243,894
Fruit and tree nuts	Mil. lbs.	89,089	92,667	92,548	93,632	94,747	95,895	97,077	98,293	99,545	100,833	102,159	103,523
Vegetables	Mil. lbs.	133,755	129,341	130,266	131,226	132,225	133,262	134,339	135,457	136,618	137,823	139,074	140,371
<b>Farm sales value<sup>4</sup></b>													
Fruit and nuts	\$ Mil.	26,907	27,981	28,589	29,211	29,848	30,498	31,164	31,845	32,541	33,253	33,982	34,727
Citrus	\$ Mil.	3,713	3,151	3,207	3,265	3,324	3,384	3,445	3,507	3,570	3,634	3,699	3,766
Noncitrus	\$ Mil.	15,796	16,844	17,172	17,506	17,847	18,195	18,550	18,913	19,282	19,659	20,043	20,434
Tree nuts	\$ Mil.	7,399	7,986	8,210	8,440	8,676	8,919	9,169	9,426	9,690	9,961	10,240	10,526
Vegetables	\$ Mil.	18,375	21,728	19,863	20,110	20,354	20,603	20,853	21,108	21,368	21,634	21,906	22,183
Fresh market	\$ Mil.	10,683	13,978	12,134	12,202	12,270	12,339	12,404	12,469	12,535	12,601	12,667	12,735
Processing	\$ Mil.	2,223	2,271	2,321	2,372	2,425	2,478	2,533	2,588	2,645	2,703	2,763	2,824
Potatoes	\$ Mil.	3,915	4,150	4,026	4,098	4,164	4,230	4,298	4,367	4,437	4,508	4,580	4,653
Pulses	\$ Mil.	1,555	1,328	1,382	1,437	1,495	1,556	1,618	1,684	1,752	1,822	1,896	1,972
Nursery and greenhouse <sup>5</sup>	\$ Mil.	15,555	15,632	15,710	15,789	15,868	15,947	16,027	16,107	16,188	16,269	16,350	16,432
Other horticulture crops <sup>6</sup>	\$ Mil.	807	831	856	877	899	921	940	959	978	997	1,017	1,038
Total horticulture crops	\$ Mil.	61,643	66,171	65,018	65,987	66,968	67,970	68,984	70,018	71,075	72,154	73,255	74,379
<b>Producer prices<sup>7</sup></b>													
Fresh fruits	2008=100	96.8	97.5	101.0	102.7	104.5	106.3	108.1	110.0	111.9	113.8	115.8	117.8
Citrus	2008=100	110.1	98.5	106.1	108.4	110.8	113.1	115.6	118.0	120.6	123.1	125.8	128.5
Noncitrus	2008=100	95.1	98.3	99.8	101.3	102.8	104.3	105.9	107.4	109.1	110.7	112.3	114.0
Tree nuts	2008=100	138.2	149.7	150.9	152.1	153.3	154.5	155.7	156.9	158.2	159.4	160.6	161.9
Vegetables	2008=100	90.8	110.4	100.5	101.2	102.0	102.7	103.4	104.2	104.9	105.6	106.4	107.1
Fresh vegetables	2008=100	85.0	117.2	102.3	103.5	104.6	105.7	106.8	107.9	109.0	110.1	111.2	112.4
Potatoes (fresh)	2008=100	90.2	100.7	97.4	99.0	100.4	101.8	103.2	104.7	106.1	107.6	109.1	110.6
Pulses (dried)	2008=100	124.5	114.6	115.9	117.1	118.5	119.7	121.1	122.4	123.8	125.1	126.5	127.9
Fruit, nuts, and vegetables	2008=100	98.0	109.1	106.6	108.1	109.5	111.0	112.5	114.0	115.5	117.1	118.7	120.2

<sup>1</sup>Bearing acreage for fruit and nuts; harvested area for vegetables. Fruits include melons.<sup>2</sup>Utilized production is used for potatoes. Pulses include edible dry beans and peas, lentils, and other peas. Excludes melons.<sup>3</sup>In farm or fresh weight units.<sup>4</sup>Production values are used for fruits, nuts, and vegetables. Farm cash receipts are used for nursery and other horticulture crops.<sup>5</sup>Includes floral crops, greenhouse vegetables such as tomatoes, cucumbers, colored peppers, and fruit/vegetable transplants.<sup>6</sup>Includes honey, maple syrup, mustard, hops, mint oils, taro, ginger root, and coffee from Hawaii.<sup>7</sup>Producer price indexes for farm commodities from U.S. Bureau of Labor Statistics. Prices for fresh fruits include melons.

Data sources: USDA, National Agricultural Statistics Service; Foreign Agricultural Service; Economic Research Service; U.S. Department of Labor, Bureau of Labor Statistics.



Table 27. Horticultural crops long-term export and import projections, fiscal years

Item	Unit	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>Exports</b>													
<b>Fruit and nuts</b>													
Fresh fruits	\$ Mil.	4,844	5,011	5,700	5,875	6,049	6,229	6,415	6,608	6,807	7,014	7,227	7,448
Citrus	\$ Mil.	1,009	1,007	1,276	1,284	1,291	1,299	1,307	1,314	1,322	1,330	1,338	1,346
Noncitrus	\$ Mil.	3,836	4,004	4,424	4,591	4,758	4,930	5,108	5,293	5,485	5,684	5,889	6,103
Processed fruits	\$ Mil.	2,877	2,889	3,200	3,279	3,360	3,442	3,527	3,614	3,703	3,794	3,888	3,984
Fruit juices	\$ Mil.	1,290	1,290	1,320	1,351	1,382	1,414	1,447	1,481	1,515	1,550	1,586	1,623
Tree nuts	\$ Mil.	6,109	7,162	7,800	8,148	8,512	8,893	9,290	9,705	10,138	10,591	11,064	11,558
Total fruit and nuts	\$ Mil.	13,830	15,061	16,700	17,302	17,921	18,564	19,232	19,926	20,648	21,399	22,179	22,990
<b>Vegetables</b>													
Fresh	\$ Mil.	2,154	2,319	2,400	2,470	2,542	2,616	2,692	2,770	2,851	2,934	3,019	3,107
Processed <sup>1</sup>	\$ Mil.	3,954	4,257	4,800	4,954	5,112	5,276	5,445	5,620	5,800	5,985	6,177	6,375
Total vegetables	\$ Mil.	6,108	6,576	7,200	7,424	7,654	7,892	8,137	8,390	8,650	8,919	9,196	9,482
<b>Other horticulture</b>													
Nursery and greenhouse	\$ Mil.	359	369	403	408	413	417	422	427	432	437	442	448
Essential oils	\$ Mil.	1,582	1,651	1,802	1,874	1,948	2,026	2,107	2,191	2,278	2,369	2,463	2,561
Wine	\$ Mil.	1,321	1,520	1,659	1,731	1,807	1,886	1,969	2,055	2,145	2,238	2,336	2,439
Beer	\$ Mil.	413	486	530	552	575	599	624	650	677	705	735	765
Other <sup>2</sup>	\$ Mil.	5,028	5,688	6,206	6,498	6,804	7,124	7,460	7,811	8,178	8,563	8,966	9,388
Total horticulture	\$ Mil.	28,641	31,352	34,500	35,789	37,122	38,508	39,950	41,450	43,009	44,631	46,318	48,073
Fresh produce <sup>3</sup>	\$ Mil.	6,998	7,330	8,100	8,345	8,591	8,844	9,107	9,378	9,658	9,947	10,246	10,555
Processed produce <sup>3</sup>	\$ Mil.	6,831	7,146	8,000	8,233	8,472	8,719	8,972	9,234	9,503	9,780	10,065	10,359
<b>Imports</b>													
<b>Fruit and nuts</b>													
Fresh fruits	\$ Mil.	7,617	8,343	9,100	9,501	9,919	10,356	10,812	11,288	11,785	12,304	12,846	13,412
Citrus	\$ Mil.	516	588	642	669	698	728	760	793	827	863	900	939
Noncitrus	\$ Mil.	7,101	7,754	8,458	8,831	9,221	9,628	10,052	10,496	10,959	11,442	11,947	12,474
Processed fruits	\$ Mil.	4,360	4,714	5,300	5,550	5,812	6,087	6,374	6,675	6,990	7,320	7,665	8,027
Fruit juices	\$ Mil.	1,763	1,894	2,100	2,178	2,258	2,342	2,428	2,518	2,611	2,708	2,808	2,912
Tree nuts	\$ Mil.	1,802	1,811	2,000	2,093	2,190	2,292	2,399	2,510	2,627	2,749	2,877	3,011
Total fruit and nuts	\$ Mil.	13,779	14,868	16,400	17,144	17,922	18,735	19,585	20,473	21,402	22,373	23,389	24,450
<b>Vegetables</b>													
Fresh	\$ Mil.	5,829	6,540	7,200	7,570	7,960	8,369	8,799	9,252	9,728	10,228	10,754	11,307
Processed <sup>1</sup>	\$ Mil.	4,203	4,220	4,400	4,594	4,797	5,009	5,231	5,462	5,703	5,955	6,219	6,493
Total vegetables	\$ Mil.	10,032	10,760	11,600	12,165	12,757	13,378	14,030	14,714	15,431	16,183	16,973	17,800
<b>Other horticulture</b>													
Nursery and greenhouse	\$ Mil.	1,622	1,666	1,812	1,837	1,863	1,889	1,916	1,942	1,970	1,997	2,025	2,054
Essential oils	\$ Mil.	2,569	2,789	3,033	3,211	3,401	3,602	3,814	4,039	4,278	4,530	4,797	5,081
Wine	\$ Mil.	5,084	5,356	5,824	6,072	6,331	6,601	6,882	7,176	7,482	7,801	8,133	8,480
Beer	\$ Mil.	3,722	3,581	3,893	4,001	4,111	4,225	4,341	4,461	4,585	4,711	4,841	4,975
Other <sup>2</sup>	\$ Mil.	4,748	5,095	5,539	5,793	6,059	6,337	6,628	6,933	7,251	7,584	7,932	8,296
Total horticulture	\$ Mil.	41,557	44,115	48,100	50,223	52,444	54,767	57,197	59,739	62,398	65,180	68,091	71,136
Fresh produce <sup>3</sup>	\$ Mil.	13,446	14,882	16,300	17,071	17,879	18,725	19,611	20,540	21,513	22,532	23,600	24,719
Processed produce <sup>3</sup>	\$ Mil.	8,563	8,934	9,700	10,145	10,610	11,096	11,605	12,137	12,693	13,275	13,884	14,520

<sup>1</sup>Includes dry edible beans, peas, lentils, and potato products.

<sup>2</sup>Includes hops, ginseng, sauces, condiments, mixed food, yeast, starches, and other products that contain horticulture ingredients.

<sup>3</sup>Includes fruits and vegetables only.

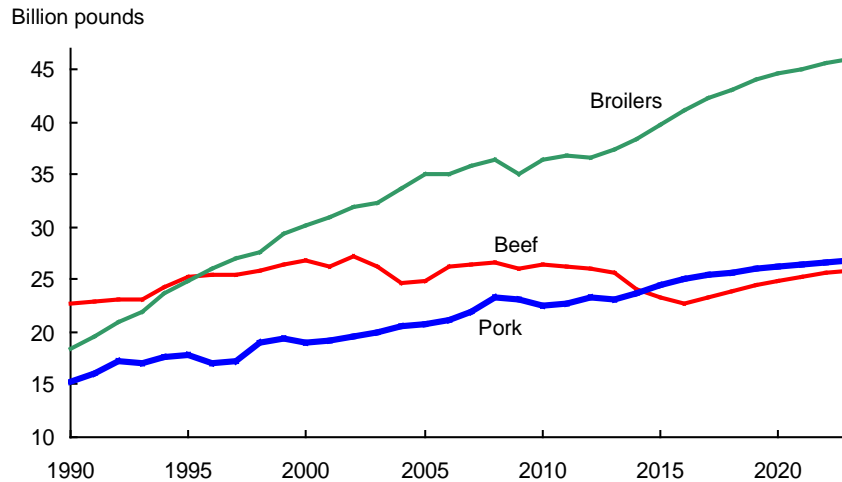
Exports are free alongside ship (FAS) value at U.S. port of exportation. Imports are customs value at U.S. port of entry.

Data source: U.S. Department of Commerce, Bureau of the Census.

## U.S. Livestock

The livestock sector is slowly recovering from high feed prices and drought in the Southern Plains of the United States over the last few years. Improving returns have provided incentives for increased production in the livestock sector. As a result, total U.S. red meat and poultry production is projected to rise over the projection period, as is per capita consumption of red meat and poultry.

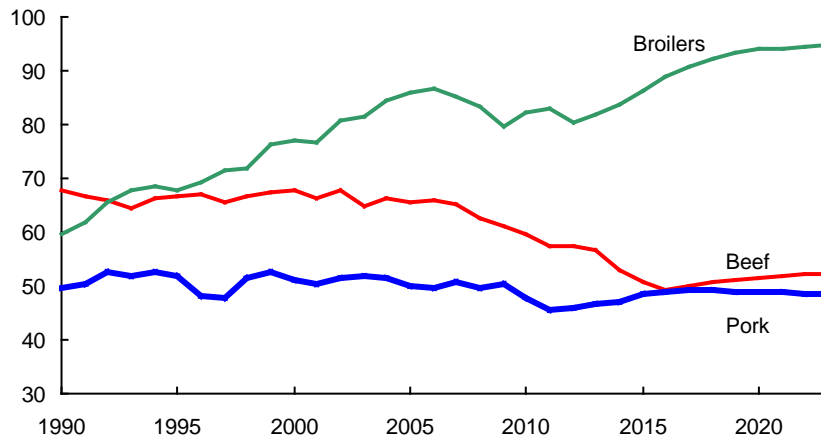
**U.S. red meat and poultry production**



- Despite improved returns for cow-calf operators in 2013, low cow inventories will limit recovery from recent drought conditions for several years. Lower beef cow inventories and expected heifer retention are expected to lead to declines in beef production through 2016. Production then rises in the remainder of the projection period as returns support continued herd expansion. Beef cow numbers rise from about 29 million head at the start of 2014 to over 33 million in 2022-23. The total cattle inventory drops below 88 million head at the start of 2014 before expanding to about 96 million in 2023. Rising slaughter weights also contribute to the longer term increases in beef production.
- As feed costs decline, pork producers are expected to increase farrowings, with pork production projected to rise over the next decade. Production increases also will be supported by productivity gains in the breeding herd and increased slaughter weights.
- Poultry production rises through the projection period, but at lower rates than in the 1980s and 1990s. Production of both broiler and turkey meats are projected to expand. Production growth is expected to come from both higher numbers of birds and higher average weights at slaughter. Increased demand is expected to strengthen broiler prices, although poultry will face competition from increasing red meat production beyond 2016.

## U.S. per capita meat consumption

Pounds per capita, retail weight

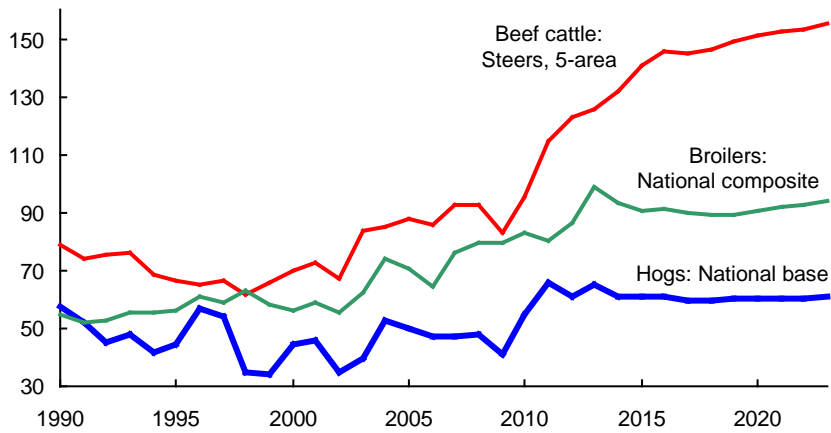


Since 2007, lower overall meat production and increased net exports have resulted in higher consumer prices and lower per capita consumption in the United States. Annual average consumption of red meats and poultry has fallen from over 221 pounds per capita in 2004-07 and is projected to be less than 203 pounds in 2014. As production increases, per capita consumption of red meats and poultry is projected to rise to about 215 pounds by 2023.

- Per capita beef consumption declines through 2016, before rising moderately over the remainder of the projection period. The near-term decline reflects reductions in beef production over the next several years. As beef production increases in subsequent years, per capita consumption grows.
- Per capita pork consumption is projected to rise through 2017 as gains in production are large enough to accommodate both increased domestic use as well as rising U.S. pork exports. Per capita consumption tapers off slightly from 2018 onward as pork production gains slow.
- Poultry production increases throughout the projection period. Per capita consumption rises over the next 10 years and, in contrast to red meats, surpasses levels of the past decade.

### Nominal U.S. livestock prices

Dollars per hundredweight

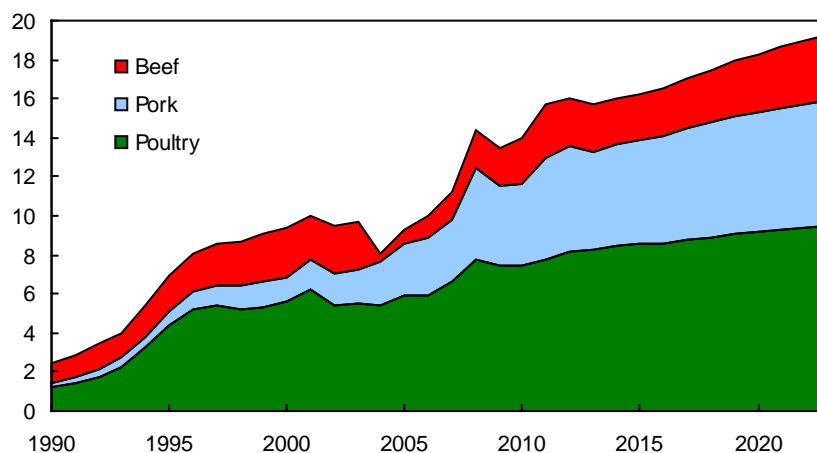


During the initial years of the projection period, prices for hogs and broilers decline as production levels for those meats rise. In contrast, beef cattle prices continue to rise as projected beef production initially declines. Increases in beef cattle, hog, and broiler prices are generally less than the general inflation rate in the later years of the projections.

- Beef cattle prices are projected to fall in 2017 and then to rise more moderately than in the early years of the projections as beef production increases.
- Nominal prices for hogs and broilers have small increases over the last half the projection period as production gains for each slow.

## U.S. meat exports

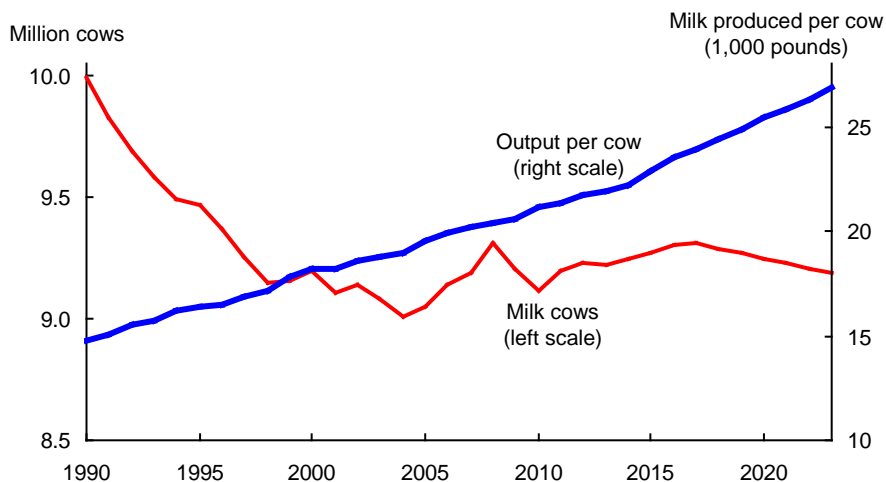
Billion pounds



The projected rise in U.S. red meat and poultry exports over the next decade reflects steady global economic growth, a continued weak U.S. dollar, and foreign demand for selected meat cuts and parts from the large U.S. market.

- Most U.S. beef exports are high-quality, grain-fed beef that typically go to Mexico, Canada, and Pacific Rim nations. A continuing recovery is assumed for U.S. beef exports to Japan and South Korea, export markets that were closed to the United States for several years following the first U.S. case of bovine spongiform encephalopathy (BSE) in December 2003.
- U.S. imports of processing beef increase in the projection period as herd rebuilding and relatively low beef cow slaughter in the United States raise import demand. This import demand will likely be met by increased purchases from Australia, New Zealand, and NAFTA countries.
- U.S. pork exports are projected to rise over the next decade. Production efficiency in the U.S. pork sector enhances the sector's international competitiveness. Pacific Rim nations and Mexico are key markets for long-term growth of U.S. pork exports. Russia is assumed to continue using investment and trade policies to facilitate expansion of its domestic pork industry and limit reliance on imports, affecting pork exports from the United States and Brazil the most.
- U.S. broiler exports rise though the projection period. Major U.S. export markets include China and Mexico, but U.S. broiler exports also have been increasing to a number of other countries. Longer term gains in these markets reflect their economic growth and increasing consumer demand. International demand for broilers also remains strong because of its lower cost relative to beef and pork. U.S. poultry producers continue to face strong competition from other major exporters, particularly Brazil. Over the projection period, most exports from Thailand and China will continue to be fully cooked products, although Thai export gains also reflect the reopening of trade in uncooked chicken products from that country to the EU. As noted for pork, Russia is assumed to also support its domestic poultry industry with investment and trade policies.

### U.S. dairy herd and milk production per cow



Milk production is projected to continue rising over the projection period. The long-term upward trend in output per cow continues, while milk cow numbers rise through 2017 and then fall.

- Milk cow numbers are projected to rise through 2017 as high milk prices and lower feed costs provide favorable returns to producers. In later years, feed costs begin to rise and milk cow numbers show year-to-year declines in 2018-23.
- U.S. milk output per cow is projected to increase through the projection period, reflecting continued technological and genetic developments.
- Domestic commercial use of dairy products increases faster than the growth in U.S. population over the next decade. The demand for cheese is expected to rise due to greater consumption of prepared foods and increased away-from-home eating. The slow decline in per capita consumption of fluid milk products is expected to continue.
- The United States is expected to be well positioned to expand exports of dairy products. Commercial U.S. dairy exports are projected to increase steadily over the next decade, reaching record levels on both a fat and a skim-solids basis. Production increases in other major dairy exporting countries are expected to lag growth in global import demand.
- After declining in 2014-16, nominal farm-level milk prices are projected to gradually rise over the rest of the projection period, with increases less than the overall rate of inflation. Real price decreases largely reflect efficiency gains in production, which result from technological improvements and consolidation in the sector. Even so, nominal milk prices exceed \$20 per hundredweight in the last several years of the projections.

Table 28. Per capita meat consumption, retail weight

Item	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
<i>Pounds</i>												
Beef	57.4	56.5	53.0	50.9	49.4	50.1	50.6	51.2	51.5	51.9	52.1	52.1
Veal	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Pork	45.9	46.6	47.1	48.5	48.9	49.1	49.1	49.0	48.9	48.8	48.7	48.6
Lamb and mutton	0.8	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7
Total red meat	104.6	104.3	101.4	100.6	99.4	100.4	100.8	101.3	101.5	101.8	101.9	101.8
Broilers	80.4	81.7	83.7	86.4	89.0	90.9	92.2	93.2	94.0	94.1	94.4	94.7
Other chicken	1.4	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Turkeys	16.0	16.0	16.3	16.4	16.6	16.8	17.0	17.1	17.2	17.3	17.4	17.4
Total poultry	97.8	99.0	101.3	104.2	107.1	109.1	110.6	111.7	112.6	112.8	113.2	113.5
Red meat & poultry	202.3	203.3	202.7	204.8	206.5	209.5	211.5	213.0	214.1	214.7	215.1	215.3

Table 29. Beef long-term projections

Item	Units	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Beginning stocks	Mil. lbs.	600	608	550	525	525	525	525	525	525	525	525	525
Commercial production	Mil. lbs.	25,913	25,592	24,090	23,266	22,672	23,257	23,799	24,364	24,806	25,260	25,599	25,868
Change from previous year	Percent	-1.1	-1.2	-5.9	-3.4	-2.6	2.6	2.3	2.4	1.8	1.8	1.3	1.1
Farm production	Mil. lbs.	83	83	83	83	83	83	83	83	83	83	83	83
Total production	Mil. lbs.	25,996	25,675	24,173	23,349	22,755	23,340	23,882	24,447	24,889	25,343	25,682	25,951
Imports	Mil. lbs.	2,220	2,258	2,265	2,400	2,500	2,550	2,575	2,650	2,675	2,744	2,838	2,920
Total supply	Mil. lbs.	28,816	28,541	26,988	26,274	25,780	26,415	26,982	27,622	28,089	28,612	29,045	29,396
Exports	Mil. lbs.	2,453	2,458	2,300	2,383	2,443	2,562	2,699	2,843	2,982	3,122	3,267	3,412
Ending stocks	Mil. lbs.	608	550	525	525	525	525	525	525	525	525	525	525
Total consumption	Mil. lbs.	25,755	25,533	24,163	23,366	22,812	23,328	23,758	24,254	24,582	24,965	25,253	25,459
Per capita, carcass weight	Pounds	81.9	80.7	75.8	72.8	70.5	71.5	72.3	73.2	73.6	74.2	74.4	74.4
Per capita, retail weight	Pounds	57.4	56.5	53.0	50.9	49.4	50.1	50.6	51.2	51.5	51.9	52.1	52.1
Change from previous year	Percent	0.1	-1.6	-6.0	-4.0	-3.1	1.5	1.0	1.3	0.6	0.8	0.4	0.0
Prices:													
Beef cattle, farm	\$/cwt	121.75	124.18	129.93	138.97	143.97	143.38	144.30	146.90	149.19	150.65	151.49	153.45
Calves, farm	\$/cwt	161.17	165.73	188.59	191.32	198.62	201.88	201.29	201.82	201.15	201.00	201.93	202.63
Steers, 5-area	\$/cwt	122.86	125.69	131.50	140.65	145.70	145.10	146.03	148.67	150.99	152.47	153.31	155.30
Yearling steers, Oklahoma City	\$/cwt	146.39	146.14	166.25	168.66	175.09	177.97	177.45	177.91	177.32	177.19	178.01	178.62
Feed price ratio:													
Beef cattle-corn	Ratio	19.6	18.0	28.9	38.1	43.6	42.8	41.8	40.8	39.8	39.1	38.4	37.4
Cattle inventory	1,000 head	90,538	88,600	87,605	88,600	89,357	91,261	92,305	93,037	93,630	94,307	95,277	96,088
Beefcow inventory	1,000 head	30,158	29,295	29,050	29,349	29,678	30,734	31,558	31,953	32,300	32,739	33,293	33,668
Total cow inventory	1,000 head	39,387	38,515	38,250	38,350	38,822	39,853	40,651	41,026	41,358	41,782	42,321	42,681

Table 30. Pork long-term projections

Item	Units	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Beginning stocks	Mil. lbs.	542	625	600	600	600	600	600	600	600	600	600	600
Commercial production	Mil. lbs.	23,253	23,150	23,760	24,525	24,982	25,433	25,721	25,962	26,197	26,412	26,631	26,840
Change from previous year	Percent	2.2	-0.4	2.6	3.2	1.9	1.8	1.1	0.9	0.9	0.8	0.8	0.8
Farm production	Mil. lbs.	17	17	17	17	17	17	17	17	17	17	17	17
Total production	Mil. lbs.	23,270	23,167	23,777	24,542	24,999	25,450	25,738	25,979	26,214	26,429	26,648	26,857
Imports	Mil. lbs.	802	857	860	873	886	899	912	925	938	951	964	977
Total supply	Mil. lbs.	24,614	24,649	25,237	26,015	26,485	26,949	27,250	27,504	27,752	27,980	28,212	28,434
Exports	Mil. lbs.	5,381	5,054	5,270	5,350	5,500	5,700	5,850	6,000	6,100	6,200	6,298	6,396
Ending stocks	Mil. lbs.	625	600	600	600	600	600	600	600	600	600	600	600
Total consumption	Mil. lbs.	18,608	18,995	19,367	20,065	20,385	20,649	20,800	20,904	21,052	21,180	21,314	21,438
Per capita, carcass weight	Pounds	59.2	60.0	60.7	62.5	63.0	63.3	63.3	63.1	63.0	62.9	62.8	62.7
Per capita, retail weight	Pounds	45.9	46.6	47.1	48.5	48.9	49.1	49.1	49.0	48.9	48.8	48.7	48.6
Change from previous year	Percent	0.5	1.3	1.2	2.9	0.8	0.5	-0.1	-0.3	-0.1	-0.2	-0.2	-0.2
Prices:													
Hogs, farm	\$/cwt	64.18	67.96	64.01	62.93	64.02	62.49	62.22	62.94	63.29	63.08	63.56	63.68
National base, live equivalent	\$/cwt	60.88	64.77	61.00	61.09	60.97	59.51	59.25	59.94	60.27	60.08	60.54	60.64
Feed price ratio:													
Hog-corn	Ratio	10.3	9.9	14.2	17.2	19.4	18.7	18.0	17.5	16.9	16.4	16.1	15.5
Hog inventory,													
December 1, previous year	1,000 head	66,361	66,373	67,775	69,841	71,076	72,293	73,073	73,724	74,357	74,939	75,531	76,094

Table 31. Young chicken long-term projections

Item	Units	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Beginning stocks	Mil. lbs.	590	651	650	640	640	640	640	640	640	640	640	640
Federally inspected slaughter	Mil. lbs.	37,039	37,791	38,900	40,263	41,588	42,723	43,638	44,450	45,181	45,619	46,096	46,610
Change from previous year	Percent	-0.4	2.0	2.9	3.5	3.3	2.7	2.1	1.9	1.6	1.0	1.0	1.1
Production	Mil. lbs.	36,643	37,387	38,484	39,832	41,143	42,266	43,171	43,975	44,697	45,130	45,603	46,112
Total supply	Mil. lbs.	37,344	38,153	39,246	40,580	41,892	43,016	43,922	44,727	45,451	45,884	46,358	46,868
Change from previous year	Percent	-0.9	2.2	2.9	3.4	3.2	2.7	2.1	1.8	1.6	1.0	1.0	1.1
Exports	Mil. lbs.	7,274	7,395	7,550	7,648	7,714	7,872	7,987	8,135	8,269	8,349	8,437	8,531
Ending stocks	Mil. lbs.	651	650	640	640	640	640	640	640	640	640	640	640
Consumption	Mil. lbs.	29,419	30,108	31,056	32,292	33,538	34,504	35,295	35,952	36,542	36,895	37,281	37,697
Per capita, carcass weight	Pounds	93.6	95.1	97.4	100.5	103.6	105.8	107.4	108.5	109.4	109.6	109.9	110.2
Per capita, retail weight	Pounds	80.4	81.7	83.7	86.4	89.0	90.9	92.2	93.2	94.0	94.1	94.4	94.7
Change from previous year	Percent	-3.0	1.6	2.4	3.2	3.1	2.1	1.5	1.1	0.8	0.2	0.2	0.3
Prices:													
Broilers, farm	Cents/lb.	51.0	59.3	55.7	53.5	53.8	52.9	52.7	52.7	53.6	54.1	54.8	55.4
Broilers, National composite	Cents/lb.	86.6	99.0	93.0	90.6	91.2	89.7	89.3	89.3	90.8	91.7	92.8	93.9
Feed price ratio:													
Broiler-feed <sup>1</sup>	Ratio	3.4	3.4	4.4	4.8	4.9	4.8	4.7	4.6	4.6	4.6	4.6	4.5

<sup>1</sup>Broiler feed price based on 58 percent corn price and 42 percent soybean price, as used by USDA, National Agricultural Statistics Service.



Table 32. Turkey long-term projections

Item	Units	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Beginning stocks	Mil. lbs.	211	296	300	310	310	310	310	310	310	310	310	310
Production	Mil. lbs.	5,889	5,783	5,960	6,033	6,159	6,282	6,388	6,480	6,570	6,657	6,742	6,830
Total supply	Mil. lbs.	6,124	6,100	6,280	6,365	6,492	6,615	6,722	6,814	6,904	6,991	7,076	7,164
Change from previous year	Percent	3.3	-0.4	3.0	1.4	2.0	1.9	1.6	1.4	1.3	1.3	1.2	1.2
Exports	Mil. lbs.	798	745	780	784	801	817	830	842	854	865	877	888
Ending stocks	Mil. lbs.	296	300	310	310	310	310	310	310	310	310	310	310
Consumption	Mil. lbs.	5,030	5,055	5,190	5,271	5,382	5,489	5,581	5,661	5,740	5,816	5,890	5,966
Per capita	Pounds	16.0	16.0	16.3	16.4	16.6	16.8	17.0	17.1	17.2	17.3	17.4	17.4
Change from previous year	Percent	-0.4	-0.2	1.9	0.8	1.3	1.2	0.9	0.6	0.6	0.5	0.5	0.5
Prices:													
Turkey, farm	Cents/lb.	71.9	66.9	66.5	65.4	66.4	64.5	64.1	64.2	65.2	65.7	66.1	67.3
Hen turkeys, National	Cents/lb.	105.6	99.2	98.5	96.9	98.3	95.5	95.0	95.0	96.5	97.3	97.9	99.7
Feed price ratio:													
Turkey-feed <sup>1</sup>	Ratio	5.1	4.2	5.6	6.4	6.7	6.4	6.3	6.2	6.1	6.1	6.0	6.0

<sup>1</sup>Turkey feed price based on 51 percent corn price, 28 percent soybean price, and 21 percent wheat price, as used by USDA, National Agricultural Statistics Service.

Table 33. Egg long-term projections

Item	Units	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Beginning stocks	Mil. doz.	28	21	22	22	22	22	22	22	22	22	22	22
Production	Mil. doz.	7,753	7,943	8,075	8,156	8,221	8,287	8,361	8,437	8,513	8,581	8,649	8,727
Change from previous year	Percent	1.2	2.5	1.7	1.0	0.8	0.8	0.9	0.9	0.9	0.8	0.8	0.9
Imports	Mil. doz.	18	19	16	16	16	16	16	16	16	16	16	16
Total supply	Mil. doz.	7,799	7,982	8,113	8,194	8,259	8,325	8,399	8,475	8,551	8,619	8,687	8,765
Change from previous year	Percent	1.3	2.4	1.6	1.0	0.8	0.8	0.9	0.9	0.9	0.8	0.8	0.9
Hatching use	Mil. doz.	937	962	990	1,014	1,038	1,060	1,078	1,093	1,106	1,116	1,124	1,133
Exports	Mil. doz.	302	360	302	305	308	311	314	317	320	323	326	329
Ending stocks	Mil. doz.	21	22	22	22	22	22	22	22	22	22	22	22
Consumption	Mil. doz.	6,540	6,639	6,799	6,853	6,891	6,932	6,986	7,043	7,102	7,158	7,215	7,281
Per capita	Number	249.7	251.7	255.9	256.1	255.6	255.1	255.0	255.1	255.2	255.2	255.2	255.4
Change from previous year	Percent	0.8	0.8	1.7	0.1	-0.2	-0.2	0.0	0.0	0.0	0.0	0.0	0.1
Prices:													
Eggs, farm	Cents/doz.	100.1	105.5	95.8	96.9	98.6	100.3	102.0	103.7	105.4	107.5	109.7	111.4
New York, Grade A large	Cents/doz.	117.4	121.2	110.0	114.0	116.0	118.0	120.0	122.0	124.0	126.5	129.0	131.0
Feed price ratio:													
Egg-feed <sup>1</sup>	Ratio	7.4	6.8	8.9	10.4	11.1	11.2	11.2	11.1	11.0	11.0	11.0	10.9

<sup>1</sup>/ Egg feed price based on 75 percent corn price and 25 percent soybean price, as used by USDA, National Agricultural Statistics Service.

Table 34. Dairy long-term projections

Item	Units	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Milk production and marketings:													
Number of cows	Thousand	9,233	9,225	9,245	9,275	9,305	9,310	9,290	9,270	9,250	9,230	9,205	9,185
Milk per cow	Pounds	21,696	21,865	22,170	22,900	23,505	23,935	24,400	24,870	25,410	25,825	26,325	26,825
Milk production	Bil. lbs.	200.3	201.7	204.9	212.4	218.7	222.8	226.7	230.5	235.0	238.4	242.3	246.4
Farm use	Bil. lbs.	1.0	1.0	1.0	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.6
Marketings	Bil. lbs.	199.4	200.7	203.9	211.6	217.9	222.1	226.0	229.8	234.4	237.8	241.7	245.8
Supply and use, milkfat basis:													
Beginning commercial stocks	Bil. lbs.	10.9	12.2	12.3	11.5	11.7	11.9	12.0	12.0	12.0	12.0	12.0	12.0
Marketings	Bil. lbs.	199.4	200.7	203.9	211.6	217.9	222.1	226.0	229.8	234.4	237.8	241.7	245.8
Imports	Bil. lbs.	4.1	4.0	4.0	3.8	3.6	3.4	3.2	3.1	3.0	2.9	2.9	2.9
Commercial supply	Bil. lbs.	214.3	216.9	220.3	226.9	233.2	237.4	241.2	244.9	249.4	252.7	256.6	260.7
Domestic commercial use	Bil. lbs.	193.3	193.1	198.2	204.8	210.0	213.3	216.6	219.9	223.9	226.8	230.1	233.5
Commercial exports	Bil. lbs.	8.8	11.5	10.6	10.4	11.3	12.1	12.5	13.0	13.5	13.9	14.4	15.1
Ending commercial stocks	Bil. lbs.	12.2	12.3	11.5	11.7	11.9	12.0	12.0	12.0	12.0	12.0	12.0	12.1
Total utilization	Bil. lbs.	214.3	216.9	220.3	226.9	233.2	237.4	241.2	244.9	249.4	252.7	256.6	260.7
CCC net removals	Bil. lbs.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Supply and use, skim solids basis:													
Beginning commercial stocks	Bil. lbs.	11.8	12.4	12.4	12.2	12.3	12.4	12.5	12.5	12.5	12.5	12.5	12.5
Marketings	Bil. lbs.	199.4	200.7	203.9	211.6	217.9	222.1	226.0	229.8	234.4	237.8	241.7	245.8
Imports	Bil. lbs.	5.7	5.1	5.2	5.4	5.5	5.6	5.6	5.6	5.6	5.5	5.5	5.4
Commercial supply	Bil. lbs.	216.9	218.2	221.5	229.2	235.8	240.2	244.1	248.0	252.5	255.8	259.7	263.7
Domestic commercial use	Bil. lbs.	171.2	166.7	171.5	176.9	181.6	184.7	187.9	190.9	194.7	197.2	200.1	203.1
Commercial exports	Bil. lbs.	33.3	39.1	37.8	39.9	41.7	43.0	43.7	44.6	45.4	46.1	47.1	48.1
Ending commercial stocks	Bil. lbs.	12.4	12.4	12.2	12.3	12.4	12.5	12.5	12.5	12.5	12.5	12.5	12.5
Total utilization	Bil. lbs.	216.9	218.2	221.5	229.2	235.8	240.2	244.1	248.0	252.5	255.8	259.7	263.7
CCC net removals	Bil. lbs.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prices:													
All milk	\$/cwt	18.53	19.85	19.75	19.15	18.95	19.10	19.40	19.65	19.90	20.15	20.30	20.45
Cheese	\$/lb.	1.71	1.77	1.72	1.73	1.74	1.75	1.77	1.80	1.82	1.84	1.87	1.89
Butter	\$/lb.	1.59	1.53	1.53	1.53	1.49	1.50	1.53	1.56	1.58	1.61	1.62	1.63
Nonfat dry milk	\$/lb.	1.33	1.70	1.72	1.62	1.60	1.62	1.64	1.67	1.68	1.71	1.71	1.72
Dry whey	\$/lb.	0.59	0.59	0.56	0.59	0.60	0.59	0.59	0.59	0.60	0.60	0.61	0.62

Dairy projections were completed in November 2013.

CCC is the Commodity Credit Corporation, U.S. Department of Agriculture.

Totals may not add due to rounding.

## U.S. Farm Income and Agricultural Trade Value

High commodity prices led to record values of U.S. agricultural exports and U.S. net farm income in 2013. Projected reductions in prices for most major crops over the next several years result in declines in export values and farm cash receipts through 2016. Export values and cash receipts then grow over the rest of the projection period as steady domestic and international economic growth, a weak U.S. dollar, and continuing production of biofuels support longer term demand for U.S. agricultural products. Although farm production expenses also increase beyond 2015, net farm income remains historically high.

### U.S. net farm income

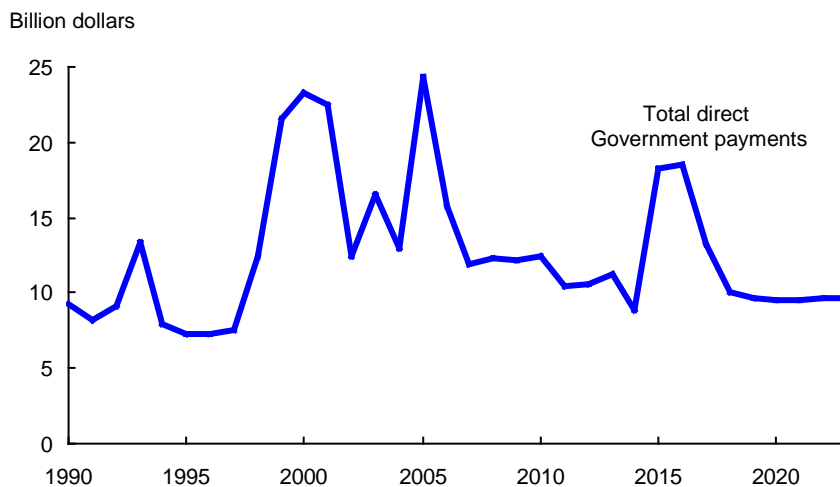
Billion dollars



Net farm income reached a record level in 2013, largely reflecting the runup in prices for many agricultural commodities. While net farm income is projected to stay below the 2013 record, it remains well above the average of the previous decade (2001 to 2010).

- Strengthening global food demand, a weak dollar, and continued biofuel demand are major factors underlying projections of rising cash receipts after 2016.
- Total direct Government payments are projected to be significantly higher in 2015-17 due to increased payments under the Average Crop Revenue Election (ACRE) program, part of the 2008 Farm Act that is assumed to remain in place for these projections.
- Farm production expenses remain relatively flat in the near term as declining feed expenses offset gains in most other expenses. Expenses rise after 2015 once effects of lower grain and oilseed prices on feed costs are completed.

## Direct Government payments

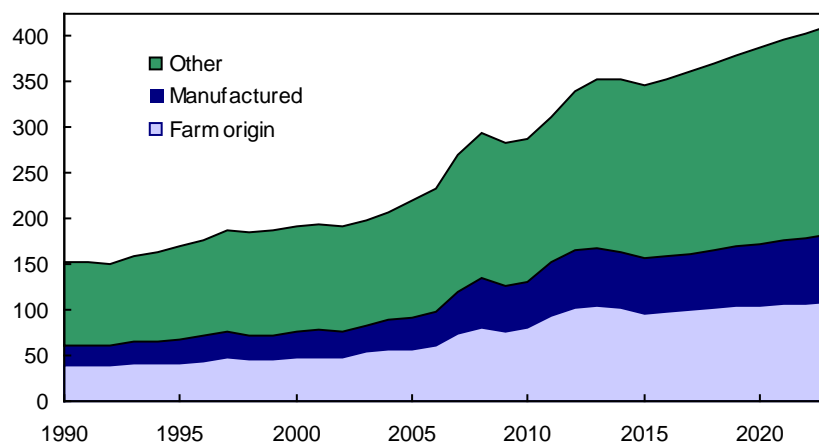


With lower crop prices projected over the next several years, direct Government payments to farmers rise sharply in 2015 and remain high in 2016 and 2017, mostly due to large payments under the ACRE program of the 2008 Farm Act (assumed to continue in the projection period). Direct Government payments average about \$9.6 billion over the remainder of the projection period, compared to an average of \$15 billion in 2001-10. The Conservation Reserve Program (CRP) and fixed direct payments are the largest Government payments to the agricultural sector beyond 2017.

- High crop prices in recent years made arable land more valuable, so rental rates for land in the CRP rose. However, high crop prices also led to reduced CRP enrollment, so overall CRP payments have been fairly flat. Acreage enrolled in the CRP is assumed to build back toward the legislative maximum of 32 million acres under the 2008 Farm Act. CRP payments are projected to rise from about \$1.8 billion in 2014 to \$2.75 billion in 2023.
- Fixed direct payments are projected to range from \$4 billion to \$5 billion annually. Within this range, these payments are lower in years when ACRE payments are anticipated to be high; farmers forgo part of their direct payments when they enroll in the ACRE program. In the later years of the projections, fixed direct payments average \$4.8 billion as enrollment in the ACRE program falls.
- As crop prices decline from recent high levels, incentives to enroll in the ACRE program rise. Payments under the program associated with 2014-16 crops (paid in 2015-17) are projected to be large, over \$9 billion annually in 2015-16 and more than \$4 billion in 2017. Once most of the benefits of the ACRE program due to the decline in prices are completed, enrollment returns to low levels, with expected ACRE payments averaging less than \$20 million annually over 2020-23.
- Government payments average less than 3 percent of gross cash income during the projection period (over 4 percent in the years of high-projected ACRE payments), compared to about 5.5 percent in 1981-2010. As a result, the sector relies more on the market for its income.

## U.S. farm production expenses

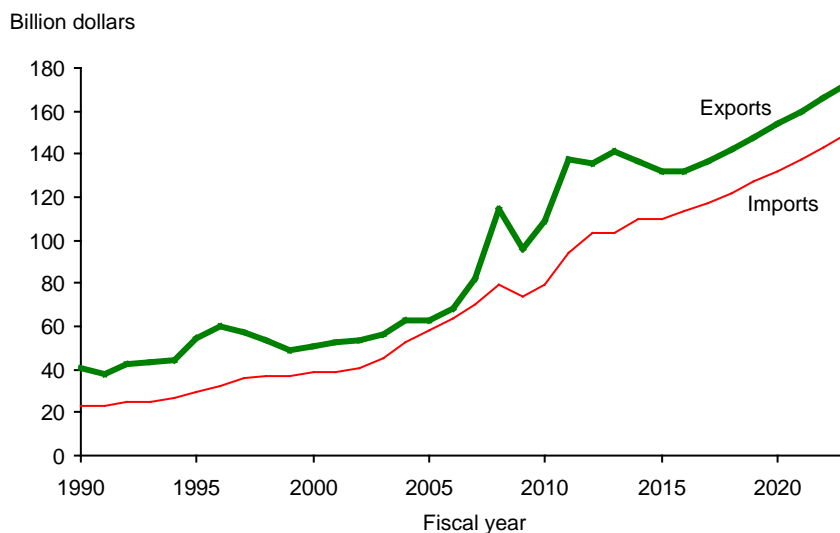
Billion dollars



Total farm production expenses are projected to rise only moderately in 2014 and then fall in 2015 as declining crop prices lower feed costs and lower planted acreage and lower near-term crude oil prices reduce manufactured input expenses. Beyond 2015, production expenses rise less rapidly than the overall rate of inflation through 2023. While interest expenses and manufactured input costs rise faster than the general inflation rate during these years, expenses for farm-origin inputs are up less than the general inflation rate. Aggregate expenses for other nonfarm-origin inputs increase at rates near the overall level of inflation.

- Interest costs rise faster than the general inflation rate over the projection period, reflecting rising farm debt levels as well as increasing interest rates due largely to tightening monetary policy.
- Production expenses for fuel and oil also rise faster than the general inflation rate after 2016, largely reflecting increases in crude oil prices. Reductions in planted acreage in 2014-17 combine with anticipated higher domestic nitrogen fertilizer production capacity and relatively low natural gas prices to decrease fertilizer expenses in this period, but these costs rise faster than inflation later in the projection period.

### U.S. agricultural trade value



The value of U.S. agricultural exports declines for 2 years at the beginning of the projections as prices for major field crops fall from current highs. Agricultural exports then rise through the remainder of the projections because of sustained global economic growth, strengthening agricultural demand, and a weak U.S. dollar. Domestic economic growth boosts demand for U.S. agricultural imports.

- High commodity prices have pushed the value of U.S. agricultural exports to high levels the past several years, including a record \$141 billion in 2013. With prices for many crops projected to fall in the initial years of the projections, export values decline through 2016. Agricultural export values are then projected to grow over the rest of the decade and surpass the 2013 record. World economic growth, particularly sustained relatively high growth in developing countries, provides a foundation for increases in global food demand, trade, and U.S. agricultural exports. Continued global biofuel demand also contributes to rising commodity prices and gains in export values beyond 2016. Furthermore, a continued weak U.S. dollar remains an important factor underlying the projected longer term gains in U.S. exports.
- Exports of high-value products (HVP) are projected to grow to nearly three-fourths of total U.S. agricultural exports by 2023. Much of the growth in HVP exports is for animal products and horticultural products.
- U.S. agricultural import values rise throughout the projection period to almost \$150 billion by 2023, up from \$109.5 in 2014. These increases are boosted by gains in U.S. consumer incomes and demand for a large variety of foods. Strong growth in horticultural imports is assumed to continue, contributing more than half of the overall increase in agricultural imports in the projection period.
- With the value of U.S. exports initially falling, the agricultural trade balance is expected to decline to under \$19 billion in 2016, down from 2011's record of nearly \$43 billion. The surplus then rises over the rest of the projection period, reaching \$23 billion in 2023.

Table 35. Farm receipts, expenses, and income, long-term projections

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	<i>Billion dollars</i>											
Cash receipts:												
Crops	223.5	217.2	199.8	186.7	183.3	185.6	189.7	194.7	199.6	204.3	208.9	212.5
Livestock and products	171.6	181.5	180.6	182.2	185.3	188.6	192.5	197.5	202.0	205.8	209.2	212.8
All commodities	395.1	398.7	380.4	368.9	368.6	374.2	382.2	392.2	401.6	410.0	418.1	425.3
Farm-related income	33.6	36.0	30.9	29.1	29.3	29.6	29.9	30.2	30.4	30.7	31.0	31.3
Government payments	10.6	11.3	8.8	18.3	18.5	13.2	10.0	9.6	9.5	9.5	9.6	9.6
Gross cash income	439.3	446.0	420.1	416.3	416.4	417.0	422.1	432.0	441.6	450.2	458.7	466.2
Cash expenses	304.9	316.3	315.7	308.3	312.2	320.4	329.3	337.2	344.4	351.5	358.8	365.8
Net cash income	134.4	129.7	104.4	108.0	104.1	96.6	92.9	94.8	97.2	98.7	99.9	100.4
Value of inventory change	-8.1	12.0	2.9	0.7	0.9	2.8	2.3	1.9	1.9	1.9	2.3	2.1
Non-money income	23.7	25.1	26.1	26.7	27.5	28.3	29.1	30.0	30.9	31.8	32.8	33.8
Gross farm income	454.9	483.0	449.1	443.7	444.8	448.1	453.5	463.8	474.4	483.9	493.8	502.1
Noncash expenses	23.1	23.1	24.4	26.0	26.9	27.7	28.4	29.1	29.8	30.6	31.3	32.1
Operator dwelling expenses	13.0	12.6	12.9	13.0	13.2	13.3	13.4	13.6	13.7	13.9	14.0	14.2
Total production expenses	341.1	352.0	353.0	347.3	352.3	361.3	371.1	379.9	387.9	395.9	404.1	412.1
Net farm income	113.8	131.0	96.1	96.4	92.5	86.8	82.4	83.9	86.5	88.0	89.7	90.0

The projections were completed in December 2013.

Table 36. Summary of U.S. agricultural trade long-term projections, fiscal years

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
<i>Billion dollars</i>												
Agricultural exports (value):												
Livestock, poultry, and dairy	29.8	31.5	31.8	32.8	34.3	36.0	37.7	39.5	41.3	43.0	44.9	46.9
Livestock products	18.5	18.9	19.4	20.4	21.4	22.5	23.7	25.1	26.3	27.5	28.8	30.2
Dairy products	5.2	6.1	5.9	5.9	6.2	6.6	6.9	7.1	7.4	7.7	8.1	8.4
Poultry products	6.2	6.5	6.4	6.5	6.7	6.9	7.1	7.3	7.6	7.8	8.0	8.2
Grains and feeds	33.4	31.3	28.1	24.2	23.4	24.1	25.2	26.5	27.8	29.0	30.3	31.7
Coarse grains	11.7	6.2	8.3	7.9	7.5	8.0	8.4	9.0	9.6	10.1	10.6	11.2
Feeds and fodder	6.9	8.2	6.1	6.4	6.7	7.0	7.3	7.6	8.0	8.4	8.7	9.1
Oilseeds and products	28.7	32.1	28.8	25.5	23.3	23.8	24.9	25.7	26.6	27.3	28.0	28.8
Soybeans and products	24.5	27.5	24.6	21.8	19.9	20.3	21.3	22.0	22.7	23.3	23.9	24.6
Horticultural products <sup>1</sup>	28.6	31.4	34.5	35.8	37.1	38.5	40.0	41.4	43.0	44.6	46.3	48.1
Fruits and vegetables, fresh	7.0	7.3	8.1	8.3	8.6	8.8	9.1	9.4	9.7	9.9	10.2	10.6
Fruits and vegetables, processed	6.8	7.1	8.0	8.2	8.5	8.7	9.0	9.2	9.5	9.8	10.1	10.4
Tree nuts, whole and processed	6.1	7.2	7.8	8.1	8.5	8.9	9.3	9.7	10.1	10.6	11.1	11.6
Cotton	6.5	5.6	4.3	4.0	3.9	3.9	3.8	4.0	4.2	4.3	4.6	4.7
Sugar and tropical products	6.2	6.3	6.9	7.1	7.3	7.6	7.7	8.0	8.3	8.6	9.0	9.3
Other exports <sup>2</sup>	2.5	2.8	2.5	2.6	2.6	2.7	2.7	2.7	2.8	2.8	2.9	2.9
<b>Total agricultural exports</b>	<b>135.8</b>	<b>140.9</b>	<b>137.0</b>	<b>131.9</b>	<b>131.9</b>	<b>136.5</b>	<b>142.0</b>	<b>147.9</b>	<b>153.9</b>	<b>159.7</b>	<b>165.9</b>	<b>172.4</b>
Major bulk products <sup>3</sup>	49.5	46.2	42.3	37.3	34.8	35.6	36.9	38.4	39.9	41.1	42.5	44.1
High-value product exports <sup>4</sup>	86.3	94.7	94.7	94.6	97.1	100.9	105.1	109.5	114.0	118.6	123.4	128.3
High-value product share	63.5%	67.2%	69.1%	71.7%	73.6%	73.9%	74.0%	74.0%	74.1%	74.2%	74.4%	74.4%
<i>Million metric tons</i>												
Agricultural exports (volume):												
Bulk commodity exports	112.0	93.4	112.5	122.7	125.5	128.7	131.5	133.3	135.2	137.1	139.1	141.0
Agricultural imports (value):												
Livestock and dairy products	13.3	13.7	14.6	15.3	16.0	16.5	17.0	17.6	18.2	18.8	19.5	20.3
Livestock and meats	9.7	10.1	10.7	11.4	12.0	12.3	12.7	13.2	13.6	14.1	14.6	15.2
Dairy products	3.0	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.9	4.0	4.1
Grains and feeds	9.5	11.3	9.3	7.2	6.8	7.0	7.5	7.9	8.3	8.6	9.0	9.4
Grain products	5.7	6.2	6.7	4.8	4.5	4.6	4.9	5.2	5.5	5.7	5.9	6.1
Oilseeds and products	8.7	8.8	8.9	7.5	7.0	7.2	7.3	7.5	7.8	8.0	8.1	8.4
Vegetable oils	5.8	5.2	5.5	4.7	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.2
Horticultural products	41.6	44.1	48.1	50.2	52.4	54.8	57.2	59.7	62.4	65.2	68.1	71.1
Fruits and vegetables, fresh	13.4	14.9	16.3	17.1	17.9	18.7	19.6	20.5	21.5	22.5	23.6	24.7
Fruits and vegetables, processed	8.6	8.9	9.7	10.1	10.6	11.1	11.6	12.1	12.7	13.3	13.9	14.5
Wine and beer	8.8	8.9	9.7	10.1	10.4	10.8	11.2	11.6	12.1	12.5	13.0	13.5
Sugar and tropical products	28.3	23.5	25.3	26.6	27.4	28.1	29.0	30.3	31.7	32.9	34.2	35.5
Sugar and related products	5.2	4.6	4.9	5.4	5.3	5.0	5.0	5.3	5.6	5.7	5.9	5.9
Cocoa, coffee, and products	11.9	10.1	10.6	11.0	11.5	11.9	12.3	12.8	13.3	13.8	14.3	14.9
Other imports <sup>5</sup>	2.1	2.4	3.4	3.5	3.6	3.7	3.8	4.0	4.1	4.2	4.4	4.5
<b>Total agricultural imports</b>	<b>103.4</b>	<b>103.8</b>	<b>109.5</b>	<b>110.2</b>	<b>113.3</b>	<b>117.3</b>	<b>121.8</b>	<b>127.1</b>	<b>132.4</b>	<b>137.7</b>	<b>143.4</b>	<b>149.2</b>
<b>Net agricultural trade balance</b>	<b>32.4</b>	<b>37.1</b>	<b>27.5</b>	<b>21.7</b>	<b>18.6</b>	<b>19.2</b>	<b>20.2</b>	<b>20.8</b>	<b>21.5</b>	<b>22.0</b>	<b>22.5</b>	<b>23.2</b>

Sources: U.S. Department of Agriculture and Bureau of Census, U.S. Department of Commerce.

U.S. trade value projections were completed in December 2013. For updates of the nearby year forecasts, see USDA's *Outlook for U.S. Agricultural Trade* report, published in February, May, August, and December.

<sup>1</sup>Includes wine, beer, essential oils, nursery crops, hops, and mint.

<sup>2</sup>Includes planting seeds, unmanufactured tobacco, and cotton linters.

<sup>3</sup>Includes bulk grains, soybeans, cotton, and tobacco.

<sup>4</sup>High-value product (HVP) exports is calculated as total exports less bulk commodities. HVP's include semiprocessed and processed grains and oilseeds, animals and animal products, horticultural products, and sugar and tropical products.

<sup>5</sup>Includes planting seeds, unmanufactured tobacco, and cotton.



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