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USDA Agricultural Baseline Projections to 2010

Interagency Agricultural Projections Committee

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Abstract

This report provides long-run baseline projections for the agricultural sector through 2010. Projections cover agricultural commodities, agricultural trade, and aggregate indicators of the sector, such as farm income and food prices. The projections are based on specific assumptions regarding macroeconomic conditions, policy, weather, and international developments. The baseline assumes that there are no shocks due to abnormal weather or other factors affecting global supply and demand. The projections assume that current agricultural law of the 1996 Farm Act remains in effect throughout the baseline. The baseline projections presented are one representative scenario for the agricultural sector for the next decade. As such, the baseline provides a point of departure for discussion of alternative farm sector outcomes that could result under different assumptions. The projections in this report were prepared in September through November 2000, reflecting a composite of model results and judgmental analysis.

In the initial years of the baseline projections, the agricultural sector continues to recover from the market situation in the late 1990s when large global production and weak global demand reduced agricultural commodity prices, U.S. agricultural export value, and market cash receipts to U.S. farmers, with net farm income maintained only through large marketing loan benefits and additional emergency and disaster assistance. Economic recovery in many countries strengthens global demand and trade in the near term. Nonetheless, the buildup of global supplies keeps agricultural prices under pressure for the next several years, lowering farm income in the absence of further ad hoc assistance. Longer run developments in the agricultural sector reflect continuing macroeconomic improvement. While strong export competition continues, strengthening global economic growth, particularly in developing countries, provides a foundation for gains in trade and U.S. agricultural exports, resulting in rising market prices, increases in farm income, and improvement in the financial condition of the U.S. agricultural sector.

Keywords: Projections, baseline, crops, livestock, trade, farm income, food prices.

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A Note to Users of USDA Baseline Projections

USDA long-term agricultural baseline projections presented in this report are a Departmental consensus on a long-run scenario for the agricultural sector. These projections provide a starting point for discussion of alternative outcomes for the sector.

The scenario presented in this report is not a USDA forecast about the future. Instead, it is a conditional, long-run scenario about what would be expected to happen under the 1996 Farm Act and specific assumptions about external conditions. The baseline includes short-term projections from the October 2000 *World Agricultural Supply and Demand Estimates* report. Trade projections in this report for 2001/02 incorporate long-term assumptions concerning weather, foreign trend yields, and foreign use and do not reflect short-term conditions that may impact trade that year.

Critical long-term assumptions include:

- U.S. and international macroeconomic conditions;
- U.S. and foreign agricultural and trade policies;
- Funding for U.S. agricultural export programs;
- Growth rates of agricultural productivity, both in the U.S. and abroad; and
- Normal (average) weather.

Changes in any of the assumptions can significantly affect the baseline projections, and actual conditions that emerge will alter the outcomes.

The baseline projections analysis was conducted by interagency committees in USDA and reflects a composite of model results and judgmental analysis. The Economic Research Service has the lead role in preparing the Departmental baseline 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 baseline projections analysis and review include the World Agricultural Outlook Board, the Economic Research Service, the Farm Service Agency, the Foreign Agricultural Service, the Office of the Chief Economist, the Office of Budget and Program Analysis, the Risk Management Agency, the Agricultural Marketing Service, the Natural Resources Conservation Service, and the Cooperative State Research, Education, and Extension Service.

Baseline Projections on the Internet

The new USDA baseline projections are available electronically on the Internet at:

http://usda.mannlib.cornell.edu/data-sets/baseline/

Also, the Economic Research Service has a briefing room for baseline projections at:

http://www.ers.usda.gov/briefing/baseline/

Baseline Contacts

Questions regarding these projections may be directed to:

Paul Westcott, Economic Research Service, Room 5188, 1800 M Street, N.W., Washington, D.C. 20036-5831, phone: (202) 694-5335, e-mail: westcott@ers.usda.gov

Randall Schnepf, Economic Research Service, Room 5026, 1800 M Street, N.W., Washington, D.C. 20036-5831, phone: (202) 694-5293, e-mail: rschnepf@ers.usda.gov

David Stallings, World Agricultural Outlook Board, Room 5143, 1400 Independence Ave., S.W., Washington, D.C. 20250-3812, phone: (202) 720-5715, e-mail: dstallings@oce.usda.gov

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USDA Agricultural Baseline Projections to 2010

Interagency Agricultural Projections Committee

Introduction

This report provides long-run baseline projections for the agricultural sector through 2010. Projections cover agricultural commodities, agricultural trade, and aggregate indicators of the sector, such as farm income and food prices.

The projections are a conditional scenario with no shocks and are based on specific assumptions regarding the macroeconomy, agricultural policy, the weather, and international developments. In particular, the baseline incorporates provisions of the Federal Agriculture Improvement and Reform Act of 1996 (1996 Farm Act) and assumes that current farm legislation remains in effect through the projections period. The projections are not intended to be a Departmental forecast of what the future will be, but instead a description of what would be expected to happen under the 1996 Farm Act, with very specific external circumstances. Thus, the baseline provides 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 in September through November 2000 in conjunction with fiscal year 2002 budget analysis. Projections reflect a composite of model results and judgmental analysis. Normal weather is assumed. The baseline includes short-term projections from the October 2000 *World Agricultural Supply and Demand Estimates* report.

Summary of Projections

In the initial years of the baseline projections, the agricultural sector continues to recover from the market situation of late 1990s that resulted in generally weak agricultural commodity prices. Large crops had been produced both in the United States and abroad for a number of years and world agricultural demand was weakened by the global financial crisis. Strong foreign competition in a weakened global trade setting reduced the value of U.S. agricultural exports and market cash receipts to U.S. farmers. Net farm income was maintained at levels near the average of the 1990s only through large marketing loan benefits and additional funds provided to the sector through emergency and disaster assistance legislation.

Although there remain some lingering effects of the global crisis in the world economy, the general recovery in crisis countries strengthens global demand and trade early in the baseline and U.S. agricultural exports rise. The buildup of global supplies keeps agricultural prices under pressure over the next several years, with marketing loan benefits continuing to have an important role in the U.S. farm sector. U.S. farm income initially declines, largely reflecting a reduction in direct government payments to the sector from the high levels of the past several years.

Longer run developments in the agricultural sector reflect continuing macroeconomic improvement. Structural reform in countries most affected by the global financial crisis of the late 1990s leads to strengthening world economic growth, particularly in developing countries, providing a foundation for further gains in trade and U.S. agricultural exports. Expanding production potential in a number of foreign countries, however, results in continued strong export competition throughout the baseline. Nonetheless, growth in trade leads to rising market prices, increases in farm income, and improvement in the financial condition of the U.S. agricultural sector. Consumer food prices are projected to continue a long-term trend of rising less than the general inflation rate. The trend in consumer food expenditures towards a larger share for meals eaten away from home is expected to continue.

Macroeconomic Assumptions

The outlook for the world economy over the next 10 years is characterized by strong growth in almost all regions of the world. World real GDP growth is projected to average about 3.5 percent annually in 2001-2010, compared with 2.6 percent in the previous decade. The aftermath of the Asian financial crisis is a world that is structurally more sound and poised for significant growth without major imbalances. Global economic growth is driven by a recovery from the Asia financial crisis as well as strong and sustained growth in the former Soviet Union, Africa, and Latin America. There is also a significant narrowing of the differential between the high growth regions such as Asia and the lower growth regions of Latin America, Africa, and the transition economies.

Overall, economic growth in developing countries is projected at 5.5 percent for the next decade, up from 4.8 percent during 1990-2000. This pickup is important for global agricultural demand because many developing countries have incomes at levels where consumers diversify their diets and include more meats and other higher valued food products, and where consumption and imports of food and feed are particularly responsive to income changes. Although lower than previously recorded, real GDP in the crisis countries of Asia is projected to grow at 5 percent per year. Significant sustained positive growth is forecast for Africa for the first time since the 1950s. A strengthening of economic growth in Latin America is also projected. The strong growth projected for South America reflects reduced debt, less government intervention in the private sector, growing intra-regional trade, and heavier foreign direct investment.

Projected growth in transition economies (countries of the former Soviet Union and Central and Eastern Europe) of about 3.5 percent over 2000-2010 is significant in comparison to the economic contraction of the previous decade. Growth is expected to remain strongest among the countries that are further along in the transformation from centrally planned to market economies. Countries of Central and Eastern Europe such as Poland, Hungary, and the Czech Republic are expected to show relatively strong growth, largely due to successful integration into the global economy. Russia and Ukraine are beginning to show benefits of their transition to a market economy, with GDP gains of 3.5 to 4 percent projected for the next decade.

Economic growth in developed countries strengthens in the baseline as well, to 2.8 percent in the projections from 2.3 percent of 1991-2000. Structural adjustments undertaken in many

developed countries throughout the second part of the 1980s and early 1990s created a foundation for growth. Low inflation and interest rates also characterize the outlook for developed economies. Relatively sluggish growth of 1.9 percent is projected for Japan, however, which continues to face significant structural problems in its economy and financial sector.

The United States is the largest economy in the world with about 25 percent of global economic activity and is the largest market for foreign goods. The U.S. also has a dominant role in global financial markets. Thus, despite a very low income elasticity of domestic demand for most farm products in the United States, the U.S. economy is crucial for U.S. agricultural prospects through its role in spurring world growth, global agricultural demand and trade, and U.S. agricultural exports. Following gains of over 4 percent each year during 1997-2000, the U.S. economy is expected to slow through 2002 as higher world growth and inflation boost interest rates and tighten credit. U.S. GDP growth then is expected at 3.1 to 3.2 percent for the rest of the baseline, reflecting growth of the labor force and strong gains in productivity. U.S. productivity will remain high because of continued improvements in telecommunications- and information-related technology crucial to the "new economy." Inflation is projected at under 3 percent as monetary policy is assumed to be relatively stringent, tightening when significant inflationary pressures are expected. The appreciation of dollar in the late 1990s during the Asia financial crisis and the dollar's continued strength through the baseline will continue to be a negative factor for U.S. agricultural exports.

Oil prices in the near term are expected to reflect a relatively tight market for petroleum products into 2002, but as inventories are restored to normal operating levels over the next several years, oil prices are assumed to decline somewhat from the high levels reached in 2000. From 2003 through the remainder of the baseline, oil prices are projected to rise slightly more than the general inflation rate. This pattern of near-term decline in oil prices followed by moderate gains is predicated on the assumptions that new oil discoveries along with new technologies for both finding and extracting oil will allow for substantial growth in demand without significant energy inflation. Also, economic growth has become less directly dependent on energy as the economy has changed from producing goods to a process much more dependent on information and communication technologies, particularly in North America and Europe. Thus, the projected growth of real world oil prices should not notably hinder global GDP growth. However, the agricultural sector is more negatively affected by higher fuel prices. Fuel costs are a relatively large share of non-farm input costs. Further, fertilizer prices will likely be up in 2001 even as oil prices fall modestly, due to continued high prices for natural gas, the major feedstock and boiler fuel in the production of nitrogen based fertilizer.

Agricultural Policy Assumptions

The baseline incorporates provisions of the 1996 Farm Act and assumes a continuation of current agricultural law through the end of the projections. Also included are agricultural provisions of appropriations acts for fiscal years 1999-2001 and provisions of the Agricultural Risk Protection Act of 2000.

Production flexibility contract payments are provided to the sector through fiscal year 2002 under provisions of the 1996 Farm Act. These predetermined aggregate payments are then

assumed to continue through the remainder of the baseline at a funding level equal to that in fiscal 2002 of $4.008 billion. Production flexibility contract payments are generally not related to current plantings or to market prices.

Nearly complete planting flexibility is provided under the 1996 Farm Act, allowing producers to respond to market prices and net returns, augmented by marketing loan benefits in low price years. Marketing loan and loan deficiency payment provisions of the 1996 Farm Act have enabled farmers to realize per-unit revenues that exceed loan rates—many farmers use a two-step marketing procedure in which they receive program benefits when prices are seasonally low (and marketing loan benefits high) and then sell their crop later in the marketing year when prices have risen. This policy effect also raises producers' expected net returns for these crops, thereby affecting planting decisions and acreage allocation. Marketing loan benefits and acreage effects are particularly important in the early years of the baseline when many crop prices are low. The baseline assumes that marketing assistance loan rates for corn, wheat, upland cotton, and oilseeds will remain at their legislated maximum levels through crop year 2001/02. Then loan rates for these crops are assumed to be based on formulas in the 1996 Farm Act, subject to minimum and maximum levels specified in the law. The rice loan rate is assumed to remain at $6.50 per hundredweight through the baseline.

Additional emergency and disaster assistance funds have been provided to the farm sector in recent years, including market loss assistance for contract crops, oilseed payments, and crop loss assistance payments. No further ad hoc assistance such as these is assumed in the baseline.

The 2000 Appropriations Act reinstated funding for cotton user marketing certificates (the Step 2 program). The dairy price support program has been extended through the end of calendar 2001.

The baseline assumes that the Conservation Reserve Program (CRP) will gradually build from its recent level of about 33.8 million acres to its maximum authorized level of 36.4 million acres by 2003, with program authority extended to allow enrollment to remain at that level. New CRP enrollments reflect periodic regular signups and continuous signups, with a competitive selection process used for CRP enrollments.

The baseline assumes full compliance with all bilateral and multilateral agreements affecting agriculture and agricultural trade. Projections assume full compliance with the internal support, market access, and export subsidy provisions of the Uruguay Round Agreement on Agriculture. The baseline assumes no accession to the World Trade Organization (WTO) by China or Taiwan; no enlargement of the European Union (EU) beyond its current 15 members; no implementation of more liberalized trade among the countries of the Asia-Pacific Economic Cooperation; and no expansion of the North American Free Trade Agreement. Agricultural and trade policies in individual foreign countries are assumed to continue to evolve along their current paths.

Annual quantity and expenditure levels for the Export Enhancement Program (EEP) are assumed to be in compliance with reductions in the UR agreement. Commodity projections in the baseline assume small EEP expenditures in fiscal 2001 (for poultry, only), with the program then assumed to be fully used starting in fiscal year 2002. The baseline assumes some growth in the

total P.L. 480 program level through fiscal year 2006 with no change assumed for later years. Program levels projected for GSM-102 and GSM-103 credit guarantee programs increase in fiscal year 2002 and then are constant in nominal dollars for the rest of the baseline.

Crops

In the initial years of the baseline, many crops continue to adjust to a period of low prices of the past several years. Marketing loan benefits provide some safety net assistance to producers in these years, augmenting market returns. In the longer run, more favorable global economic growth supports increases in trade and U.S. agricultural exports, although strong export competition continues.

Planted acreage for the eight major U.S. field crops (corn, sorghum, barley, oats, wheat, rice, upland cotton, and soybeans) declines over the next two years before turning upward for the remainder of the baseline. By 2010, total planted area for these crops reaches 259 million acres, approaching the high level of plantings for these crops attained in 1996. Planting flexibility of current agricultural legislation facilitates acreage movements by allowing producers to respond to market prices and returns, augmented by marketing loan benefits in low price years. Marketing loan benefits influence the aggregate level of plantings as well as the cropping mix in the early years of the baseline when many prices are relatively low, but projected acreage gains in the longer term reflect land drawn into production based on strengthening market incentives as world demand grows. Yield gains for many crops mitigate some of the need for increasing total land use.

Export markets continue to increase in importance for many U.S. field crops. Gains in disappearance for U.S. wheat, sorghum, and cotton are driven by exports, with U.S. trade showing larger absolute gains and growth rates than domestic demand. U.S. wheat exports rise steadily in the baseline but face competition from the EU, which is projected to be able to export wheat without subsidies throughout the baseline. Cotton exports benefit from Step 2 payments, with exports strengthening in the latter part of the baseline following the phaseout of the Multi-Fiber Arrangement's import quotas. Sorghum export gains reflect increasing trade to Mexico. Corn and soybean oil exports also grow at faster rates than domestic use, although absolute increases in domestic use are larger than trade gains, reflecting the relative sizes of the utilization categories. The corn sector faces strong competition in global trade from Argentina, muting U.S. corn export gains somewhat. Projected utilization gains for soybeans, soybean meal, and rice are primarily driven by domestic demand, with larger absolute increases and growth rates in domestic use than exports. Exports of soybeans and products have stronger gains in the first half of the baseline as low market prices discourage foreign production and encourage domestic crushing, with U.S. producers receiving marketing loan benefits. Later in the baseline when prices strengthen, foreign production rises and increased competition lead to declines in U.S. soybean exports. U.S. rice exports are expected to fall slowly throughout the baseline as U.S. rice prices increase faster than world prices, making U.S. rice exports less competitive in some markets.

Domestic demand for many crops is projected to grow slightly faster than population. Growth in domestic use of rice reflects a greater emphasis on dietary concerns and an increasing share of

the U.S. population of Asian and Latin American descent. Gains in corn used for ethanol and corn sweeteners exceed population growth rates. Increases in domestic soybean crush are largest in the first half of the projections when soybean prices are low, but continue to reflect strong growth in poultry production and demand for soybean meal throughout the baseline. Domestic wheat use rises gradually, mainly reflecting gains in food use. Additionally, increases in cotton textile imports in the second half of the baseline after liberalization of restrictions on cotton textile import quotas lead to declining domestic mill use of cotton.

The ratios of ending stocks to use are declining over the baseline for corn, wheat, and soybeans, with nominal prices rising. For rice, ending stocks-to-use ratios are projected to be relatively constant throughout the projections. Stocks-to-use ratios for cotton increase initially and then are relatively stable for the rest of the baseline.

Livestock

Relatively low grain and soybean meal prices in the initial years of the baseline encourage livestock sector expansion, although biological lags in the production process delay higher output for beef in the near term. In the longer run, moderate feed price increases through much of the baseline, replenishment of forage supplies, low inflation, domestic demand strength, and gains in meat exports are expected to contribute to producer returns that encourage higher total red meat and poultry production, with a growing proportion being poultry.

Beef cattle inventories have continued to be held down by droughts and poor forage conditions over the past several years, which have encouraged more heifers to be placed in feedlots rather than retained for calving even as cattle returns have improved. The length of the biological lag is likely to prevent beef cow herd expansion before 2003-2004. Beef cow numbers then rise through the remainder of the baseline, pushing the cattle herd up to more than 106 million head by the end of the projections. Additionally, shifts toward a breeding herd of larger-framed, higher-grading cattle and heavy slaughter weights partially offset the need for further expansion of cattle inventories. The beef production mix continues to shift toward a larger proportion of higher-quality fed beef, with almost all steers and heifers being feedlot fed. Beef production also continues to move toward a higher graded product being directed toward the export and domestic hotel-restaurant markets. The United States remains the primary source of high quality, fed beef for export, including exports for hotel-restaurant trade, largely to Pacific Rim nations. The United States becomes a net beef exporter near the end of the baseline.

The pork sector will continue to transform into a more vertically coordinated industry with a mix of production and marketing contracts. Increased vertical coordination in pork production will lower production costs and improve pork quality and product consistency, allowing pork to increasingly challenge beef in the hotel-restaurant market as well as at retail. Larger, more efficient pork producers will market a greater percentage of the hogs over the next 10 years. With a more vertically coordinated industry structure, the hog cycle is dampened. Pork production rebounds through 2002 with a moderate contraction in 2003-2004, before rising gradually through the rest of the baseline. The United States is an important net pork exporter, in part reflecting environmental constraints in a number of competing countries that limit their production gains. Prospects for long-term growth markets for U.S. pork exports remain focused

on Pacific Rim nations and Mexico. Canada will increasingly compete for trade in these markets.

The broiler and turkey industries have kept production costs from increasing at the full rate of inflation through technological advancements and improved production management practices, including taking advantage of economies of size through increasing horizontal and vertical integration. Further technological improvements are expected to occur during the baseline, although efficiency gains are likely to be smaller than in the past. Broiler production grows steadily throughout the projections, with gains slowing to about 2 percent annually at the end of the baseline. Processed products and fast food markets are important sources of domestic growth for the poultry sector. Competition in global poultry markets holds U.S. poultry exports to moderate gains. Asian imports are projected to expand through the baseline, even with growing domestic broiler production in China. Increasing exports are also expected to Russia, Mexico, Central America, and the Caribbean.

Decreases in real prices of meats combined with increases in real disposable income allow U.S. consumers to purchase more total meat with a smaller proportion of disposable income. Although small reductions in per capita consumption are projected for beef and pork, significant increases in per capita consumption of relatively lower priced poultry will continue. Thus, poultry gains a larger proportion of both total meat consumption and total meat expenditures. On a retail weight basis, poultry consumption is projected to be nearly as large as red meat consumption by the end of the baseline.

Per capita consumption of eggs rises moderately in the baseline as greater use of eggs in processed products offsets declining shell egg use per person.

Milk production grows despite slowly declining cow numbers as strengthening milk-feed price ratios, improved management, and dairy productivity gains push milk output per cow higher. Productivity gains in the dairy sector will reflect the continued structural shift to larger-sized operations as many traditional dairy farms, particularly smaller operations, will experience income stress caused by lower real milk prices and will exit the industry. Domestic dairy demand is expected to show slow growth in the baseline.

Farm Income and Farm Financial Conditions

Over the last few years, net farm income has been maintained at levels near the average of the 1990s mostly because of large marketing loan benefits and additional funds provided to the sector in emergency and disaster assistance legislation. These government payments balanced lower farm cash receipts during this period of generally low commodity prices. Large crops had been produced both in the United States and abroad for a number of years, and world agricultural demand was weakened by the global financial crisis. With the baseline assuming no further ad hoc government assistance and with production flexibility contract payments scheduled to decline, farm income is initially lower as gains in commodity prices and cash receipts in the sector do not match the reduction in government payments. Further, production expenses for energy-related inputs, such as fuels and fertilizer, have been boosted due to price increases for oil

and natural gas. Despite some cash flow difficulties in the sector, a strong financial position achieved during the 1990s will help farmers through this period.

In the longer run, the outlook for the sector improves as large global commodity supplies are reduced, agricultural demand and exports strengthen, and prices rise, leading to gains in farm income and greater stability in aggregate financial conditions. Beyond 2002, net farm income gradually moves upward for the rest of the baseline to more than $56 billion by the end of the projections. As direct government payments fall and then level off, the agriculture sector increasingly relies on the marketplace for its income. Government payments, which represented about 9 percent of gross cash income in 1999 and 2000, account for only about 2 percent of gross cash income in the latter part of the projections. Both crop and livestock receipts are up in nominal terms due to larger production and higher prices. Production expenses increase in the baseline, with expenses for non-farm origin inputs rising faster than expenses for farm-origin inputs. Cash operating margins tighten somewhat early in the projections, with cash expenses increasing to 79-80 percent of gross cash income over the next few years before falling back to 76 percent later in the baseline.

With reduced farm income and cash flow over the next few years, debt management will be crucial to the financial condition of the agricultural sector. In the longer run, increasing farm incomes and relatively low interest rates assist in asset accumulation and debt management, thus leading to an improved balance sheet for the farm sector. Farm asset values rise only moderately in the initial years of the projections before strengthening more rapidly through the rest of the baseline in response to improving farm income prospects. Farm debt rises less rapidly than asset values. As a result, after 2003, debt-to-asset ratios continue the downward trend of the last 15 years from the high levels of over 20 percent in the mid-1980s, declining to about 14 percent by the end of the baseline. With asset values increasing more than debt, farm equity rises significantly. Increasing farm income in the baseline and rising farm equity lead to improvement in the financial condition of the farm sector.

Food Prices and Expenditures

Retail food prices in the baseline are projected to rise less than the general inflation rate, continuing a long-term trend. The largest price increases generally occur among the more highly processed foods, such as cereals and bakery products. Prices of these foods are related more to the costs of processing and marketing than to the costs of farm commodities. Expenditures for meals eaten away from home account for a growing share of food spending, reaching nearly 50 percent of total food spending by the end of the baseline.

Agricultural Trade

Relatively strong growth in the volume of global and U.S. agricultural trade is projected during the next 10 years, aided by ample global supplies and steady demand growth. Demand prospects are driven by the outlook for healthy economic growth in most of Asia, Latin America, North Africa, and the Middle East, moderate gains in developed countries, and continued progress toward freer trade through ongoing unilateral policy reforms and existing multilateral

agreements. The solid prospects for trade expansion in these regions are expected to more than offset the relatively weak growth in parts of Asia, Africa, and the former Soviet Union.

Global and U.S. commodity prices and trade value have been weak in recent years because of large stocks resulting from weakened global demand and large production in the late 1990s. Even with continued output and productivity gains in exporting countries, commodity prices and export earnings are projected to strengthen in the baseline because of steady growth in import demand and reduced U.S. and foreign stocks.

Future trends in China's agricultural trade are key in the global outlook for commodity trade and prices. The baseline includes steady growth in China's imports of most commodities. However, policy rather than market forces determine much of China's trade in agricultural commodities and significant uncertainties exist regarding future policies in China. The size of China's agricultural economy increases the potential significance of these issues for world trade.

The baseline shows improved trade growth for several bulk commodities during 2000-10, compared with the 1980s and 1990s. Projected growth in wheat and coarse grains trade is particularly strong compared with recent performance, and cotton trade is projected to improve from the contraction of the 1990s. The expansion of grain trade is broad based, driven by rising incomes in developing regions, diet diversification, and increased demand for livestock products and feeds. The phase out of the Multi-Fiber Arrangement (MFA) by 2005 is expected to boost demand for raw cotton in developing countries, while gradually shifting demand in developed countries from raw cotton to processed cotton products (textiles and apparel).

Global trade in soybeans and products is projected to continue growing, but at a much slower rate than the rapid growth of the 1990s. Continued strong gains in developing-country demand for feed protein is projected to be mostly offset by reduced demand in the EU that results from slowed livestock output and increased substitution of grain for protein feeds following Agenda 2000 reforms. Growth in soybean oil trade is projected slower than the very high rate achieved in the 1990s due to increased crushing in developing countries and competition from other oils, particularly palm oil.

U.S. export volume is projected to strengthen for wheat, coarse grains, and soybeans and products, rise gradually for raw cotton, and decline for rice. U.S. wheat, coarse grain, and soybean and soybean product exports expand along with world trade, although continued strong competition is expected in these markets. U.S. wheat and coarse grain exports compete with unsubsidized EU wheat and barley throughout the projection period. Argentina is expected to remain a strong competitor for coarse grain market share. Eastern Europe also begins to make its presence felt as an exporter in world corn markets early in the projection period. U.S. raw cotton exports remain strong through the baseline, increasing gradually in the second half of the decade due to rising global demand following the MFA phase out. U.S. rice exports are expected to fall during 2000-10 as domestic demand outpaces U.S. production. U.S. exports of soybeans and products continue to grow, albeit at a much slower pace compared with the 1990s, reflecting projected trends in world trade and increasing competition from Argentina and Brazil.

Global meat trade and U.S. meat exports are projected to recover from the recent slowdown in East Asian and Russian demand, showing strong and steady growth during 2000-10. Prospects for meat trade are supported by the economic rebound in key Asian markets, and by already-negotiated reductions in trade barriers. However, Russian imports are projected to increase gradually and surpass the record levels reached in the late 1990s by the end of the projection period.

The total value of U.S. agricultural exports is projected to rise to $76 billion by 2010, up from about $51 billion in 2000. Both bulk and high-valued products are expected to show strong export growth. Their shares in total U.S. exports remain stable, with high-valued products continuing to account for the larger share, about 63 percent of the total. The growth expected in bulk-export value lends strength to total export earnings, in contrast to the average annual decline in bulk commodity export value in the 1990s. U.S. agricultural imports are forecast to grow from $38.9 billion in fiscal year 2000 to $53.4 billion in 2010, reflecting the expansion of the domestic economy and the dollar's exchange value. The resulting agricultural trade surplus rises to $22.6 billion in fiscal year 2010, up from $12 billion in 2000 but still well below the record export surplus of 1996.

Macroeconomic Assumptions

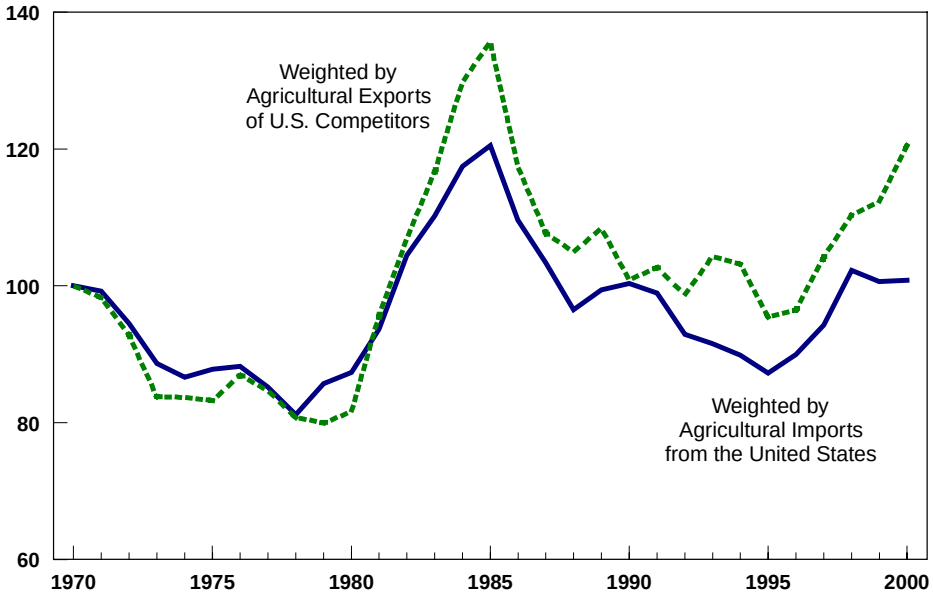
This section presents the macroeconomic projections underlying the USDA baseline.[1] Factors affecting the domestic macroeconomic projections are presented first, followed by a discussion of the conditions determining the international projections. The projections presented this year are characterized by strong global growth driven by a rapid recovery from the global financial crisis as well as strong and what appears to be the beginning of sustained growth in the former Soviet Union (FSU), Africa, and Latin America.

The global financial crisis that took place in the late 1990s changed trade policies, trade patterns, and interest rates, and led to major exchange rate depreciations in dollar terms. These changes have had the expected consequence of reducing foreign demand for U.S. farm products at a time of worldwide agricultural surpluses. Although the dramatic changes that took place during the crisis are largely behind us, the lingering impact both in the United States and abroad will continue for years to come. In the last several years of the 1990s, currencies of our agricultural competitors depreciated relative to the dollar more than did currencies in our major export markets (Figure 1). The overall impact was a slump in U.S. agricultural exports. Baseline assumptions do not anticipate any significant change in relative exchange rates, a continued negative factor for U.S. agricultural exports. In contrast, the substantial increase in worldwide economic growth, particularly focused on low-income and other developing countries, should be a positive factor to drive increased import demand for agricultural products.

Figure 1

Real Agricultural Trade-Weighted Exchange Rates

Index of foreign currency per U.S. dollar, 1970=100



2000 estimated based on available data through July.

[1] The macroeconomic assumptions used in the baseline were completed in August 2000.

Domestic Macroeconomic Projections

U.S. economic conditions are crucial to U.S. agricultural prospects, despite a very low income-elasticity of domestic demand for most farm products. U.S. GDP growth spurs world growth, since the United States is the largest single market for foreign goods as well as the largest economy. U.S. financial markets also dominate world financial markets. The growth of developing economies and the relative strength of the dollar strongly influence farm export demand and prices. Further, U.S. inflation, energy prices, and interest rates directly influence agricultural production costs.

The United States had very high growth and low inflation between 1995 and 2000. Remarkably strong productivity growth has been a key component of the high-growth, low-inflation economy. GDP growth averaged 4.3 percent while inflation, as measured by the GDP deflator, averaged less than 2 percent. Short-term Treasury bill rates averaged 5 percent and 10-year Treasury bond yields averaged 6 percent during this period. In 2000, the unemployment rate fell to about 4.0 percent, the lowest annual rate since 1969. In 2000, GDP growth is projected to be 5.1 percent, the ninth year of the current economic expansion.

The strong dollar and sharply rising oil prices in 1999 and 2000 hurt U.S. agriculture. While strong world growth helped keep manufactured exports strong, record crop supplies and a continued strong dollar kept agricultural export values well below the levels of 1996.

Farm, raw industrial material, and manufactured imports surged due to strong U.S. income growth and a strong dollar. Overall exports grew but imports grew more, pushing the trade deficit to record high levels. Nevertheless, large capital inflows from trade-surplus countries resulted in continued low long-term U.S. Treasury bond interest rates even as the Federal Reserve raised short-term rates to forestall a new surge in inflation. As corporate bond interest rates were relatively stable, lending rates and credit standards for small borrowers rose sharply. Strong U.S. and world growth, particularly in Asia, and a tightening of crude oil supplies by OPEC caused oil prices to rise sharply, which further widened the U.S. trade deficit and added to farm expenses. Core inflation (overall inflation minus energy and food price changes) rose modestly.

Near-term U.S. Macroeconomic Outlook

The 1995-2000 equipment investment boom will continue into 2001, fueled by the contributions of productivity-boosting equipment sales to business cost savings. These savings will be reflected in enhanced labor productivity, allowing rising real wages and thereby boosting consumer spending. Faster world growth will modestly improve the U.S. trade deficit. However, high oil prices will dampen the trade deficit improvement.

Bottlenecks in specific labor markets will boost inflation modestly and moderate employment growth. The baseline assumes short-term interest rates will be up in 2001 to keep inflation in check. The expected increase in world growth, high oil prices, and higher inflation will lead to higher long-term interest rates and tighter lending standards.

Most industry analysts expect home, appliance, and auto demand growth to slow from the rapid pace of recent years as record per capita levels of housing and car ownership have been reached. The expected saturation in housing and consumer durables demand combined with higher interest rates, tighter credit, and high oil prices will keep consumer spending gains and GDP growth modest in the near-term.

The U.S. Economy, 2003 to 2010 Projections Overview

Longer-term macroeconomic projections are based on trend GDP growth assumptions for 2003-2010, with 2002 used as a transition year from the short-term forecasts. Near-term moderating GDP growth will continue into 2002 as GDP growth falls to 2.6 percent, below the long-term trend. Then, growth returns to a long-term sustainable rate of 3.2 percent per year through 2007, slowing to 3.1 percent per year as baby boomers retire in large numbers in 2008 to 2010.

Oil Market Balances in 2003. Oil price projections assume a long-run equilibrium of supply and demand by 2003. The current market pricing of oil company equities reflects the view that increases in earnings from high crude oil prices are not sustainable due to eroding OPEC market power. Thus, the crude oil market is assumed in the baseline to revert to pricing based on the fundamentals of demand and supply in 2 to 3 years.

Financial Markets in 2003-2010 Similar to 1996. Projected financial market variables such as interest rates reflect a balance of supply and demand for loanable funds consistent with world and U.S. growth assumptions. Moody's AAA bond rates are assumed to average 6.6 percent in 2003-2010. Core inflation is 2.9 percent as reflected in the CPI. An unemployment rate of 4.6 percent is assumed, reflecting effective full employment. Projected labor compensation grows about 1 percent above inflation.

Underlying Policy and Aggregate Supply Assumptions for 2003-2010

- Fiscal policy will result in structural Federal budget surpluses for the forecast horizon.

- Monetary policy will be relatively stringent, as the Federal Reserve policy will tighten when significant inflationary pressures are expected, keeping inflation below 3 percent. The three-month Treasury bill yield will average 4.7 percent.

- Trend labor productivity growth will average from 1.9 to 2.2 percent in 2000 to 2010.

- Energy markets will return to balance in 2003. Thereafter, real crude oil prices will rise 0.4 percent per year, roughly consistent with the Energy Information Administration's January 2000 *Annual Long Term Outlook* and the more recent long-term projections of the International Energy Agency.

- Employment growth is expected to average 1.1 to 1.2 percent a year through 2010, which is broadly consistent with Bureau of Labor Statistics projections. This projection is consistent with the tightened welfare and disability qualifications now in place and expected

immigration, as well as the age structure of the working population and the continuing pattern of retirement prior to social security eligibility.

World GDP growth is expected to be about 3.5 percent from 2005 to 2010. Since the U.S. is 25 percent of the world economy, world growth is jointly determined with U.S. GDP growth.

Domestic Macroeconomic Projection Highlights

- The trend baseline assumptions avoid introducing spurious cycles into forecasts dependent on these projections. These trends are consistent with standard macroeconomic stylized facts, such as an increasing capital-to-labor ratio and high total factor productivity raising labor productivity.

- Long-term trend GDP growth is 3.2 percent. Disposable income and consumer spending growth are expected to grow at a trend 3.0 percent per year. Disposable income growth will be partly the result of growth in real compensation in a labor market that has the unemployment rate below 5.0 percent. A pickup in the personal savings rate relative to the low savings rate of 2000 is expected. Such low personal savings rates are not sustainable in the medium term and the increase in savings will be a major force slowing GDP growth in 2002.

- The investment required to achieve continued high productivity growth implies augmenting domestic savings with a net inflow of foreign funds. This will result in continued trade deficits and will prevent a significant drop in real long-term interest rates despite continued budget surpluses and modest increases in the personal savings rate. The continuing trade deficit and accompanying inflow of funds is consistent with a stable real value of the dollar. While likely to shrink from current high levels, the trade deficit will continue to be substantial.

- Inflation as measured by the annual GDP deflator is projected to average 2.7 percent from 2003 to 2010, almost as low as that in the early 1960s. The sharp runup in oil prices seen in the second half of 1999 is expected to turn around in early 2001, with relative stability by 2003. The trend growth in oil prices thereafter is expected to result in average real crude oil prices comparable to those of 1996 by the end of the projection horizon.

Major Issues Shaping the U.S. Macroeconomic Assumptions

Three major issues are involved in the baseline domestic macroeconomic forecast:

- How is trend GDP growth justified?

- How did the large revisions made in historical macroeconomic variables in the National Income and Product Accounts change the baseline forecast for the economy and what does that mean for agricultural market analysis?

- What are the near-term and long-term prospects for oil prices and what are the implications for the general economy and the agricultural sector?

These issues are discussed in the following three boxes.

U.S. Long-term GDP Growth Prospects

Projected trend total factor productivity growth (the portion of growth not accounted for by capital or labor growth) for 2000-2010 is 1.5 percent annually--as fast as that of the 1990s, although it represents a slowdown from productivity gains of the last 5 years (table 1). Despite data revisions boosting historical GDP growth, the recent and projected productivity growth is largely due to real structural changes in the U.S. economy reflected in aggregate supply and demand changes of the last decade.

The trend GDP growth for the decade from 1990 to 2000 is 3.3 percent. The portion of that growth attributable to capital is the share of capital income relative to overall national income (assumed to be 30 percent) times the annualized growth rate in the capital stock. Capital stock grew 2.67 percent during 1990-2000, which when multiplied by 0.3 is a 0.8 percent annualized contribution to total economic growth. The labor share is similarly computed, resulting in a labor contribution of 1.0 percent (0.7*1.43) to annualized economic growth. The remaining 1.5 percent is the residual GDP growth unexplained by capital or labor, and is attributed to total factor productivity (TFP) for 1990-2000. These results are in table 1.

Total factor productivity is everything not explicitly attributable to labor or capital. It is the only non-measurable part of the productivity formula and it is always computed as the percentage

Table 1. Historical and projected GDP growth accounting

Selected time periods	GDP growth	Capital contribution	Labor contribution	Total factor productivity
	Average annual percentage change			
1950-1960	3.5	1.1	1.1	1.3
1960-1970	4.2	1.2	1.6	1.5
1970-1980	3.2	1.0	1.7	0.5
1980-1990	3.3	0.8	1.3	1.1
1990-2000	3.3	0.8	1.0	1.5
1995-2000	4.3	1.0	1.2	2.1
2000-2010 forecast	3.2	0.8	0.9	1.5

Sources: Historical BEA and BLS data from Haver Analytics; forecasts, USDA/ERS. Computations assume growth contributions are 30 percent from capital and 70 percent from labor. For methodological details, see N. Gregory Mankiw, *Macroeconomics*, 4th edition, 2000, page 129.

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U.S. Long-term GDP Growth Prospects--continued

change remaining after subtracting the contributions of capital and labor to GDP growth. The improved quality of workers due to an increasing share of the workforce with a college education, the widespread use of telecommunications equipment in business, as well as measurement errors in capital and labor measurement and dozens of other factors are included in imputed total factor productivity.

Was the 1990s Decade Really New?

The 1990s began with a relatively mild recession lasting 3 quarters starting in mid-1990 and ending in early 1991. This recession was due largely to an oil price shock affecting an economy that had structural imbalances, continuing from the 1970s and 1980s. For the remainder of the 1990s the U.S. economy showed accelerating growth.

The annualized growth rate went from 2.3 percent in 1990-1995 to 4.3 percent in 1995-2000. The extraordinary surge of 4.3-percent GDP growth in the last half of the 1990s reflected a double-digit annual growth in equipment and software investment and a boost in TFP. TFP picked up in part because of low real oil prices; increasingly effective use of personal computers, telecommunications equipment, and software to lower costs and increase output; and increased perceived job insecurity, as measured by a decline in number of days lost to strikes.

The baseline assumes total factor productivity growing at a 1.5 percent annual rate, as fast as in the last decade but more slowly than in the last half of the decade. This strength reflects continued improvements due to Internet and telecommunications related technology (the new economy factor). We expect a slowdown from the recent rapid pace of growth in capital stock, returning to the rate of the 1980s and an average of the 1990s, about 0.8 percent. Finally, because of an expected modest slowdown in the growth of the labor force, the baseline assumes the contribution from labor to overall growth slows to 0.9 percent per annum, down from the 1-percent annual contribution of the 1990s. Together, these three assumptions imply an underlying annual trend GDP growth rate of 3.2 percent.

U.S. GDP Growth Revisions

Conceptual and statistical revisions by the Bureau of Economic Analysis (BEA) of the Commerce Department to the historical national income and product accounts were released at the end of 1999. One of the major factors incorporated into the accounts adjusted for shortcomings in the treatment of technological change. As a result, estimates of historical GDP and productivity growth were revised upward. The details of the revisions are presented in several articles from *The Survey of Current Business*, at http://www.bea.doc.gov/bea/an1.htm.

Highlights of the revisions include:

- Current-dollar (nominal) gross domestic product (GDP) was revised up for all years from 1975 to 1999, primarily because of a definitional change that recognized software purchases as investment spending.

- Nominal personal consumption expenditures (PCE) for non-durable goods were revised up for all years beginning with 1975. In particular, nominal consumer food expenditures were revised up. Beginning with 1993, nominal non-durable goods spending was revised up by increasingly large amounts that reached $46.5 billion for 1998. The revisions were primarily accounted for by food--increasingly large upward revisions to purchased meals and beverages that were offset partly by downward revisions to food purchased for off-premise consumption.

- The revised estimates of real GDP show an average annual growth rate for the 1957-1999 period of 3.4 percent, 0.2 percentage points higher than that shown in the previously published estimates.

- Upward revisions to the growth of real GDP begin in 1977, with no change in previous years. For 1977-92, the growth rate of real GDP was revised up 0.3 percentage point to 2.9 percent, and for 1992-98, it was revised up 0.4 percentage point to 3.6 percent. Most analysts believe the 1995-1999 GDP growth of 3.1 percent was raised by at least 0.5 percentage point due to the data revisions.

Implications for the Baseline

The trend GDP growth of 2.6 percent assumed in the February 2000 USDA baseline could be as high as 3.2 percent or as low as 2.9 percent under the new NIPA revisions. If the prior trend GDP projection is increased to reflect the 0.5 percent consensus estimate of the difference between the old GDP data and the new GDP data for 1995-1999, the revised 2000 baseline trend GDP annual growth rate would be 3.1 percent.

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U.S. GDP Growth Revisions -- continued

The trend GDP growth rate assumed in this baseline report reflects the data changes and a slightly more optimistic view about the rest of the world's GDP growth, yielding a trend U.S. GDP growth rate of 3.2 percent. This growth slows to 3.1 percent towards the end of the projections as baby boomers start to retire in large numbers. Thus, the 2001 baseline GDP growth rate is essentially the same as the 2000 baseline GDP growth rate, adjusted for the GDP data revisions and higher assumed rest-of-world growth. Changes in disposable income and consumer spending growth in the 2001 baseline compared to the 2000 baseline are also largely due to the NIPA revisions in historical data.

Because of these historical data revisions, an analyst using one of the affected variables (such as disposable income, GDP, or aggregate consumption) as a demand shifter in a forecasting model should re-estimate those equations using the revised NIPA data. A defensible alternative procedure until this re-estimation can be completed is to reduce GDP growth by 0.5 percentage point in the current forecasting model.

Energy Prices, the World Economy, and U.S. Agriculture: Now and Later

Energy prices, particularly petroleum prices, have been extremely volatile over the last several years. Spot crude oil prices have gone from below $10 per barrel in late 1998 to above $30 per barrel in mid-2000.

The slowdown of the Asian economy, which spilled over into other parts of the developing world, resulted in slow world economic growth in late 1997 and 1998. Weak world GDP growth led to falling demand and lower prices for crude oil. In response, most oil-producing nations expanded supplies, attempting to keep revenues up. Crude oil prices bottomed out in December 1998 when the refiners' acquisition cost of imported crude dropped to $9.38 per barrel, roughly half the price of October 1997.

The Asian and world economy turned around sharply in late 1998 and in 1999, while the United States continued to have very strong growth. So, when the Asian economy bounced back, the demand for oil was extremely strong. At the same time, OPEC members, with the cooperation of non-OPEC oil producers (such as Russia, Norway, Oman, and Mexico), curtailed oil supply. As a result of higher demand and tighter supply, crude oil prices tripled.

The intermediate oil price outlook through 2002 is expected to reflect a relatively tight market. The longer-term real oil price is assumed in the baseline to remain above the long-term equilibrium price expected by most of the 11 major forecasts reviewed by the Energy Information Administration (http://www.eia.doe.gov/oiaf/aeo/forecast.html), but below their high oil price scenario.

Petroleum demand in this forecast will not move up as rapidly as it did in 1998 to 2000. The major reasons for slower petroleum demand growth are (1) an expected moderation in near-term U.S. and Asian growth, and (2) increased energy efficiency induced by relatively high petroleum product prices and continuing substitution of natural gas for petroleum-based fuels. The sharp drawdown of crude oil inventories over 1998 to the middle of 2000 reflected a very tight market for petroleum products, which will almost certainly last into 2002.

OPEC's market power is expected to erode as the cost of quota compliance in terms of lost oil volume exceeds the benefits of continuing high prices for some of the OPEC producers. Further, the oil supply will further expand as non-OPEC producers expand crude output to enhance oil revenues. By 2003, the baseline assumes that oil supply will balance demand as inventories are restored to normal operating levels.

In the longer term, new supplies from West Africa's coast and the Caspian Sea, coupled with continued gains in crude oil yields from oil field extraction technology, will keep supply growing. The projected strengthening in world GDP growth, even with continued energy efficiency improvements, will likely shift petroleum demand out. The net result of the growth of demand and supply suggests a trend growth in the real crude oil price of about 0.4 percent per

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Energy Prices, the World Economy, and U.S. Agriculture: Now and Later -- continued

year. The baseline oil price forecast is in line with the International Energy Agency's projections from the *International Energy Outlook 2000* (http://www.eia.doe.gov/oiaf/ieo/index.html). This relatively slow growth of real world oil prices should not notably hinder global GDP growth.

Implications for the U.S. Economy and the Agricultural Sector

Implications for the overall U.S. economy of the current and projected short-term energy situation are negligible because the magnitude of the real oil price increase is small. The September 2000 surge in West Texas Intermediate (WTI) crude to $33.88 a barrel was equivalent to $19.64 in 1987 dollars, only $4.64 real 1987 dollars above the average post war $15 real oil price. Even if the oil price remains at the September 2000 level, the real price of crude still would be far lower than during the oil price shocks of 1974, 1979, and 1990. So, while a $19.64 real oil price is above average, it is low compared to the almost $49 real price per barrel of 1979. Impacts of higher oil prices on the U.S. economy are further muted because of improvements in energy efficiency--the domestic energy and petroleum intensity (the amount of energy per dollar of real GDP) is now less than half of what it was in 1973.

The agricultural sector, however, is more negatively affected by higher fuel prices. Fuel costs are a relatively large share of non-farm input costs. Also, natural gas substitution for petroleum-based fuels will keep the price of natural gas high. Natural gas is the major feedstock and boiler fuel in the production of nitrogen based fertilizer. Natural gas price rises will be translated into higher fertilizer prices now and in the immediate future.

International Macroeconomic Assumptions[2]

The outlook for the world economy over the next 10 years is characterized by strong growth in almost all regions of the world. The aftermath of the Asian financial crisis is a world that is structurally more sound and poised for significant growth without major imbalances. Although we anticipate that long-run growth rates in the Asian crisis countries are lower than they were before the crisis, significantly high real GDP growth rates of about 5 percent per year are forecast for these countries. Significant sustained positive growth is forecast for Africa for the first time since the 1950s and for Russia for the first time since the breakup of the Soviet Union. In both cases, positive per capita income growth is foreseen after long periods of per capita income declines. Although we anticipate positive GDP growth in Japan, the longer-term outlook for sluggish growth there is an important negative feature of the longer-term global outlook. Continued large trade deficits in the United States are another potential problem for the longer-term outlook.

There are two distinct phases of the world economic forecast. In the near to midterm, crisis recovery dominates the outcome, while in the longer-term structural reform leads to renewed sustained economic growth in the crisis countries but at a lower rate than previously recorded. Combined with this renewed growth in the crisis countries is higher growth in Africa and Latin America. Indeed, it is hard to find a comparable historical period of consistent and sustained growth on such a broad country basis under conditions of macroeconomic stability. It is also hard to find a comparable period of such high-sustained growth throughout the world without significant inflationary pressures.

Oil prices are assumed to decline somewhat over the next several years from the high levels reached in 2000, and then to rise slightly more than the general inflation rate for the remainder of the baseline. This near-term decline in oil prices followed by moderate gains is predicated on the assumptions that new oil discoveries, such as those in Kazakhstan, along with new technologies for both finding and extracting oil will allow for substantial growth in demand without significant energy inflation. Also, economic growth itself has changed from a process of producing goods to a process much more dependent on information and communication technologies. This transformation, which is particularly evident in North America and Europe, has reduced the direct dependence on energy and is expected to have widespread impacts throughout the world.

In the aftermath of the global crisis of 1997-98, world real GDP is projected to grow an average of 3.5 percent between 2001 and 2005, compared with 2.6 percent during 1991-2000 (table 3). The United States continues to sustain the longest expansion in history, while the EU countries are beginning to benefit from their monetary union. Although unemployment in the EU is still high compared with the United States and Japan, it has fallen below 10 percent for the first time in 20 years. Prospects for Europe are better than they have been for a long time.

The crisis countries of Asia recovered much more rapidly than at first anticipated. However, the structural reforms that would provide the fundamentals for long-term sustained high-level

[2]The international macroeconomic assumptions used in the baseline were completed in October 2000.

growth have not been undertaken to nearly the degree that would be desired. Consequently, projected growth for these countries is not as high as before the crisis, although still considerable. While growth for the next decade of 6.7 percent is projected to be somewhat slower in East and Southeast Asia than the 7.3 percent annual rate of the 1990s, the countries of the region have recovered remarkably well from the financial crisis.

Latin American growth is projected to increase substantially to an average of 4.6 percent between 2001-2010, significantly higher than the 3.2 percent growth of the 1990s. Growth in Africa and the transition economies of Eastern Europe and the former Soviet Union are projected to experience even higher growth relative to the historical period. For Africa, growth is projected to increase from 2.6 to 4.4 percent. The transition economies are projected to experience growth of 3.6 percent compared with a rate in the 1990s of -3.3 percent per year. In both cases, significant per capita income growth is expected for the first time in more than a decade. The developed economies, including the United States, are also projected to grow at higher rates than in the 1991-2000 period, 2.8 compared with 2.3 percent. Inflation is expected to continue at unusually low levels in both the developed and developing countries. The real price of oil is expected to return to relatively low levels through much of the projections period.

Overall, projected world growth is stronger than in any period since the 1960s, with almost all regions of the world expected to experience above-average growth. There is also a significant narrowing of the differential between the high growth regions such as Asia and the lower growth regions of Latin America, Africa, and the transition economies.

Developed Economies

In the coming decade, real GDP growth will increase in the developed economies from the relatively low rates of the 1990s. The structural adjustments undertaken throughout the second part of the 1980s and into the 1990s created a solid foundation for future growth. Low inflation and interest rates will help countries produce output close to potential levels. Government budgets, except in Japan, will be largely balanced. However, external imbalances may persist, particularly the large U.S. trade deficits with Japan and China. Among the major economies, only the United States will continue to carry a large current account deficit, although it is expected to decline somewhat over the projections period. The continued large trade deficits for the United States are predicated on the assumption that countries around the world will still want to accumulate dollars as a reserve currency. If the euro begins to challenge the dollar's role as an alternative reserve currency, then a significant relative depreciation of the dollar would be expected and the competitive outlook for U.S. trade would improve substantially.

European Union. The monetary union between qualified EU members and introduction of a single currency enhances the efficiency of cross-border trade and investment within the EU. More uniform fiscal policies, as well as disciplined monetary policy guided by the German-based central bank, should lead to more stable growth prospects early in the baseline. The European economy is projected to expand by 2.8 percent on average between 2001 and 2005 and 2.6 percent from 2005 to 2010. This is a substantial increase from the 2-percent growth experience in the 1990s. Population will stabilize so that virtually all income growth will translate into per capita gains.

Unemployment will remain high relative to the United States, near 10 percent, but should gradually fall to 8 percent as more flexible wage and employment policies are adopted. This is a significant change from the very persistent double-digit unemployment rate over the 1990s. Inflation should be well controlled as a strong unified currency, the euro, acts as an anchor for price stability. Fiscal consolidation by member countries will reduce inflationary expectations and lower long-term interest rates. The euro is projected to depreciate in real terms over the next several years, and then stabilize for the rest of the projections as the currency becomes used for world trade and international reserves. Because of the monetary union, national differences in real interest rates will disappear, at least for the countries in the union--financial markets will encompass the whole region, and thus investment opportunities will depend less on the relative availability of capital in each country.

Greater intra-European trade should encourage price arbitrage of homogeneous products and services, providing comparable prices across countries for both producers and consumers. As capital moves freely across borders, investors and producers would be able compete on more equal terms across countries, despite the lack of transnational mobility of workers. Even without formal eastward enlargement, closer integration with Eastern Europe also opens more trade and investment opportunities in the transition economies, particularly the former Soviet Union. As the transition economies gain higher per capita incomes, imports from the EU should rise accordingly.

Japan. Japan's economy continues to face significant structural problems, including a large fiscal deficit, sluggish consumer spending, and very large nonperforming loans that burden the banking system. Current growth in the GDP is the result of government deficit spending, particularly on public works projects. The government hopes to induce self-sustaining economic growth by restoring consumer confidence and reviving financial activity and investments by addressing private-sector debt problems. Projected slow growth to 2010 assumes some success in these efforts, but also reflects the difficulty of the tasks. Added to the current economic difficulties is the anticipated decline in size of the labor force in the last part of the projection period, which could lead to lower output unless labor productivity improves. Japan's share of world GDP is projected to decline from a peak of almost 13 percent in 1991 to about 9.5 percent by 2010.

A major issue for Japan's economy is the excess of savings over investment, as manifested in its sizable current account surplus. This fundamental imbalance, together with non-tariff barriers that restrict imports and foreign investment, keep the domestic economy isolated from global competition. High internal costs in the non-manufacturing industries such as farming, housing, and electric power generation have held back investors as well as consumers. More deregulation will encourage domestic demand, specifically private consumption and investment, as well as boost imports.

The yen is expected to continue a slow appreciation as Japan maintains a large trade surplus. Deregulation of Japan's financial market is also likely to boost the yen as foreign capital funds are attracted. Opening Japan's retail and insurance markets to foreign competition will lower prices of goods and services.

Canada. Canada's growth pattern in the 1990s roughly tracked the U.S. GDP, but at a slightly slower rate, 2.6 percent for Canada against 3.2 percent for the United States. Because of the close integration of trade and investment, projections over the next 10 years have Canada growing at approximately the same rate as the United States, 3.2 percent. NAFTA has reinforced the growing integration of the two economies. Canada has consistently had a trade surplus with the United States in the 1990s, the destination for 82 percent of its exports. A competitive Canadian dollar significantly influenced this pattern. A steady depreciation against the U.S. dollar since 1990 averaging 3.9 percent a year has helped boost the Canadian currency's real exchange rate competitiveness. The baseline assumes a continuation of this pattern at a rate of depreciation below 1 percent per year.

The future growth path for Canada depends to a large extent on the pace of U.S. economic activity, augmented by growing trade with Asia and Mexico. Already considerable, Canadian trade with Asia should further expand as APEC relationships become closer. Although Asian growth is projected to be somewhat slower in the aftermath of the crisis, as a region, Asia will still continue to grow faster than any other region. Canadian trade with Mexico is already on the rise, stimulated by NAFTA. The country's trade surplus is projected to continue growing.

The overhaul of Canada's fiscal policy from large deficit to surplus is principally responsible for the country's bright growth prospects. Less government spending and more funds available for private investment and consumption allowed market forces to revive previously anemic growth as interest rates significantly fell. Low inflation and interest rates are expected to carry healthy GDP expansion through the next decade. Also, foreign debt (as a percentage of GDP) will fall by 35 percent over the next 10 years. Domestic demand in the short- and long-term will be led by fixed capital formation. Gross national savings as a share of GDP will increase to around 22 percent compared to 19 percent for the United States.

Transition Economies

Among the transition economies, countries that are further along in the transformation to market economies are experiencing higher growth than those that have only recently carried out reforms. The first group includes Poland, the Baltic countries, the Czech Republic, Hungary, the Slovak Republic, Croatia, and Slovenia. The second group includes Bulgaria, Romania, Russia, Ukraine, and other countries of the former Soviet Union. The principal measure of the success of reform, which also coincides with higher GDP growth, is the degree of integration into the global economy--trade flows, investment flows, and currency convertibility. More liberalized trade arrangements, foreign direct investment, and portfolio inflows indicate the integration and relative competitiveness with the world at large, particularly with Europe and the other advanced economies. Russia and the Ukraine are completing the adjustment associated with the transition from centrally planned to market economies. Significant growth occurred in 2000 and the baseline assumes that growth will continue throughout the next decade. However, important problems still are prevalent and growth is projected to be slower than in the more progressive Central European countries even in the out years.

Central and Eastern Europe

Poland and Hungary had significant growth in the second half of the 1990s, exceeding 4 percent on average, after undertaking market reforms and increasing openness to trade and competition. A reorientation of trade from the former Soviet Union to the West has contributed to their strong performance. But in some countries, like Bulgaria, reforms have only recently begun. Romania, which recently shed heavy state intervention in the economy, should soon expand in pace with its more advanced neighbors. The growth outlook for this region is relatively optimistic at rates approaching 5 percent annually over the next 10 years. A crucial advantage over the former Soviet Union is proximity and closer integration with the European Union. Foreign direct investment, particularly from high-cost countries like Germany, will increase the region's capacity to export. Integration into the EU will further stimulate technical transfer and productivity growth. As the crossroads between the East and the West, the region should benefit as trade increasingly flows through its countries.

Former Soviet Union

After a decade of economic retrenchments and setbacks, Russia and Ukraine are beginning to show signs of benefiting from their transition to a market economy. The smaller countries of the region have been growing since 1996, with growth of about 1.5 percent in 1999. Overall GDP growth for the region is anticipated to average 3.2 percent between 2001-2005 and 3.0 percent from 2005 to 2010. This is a substantial increase from the negative 4.7 percent of the 1990s.

The financial crisis seems to have led to a more serious view in Russia of the importance of macroeconomic stability. A properly managed economy with a stronger legal system and other public institutions could lay the groundwork for sustained growth in Russia. The depreciation of the ruble following Russia's economic crisis in 1998 has improved the price competitiveness of domestic producers vis-à-vis the world market, and the recent upswing in world energy prices has increased earnings from the country's oil and natural gas exports. As a result, GDP is assumed in the baseline to grow at 4 to 4.5 percent annually over the next decade.

Ukraine also seems to be bouncing back from the financial crisis. Significantly increased trade with Russia and the other former Soviet republics is critical to Ukraine's transition to a higher income country. Some opening and increased trade with Western Europe should also help. The turnaround in Ukraine is even more substantial than in Russia. After experiencing a negative 8.1 percent growth in real GDP, growth is projected to average more than 3.5 percent in the first decade of the new millennium. The smaller countries of the FSU are expected to average higher growth rates because of increasing trade and production of agricultural products and natural resources, particularly crude oil and natural gas. With adequate definition of a more reliable legal system, significant inflows of foreign investments can help lift their growth prospects. This is particularly the case for energy rich republics such as Kazakhstan.

Developing Countries

Overall, the developing countries will maintain close to 5.5 percent average growth over the next decade, compared to 4.8 percent during 1991-2000. Emerging markets in Latin America will

continue to attract investment funds as long as they maintain well managed macroeconomic policies resulting in relatively low inflation rates. The currency devaluations in Southeast Asia have encouraged more flexible exchange rates, which prevent overvalued currencies and act to discourage inflows of speculative funds or excessive borrowing of foreign money. The structural adjustments should lead to stronger financial systems and stricter banking regulations. This will eventually be reinforced by the development of timely and transparent statistics. The risks of excessive lending will be reduced resulting in more stable growth paths in the longer run.

Mexico. The Mexican economy has recovered from its deep recession in 1995 that was precipitated by the peso's devaluation in late 1994. The domestic sector has bounced back in terms of improved real wages and consumption levels. Business investment and export growth are healthy again. It appears that Mexico's newly-elected government intends to address political problems that have constrained growth in the past and led to cyclical over-valuations and under-valuations of the peso. The inflow of foreign capital and expanded trade with the United States because of NAFTA have boosted Mexico's production and export capacity. The devaluation of the peso by about 50 percent in 1994-95 made Mexican exports more price competitive.

Starting in 1996 the peso has appreciated in real terms against the U.S. dollar, largely because of Mexico's success in attracting foreign investment funds. That is, despite a floating exchange rate and inflation higher than in the United States, confidence in holding pesos, and in the Mexican economy in general, is strong. But these gains in purchasing power have fueled Mexican imports, generating a trade deficit and a higher current account deficit. The long-term growth outlook of 5.1 percent reflects a continuing improvement in infrastructure and a buildup of competitive export industries in Mexico. These developments entail imports of capital and intermediate inputs that would raise the current account deficit beyond 2000.

China. China's economic growth has been consistently the strongest in Asia, although growth is expected to level off from double-digit gains in the early 1990s to a rate of 7.5 to 8.5 percent over the next decade. With population growth of less than 1 percent per year, per capita GDP gains will be 6.5 to 7.5 percent annually. These gains will penetrate China's poor inner provinces and likely improve productivity in the agricultural sector as more capital-intensive farming and food processing are undertaken. But real output gains are expected to be slowed by adjustment problems of unemployment, as privatization of state-owned enterprises accelerates, and by competition from foreign firms. Competition for lower-value export markets should intensify as other developing countries, including Vietnam and India, increasingly enter those markets.

Inflation has now subsided to single digits and is assumed to remain in that range for the baseline. Credit supply will be directed less by the government and more by independent banks, and thus access to credit will increasingly be market-based. The movement toward convertibility of the yuan in the capital account, which should attract more foreign equity funds, also will permit the outflow of domestic funds for foreign investments. Real wages will rise as worker productivity grows. The country's high savings rate will keep interest rates relatively low in spite of increasing demand for capital, especially to finance infrastructure projects.

East and Southeast Asia. Output growth in East and Southeast Asia is projected to come down somewhat over the next 5 years to 6.9 percent and slow further to 6.4 percent in the following 5 years. Economic growth has resumed in these countries, but not at rates comparable to those before the Asia financial crisis. Long-term growth is projected to be about 2 percentage points lower than historical rates excluding crisis years. Exports, buoyed by increased exchange rate competitiveness, and domestic demand, cushioned by high domestic savings, are leading the recovery.

Japan provides a market for about 13 percent of developing Asia's exports, and Japan's economy is expected to show only sluggish near-term growth. About 40 percent of developing Asia's exports are typically destined for Asian markets other than Japan. Thus, the region-wide recovery is self-supporting. A key to long-term growth is whether the appropriate structural reforms are undertaken in both the financial and manufacturing sectors. To date, although some structural reforms have been undertaken, the pace of reforms is slower than was expected, thus limiting some of the potential for stronger economic growth.

Indonesia, Thailand, Malaysia, the Philippines, and Korea were the most affected by the crisis. Taiwan and China were only modestly affected by it. Healthy expansion in North America and Europe over the mid-term helped East Asia return to growth. Strong U.S. imports were a major factor in the recovery. China's continued strong GDP growth will remain a source of import demand for other East Asian exports.

South Asia. South Asia continues its impressive growth over the projections period. Economic growth rates in South Asia are now projected to be almost equal to those in Southeast and East Asia over the longer term. India, which produces 82 percent of the area's output, is projected to grow, on average, by 6.2 percent annually. Pakistan, which is going through a period of political turmoil, is projected to grow more slowly, in the 4 percent range. Bangladesh is projected to grow at 5 percent, which will result in more than 3 percent per capita income growth. Like China, India's large and increasingly liberalized domestic market will provide the bulk of the impetus for growth. India should also be capable of producing a more diversified set of export products, both manufactured and agricultural. Investment policy is increasingly liberalized and the inflow of foreign capital will boost the region's production capacity.

The proximity to energy sources in the Middle East and, in the future, to energy from Central Asia, should likewise be a boon. Potentially in the long run, exports of higher-technology products, especially from India, will generate currency reserves needed to help improve the region's infrastructure and industrial capacity. Competitive gains will depend on the region's low-cost labor, more open trade and investment policies, and real exchange rates that are not distorted by restrictions on capital flows.

Africa and the Middle East. Economic performance in the Middle East remains strongly tied to the typically uncertain outlook for petroleum export earnings. The region is projected to grow at a rate of about 4 percent in the baseline as macroeconomic performance strengthens with the global economy and high oil prices. With population growth still around 2 percent, however, annual per capita GDP growth averages only about 2 percent during the period.

In Africa, potential growth hinges on the performance of Egypt, Nigeria, and South Africa, the continent's largest countries. Whereas GDP growth in Egypt is projected to be relatively strong in the 5-percent range over the next 5 years, Nigeria and South Africa are not expected to grow as fast. Nigeria, because of continued political instability, corruption, and a largely unskilled labor force, will be unable to attract enough foreign investment and take advantage of its abundant oil resources. In South Africa, a large labor force of unskilled workers, high interest rates because of budget problems, and continued social discontent will pose risks for investors and limit growth. Growth, nonetheless, will move toward a 4 percent rate, a considerable improvement over the 1.5 percent growth rate of the 1990s. The politically troubled countries of Algeria, Sudan, and Congo will drag overall growth down in North Africa and in Sub-Saharan Africa. Nevertheless, increased North African trade with Europe and market reforms in some East and West African countries are generating relatively faster growth. For the first time in many decades, the more optimistic growth scenarios translate into significant per capita income increases. Although Africa's population growth remains the highest in the world at 2.3 percent a year in the projections period, the rate keeps declining. Positive per capita income growth of 2 percent a year for Africa is a significant improvement over declining per capita incomes over the past 20 years.

South America. The 1998 crisis in Brazil was short lived, reflecting a rapid response by the international community as well as the Brazilian government instituting policy changes that prevented further deterioration of the currency. Also, the macroeconomic setting was favorable because of policy reforms implemented in the early 1990s. Inflation, which in previous decades plagued the countries of the region, no longer seems to be a major issue. Countries who, in the past, had inflation rates in the hundreds and even thousands percent annually now have inflation in the single digits. Strong growth is projected for the area for the next decade, led by the MERCOSUR core countries of Brazil and Argentina. South America for the first time has growth rates approaching 5 percent, almost in line with East Asia. Freer trade will further integrate these countries' economies as they gear up for eventual hemispheric free trade with NAFTA countries. Behind the strong growth is reduced debt, less government intervention in the private sector, growing intra-regional trade, and heavier foreign direct investment. The past environment of overvalued currencies, large trade deficits, fiscal deficits, and low internal investment due to low savings is not expected to return. New economic policies now generate less inflation and more competitive industries as import barriers fall. Savings as a share of GDP are projected to rise, but levels will remain lower than in East and Southeast Asia. Because of this, the region's general dependence on foreign capital introduces the risk of capital flight in response to external shocks such as higher U.S. interest rates.

World Population Growth

Population assumptions were updated in August 2000 using data obtained from the U.S. Bureau of the Census and the United Nations.

Rates of growth in population have been declining consistently over the past few decades. This pattern is projected to continue into the next decade. Overall world population growth is projected to increase at only 1.3 percent a year over the projections period, a slight decline from the previous decade. Almost all population growth is occurring in developing countries. Growth

in developed countries is less than 0.4 percent per year. The highest growth rates are occurring in Sub-Saharan Africa at 2.5 percent per year. These are also the countries with the lowest per capita incomes and, historically, the lowest growth in per capita income. The Middle East also has high population growth rates, which slow from 1.9 percent a year in the 1990s to 1.7 percent a year in the last half of the projections period.

In some countries, the slowdown of population growth rates has been quite dramatic. For instance, South Africa saw it population growth rate decline from an average of 3 percent in the 1980s to 2.0 percent in the 1990s. Growth is projected to continue to decline to 1.5 percent in the projections period. The lowest population growth rates have occurred and are projected to continue to be in the transition economies. In some countries in this region, populations have been declining consistently since the 1980s. Hungary in particular has been losing population at a rate of about 0.3 percent per year. Russia has also been losing population since the 1990s. Overall, the transition economies are projected to have virtually no population growth over the next decade.

Populations in the developed economies are projected to grow by less than 0.5 percent per year, with the slowest rates in Japan and the European Union. Overall, the number of people in the world will increase at a declining rate, to 6.85 billion in 2010. Over 80 percent will live in developing countries.

Because of differing rates of population growth, GDP gains translate into per capita income growth at differing rates (the rate of per capita income growth equals the GDP growth rate minus the population growth rate). The highest growth rate in per capita income is in China, which has both very high GDP growth rates and also low population growth rates. The lowest per capita income growth rates are in Africa and the Middle East where GDP growth rates are relatively modest and population growth rates are high. The pattern toward slowing population growth rates and increasing per capita income growth rates will have profound impacts on agricultural trade over the coming decade as rising income leads to demand for more high value products and less basic products. This compositional change should continue and even accelerate during the projections period.

Table 2. Domestic macroeconomic baseline assumptions

Item	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
GDP, billion dollars												
Nominal	9,299	10,008	10,617	11,176	11,845	12,555	13,306	14,103	14,947	15,826	16,758	17,743
Real 1996 chained dollars	8,876	9,328	9,664	9,906	10,223	10,550	10,888	11,236	11,596	11,955	12,326	12,708
percent change	4.2	5.1	3.6	2.5	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1
Disposable personal income												
Nominal (billions)	6,638	7,078	7,521	7,912	8,355	8,823	9,317	9,839	10,390	10,961	11,564	12,200
percent change	5.0	6.6	6.3	5.2	5.6	5.6	5.6	5.6	5.6	5.5	5.5	5.5
Nominal per capita, dollars	24,314	25,692	27,073	28,249	29,591	31,000	32,476	34,022	35,642	37,301	39,035	40,849
percent change	4.1	5.7	5.4	4.3	4.8	4.8	4.8	4.8	4.8	4.7	4.7	4.6
Real (billion 1996 chained)	6,331	6,578	6,815	6,985	7,188	7,396	7,611	7,831	8,058	8,284	8,516	8,754
percent change	3.9	3.9	3.6	2.5	2.9	2.9	2.9	2.9	2.9	2.8	2.8	2.8
Real per capita, 96 dollars	23,191	23,876	24,531	24,940	25,457	25,986	26,528	27,080	27,644	28,190	28,746	29,312
percent change	2.3	3.0	2.7	1.7	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0
Consumer spending												
Real (billion 1996 chained)	5,979	6,290	6,522	6,699	6,899	7,106	7,320	7,539	7,765	7,998	8,238	8,477
percent change	5.3	5.2	3.7	2.7	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9
Inflation measures												
GDP price index, chained	104.8	107.3	109.9	112.8	115.9	119.0	122.2	125.5	128.9	132.4	136.0	139.6
percent change	1.5	2.4	2.4	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
CPI-U, 82-84=100	166.6	172.1	177.1	182.2	187.5	192.9	198.5	204.3	210.2	216.3	222.6	229.0
percent change	2.2	3.3	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
PPI, finished goods 82=100	133.0	136.9	139.9	143.0	146.1	149.3	152.6	156.0	159.4	162.9	166.5	170.2
percent change	1.8	2.9	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
PPI, crude goods 82=100	98.2	111.8	115.4	116.9	118.4	120.0	121.5	123.1	124.7	126.4	128.0	129.7
percent change	2.3	13.9	3.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Crude oil price, $/barrel												
Refiner acq. cost, imports	17.3	28.5	27.0	23.3	23.3	24.0	24.8	25.5	26.3	27.1	28.0	28.9
percent change	42.6	65.1	-5.2	-13.7	-0.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Real cost, 1996 chained dollars	16.5	26.6	24.6	20.7	20.1	20.2	20.3	20.3	20.4	20.5	20.6	20.7
percent change	40.5	61.2	-7.4	-16.0	-2.7	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Labor compensation per hour												
nonfarm business, 92=100	124.4	130.6	136.1	141.6	147.1	152.8	158.8	165.0	171.4	178.1	185.0	192.2
percent change	4.9	5.0	4.2	4.0	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Interest rates, percent												
3 month T-bills	4.7	5.7	6.5	5.8	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
6 month commercial paper	5.2	6.3	7.0	6.2	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
Bank prime rate	8.0	9.2	9.5	9.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Treasury bonds (10-year)	5.6	6.3	6.7	6.5	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
Moody's Aaa bonds	7.0	7.8	8.2	7.5	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Civilian unemployment												
rate, percent	4.2	4.0	4.0	4.5	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Nonfarm payroll emp., millions	130.2	131.8	133.4	135.0	136.6	138.2	139.9	141.5	143.2	144.8	146.4	148.0
percent change	1.7	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.1	1.1
Total population, million	273.0	275.5	277.8	280.1	282.3	284.6	286.9	289.2	291.5	293.9	296.2	298.7
percent change	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8

Macroeconomic assumptions were completed in August 2000.

Table 3. Foreign real GDP baseline growth assumptions

Region/country	1998	1999	2000	2001	2002	2003	2004	Average 1991-2000	Average 2001-2005	Average 2006-2010
					Percent change					
World	2.2	2.8	3.5	3.6	3.4	3.5	3.4	2.6	3.5	3.4
less U.S.	1.6	2.3	3.0	3.6	3.7	3.6	3.5	2.4	3.6	3.5
Developed economies	2.4	2.6	3.1	3.0	2.8	2.8	2.7	2.3	2.8	2.7
United States	4.4	4.2	5.1	3.6	2.7	3.2	3.2	3.2	3.2	3.1
Canada	3.1	4.2	4.0	3.5	3.3	3.1	3.1	2.6	3.2	3.0
Japan	-2.5	0.7	0.9	1.5	1.9	2.1	1.9	1.1	1.9	1.9
Australia	4.8	4.1	3.9	3.7	3.5	3.4	3.3	3.5	3.4	3.2
European Union-15	2.6	2.2	2.2	3.1	3.0	2.7	2.6	2.0	2.8	2.6
Other Western Europe	2.6	-0.6	2.8	2.6	2.6	2.8	2.8	1.5	2.7	2.9
Transition economies	-0.3	2.2	3.3	3.7	3.8	3.7	3.7	-3.3	3.7	3.4
Eastern Europe	3.1	2.6	4.0	4.6	5.2	5.1	4.9	1.3	4.9	4.1
Czech Republic	-2.3	-0.3	2.6	3.6	4.8	4.7	4.4	-0.8	4.3	3.9
Hungary	5.1	4.2	5.3	5.2	5.4	5.1	5.5	0.9	5.2	3.8
Poland	4.8	3.8	4.8	5.1	5.5	5.7	4.9	3.8	5.2	4.5
Former Soviet Union	-1.6	2.1	3.0	3.3	3.2	3.1	3.1	-4.7	3.2	3.0
Russia	-4.9	3.2	4.2	4.4	4.2	4.0	4.0	-4.5	4.1	4.0
Ukraine	-1.7	-0.4	2.5	3.9	3.7	3.5	3.5	-8.1	3.6	3.5
Other	1.5	1.5	2.0	2.2	2.2	2.2	2.2	-4.1	2.2	1.9
Developing countries	1.9	3.2	5.2	5.4	5.6	5.6	5.5	4.8	5.5	5.2
Asia	1.4	5.9	6.6	6.7	6.8	6.7	6.6	6.8	6.7	6.2
East & Southeast Asia	0.2	6.1	6.9	7.0	7.1	6.9	6.8	7.3	6.9	6.4
China	7.8	7.1	8.0	8.2	8.5	8.3	8.2	10.1	8.3	7.7
Hong Kong	-5.1	2.9	5.8	5.2	5.0	4.6	4.6	4.1	4.8	4.6
Korea	-5.8	9.1	8.0	7.2	6.6	6.2	6.0	6.1	6.4	5.6
Taiwan	4.7	5.3	6.5	6.3	6.1	5.9	5.7	7.4	5.9	5.3
Indonesia	-13.2	0.2	4.5	5.1	6.0	6.2	5.9	4.3	5.8	5.0
Malaysia	-7.5	5.4	4.7	5.3	6.2	6.4	6.1	6.2	6.0	5.2
Philippines	-0.5	3.9	4.3	4.6	4.7	4.7	4.8	3.0	4.7	4.9
Thailand	-10.0	4.0	4.2	4.5	5.0	5.2	5.2	4.6	5.0	5.0
Vietnam	4.4	3.7	4.1	5.3	6.2	6.4	6.3	7.1	6.1	5.9
South Asia	5.8	5.9	6.0	6.1	6.1	6.1	6.1	5.5	6.1	5.8
India	6.0	6.3	6.5	6.4	6.4	6.4	6.4	5.8	6.4	6.0
Pakistan	4.3	3.1	3.9	4.1	4.3	4.3	4.2	4.0	4.2	4.2
Bangladesh	5.7	5.2	3.1	4.8	5.2	5.3	5.2	4.7	5.1	4.8
Latin America	2.2	0.8	3.5	4.4	4.8	5.0	4.8	3.2	4.7	4.5
Caribbean & Central America	3.4	3.8	3.9	4.1	4.1	4.2	4.1	3.2	4.0	3.4
Mexico	4.8	3.7	5.8	5.2	5.1	5.1	5.1	3.5	5.1	5.1
South America	1.3	-0.4	2.7	4.2	4.8	5.0	4.8	3.1	4.7	4.4
Argentina	3.9	-4.1	2.0	4.6	5.0	4.9	4.7	4.5	4.7	4.2
Brazil	0.2	0.8	3.2	4.2	5.0	5.4	5.1	2.6	4.9	4.6
Other	1.5	0.2	2.0	3.8	4.2	4.3	4.2	3.4	4.1	4.0
Middle East	2.5	0.7	4.5	4.1	4.2	4.1	4.1	3.8	4.1	4.1
Iran	1.6	0.5	4.1	4.0	4.0	4.0	4.0	3.7	4.0	4.0
Iraq	12.0	2.8	4.0	6.0	7.0	6.0	5.5	4.1	5.9	4.3
Saudi Arabia	-1.5	2.5	7.5	3.7	3.6	3.5	3.6	2.5	3.6	3.9
Turkey	3.5	-5.0	4.5	4.0	4.2	4.4	4.5	3.4	4.3	4.7
Other	4.2	4.2	4.2	4.3	4.4	4.2	4.1	6.1	4.2	4.0
Africa	2.6	2.4	4.4	4.8	4.7	4.6	4.5	2.6	4.6	4.1
North Africa	4.9	3.6	5.4	5.3	4.8	4.5	4.3	3.2	4.6	4.1
Algeria	4.6	2.8	5.2	3.9	3.4	3.5	3.4	1.9	3.5	3.7
Egypt	4.6	5.1	6.6	6.1	5.5	4.8	4.5	4.4	5.0	3.9
Morocco	6.5	-0.1	2.5	5.6	5.5	5.4	5.3	2.5	5.4	4.9
Tunisia	5.0	6.0	5.5	5.7	5.5	5.4	5.3	4.9	5.4	4.9
Sub-Saharan Africa	1.7	2.1	3.8	4.7	5.0	4.9	5.0	2.8	4.8	4.4
South Africa	0.6	1.2	3.9	4.1	4.0	3.9	3.7	1.5	3.8	3.3

Table 4. Baseline population growth assumptions

Region/country	1998	1999	2000	2001	2002	2003	2004	Average 1991-2000	Average 2001-2005	Average 2006-2010
					Percent change					
World	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.3	1.2
less U.S.	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.4	1.3	1.3
Developed economies	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.4	0.3
United States	1.0	0.9	0.8	0.8	0.8	0.8	0.8	1.0	0.8	0.8
Canada	1.0	1.0	1.0	1.0	1.0	1.0	0.9	1.1	1.0	0.9
Japan	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.3	0.1	0.0
Australia	1.2	1.1	0.9	0.9	0.8	0.8	0.8	1.1	0.8	0.7
European Union-15	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.3	0.1	0.0
Other Western Europe	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.5	0.6
Transition economies	-0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.2
Eastern Europe	0.0	0.2	0.1	0.1	0.2	0.2	0.2	-0.1	0.2	0.1
Czech Republic	-0.1	0.0	0.0	0.1	0.2	0.3	0.3	-0.1	0.2	0.1
Hungary	-0.4	0.7	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
Poland	0.0	0.1	0.1	0.2	0.3	0.4	0.4	0.2	0.3	0.3
Former Soviet Union	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.1	0.1	0.0	0.2
Russia	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	0.0
Ukraine	-0.8	-0.7	-0.6	-0.6	-0.5	-0.5	-0.4	-0.4	-0.5	-0.3
Other	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.6	0.8
Developing countries	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.7	1.5	1.5
Asia	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.5	1.3	1.3
East & Southeast Asia	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.4	1.2	1.2
China	0.9	0.9	0.9	0.8	0.8	0.8	0.7	1.1	0.8	0.7
Hong Kong	2.8	2.4	1.7	1.5	1.4	1.3	1.2	2.0	1.3	0.8
Korea	1.0	1.0	1.0	1.0	0.9	0.9	0.8	1.0	0.9	0.7
Taiwan	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0	0.9	0.8
Indonesia	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.8	1.7	1.6
Malaysia	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.4	2.4
Philippines	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.3	2.0	1.8
Thailand	1.0	1.0	0.9	0.9	0.9	0.8	0.8	1.2	0.8	0.7
Vietnam	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.7	1.3	1.2
South Asia	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.8
India	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.6	1.6
Pakistan	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.4	2.4
Bangladesh	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.4
Latin America	1.6	1.4	1.5	1.5	1.5	1.4	1.4	1.6	1.4	1.3
Caribbean & Central America	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.8	1.7	1.6
Mexico	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.8	1.6	1.5
South America	1.5	1.3	1.4	1.4	1.4	1.3	1.3	1.6	1.3	1.2
Argentina	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.2
Brazil	1.3	1.2	1.2	1.1	1.1	1.0	1.0	1.4	1.0	0.9
Other	1.9	1.5	1.8	1.7	1.7	1.7	1.6	1.9	1.7	1.5
Middle East	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.9	1.8	1.7
Iran	1.7	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6
Iraq	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.6	2.2	2.1
Saudi Arabia	3.4	3.3	3.3	3.3	3.2	3.1	3.0	3.4	3.1	3.0
Turkey	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.5	1.4	1.2
Other	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.9	1.8	1.7
Africa	2.4	2.5	2.4	2.4	2.4	2.3	2.3	2.5	2.3	2.2
North Africa	1.8	1.8	1.7	1.7	1.6	1.6	1.6	1.9	1.6	1.4
Algeria	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.2	2.0	1.8
Egypt	1.7	1.7	1.6	1.6	1.5	1.4	1.4	1.9	1.4	1.2
Morocco	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.8	1.6	1.5
Tunisia	1.3	1.3	1.4	1.4	1.3	1.3	1.3	1.6	1.3	1.2
Sub-Saharan Africa	2.6	2.7	2.6	2.6	2.6	2.5	2.5	2.7	2.5	2.5
South Africa	1.8	1.7	1.7	1.6	1.6	1.6	1.6	2.0	1.6	1.5

Sources: U.S. Department of Commerce, Bureau of the Census; United Nations. The population assumptions were completed in August 2000.

Agricultural Policy Assumptions

Baseline projections assume a continuation of current agricultural legislation. Most policy features assumed reflect provisions of the Federal Agriculture Improvement and Reform Act of 1996 (1996 Farm Act). The baseline also reflects applicable provisions of the Agricultural Adjustment Act of 1938, the Agricultural Act of 1949, the Emergency Farm Financial Relief Act, and the Omnibus Consolidated and Emergency Supplemental Appropriations Act of Fiscal Year 1999, the FY 2000 Agricultural Appropriations Act, the Agricultural Risk Protection Act of 2000, and the Agriculture Appropriations Act of 2001.

Programs for Contract Crops and Oilseeds

Key policy assumptions for "contract crops" (wheat, corn, grain sorghum, barley, oats, rice, and upland cotton) and oilseeds are summarized in this section.

Planting Flexibility

Nearly complete planting flexibility is permitted, with limitations on fruits and vegetables, as long as the producer complies with conservation and wetland provisions.

Production Flexibility Contracts

The 1996 Farm Act provides decoupled income support payments over 7 years that are not related to market prices or most farm-level production decisions. In general, to receive payments and be eligible for loans on contract commodities, a producer had to enter into a production flexibility contract (PFC) for 1996-2002 during the one-time enrollment period held in 1996. Eligible land leaving the Conservation Reserve Program (CRP) may be added to an existing PFC or enrolled in a new PFC at the beginning of a fiscal year. Eligibility for loan deficiency payments was extended to production of contract crops grown on farms with no production flexibility contract for the 2000 crop year, subject to the same terms and conditions as farms with PFCs.

Farmers receive PFC payments for 7 years, 1996-2002. Payments are based on enrolled contract acreage and generally are not related to current plantings. Cumulative outlays for contract payments for fiscal 1996-2002 are capped at slightly over $36 billion. Total PFC payments will be lower, reflecting payment limitations. Production flexibility contracts are assumed to continue beyond 2002 in the baseline, with funding for contract payments remaining at the fiscal 2002 level of $4.008 billion.

Payment levels are allocated among contract commodities according to percentages specified in the 1996 Farm Act (see table 6). Adjustments were made in 1996 and 1997 for payments of previous years' deficiency payments that occur in those years and repayments of unearned deficiency payments that were due in those years. A further adjustment of $8.5 million annually is added to rice payments starting in fiscal 1997. This rice payment adjustment is also assumed in the baseline to continue beyond 2002.

Payment rates for each commodity are derived by dividing the commodity's total annual contract payments (before payment limitation reductions) by the corresponding total payment quantity on all enrolled acreage for the commodity (see table 7). Production flexibility contract payments to individual farmers are then based on the derived payment rate times the payment quantity on the farm. The payment quantity equals 0.85 times the payment yield times the contract acreage.

Annual production flexibility contract payments are made on a fiscal year basis. Through fiscal year 1998, a 50-percent advance payment could be made on either December 15 or January 15 of the fiscal year, at the option of the owner or producer. The Emergency Farm Financial Relief Act, enacted in August 1998, allowed farmers to receive fiscal year 1999 PFC payments earlier--at the producer's option, 1999 PFC payments could be received in one payment or in two equal payments at any time during the fiscal year. This payment timing option was extended through fiscal 2002 in the 2000 Appropriations Act, and is assumed in the baseline to continue in subsequent years.

Annual contract payments under the 1996 Farm Act are limited to $40,000 per person (except for additional payments that result from repayment of prior-year advanced deficiency payments). The payment limit on marketing loan gains and loan deficiency payments was $75,000 per person, per crop year, through the 1998 crops, and the three-entity rule was retained. The 2000 and 2001 Appropriations Acts raised this limit to $150,000 for 1999 and 2000 crops. The baseline assumes that this payment limit returns to $75,000 for subsequent years. However, the availability of commodity certificates starting in early 2000 provides a vehicle for producers to receive marketing loan benefits unconstrained by payment limitations (see commodity certificates discussion below).

Emergency and Disaster Assistance

The 1999 Appropriations Act provided $2.857 billion for market loss assistance payments to be paid in fiscal 1999 to farmers who were eligible for PFC payments in fiscal 1998. The 2000 Appropriations Act provided $5.544 billion for market loss assistance payments to be paid in fiscal 2000 to farmers who were eligible for PFC payments in fiscal 1999. The Agricultural Risk Protection Act of 2000 provided $5.465 billion for market loss assistance payments to be paid in September 2000 to farmers who were eligible for PFC payments in fiscal 2000.

The 2000 Appropriations Act also provided $475 million to 1999 producers of oilseeds and the Agricultural Risk Protection Act of 2000 provided $500 million to 2000 oilseed producers.

The 1999 Appropriations Act provided $2.375 billion for crop loss assistance and the 2000 Appropriations Act provided $1.2 billion for crop loss assistance. The 2001 Appropriations Act provided for additional crop loss assistance for 2000 crops for quality, quantity, or severe economic losses.

Marketing Assistance Loans

The baseline assumes that marketing assistance loan rates for corn, wheat, upland cotton, and oilseeds will remain at their legislated maximum levels through crop year 2001/02, but will then

be determined based on formulas in the 1996 Farm Act, subject to the maximum levels specified in the law for these crops and the minimum levels specified for upland cotton and oilseeds (see table 7). Loan rates for sorghum, barley, and oats for the 2001/02 crops reflect the December 2000 announcements. Loan rates for those feed grains in subsequent years are assumed to set in relation to the corn loan rate, taking into account their feed values relative to corn as measured by ratios of 5-year lagged moving average prices relative to corn prices. The rice loan rate is set at $6.50 per hundredweight.

Marketing loan provisions allow the repayment of commodity loans at less than the loan rate when posted county prices (wheat, feed grains, and oilseeds) or world prices (upland cotton and rice) are below the loan rate. Also, loan deficiency payments may instead be made to eligible producers of wheat, feed grains, upland cotton, rice, and oilseeds who agree to forgo obtaining a loan. The availability of marketing loans has enabled producers to receive per-unit revenues that, on average, exceed commodity loan rates (see marketing loan benefits box, page 36).

Commodity Certificates

Based on authorization in the 2000 Appropriations Act, the CCC announced in February 2000 that commodity certificates would be available to producers of wheat, rice, feed grains, upland cotton, soybeans, and designated oilseeds. Commodity certificates may be purchased by producers with outstanding nonrecourse marketing assistance loans for these crops and then exchanged for the commodities pledged as collateral for those loans. Certificates are primarily designed to limit loan program forfeitures of crops to the government—they facilitate the repayment of loans when producers would not otherwise be able to exercise their full opportunity to repay those loans. In so doing, certificates provide a vehicle for producers to receive marketing loan benefits unconstrained by payment limitations**.**

Cotton User Marketing Payments

The 1996 Farm Act capped total expenditures for cotton user marketing certificates during fiscal years 1996-2002 at $701 million, which was used by mid-December 1998. The 2000 Appropriations Act removed the program's expenditure cap starting in fiscal 2000, and the program was reinstated in October 1999.

For fiscal year 2000 and subsequent years, cotton user marketing payments are made to domestic users and exporters of upland cotton when the lowest-priced U.S. growth of upland cotton quoted for delivery in Northern Europe exceeds the Northern Europe price by more than 1.25 cents per pound for 4 consecutive weeks, and if during the same 4-week period, the adjusted world price does not exceed 134 percent of the base U.S. loan rate. Payments are made in cash or certificates to domestic users on documented raw cotton consumption and to exporters on documented export shipments during the fifth week at a payment rate equal to the difference between the U.S. price and the Northern Europe price, minus 1.25 cents per pound during the fourth week of the period.

Marketing Loan Benefits Push Per-Unit Revenues Above Loan rates

Producers can receive marketing loan benefits in two alternative ways—through marketing loan gains or through loan deficiency payments. Farmers can realize a marketing loan gain by repaying outstanding commodity loans at a per-unit rate (posted county price for wheat, feed grains, and soybeans, or adjusted world price for upland cotton and rice) that is below the loan rate. Alternatively, farmers may opt for a direct loan deficiency payment (LDP) from the government at a per-unit rate that equals the difference between the commodity loan rate and the posted county price or adjusted world price.

Marketing loan gains and LDPs augment market revenues and result in national average per-unit revenues that exceed commodity loan rates. Marketing loan benefits for 1999 crops illustrate this policy effect. Through early-October 2000 (information available when the baseline's commodity analysis was completed), 97 percent of the 1999 soybean crop had received a marketing loan benefit. About 87 percent of the crop had received an LDP, with an average payment rate of $0.91 a bushel, and about 10 percent had received a marketing loan gain averaging $0.80 a bushel. The rest of the 1999 soybean crop did not receive a marketing loan benefit, although some 1999 soybean commodity loans were still outstanding.

Accounting for LDPs, marketing loan gains, and the portion of the crop with no marketing loan benefit, the weighted-average marketing loan benefit for the 1999 soybean crop was about $0.87 a bushel. This benefit augmented the season-average price of $4.65 per bushel, raising the average per-unit revenue for soybeans to $5.52 a bushel, $0.26 above the 1999 national soybean loan rate of $5.26 per bushel.

Similar benefits went to other field crops in 1999 with marketing loan provisions--wheat, corn, grain sorghum, barley, oats, rice, upland cotton (table 5), and several minor oilseeds. For all of these crops, marketing loan benefits supplemented market receipts, resulting in average per-unit

Table 5. Realized average per-unit revenues increased by marketing loan benefits, 1999

Commodity	Season average price	Marketing loan benefit	Average per-unit revenue	1999 commodity loan rate	Realized average revenue above loan rate
			Dollars per bushel		
Corn	1.80	0.25	2.05	1.89	0.16
Sorghum	1.55	0.26	1.81	1.74	0.07
Barley	2.13	0.14	2.27	1.59	0.68
Oats	1.12	0.19	1.31	1.13	0.18
Wheat	2.48	0.41	2.89	2.58	0.31
Soybeans	4.65	0.87	5.52	5.26	0.26
			Dollars per hundredweight		
Rice	6.11	1.91	8.02	6.50	1.52
			Dollars per pound		
Upland cotton	0.45	0.198	0.648	0.5192	0.129

October 2000 *WASDE* report and October 4, 2000 marketing loan data (based on cumulative LDP and loan activity data from Farm Service Agency's PSL-82R report).

--continued

Marketing Loan Benefits Push Per-Unit Revenues Above Loan rates --continued

total revenues exceeding the respective national loan rates. As with soybeans, marketing loan benefits for wheat, corn, grain sorghum, oats, upland cotton, and rice raised the average per-unit revenue above the loan rate from a season-average price that was below the loan rate.

The above-loan rate per-unit revenues facilitated by marketing loans reflect the use of a two-step marketing procedure by many farmers in which they receive program benefits when prices are seasonally low (and program benefits high) and then sell their crop later in the marketing year when prices have risen. These realized levels of per-unit revenues also raise producers' expected net returns for these crops, thereby affecting planting decisions and acreage allocation. This policy effect is incorporated into the baseline's acreage projections.

Program Assumptions for Other Commodities

Baseline policy assumptions for selected other commodities--dairy, sugar, and tobacco--are discussed in this section. Dairy and sugar assumptions are largely based on provisions from the 1996 Farm Act and the 2000 Appropriations Act. Policy assumptions for tobacco reflect earlier legislation because the tobacco program was not included in the 1996 Farm Act.

Dairy

Dairy price supports were phased down to $9.90 per hundredweight in 1999. The 2001 Appropriations Act extended the price support program to December 31, 2001, leaving support at $9.90. Starting January 1, 2002, a recourse loan program, in which loans must be repaid with interest, is assumed to be implemented for butter, nonfat dry milk, and cheddar cheese at loan rates equivalent to $9.90 per hundredweight for milk.

Sugar

The 1996 Farm Act set the raw cane sugar loan rate at 18 cents per pound and the refined beet sugar loan rate at 22.9 cents per pound. These levels are assumed in the baseline to continue through the projections.

Nonrecourse loans are available through the sugar loan program. Initially, under the 1996 Farm Act, sugar loans would be recourse in years when the tariff-rate quota was at or below 1.5 million short tons, but such loans would convert to nonrecourse loans if the tariff-rate quota is increased above 1.5 million short tons. However, sugar loans through 2000 under the 1996 Act were always nonrecourse. Further, the 2001 Agriculture Appropriations Act eliminated the TRQ-trigger provisions for sugar loans to become recourse. Thus, sugar loans are assumed to remain nonrecourse throughout the baseline projections. Under the nonrecourse loan program for sugar, processors must pay a 1-cent fee on each pound of raw cane sugar and 1.07 cents on each pound of refined beet sugar forfeited to the CCC.

Sugar marketing assessments were paid on all processed, domestically grown sugar for fiscal 1997 through 1999, but were suspended through fiscal 2001 by the 2000 Appropriations Act. The baseline assumes sugar assessments will resume in fiscal 2002. Assessments on raw cane sugar marketings equal 1.375 percent of the 18-cent loan rate, 0.2475 cents per pound. Assessments on refined beet sugar marketings equal 1.47425 percent of 18 cents, 0.2654 cents per pound.

In August 2000, the Secretary announced a Sugar Payment in Kind (PIK) Program for 2000 to address large sugar supplies and low prices in the domestic sugar market. The program offered sugar beet farmers the choice of reducing 2000 crop year production in exchange for CCC inventory sugar. Producers offered bids for the amount of CCC inventory sugar they would accept in exchange for forgoing harvest of a specific number of acres. Bids were subject to a bid cap based on the producer's average sugar production over the previous 3 years and farmers were limited to $20,000 value of the sugar PIK payments. The PIK program was intended to reduce the amount of sugar in CCC inventory, the amount of sugar forfeitures, and the overall storage cost to the CCC. The sugar PIK program is not assumed in the baseline to be extended to subsequent years.

Tobacco

The major provisions of the tobacco program are included in the Agricultural Adjustment Act of 1938, as amended; the No-Net-Cost Tobacco Program Act of 1982; and the Omnibus Budget Reconciliation Act of 1993. The tobacco program was not included in the 1996 Farm Act.

Tobacco marketing quotas and allotments continue, in accordance with the Agricultural Adjustment Act of 1938. Support for flue-cured and burley tobacco is based on statutory formulas that include a 5-year moving average of market prices and a cost-of-production index. The baseline assumes a continuation of the no-net-cost assessment paid by growers and buyers to cover costs of the tobacco price support programs.

Imports of flue-cured, burley, and certain other tobaccos are covered by a tariff rate quota as authorized by GATT implementing legislation. The baseline assumes that tobacco marketing assessments on domestic producers and purchasers and on importers, which ended after crop year 1998, do not resume.

The 2001 Appropriations Act allows forfeitures of 1999-crop burley tobacco regardless of quality, and specified that any related costs incurred by the CCC shall not be charged to the no net cost tobacco account.

Conservation Reserve Program

The baseline assumes that the Conservation Reserve Program (CRP) will gradually build from an estimated recent level of about 33.8 million acres in fiscal year 2001 to its maximum authorized level of 36.4 million acres by 2003 (see table 8). Authority to sign up and enroll acreage in the CRP is assumed to be extended after 2002 to maintain CRP acreage at 36.4 million acres. The cropping history allocation of the CRP to specific crops provided in table 8 reflects crops grown

in 1998 on farms with CRP acreage. New enrollments in the CRP reflect periodic regular signups and continuous signups.

Major Trade Program Assumptions

The following assumptions are made in the baseline for major U.S. trade programs.

Export Enhancement Program (EEP)

Annual quantity and expenditure levels for the Export Enhancement Program (EEP) are assumed to be within the limits set in the Uruguay Round Agreement on Agriculture and enacted in the 1996 Farm Act. The annual EEP expenditure limit is $478 million beginning in fiscal year 2001. Only limited use of the EEP has been made (for poultry) in the past two years, so commodity projections in the baseline assume that no EEP expenditures other than for poultry occur in fiscal year 2001. The program is assumed in the baseline to be fully used starting in fiscal year 2002.

Dairy Export Incentive Program (DEIP)

The Dairy Export Incentive Program operates on a bid bonus system, with cash bonus payments to exporters to facilitate sales of U.S. dairy products in overseas markets. Estimates of the quantity of dairy products exported under the DEIP and associated expenditures are formulated in the baseline within the maximum allowable expenditure and quantity levels of the Uruguay Round Agreement on Agriculture. The maximum annual expenditure for U.S. dairy product export subsidies is $116.6 million in fiscal year 2001 and the baseline assumes that DEIP funding continues at that amount for subsequent years.

Export Credit Guarantee Programs

Annual program levels assumed in the baseline for GSM-102 and GSM-103 credit guarantee programs are based on forecast economic and market conditions and the expected supply/demand conditions of the countries to which GSM credit guarantees will be made available. The baseline assumes program levels of $3.792 billion in fiscal year 2001 and $3.904 billion for fiscal year 2002 and subsequent years.

P.L. 480 Program

P.L. 480 program levels in the baseline for fiscal year 2001 reflect the 2001 Appropriations Act. A credit level of $159.678 million is covered by Title I. Fiscal year 2001 program levels of $20.322 million for Title I Ocean Freight Differential and $837 million for Title II are provided. No funding is provided for Title III. For fiscal year 2002 and later years, Title I Credit and Title I Ocean Freight Differential program levels are assumed at $190 million and $28 million, respectively. Program levels for Title II are assumed to remain at $837 million for fiscal year 2002, grow to $910 million by fiscal year 2006, and then remain at that level for the rest of the baseline. Title III is assumed to remain unfunded in the baseline. Up to 15 percent of funds of any title of P.L. 480 may be transferred to carry out any other title.

Export Donations

The baseline assumes that CCC-owned commodities will be available for the regular Section 416(b) program when inventory stocks are available. CCC purchase of commodities for use in the Food for Progress program is assumed at a commodity level which can be supported within the annual $30 million limitation on Food for Progress ocean transportation and other non-commodity expenses.

Bill Emerson Humanitarian Trust

The Bill Emerson Humanitarian Trust (formerly the Food Security Commodity Reserve) is assumed to remain near its current level of about 2.5 million metric tons (about 93 million bushels) of wheat through the baseline. The reserve is authorized for up to 4 million metric tons of grain (wheat, corn, and sorghum, and rice) to meet humanitarian food aid needs. The existing 300,000 ton release authority for urgent humanitarian relief in disasters is raised to 500,000 metric tons in the case of unanticipated need, with release of an additional 500,000 metric tons of eligible commodities allowed that could have been released but were not released in previous years. The Secretary is authorized to release eligible commodities from the reserve when supplies are so limited that eligible commodities cannot be made available for programming under P.L. 480. The 1996 Farm Act authorizes replenishment of the reserve, but does not set a specific time for replenishment. Beginning in fiscal year 2000, the Africa: Seeds of Hope Act of 1998 allows the retention and use of funds from P.L. 480 reimbursements to purchase grain to replace supplies released from the reserve. The purchases are limited to no more than $20 million per fiscal year. CCC also is authorized to hold money as well as commodities in the reserve. However, the baseline assumes no release of grain from the reserve and no purchases of grain to add to the reserve.

Other Agricultural Policy Assumptions

- *Bioenergy Program*. A new Bioenergy Program was announced by USDA in October 2000 for fiscal years 2001 and 2002, with an annual program level of $150 million assumed in the baseline for each of those two years. The program will provide incentive payments to ethanol and biodiesel producers who expand bioenergy production from eligible commodities.

- *Ethanol*. The federal tax credit for ethanol use was extended through 2007 in the Building Efficiency Surface Transportation Equity Act, and is assumed in the baseline to continue through the end of the projections.

- *Bilateral and Multilateral Agreements*. The baseline assumes full compliance with all bilateral and multilateral agreements affecting agriculture and agricultural trade. Examples include full compliance with internal support, market access, and export subsidy provisions of the Uruguay Round (UR) Agreement on Agriculture.

- *World Trade Organization (WTO)*. The baseline assumes no accession to the WTO by China, Taiwan, or any other country not formally admitted as of October 2000.

- *EU Enlargement*. The baseline assumes no enlargement of the EU-15 to add countries of Central and Eastern Europe.

- *Asia-Pacific Economic Cooperation (APEC).* No implementation of more liberalized trade among the APEC countries is assumed.

- *North American Free Trade Agreement (NAFTA)*. No expansion of NAFTA to include additional countries is assumed.

- *Export Subsidy Carryover Credit.* The baseline assumes no additional carryover to later years of unused UR agreement export subsidies.

- *Other Agricultural Policy Trends*. Agricultural and trade policies in individual foreign countries are assumed to continue to evolve along their current paths. In particular, the process of liberalizing economic and trade policies underway in many developing countries will continue.

Table 6. Production flexibility contract payments under the 1996 Farm Act

Commodity	Commodity share	1996	1997	1998	1999	2000	2001	2002
	Percent				*Million dollars*			
1996 Farm Act gross contract payments								
Wheat	26.26	1,463	1,414	1,523	1,471	1,347	1,085	1,053
Corn	46.22	2,574	2,489	2,681	2,590	2,371	1,909	1,852
Sorghum	5.11	285	275	296	286	262	211	205
Barley	2.16	120	116	125	121	111	89	87
Oats	0.15	8	8	9	8	8	6	6
Upland cotton	11.63	648	626	675	652	597	480	466
Rice	8.47	472	456	491	475	435	350	339
Total payments, unadjusted		5,570	5,385	5,800	5,603	5,130	4,130	4,008
Adjusted contract payments, before payment limitations 1/								
Wheat		1,976	1,426	1,534	1,483	1,362	1,096	1,064
Corn		1,771	3,434	2,694	2,603	2,389	1,925	1,868
Sorghum		206	347	298	288	265	214	208
Barley		141	117	126	122	112	91	89
Oats		9	8	9	8	8	6	6
Upland cotton		746	639	689	665	616	501	486
Rice 2/		472	461	498	480	442	357	347
Total adjusted payments		5,321	6,433	5,847	5,650	5,195	4,190	4,068
Projected contract payments after payment limitations and other adjustments								
Wheat		1,941	1,397	1,496	1,445	1,337	1,073	1,041
Corn		1,745	3,384	2,633	2,545	2,350	1,888	1,832
Sorghum		201	338	287	277	257	206	200
Barley		137	113	120	115	107	86	84
Oats		9	8	9	8	8	6	6
Upland cotton		699	597	637	614	575	462	448
Rice		455	448	478	466	433	350	340
Total payments		5,186	6,285	5,659	5,470	5,065	4,072	3,952

1/ Adjusted for prior-year earned deficiency payments paid in these years, repayments of unearned 1995 deficiency payments, and repayments of prior-year PFC payments. These adjusted contract payments are used for payment rate calculations.

2/ 1996 Farm Act includes additional rice payments of $8.5 million annually, FY 1997 through FY 2002.

Note: FY-1999 appropriations for agriculture provided $3.057 billion for market loss assistance, with $2.857 billion paid to farmers eligible for production flexibility payments in the previous year. FY-2000 appropriations for agriculture provided $5.544 billion for market loss assistance paid to farmers eligible for production flexibility payments in the previous year. The Agricultural Risk Protection Act of 2000 provided $5.465 billion for market loss assistance payments to be paid in September 2000 to farmers who were eligible for PFC payments in fiscal 2000.

Table 7. Summary baseline policy variables

	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Marketing assistance loan rates (Dollars per unit)												
Corn	1.89	1.89	1.89	1.64	1.64	1.70	1.80	1.85	1.89	1.89	1.89	1.89
Sorghum	1.74	1.71	1.71	1.44	1.42	1.48	1.57	1.60	1.64	1.64	1.65	1.66
Barley	1.59	1.62	1.65	1.40	1.40	1.47	1.53	1.56	1.58	1.58	1.58	1.57
Oats	1.13	1.16	1.21	0.99	0.94	0.97	1.01	1.03	1.06	1.08	1.09	1.09
Wheat	2.58	2.58	2.58	2.24	2.24	2.32	2.48	2.58	2.58	2.58	2.58	2.58
Rice	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
Upland cotton	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192
Soybeans	5.26	5.26	5.26	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92	5.07
Production flexibility contract payment rates (Dollars per unit)												
Corn	0.36	0.33	0.27	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Sorghum	0.44	0.40	0.32	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Barley	0.27	0.25	0.21	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Oats	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Wheat	0.64	0.59	0.47	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Rice	2.82	2.60	2.10	2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.04	2.04
Upland cotton	0.079	0.073	0.060	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058	0.058
Production flexibility contract payments (Dollars per PFC acre, average)												
Corn	31.78	29.17	23.49	22.81	22.81	22.81	22.81	22.81	22.81	22.81	22.81	22.81
Sorghum	21.09	19.43	15.68	15.22	15.22	15.22	15.22	15.22	15.22	15.22	15.22	15.22
Barley	10.83	10.06	8.18	7.94	7.94	7.94	7.94	7.94	7.94	7.94	7.94	7.94
Oats	1.30	1.20	0.95	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Wheat	18.76	17.26	13.89	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.48	13.48
Rice	115.70	106.48	86.12	83.63	83.63	83.63	83.63	83.63	83.63	83.63	83.63	83.63
Upland cotton	40.61	37.89	30.77	29.90	29.90	29.90	29.90	29.90	29.90	29.90	29.90	29.90

Note: Units for marketing assistance loan rates and production flexibility payment rates are dollars per bushel except for upland cotton (per pound) and rice (per hundredweight).

Table 8. Conservation Reserve Program acreage assumptions

	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
						Million acres						
Cropping History 1/												
Corn	5.2	5.5	6.0	6.1	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Sorghum	1.2	1.3	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Barley	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Oats	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Wheat	7.4	7.7	8.3	8.5	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
Upland cotton	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Soybeans	4.3	4.6	5.0	5.1	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
Subtotal	20.1	21.3	22.9	23.6	24.7	24.7	24.7	24.7	24.7	24.7	24.7	24.7
Fallow	2.4	2.6	2.8	2.8	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Other	7.3	7.6	8.1	8.3	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
Total	29.8	31.5	33.8	34.8	36.4	36.4	36.4	36.4	36.4	36.4	36.4	36.4

1/ The cropping history allocation is based on 1998 plantings on farms with CRP acreage, and is used as a general indicator influencing land available for plantings.

Crops

During the projection period most major U.S. field crops receive some safety net assistance--marketing loan benefits--when prices are low, as provided by the 1996 Farm Act. Feed grains, wheat, soybeans, and cotton are projected to receive these benefits in the early years of the baseline, while rice is expected to receive benefits for the entire period. In the initial years of the projections, many crops are adjusting to a number of years of large global production combined with a rebounding international demand, before moving back to a longer-term growth trend. In the longer run, global economic growth provides for growth in trade and U.S. agricultural exports, although gains in trade are constrained by export competition and moderate growth in import demand for some important markets.

The 1996 Farm Act provides producers nearly full planting flexibility, permitting acreage responses to changes in net returns per acre. However, marketing loan benefits also enter into acreage response decisions for the baseline projections, especially during the early years of the projections. Marketing loan provisions of the 1996 Farm Act provide a minimum revenue per unit of production when market prices are below the loan rate. Consequently, these provisions affect planting decisions when market prices are near or below marketing assistance loan rates. The baseline assumes that loan rates for corn, wheat, soybeans, and upland cotton are set at their legislative maximums for the 2001/02 crop, but thereafter, are based on formulas specified in the 1996 Farm Act. Consequently, except for cotton and rice, loan rates decline in the early to mid-period of the baseline but return to their maximum levels later in the projection period.

Production flexibility contract payments decline over the first two years of the baseline period, 2001 and 2002. The remainder of the baseline assumes a constant level of payments at the 2002 level for each contract crop. Because these payments are not linked to production, they are deemed "decoupled" and considered to have minimal effects on acreage decisions.

Land Use

Decisions on land use reflect net returns per acre in a policy environment of nearly complete planting flexibility as provided by the 1996 Farm Act. Net returns are a function of market prices supplemented by benefits from the marketing loan provisions in years of depressed prices, productivity as expressed in yields, and variable costs. Acreage changes for individual crops reflect relative net returns among competing crops as well as relative magnitudes of crop-specific acreage responses to those net returns. The acreage impact of a crop's own net returns are partly offset by acreage impacts of competing crops' net returns. This land-use competition is particularly strong between corn and soybeans, where the mix of plantings is quite responsive to changes in relative prices and relative program benefits. Because prices for many commodities remain below their loan rate early in the baseline, planting decisions during those years are influenced by marketing loan benefits.

Total planted area to the eight major U.S. field crops (corn, sorghum, barley, oats, wheat, rice, upland cotton, and soybeans) is expected to rise to 259 million acres in 2010 (table 9, page 62), nearly equal to the recent high level of plantings attained in 1996. Compared to 1996, fewer

acres are planted to wheat, and feed grains, while more area is devoted to soybeans and rice. Aggregate crop area declines in the early years of the baseline because of lower per-acre net returns. Although global demand for agricultural commodities is expected to improve, market prices are still recovering from relatively low levels and loan rates are assumed to decline for most crops in 2002. Starting in 2003, rising net returns contribute to an increase in aggregate planted area through the remainder of the baseline. Harvested acreage for all major crops mirrors total planted area, which generally declines in the early years of the projection period but rises thereafter.

Total feed grain area declines in the initial years of the baseline period but then increases modestly for the remainder of the period. Planted area to corn declines in the early years of the baseline, responding to continued low returns, reflecting rising input costs, an assumed declining loan rate, and recovering foreign demand. Soybean planted area begins the baseline with record plantings of 75 million acres, as marketing loan benefits are expected to support soybean net returns (and thereby acreage) that are still comparatively better than many other commodities. As corn and wheat net returns strengthen, soybean acreage is projected to decline, but begins to rise in 2005 and approaches record levels by 2010. Wheat planted area declines through 2002 as expected net returns decline with the assumed loan rate reduction, but market prices rise sufficiently to lead to additional wheat plantings thereafter. Rice area is projected to decline to 3.0 million acres. Returns per acre are not sufficient to maintain acreage at the 2000 level of 3.2 million acres because per acre variable costs rise faster than projected revenue. Planted area of upland cotton is projected to decline from 15 to 13.8 million acres in response to reduced net returns, as total use stabilizes and yields are projected to grow slightly.

The Conservation Reserve Program (CRP) is projected to achieve its maximum acreage as specified in the 1996 Farm Act by increasing from 33.8 million acres in 2001 to 36.4 million acres in 2003 and beyond (see CRP discussion, page 38 and table 8, page 43). Acreage with a planting history to wheat, corn, and soybeans accounts for about 57 percent of the CRP area throughout the baseline.

Crop Supply and Demand Overview

During the first 2 to 3 years of the baseline, many of the major crops adjust to recovering market conditions. Crop area initially declines for many crops in response to low producer returns, reflecting reduced marketing loan benefits from the lower assumed commodity loan rates, large global supplies, and a recovering foreign demand with continued competition. Later in the projection period, aggregate acreage rises in response to growing world demand, accompanied by strengthening producer returns. However, with continued export competition and moderate import demand growth tempering trade for some markets, yield gains for many crops are sufficient to support much of the needed production growth, thereby mitigating some of the need to increase total land use.

The domestic market is the main component of disappearance for the major field crops. However, the export market is projected to increase in importance for many commodities. Gains in projected disappearance for wheat, cotton, and sorghum are driven by exports, with U.S. trade showing larger absolute gains and growth rates than domestic demand. Exports of corn and

soybean oil also grow at faster rates than their domestic use, but absolute increases in domestic use for these crops are larger than trade gains, reflecting the relative sizes of their utilization categories. In contrast, projected increases in consumption for barley, oats, rice, soybeans, and soybean meal are driven mainly by domestic demand. Growth in domestic consumption for these crops is larger than exports in both absolute and percentage terms. Stocks-to-use ratios decline for corn, wheat, and soybeans, with nominal prices rising.

Feed grain area declines through 2002, with yields accounting for most gains in production. Feed grain prices recover throughout the baseline period, as stock-to-use ratios are expected to decline. Although domestic use continues to grow, exports decline in the first three years of the projection period. In the later years of the baseline, feed grain plantings rise in response to higher producer returns resulting from growth in exports and steady gains in the domestic market. Larger livestock inventories boost feed use, while food, seed, and industrial (FSI) use increases mainly due to growth in corn sweetener and ethanol use. U.S. export gains are expected to be larger in the middle of the baseline period, as competitors' stocks are reduced early in the baseline but their production and competition increase later.

Less wheat area is needed in the early years of the baseline as relatively large stocks are reduced. Wheat area expands later in the baseline in response to increased net returns. Production is expected to rise beginning in the third year of the baseline aided by rising area and yields. Total consumption of U.S. wheat is projected to be fairly uniform for the first three years of the baseline but is expected to rise during the remainder of the projection period. Food use is projected to rise at 10 million bushels per year because of population growth and small increases in per capita food use of wheat products. Feed and residual use is expected to adjust downward and remain steady for most of the baseline period as wheat prices rise relative to corn and then become relatively stable. After a 3-year period of stability in the early years of the baseline period, U.S. wheat exports are expected to rise steadily over the remainder of the projection period. The U.S. is expected to face competition from the EU as the lower euro makes it possible for the EU to export wheat without subsidies throughout the projection period. U.S. exports are expected to grow at about the same pace as world wheat trade.

After rising slightly in 2001/02, area planted to rice is projected to slowly decline, as net returns are insufficient to maintain acreage levels. Annual rice production is expected to decline from 196 to 194 million hundredweight during the projection period, as the effects of contracted rice area offset small increases in yields. Steady growth in domestic use of rice is projected, driven by food use, although gains will be slower than in recent years. U.S. rice exports are expected to decline slowly throughout the baseline as rising domestic use accounts for a larger share of production. Most U.S. exports go to high-quality markets, rarely competing with the low-cost Asian exporters in lower quality rice markets. Domestic producer prices are expected to rise slowly over the next decade, as international prices recover. However, world prices are projected to remain below U.S. loan rates during the baseline, thereby making U.S. producers eligible for marketing loan benefits. Rice producers' net returns are projected to decline an average of nearly 2 percent a year, as variable costs are projected to rise faster than the sum of market revenues and marketing loan benefits.

Productivity for U.S. upland cotton is expected to nearly keep pace with growth in total use. Planted area for upland cotton is expected to fall from 15 million to 13.8 million acres during the baseline period. Acreage remains at fairly high levels in the early years of the baseline in response to cotton's favorable returns relative to other commodities but later in the period some area is bid away from cotton. Projected production ranges from 18.3 million to 17.5 million bales during the baseline period, as declines in planted area offset slight gains in yields. Total consumption is expected to rise in the early years of the baseline as global consumption expands, but then declines slightly through the end of the period. Domestic mill use declines by 7 percent over the baseline due, in part, to the full phaseout of the Multi-Fiber Arrangement's (MFA) textile and apparel import quotas scheduled for 2005. In contrast, cotton exports are expected to remain at 8 million bales for the first 4 years of the baseline and thereafter gradually increase, aided by Step 2 payments, but not completely offsetting the decline in mill use. Ending stocks of upland cotton begin to decline after the early years of the baseline and the stocks-to-use ratio declines slightly throughout most the projection period.

After 2001, lower soybean loan rates assumed in the baseline and strengthening corn and wheat prices are expected to initially reduce and then dampen increases in soybean planted area. Soybean production is expected to exceed 3.2 billion bushels on 73.8 million harvested acres by the end of the baseline. Producer prices for U.S. soybeans are projected to rise to $6.30 a bushel by the end of the baseline as supplies come into closer balance with demand. In the early part of the baseline, lower world market prices are expected to discourage foreign soybean production and the U.S. is expected to capture a larger market share of the world soybean market. Later, as U.S. soybean prices increase, foreign soybean output is expected to curtail growth in U.S. soybean exports. Ample soybean supplies and low soybean prices accelerate domestic crushing through 2003/04, with a resurgence in foreign meal output projected to slow growth in U.S. meal exports to 9.1 million tons by 2010/11. U.S. soybean oil prices are anticipated to rise throughout the baseline as consumption converges with supply.

Feed Grains

After an initial decline in 2001/02, feed grain production increases for the remainder of the projection period. Yield gains account for most of the increase in production, particularly in the early years. Corn is expected to continue increasing its share of total feed grain production and use. After declining in the initial years of the baseline, corn acres are expected to gradually increase over the remainder of the baseline period. Sorghum plantings slowly increase over the period but acreage does not return to the 1996/97 level. However, no significant turnaround in planted area for barley or oats is foreseen. Net returns of the other feed grains improve from the low levels in 1998/99, 1999/2000, or 2000/01, but continue low relative to corn through the remainder of the baseline.

Total feed grain use is projected to set a record throughout the baseline period. Exports are expected to grow about 20 percent over the baseline, a much more robust growth rate than the past two decades, and reach the old 1979 record during the later part of the baseline period. Despite improved growth in global imports, the United States is projected to face strong competition throughout the baseline.

U.S. ending stocks of feed grains are projected to drop throughout the baseline period to around 27 million metric tons. This is below the average ending stocks of the 1990s, which was 41 million tons, and much less than the average of 85.1 million of the 1980s when much higher stockholding was common due to government programs. Corn prices rise throughout the baseline as the stocks-to-use ratio declines. Without a major shock from exports, increases in productivity are expected to accommodate about 80 percent of demand growth, with the remaining increase in supply coming from increased plantings.

Corn

The corn sector starts the baseline in a low but increasing price environment, reflecting an adjustment of large supplies to a growing demand. At the onset of the baseline, domestic corn use is already at record high levels, and continues growing throughout the period. For U.S. exports, the favorable impact of low prices on global demand and trade is partly offset by competition from other exporters, so a resumption of growth of U.S. corn exports is largely dependent on the U.S. corn sector remaining competitive in global markets.

Planted area for corn is projected to remain relatively large, but initially declines in response to lower net returns. Corn area is expected to increase in 2003 through the remainder of the baseline, as use strengthens and prices improve. Corn competes mostly with soybeans for land and is used extensively in rotations with soybeans. Relative net returns are expected to favor corn over soybeans for most of the baseline except 2001. Although prices for both crops are projected to be low in the next few years, the loan rate for soybeans is relatively more favorable than that of corn. Marketing loan benefits make soybeans more attractive in 2001 as a decline in total corn plantings is initially projected with an increase in soybean acres.

Strong yield gains for corn are projected to continue over the entire period, facilitated by genetic improvements and gains from farming practices, such as timely planting and effective input use. Corn production is projected to increase throughout the baseline, surpassing the previous record of 10.2 billion bushels by 2004.

Feed and residual use grows throughout the projection period, reflecting record meat production and a record number of grain-consuming animal units in the U.S. livestock sector. A steady increase in broiler production adds to generally increasing hog and cattle inventories. In addition, feed and residual use of other grains remains low relative to earlier periods.

Food, seed, and industrial (FSI) use of corn increases throughout the baseline period, beginning at a record level. Expansion for high fructose corn syrup (HFCS) and ethanol, the two largest FSI components, is projected to be smaller than in most of the previous decade, although use for ethanol is boosted in the initial years by the bioenergy program. Policies remain a critical determinant for the volume of corn used for ethanol and different policies could drastically change the use of ethanol in fuels. Food and starch, other segments of FSI use, are mature markets and projected gains reflect population growth.

Projected exports show strong growth compared with the 1980s and 1990s, but remain below the record established in 1979/80 until 2006/07. U.S. corn exports are expected to decline slightly

during the early years of the baseline, because of competing countries' exports, but begin recovering in 2004/05 and beyond.

Ending stocks of corn are expected to decline to around 860 million bushels. Prices strengthen from recent lows to $2.60 per bushel by the end of the projection period, as the stocks-to-use ratio progressively declines.

Sorghum

Sorghum production is projected to grow to 670 million bushels by 2010. This reflects an increase in plantings from 9.3 million acres to 10 million acres and trend yield growth of 0.6 bushels per year. Planted acreage is expected to increase throughout the baseline as prices and producer returns rise. By 2007, sorghum yields exceed the current record of 72.7 bushels per acre.

Since growth in both supply and demand are about equal, ending stocks of sorghum are projected to remain about the same throughout the projection period. Steady export gains are largely due to increased shipments to Mexico. Only modest increases in feed and residual use are projected. Food, seed, and industrial use rises slowly in the baseline, remaining record high due to sorghum's industrial use.

Barley

Barley production increases modestly over the baseline, reaching 365 million bushels by 2010. Planted acreage remains steady over the period, as barley's net returns cannot compete for more area. Yield per acre is expected to increase 8.7 percent over the period, in line with trend increases.

In contrast to sorghum, the increase in barley supply goes to feed and residual use. Food and industrial use, dominated by malt for beer brewing, is expected to show no growth. Barley exports are projected at a relatively high 70 million bushels per year, around the maximum quantity of subsidized feed grain exports permitted under the Uruguay Round Agreement on Agriculture. Imports are expected to grow to 55 million bushels and remain constant. The average barley price is projected to rise through the baseline, reaching $2.40 per bushel by 2010/11.

Oats

The declining long-term trend in oat acreage is projected to bottom out, with oat plantings remaining constant over the baseline period. The crop will remain important in some rotations and as a cover crop. Production is projected to range from 140 to 150 million bushels over the period, while total use starts at 246 million bushels, increasing to 275 million. Imports rise from 100 million bushels to 125 million or 32 to 38 percent of supply, making up the difference between production and use. Imported oats are particularly important to food and specialty feed use. Food use grows very slowly reflecting population increases. Feed and residual use ranges

from 175 million bushels to 195 million. Oat prices begin the projection period at low levels and increase to $1.45 per bushel by 2010/11, reflecting the rise in general level of corn prices,

Wheat

Total U.S. wheat supply drops in the early years of the projections, but then increases during the rest of the baseline as gains in production outpace the decline in carryover stocks. Although supply grows during the later years of the projections, the levels achieved in 1998/99-2000/01 are not reached again in the baseline period. Wheat imports remain about 3 to 4 percent of supply.

Wheat prices for U.S. producers are projected to rise over the projection period as both rising exports and domestic food use reduce U.S. wheat stocks and the stocks-to-use ratio. The variable cost of producing wheat rises steadily throughout the period and is led by fertilizer, the largest component. However, net returns maintain a positive growth throughout most of the period as revenue outpaces variable cost.

Domestic wheat production is projected to increase steadily from 2003, after burdensome stocks decline in the early years of the baseline. Farmers are expected to respond to an increase in net returns by planting more wheat, after small declines through 2002 accompanied by an assumed reduction in the loan rate from $2.58 to $2.24 per bushel for 2002/03. Planted area expands to 66 million acres by 2010. Expected wheat yields rise steadily in the baseline from a starting point that is lower than actual yields in the past 3 years with the assumption of more normal weather patterns. Yields are expected to rise even faster once wheat prices exceed $3.00 per bushel in 2003/04 and beyond.

Total wheat consumption remains relatively constant in the early years of the baseline, as gains in domestic use offset a decline in exports. Thereafter, total consumption is expected to expand for the remainder of the period due to rising food use and exports. Feed and residual use is projected to remain at 225 million bushels annually for the remainder of the period after increasing to 275 in 2001/02. Consumption of wheat for food is expected to increase 10 million bushels annually over the projection period because of population growth and small increases in per capita use of wheat products accompanied by a rise in personal income. Food use is expected to shrink as a proportion of total wheat use after 2003/04 because of a faster growth in exports.

U.S. exports are expected to grow around the same rate as the world wheat trade. The U.S. share of global trade is projected to fluctuate around 29 percent during the baseline period. Growth in global imports is mainly attributed to the rising global population. North Africa and the Middle East are key growth areas and the near-term flat U.S. exports reflect a return to normal production in those regions. China is also expected to be a growing importer of wheat. Export competition heightens as exchange rates make it possible for the EU to export wheat without subsidies throughout the projection period in competition with the United States. This exchange rate situation, together with rising U.S. wheat prices, limits growth in U.S. exports.

Rice

U.S. rice plantings are projected to decline moderately after 2002/03, as domestic prices will not be high enough to maintain acreage at 2001/02 levels. The bulk of the contraction is expected to occur on the Gulf Coast where rice acreage has declined for more than two decades due to high costs and urban sprawl. U.S. rice acreage is projected to expand in 2001/02 due to expected favorable returns and few planting alternatives. From 1997 to 1999, U.S. rice acreage expanded to near-historic levels with the Delta accounting for the bulk of the expansion. Acreage dropped substantially in 2000, primarily in response to much lower prices.

Rice production declines from 196 million hundredweight in 2002/03 to 194 million in 2010/11, remaining well below the 1999 record of 206 million. The projected contraction in U.S. rice area offsets small but steady increases in yield. U.S. yield growth for rice is projected to be about 0.5 percent annually due to better farm management practices and some improvements in rice varieties. This growth is less than achieved in the 1980s and early 1990s when modern high-yielding varieties were being adopted.

U.S. rice imports are projected to expand about 2.5 percent annually in the baseline, reaching 13.1 million hundredweight by 2010/11, reflecting a slowdown in the rate of growth from recent years. Rice imports' share of supply is expected to rise slightly over the decade to 5.6 percent. U.S. rice imports are predominantly high quality, specialty varieties, mostly Thai jasmine as well as basmati from India and Pakistan.

Total domestic and residual use is projected to rise about 2.2 percent a year, reaching 153.1 million hundredweight by 2010/11. Food use is expected to account for virtually all of the growth in domestic use. A growing share of the U.S. population of Asian and Latin American descent, a greater emphasis on healthier life styles, and greater use of rice in processed and convenience foods account for most of the expansion in domestic food use of rice. Brewers' use of rice, which has been virtually stagnant since the late 1980s, is projected to expand only fractionally over the next decade. Brewers' use of rice is unlikely to expand due to stagnant per capita beer consumption, growing popularity of light beers that use less rice than regular beers, and larger imports of beer. Seed use, essentially a function of planted area, will slowly decline through 2010/11 as rice plantings contract.

Exports are projected to slowly decline after 2001/02 as rising domestic use accounts for a larger share of production. The export share of total use is projected to drop from 39 percent in 2000/01 to 26 percent in 2010/11. With U.S. rice production essentially steady, expanding domestic use reduces supplies available for export. U.S. prices are projected to rise faster than world prices, making U.S. rice exports less competitive in some international markets.

The United States exports mostly to high-quality markets, rarely competing with the low cost Asian exporters in lower quality milled rice markets. However, Thailand and India compete with the United States in certain high quality indica markets in the Middle East and South Africa. And China, along with Australia, competes with the U.S. for japonica sales to Japan. Australia, Egypt, and the EU also compete with the U.S. in the international japonica market. Currently, 25 to 30 percent of U.S. rice exports are rough rice, mostly going to Latin America. Asian exporters

do not export rough rice and ship very little rice to Latin America. However, both Argentina and Uruguay ship small amounts of rough rice to Latin American markets.

U.S. ending rice stocks are projected to stay near 27 million hundredweight in the baseline, and the projected stocks-to-use ratio remains about 13 percent.

International prices are expected to rise over the next decade due to expanding world rice trade and some shifting to higher quality rice. However, world prices are not projected to exceed the U.S. loan rate during the baseline period, keeping U.S. producers eligible for marketing loan benefits. Global prices are currently very low due to large exportable supplies worldwide.

Domestic rice prices are expected to rise slowly in the baseline as international prices recover. The U.S. season-average, farm-level rice price is expected to rise from a projected $6.10 per hundredweight in 2001/02 to $7.71 in 2010/11. Rice producers' net returns, including marketing loan benefits, are projected to decline an average of almost 2 percent a year, falling to $143 per acre by 2010/11.

Upland Cotton

Planted area for upland cotton is expected to decline from 15 million to 13.8 million acres during the baseline period. Planted area in 2001 and 2002 is expected to be 15 million acres, responding to cotton's expected favorable returns relative to other commodities. During the remaining years of the projection period, cotton acreage declines as some area is bid away to other crops. Projected area incorporates average abandonment of 8 percent per year. Upland cotton yields are expected to reach 662 pounds per harvested acre by 2010, an average yield increase of 3 pounds per year, well below the 705-pound per acre record produced in 1994. Projected production ranges from 18.3 to 17.5 million bales during the baseline period, as the decline in planted area offsets the slight rise in yields. Productivity is expected to nearly keep pace with growth in total use.

Total consumption of U.S. upland cotton in 2001/02 and 2002/03 is expected to expand modestly, as global consumption continues to expand to meet the improving demand for cotton's textile and apparel products. Total use is projected to increase to 18 million bales in 2002/03, but still remain below the historically high level of 1994/95. Total consumption is expected to decline slightly for the remainder of the projection period.

Upland mill use is expected to decline slightly throughout the baseline period as structural adjustments in the U.S. textile and apparel industry continue in preparation for the full phaseout of the MFA quotas scheduled for 2005. By 2005/06, the liberalization of restrictions on cotton's textile and apparel import quotas is likely to result in larger imports, primarily apparel, from developing countries with lower wages. Increases in cotton's textile and apparel imports are projected to more than offset larger textile and apparel exports. As a result, U.S. upland mill use is projected to decline about 1 percent per year beginning in 2005/06, declining to 9.3 million bales by the end of the baseline.

Exports of upland cotton are projected to remain flat at 8 million bales during the first several years of the baseline period. However, after 2004/05, upland exports increase slightly each year for the remainder of the period, but not completely offsetting the decline in mill use. Although world trade is projected to expand throughout the baseline period, averaging between 1 and 2 percent annually, the U.S. market share falls from nearly 30 percent in 2002/03 to about 28 percent by 2010/11. Step 2 payments--reauthorized in October 1999--are assumed to continue throughout the baseline period, aiding U.S. cotton exports.

Ending stocks are projected to rise moderately in 2001/02 and 2002/03, the highest since 1992/93, as production more than offsets expected total use. Stocks are expected to decline modestly from 4.7 million bales at the end of 2002/03 to about 4.2 million by 2010. The stocks-to-use ratio remains fairly stable during the baseline period, ranging from 24 to 26 percent. Producers' net returns for upland cotton are expected to be somewhat stable throughout the baseline period, but remain below the relatively high levels of the 1996-98 seasons.

Soybeans

U.S. soybean acreage gains in 2001 reflect marketing loan benefits, which support soybean net returns and acreage, and relatively higher input costs for corn, which limit plantings of that crop somewhat. For the remainder of the baseline, soybean marketing loan benefits are lower as the loan rate is assumed to revert to the formula or minimum level set forth in the 1996 Farm Act, and soybean prices rise. Also, strengthening corn and wheat net returns are projected to limit U.S. soybean plantings through the early years of the baseline.

U.S. soybean yields are expected to regain an annual trend growth of 0.5 bushels per acre. Continued expansion of narrow-row seeding practices and improvements in soybean varieties are expected to contribute to the trend growth for U.S. yields. Growth in yields and area planted are consistent with demand growth after 2005. By 2010, soybean production is expected to exceed 3.2 billion bushels on 73.8 million harvested acres.

Despite an increase in total consumption of soybeans in 2001/02, there is a net addition to ending stocks. After falling to a low of about $4.55 per bushel in 2001/02, prices are projected to continue below the loan rate until 2003/04. For at least the first three years of the baseline, it is expected that loan deficiency payments and marketing loan gains will supplement revenue from farm marketings. But once supplies come into closer balance with demand, U.S. soybean farm prices are projected to rise, reaching $6.30 per bushel by the end of the baseline period. However, soybean net returns are not expected to match the 1997/98 level until about 2008/09.

U.S. soybean exports are projected to increase to a record 1.065 billion bushels by 2003/04 because of slowed foreign soybean production caused by low world market prices. Consequently, the United States is expected to capture a larger share of the world soybean market. But as domestic prices begin to firm, foreign soybean output is expected to resume growth, with the competition slowing U.S. soybean export growth in the second half of the baseline.

The pace of U.S. crush is partly determined by demand for world soybean meal and the rate of foreign crushing. Ample soybean supplies and low prices are expected to accelerate domestic crushing from 2001/02 to 2003/04. Subsequent annual increases in crushing are expected to moderate and total nearly 2 billion bushels by 2010/11, as foreign supplies increase. The average price for soybean meal is projected to decline to $157.50 per ton in 2001/02, which should keep U.S. soybean meal exports competitive. Beginning in 2002/03, U.S. soybean meal prices are anticipated to strengthen modestly, because of a slowing growth in supply and a continuing growth in demand for domestic soybean meal (particularly spurred by rising poultry and pork production). Tightening soybean supplies and a revival in foreign meal output are projected to slow growth in U.S. meal exports in the second half of the baseline, which reach 9.1 million tons by 2010/11.

Recent soybean prices have been pressured by the lowest soybean oil values since 1971. U.S. soybean oil prices are expected to average 17.3 cents per pound in 2001/02, a modest recovery. Soybean oil prices are projected to increase throughout the baseline as consumption converges with supply, slowly reducing ending stocks. Domestic disappearance of soybean oil is expected to rise at a relatively steady rate, reaching 20 billion pounds by 2010/11. U.S. exports are projected to grow to 2.75 billion pounds by 2004/05. However, as domestic prices rise and world palm oil production continues to expand, the pace of U.S. soybean oil exports slows in the last half of the baseline.

Sugar

The USDA sugar baseline assumes a continuation of current U.S. sugar policy through the end of the projections period in fiscal year 2011. The main components of the U.S. sugar program are the price support loan program and the tariff-rate quota (TRQ) import system. The loan program supports prices of domestically produced sugar. The TRQ system helps support domestic sugar prices by restricting imports of sugar. U.S. commitments under international trade agreements, including the World Trade Organization (WTO) and the North American Free Trade Agreement (NAFTA), affect the level and allocation of the TRQs throughout the baseline. NAFTA provisions also affect imports of high-tier tariff sugar outside the TRQ system.

U.S. sugar policy is carried out in the context of additional assumptions about trends that affect the production and consumption of U.S. sugar. These include assumptions about technology and the prices of crops that substitute for sugarcane and sugarbeets. In addition, factors affecting Mexican sugar supply and demand influence the U.S. sugar projections.

U.S. Sugar Loan Program

Program Administration and Minimum Prices to Avoid Forfeitures. The 1996 Farm Act provides for the USDA to make loans available to processors of domestically grown sugarcane at a rate of 18 cents per pound and to processors of domestically grown sugarbeets at a rate of 22.9 cents per pound for refined beet sugar. To qualify for loans, processors must agree to provide payments to producers that are proportional to the value of the loan received by the processor for sugarbeets and sugarcane delivered by producers. In all years covered by the 1996 Farm Act, the loans made available to processors have been nonrecourse. With a nonrecourse loan, the USDA

must accept sugar pledged as collateral for the loan as full payment of the loan in lieu of cash repayment, at the discretion of the processor.

Although the 1996 Farm Act required that the sugar TRQ be established higher than 1.5 million short tons, raw value (STRV) as a condition for nonrecourse loans to processors, the fiscal year 2001 Agricultural Appropriations Act eliminated the TRQ trigger for nonrecourse loans and all references to recourse loans. Thus, USDA must offer nonrecourse loans for the 2002 and 2003 sugar marketing years to processors even if the TRQ is established at a level of 1.5 million STRV or less. Nonrecourse loans are assumed to continue through fiscal year 2011 for purposes of developing the USDA sugar baseline.

To forestall forfeiture, the sugar price must be high enough to cover interest expenses. Cane processors share interest expenses with their growers, but beet processors do not and must therefore recover the entire interest expense of loan repayment in their share of the sugar's selling price. Cane processors incur transportation and distribution costs in moving sugar to the refiner and also face location discounts required by some refiners. These additional costs must be included in the minimum price to avoid forfeiture calculation. Because beet sugar is refined sugar requiring no further processing, the minimum price does not include transport adjustments. However, because beet sugar is normally sold subject to a 2-percent cash discount, this amount must be added to arrive at the minimum price. Also, the 1996 Farm Act required that processors who forfeit sugar pledged as collateral for a nonrecourse loan pay a penalty of 1 cent a pound for raw cane sugar and 1.072 cents a pound for refined beet sugar. Processors consider these penalties when deciding whether to forfeit sugar to the CCC. For the sugar baseline, the minimum raw sugar market price to discourage forfeitures is calculated at 19.86 cents a pound, while the corresponding minimum refined beet sugar price is calculated at 24.78 cents a pound. These minimum prices to avoid forfeiture are assumed constant over the projections period.

CCC Ending Sugar Stocks. By October 2000, the Commodity Credit Corporation (CCC) held an estimated inventory of 1,090,318 STRV of sugar. This sugar was received through a USDA purchase in June (141,240 STRV) and through loan forfeitures totaling 949,078 STRV. It is assumed in the baseline that sugar paid out of CCC stocks for the Payment-In-Kind Diversion Program reduces the CCC inventory to between 810,000 to 840,000 STRV for fiscal year 2001. In the May 11, 2000 press release (No. 0159.00) announcing USDA would purchase sugar, the Secretary of Agriculture stated that CCC would not sell the sugar back into a depressed U.S. sugar market. On this basis, the USDA sugar baseline assumes that all sugar held by the CCC, including projected future acquisitions, will not be resold into the market. The baseline also assumes that inventories will accumulate because USDA has not yet specified an inventory management and disposal policy.

Sugar Tariff-Rate Quota

In the Uruguay Round of the General Agreement on Tariffs and Trade (GATT), the United States agreed to import a minimum quantity of raw and refined sugar of 1.256 million STRV each marketing year (October/September). Included in this amount is a commitment to import at least 24,251 STRV of refined sugar. These commitments became binding under the World Trade Organization (WTO) when it replaced the GATT.

The raw cane sugar TRQ is allocated to 40 quota-holding countries based on a representative period (1975-81) when trade was relatively unrestricted. An additional quantity of sugar is made available to Mexico to satisfy U.S. obligations under NAFTA. The USDA sugar baseline assumes that the raw sugar TRQ less the NAFTA commitment to Mexico is set at the minimum access level of 1.231 million STRV throughout the projection period. Based on historical performance, it is assumed that some quota-holding countries will be unable to fulfill their assigned quota at an aggregate level of 65,000 STRV. In fiscal years 2001 and 2002 only, it is assumed that actual raw sugar TRQ imports will be 50,000 STRV lower due to a special program that allows Certificates for Quota Eligibility to be purchased by a U.S. refinery. (The refinery is expected to import an offsetting amount outside the TRQ, thereby leaving total U.S. sugar supply unaffected.)

The WTO minimum access for refined sugar TRQ is 24,251 STRV. It is expected that the refined sugar TRQ will be set higher than the minimum, consistent with the recent historical pattern that has allowed additional specialty sugar to be imported at a low duty within the TRQ. Therefore, the yearly refined sugar TRQ for the baseline period is assumed to be set at 41,887 STRV, the same level as for fiscal year 2001.

North American Free Trade Agreement

Low-tier Tariff NAFTA Imports. The NAFTA went into effect on January 1, 1994. Although the original agreement contained provisions that related to trade in sugar, they were modified by the terms of a side letter in November 1993 that altered the sugar provisions of the original NAFTA text. Although Mexico has since rejected the validity of the side-letter agreement, the United States maintains that the side letter provisions supercede those of the original NAFTA.

According to the NAFTA side letter, Mexican sugar low-tier tariff exports to the United States are restricted by Mexico's "net surplus production" of sugar. The net surplus is defined as Mexico's production of sugar less its consumption of sugar and high fructose corn syrup. From fiscal year 2001 through 2007, Mexico is to have duty-free access to the U.S. market for the amount of its surplus as measured by the formula, up to a maximum of 250,000 metric tons, raw value (MTRV). Beginning in fiscal year 2008, Mexico is to have duty-free access with no quantitative limit.

The sugar baseline projects that Mexico will achieve net surplus producer status through fiscal year 2007. In general, the surplus is expected to be above 250,000 MTRV, implying that low-tier tariff imports will be set at 250,000 MTRV or 275,575 STRV. Because a portion of this amount enters as part of the WTO raw sugar minimum access (7,258 MTRV or 8,000 STRV) and the refined sugar TRQ (2,954 MTRV or 3,256 STRV), NAFTA low-tier imports are 264,000 STRV except in fiscal year 2006, when Mexico's net surplus production is projected less than 250,000 MTRV.

High-tier Tariff NAFTA Imports. The NAFTA specifies a declining high-tier tariff schedule for raw and refined sugar over the transition period to duty-free sugar trade in fiscal year 2008. For fiscal year 2001 the raw sugar tariff is 10.58 cents a pound, and the refined sugar tariff is

11.21 cents a pound. The raw sugar tariff drops about 1.5 cents each year, and the refined sugar tariff drops about 1.6 cents a year. Both rates reach zero in fiscal year 2008.

The economic incentive for Mexico to export high-tier tariff raw sugar exists if a price threshold is less than or equal to the U.S. sugar price. The threshold is equal to the sum of the world price of sugar (No. 11 New York contract), the high-tier NAFTA tariff rate, unit marketing costs (about 1.1 cents a pound for raw sugar), plus marketing premiums (assumed to be about $30 a metric ton, or 1.36 cents a pound). The threshold price is compared to the U.S. price for entry in Gulf ports. This U.S. price runs about 1 cent lower than the No. 14 New York contract price. If the threshold is below the U.S. Gulf price, then Mexico would be encouraged to export sugar to the United States up to that point where the marginal returns from exporting to the U.S. and the world markets are equalized. If the return to exporting to the United States is at all levels higher than shipping to the rest-of-the-world, then Mexico ships all exportable sugar to the U.S. market.

The sugar baseline assumes that the world price of sugar will trend up through fiscal years 2001 (9 cents a pound) and 2002 (9.5 cents a pound) to a level of 10 cents a pound in 2003. This level is expected to be the average through the remainder of the baseline projections period. U.S. sugar processors are expected to use the sugar loan program to keep the U.S. raw sugar price at or above 19.86 cents a pound, with a sufficient level of loan program forfeitures (that remove sugar from the market) to keep prices from falling lower.

Under the foregoing assumptions, significant high-tier tariff imports from Mexico are expected, beginning in fiscal year 2004. Yearly imports through fiscal year 2007 are expected to be between 500,000 and 550,000 STRV. These projections are made on the assumption that Mexico will keep its countervailing duties on HFCS imports from the United States. These duties limit inroads that HFCS could otherwise make in substituting for sugar in the beverage and food processing industries. If these duties were reduced or removed completely, it is likely that high-tier sugar imports from Mexico would be much higher.

Another factor encouraging high-tier tariff imports is the U.S. sugar loan program. Under the assumptions discussed above, the CCC acquires sugar that it holds off the market in order to keep raw and refined sugar prices at the minimums necessary to forestall additional forfeitures. (In economic jargon, the CCC's stock acquisition activity is the model's equilibrating adjustment mechanism.) Because high-tier tariff imports cannot depress U.S. sugar prices below the support level, and given a world sugar price of 10 cents a pound, Mexico is encouraged to ship all exportable sugar to the United States.

After fiscal year 2007, the high-tier tariff is zero, and Mexican exports are no longer limited by calculations of net surplus production. It is expected that Mexican prices will be at parity with U.S. sugar prices, which in turn will be supported by CCC stock acquisitions. Higher Mexican prices encourage Mexican production, and encourage substitution toward HFCS because its price relative to Mexican sugar prices is now lower. In fiscal year 2011, Mexican exports to the United States are shown to be above 1.9 million STRV.

U.S. Sugar Production

Trend improvements in sugarcane and sugarbeet growing, harvesting, and processing are expected to continue through the projections period. These improvements are captured in the baseline by sugar produced per acre. The sugar yield for the sugarcane States is projected at 4.34 tons per acre in fiscal year 2002, and is expected to grow yearly at about 0.06 tons per acre, reaching 4.66 tons per acre in fiscal year 2011. The U.S. sugarbeet yield is projected at 3.11 tons per acre in fiscal year 2002, and is expected to grow yearly at about 0.02 tons per acre. In fiscal year 2011, it is projected at 3.30 tons per acre.

Nominal sugar and sugar crop prices are expected to be at levels consistent with current sugar loan rates and forfeiture penalties. At these price levels, U.S. sugar production capacity is expected to remain at slightly lower levels than in 2000. Sugarcane processing capacity is expected to decrease by 2 percent, and sugarbeet processing capacity is expected to decrease by 4 percent.

Although nominal sugar crop prices are not expected to change much through the baseline, the prices of alternative crops are projected to rebound in the baseline from the very low levels of 2000. Prices for alternative crops in sugarbeet areas increase 34 percent between fiscal years 2001 and 2011, and prices for alternative crops in sugarcane areas increase 28 percent over the same period.

Declining real prices of U.S. sugar crops imply reductions in area planted and harvested. For sugarbeets, the area planted is expected to decline from 1.561 million acres in fiscal year 2001 to 1.478 million acres in fiscal year 2011, a 5.3 percent reduction. For sugarcane, the area harvested is expected to decline from 985,000 acres in fiscal year 2001 to 911,000 acres in fiscal year 2011, a 7.5 percent reduction.

U.S. sugar production is expected to be fairly constant over the projections period. For both beet and cane sugar, increases in productivity are offset by area reductions resulting from lower real sugar crop prices, so that production in fiscal year 2011 is only 1.8 percent more than in fiscal year 2002. While the U.S. sugarbeet crop is projected to increase by 400,000 tons, productivity increases imply an increase in beet sugar of 161,000 STRV. Although U.S. sugarcane production is projected to decrease by 1.6 million tons, the decrease in cane sugar production is only 4,000 STRV.

U.S. Sugar Consumption and Ending Stocks

Domestic deliveries are expected to increase 135,000 STRV each year. Although this yearly increase is below the 1987-2000 average of 155,000 STRV per year, the deliveries increase will drive up calculated per capita sugar consumption from a projected 70.0 pounds in fiscal year 2001 to 73.0 pounds in fiscal year 2011, a 4.3 percent gain. Consistent with historical trend, delivery growth for industrial uses is expected to be greater than growth for non-industrial (including household) uses. Although sugar demand by industrial users may be somewhat price-elastic within certain price ranges, wholesale sugar prices are expected to be steady due to support provided by the loan program. Prices of alternative sweeteners, mainly HFCS-42 and

HFCS-55, are not expected to be sufficiently high to warrant substitution away from those products to sugar.

Ending stocks, especially those owned by the CCC, are projected to grow very significantly in the baseline. Projected ending stocks in fiscal year 2011 equal 5.2 million tons, most of which (about 77 percent) are owned by the CCC. The implied ending stocks-to-use ratio would be a record 43.7 percent.

Ending stocks are a residual category because the U.S. sugar support program prevents domestic prices from falling to levels that would balance supply and demand. Given the assumptions embedded in the baseline about U.S. sugar supply, demand, and trade policy, these projected high stock levels, along with the associated U.S. budgetary costs, represent the projected outcome of current U.S. sugar policy.

Tobacco

Tobacco leaf grown in the United States is primarily used for domestic manufacture of cigarettes and for exports for cigarette production in other countries. As U.S. cigarette output has shrunk in recent years, manufacturers have needed less leaf. Furthermore, use of imported leaf has increased. Purchase intentions have plummeted, loan stocks have accumulated, and exports of leaf have declined slightly. The result has been lower marketing quotas for flue-cured and burley tobacco. In 2001, the exclusion of 1999 burley loan takings from the quota calculations will stop the plunge in burley quota. But the long-term trend towards reduced leaf use is likely to continue as cigarette consumption slides. Cigarette output is expected to continue its decline and expenses associated with litigation and settlement will push prices up. On January 1, 2001, Federal excise taxes on cigarettes will increase 5 cents per pack, putting additional pressure on prices. Cigarette manufacturers are shifting production overseas for cigarette markets in other countries, instead of producing the cigarettes domestically. In addition, greater use of imported tobacco leaf in U.S. cigarette production could compound the erosion in demand for U.S. tobacco.

Significant stocks of flue-cured and burley tobacco, along with stagnant exports and declining purchase intentions, will continue to force quotas down. Marketing quotas for flue-cured and burley are set by totaling (1) intended purchases by domestic cigarette manufacturers from the previous crop; (2) average exports for the most recent 3 marketing years; and (3) an adjustment to maintain loan stocks at the specified reserve-stock level of 15 percent of basic quota, or a minimum of 100 million pounds of flue-cured or 50 million pounds of burley. This amount may be adjusted by up or down by a maximum of 3 percent by the Secretary of Agriculture.

In the near-term, the combination of reduced manufacturer purchase intentions and high stocks will dampen quotas for flue-cured leaf, while 1999 loan forgiveness means burley will be affected mostly by lower purchase intentions. Cigarette consumption is likely to continue declining for the next decade, further eroding demand for leaf. Quotas will continue to fall. Imports are expected to remain steady for 2 years and increase annually. Export markets for both flue-cured and burley are expected to tighten as quality and competitiveness of foreign-produced tobacco gains and global cigarette consumption falls.

Tobacco yields remain constant throughout the baseline. Poundage quotas reduce incentives to raise production per acre. Prices for U.S. grown tobacco rise in correspondence with increases in the support price, which is based in part on changes in production costs.

Horticulture

The farm value of U.S. horticultural production is projected to reach $42 billion in 2001, up 5 percent from 2000 and 10 percent above 1999. Production value gains are expected in most horticultural industries, primarily resulting from increased prices. During 2000, the 5-percent increase in U.S. horticultural crop value was due mainly to increased fruit production (particularly oranges), record potato production, and higher prices for many fresh vegetables and nuts. The value of horticultural production is projected to increase $1.2 to $1.7 billion annually during 2002-2010, an annual growth rate of 2 to 4 percent.

Exports continue to be crucial to the success of the U.S. horticultural sector, accounting for about one-quarter of total crop value recently. On average, export sales are projected to generate 27 percent of U.S. horticultural production value during 2001-2010. The value of U.S. horticultural exports is projected to increase about 4 percent per year from fiscal year 2001 to fiscal year 2010, reaching about $15.2 billion by the end of the baseline. However, the U.S. will remain a net importer of horticultural products, with the trade gap widening slightly. Total import value is expected to increase an average of 4 percent annually throughout the baseline, which would put import value at $23.1 billion in 2010.

Potato production for 2000 is forecast up 5 percent from a year earlier, setting a new record. The record U.S. crop was accompanied by record Canadian potato production and strong production in Europe in the fall, 2000. As a result, U.S. potato prices are expected to be down for the 2000 crop. With a large supply of potatoes in the world, U.S. exports of potatoes and potato products may decline marginally in 2001, but are expected to recover and increase an average of 4 percent annually for 2002-2010. Domestic demand for potatoes and potato products is expected to increase by 2 percent annually from 2002-2010, while domestic production is expected to increase an average of 2 percent a year. Despite the similar projected growth rates in domestic consumption and production, exports are expected to continue to increase. Imports of frozen French fries from Canada, which have grown nearly 10-fold since 1989, are also expected to exhibit continued growth over the next decade.

Domestic demand for other fresh-market vegetables is expected to increase an average of 2.6 percent annually during 2001-2010. Per capita consumption is projected to increase about 1.8 percent a year, while annual population growth is projected at slightly less than 1 percent. Consumer awareness of the importance of fresh produce in a healthy diet, combined with increasing product diversity and availability, should help boost domestic consumption. During this 10-year period, U.S. production of fresh vegetables is expected to increase an average 2.4 percent per year. Exports should continue to increase, but will likely be outpaced by imports. Imports will continue to play an important role in the domestic supply of fresh vegetables during the winter months, and, increasingly, during other times of the year.

Fruit and nut production in 2001 is expected to increase by 1.5 percent from 2000, with most of the gain expected to occur in non-citrus fruit. For the remainder of the baseline (2001-2010), however, fruit and nut production is expected to increase an average of less than 1 percent per year. Growth in citrus production may slightly outpace growth for non-citrus fruit. On the demand side, domestic per capita consumption of fruit and nuts is expected to increase by less than 1 percent per year. Despite the relatively slow projected growth rates for domestic fruit production and consumption, trade in fruit and nuts is expected to increase. As consumers worldwide become increasingly accustomed to year-round availability of fresh produce, as well as produce not produced domestically, international trade in these products will increase. U.S. fruit and nut exports are projected to increase about 4 percent annually during 2001-2010, while imports are expected to increase 3 percent annually. The U.S. will remain a net importer of fresh fruit through 2010.

Domestic use of fruit and vegetables for processing (excluding potatoes, sweet potatoes, pulses, and mushrooms) is projected to increase during 2001-2010 by an average of less than 1 percent a year, with processed fruit consumption gaining at a slightly faster pace than processed vegetables. The processed fruit category includes juices and wine, which account for a little over 50 percent of total fruit production. Processed fruit and vegetable exports are likely to continue to increase between 4 and 6 percent annually for the next decade. Export potential for virtually all processed fruit and vegetable categories looks promising, with fruit perhaps slightly outpacing vegetables largely due to expected strong growth in wine exports.

Table 9. Planted and harvested acreage for major field crops, baseline projections

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
						Million acres						
Planted acreage, 8 major crops												
Corn	77.4	79.6	78.5	78.5	79.5	80.5	80.0	80.0	80.5	80.5	81.0	81.0
Sorghum	9.3	9.0	9.3	9.4	9.5	9.5	9.5	9.6	9.7	9.8	9.9	10.0
Barley	5.2	5.8	6.0	6.0	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Oats	4.7	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Wheat	62.7	62.5	62.0	61.0	62.5	63.5	64.5	64.5	64.5	65.0	65.5	66.0
Rice	3.5	3.1	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0
Upland cotton	14.6	15.4	15.0	15.0	14.5	14.4	14.3	14.2	14.1	14.0	13.9	13.8
Soybeans	73.7	74.5	75.0	74.0	73.0	73.0	73.5	74.0	74.0	74.3	74.5	74.8
Total	251.1	254.4	253.5	251.6	252.6	254.5	255.3	255.8	256.3	257.0	258.3	259.0
Harvested acreage, 8 major crops												
Corn	70.5	73.0	71.7	71.7	72.7	73.7	73.2	73.2	73.7	73.7	74.2	74.2
Sorghum	8.5	7.7	8.3	8.4	8.5	8.5	8.5	8.6	8.7	8.8	8.9	9.0
Barley	4.7	5.2	5.5	5.5	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
Oats	2.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Wheat	53.8	53.2	53.8	53.3	54.6	55.4	56.3	56.3	56.3	56.7	57.2	57.6
Rice	3.5	3.1	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.0	3.0
Upland cotton	13.1	13.4	13.8	13.8	13.3	13.2	13.2	13.1	13.0	12.9	12.8	12.7
Soybeans	72.4	73.0	74.0	73.0	72.0	72.0	72.5	73.0	73.0	73.3	73.5	73.8
Total	229.0	230.9	232.6	231.2	232.0	233.6	234.5	235.0	235.5	236.1	237.3	238.0

Table 10. Selected supply, use, and price variables for major field crops, baseline projections

	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Yields 1/												
Corn	133.8	139.6	136.1	137.8	139.5	141.2	142.9	144.6	146.3	148.0	149.7	151.4
Sorghum	69.7	60.7	69.3	69.9	70.5	71.1	71.7	72.3	72.9	73.5	74.1	74.7
Barley	59.2	61.4	61.9	62.5	63.1	63.7	64.3	64.9	65.5	66.1	66.7	67.3
Oats	59.6	64.4	60.6	61.0	61.4	61.8	62.2	62.6	63.0	63.4	63.8	64.2
Wheat	42.7	42.1	40.8	41.1	41.4	41.8	42.2	42.6	43.0	43.4	43.8	44.2
Rice	5,866	6,230	6,150	6,181	6,213	6,246	6,279	6,312	6,345	6,381	6,415	6,449
Upland cotton	595	613	635	638	641	644	647	650	653	656	659	662
Soybeans	36.6	38.7	39.5	40.0	40.5	41.0	41.5	42.0	42.5	43.0	43.5	44.0
Production 2/												
Corn	9,437	10,192	9,760	9,880	10,140	10,405	10,460	10,585	10,780	10,910	11,110	11,235
Sorghum	595	465	575	585	600	605	610	620	635	645	660	670
Barley	280	320	340	345	340	345	345	350	355	355	360	365
Oats	146	150	140	140	140	140	145	145	145	145	145	150
Wheat	2,299	2,239	2,195	2,190	2,260	2,315	2,375	2,400	2,420	2,460	2,505	2,545
Rice	206.0	192.2	195.2	196.2	196.3	196.1	195.9	196.0	196.1	194.6	194.1	194.2
Upland cotton	16,294	17,079	18,300	18,300	17,800	17,700	17,800	17,700	17,700	17,600	17,600	17,500
Soybeans	2,654	2,823	2,925	2,920	2,915	2,950	3,010	3,065	3,105	3,150	3,195	3,245
Exports 2/												
Corn	1,935	2,275	2,250	2,225	2,225	2,275	2,325	2,400	2,475	2,550	2,600	2,675
Sorghum	250	200	255	260	260	260	265	270	280	290	300	315
Barley	30	35	70	70	70	70	70	70	70	70	70	70
Oats	2	2	2	2	2	2	2	2	2	2	2	2
Wheat	1,090	1,125	1,100	1,125	1,125	1,150	1,175	1,200	1,225	1,250	1,300	1,325
Rice	88.0	80.0	80.0	78.0	76.0	73.0	70.0	68.0	65.0	60.5	57.0	54.5
Upland cotton	6,303	7,125	7,700	8,000	8,000	8,000	8,050	8,100	8,150	8,200	8,250	8,300
Soybeans	973	965	1,010	1,040	1,065	1,060	1,050	1,045	1,050	1,055	1,060	1,070
Soybean meal	7,325	7,250	7,650	8,100	8,400	8,450	8,550	8,650	8,750	8,850	8,950	9,050
Ending stocks 2/												
Corn	1,715	1,817	1,447	1,187	1,102	1,142	1,102	1,022	992	927	917	867
Sorghum	65	51	56	61	71	76	76	76	76	71	71	66
Barley	111	105	103	111	114	117	115	113	111	109	107	110
Oats	76	76	70	68	65	61	61	60	58	55	56	56
Wheat	950	888	775	675	638	625	637	639	625	616	591	570
Rice	27.5	27.1	27.0	27.3	27.3	27.4	27.6	27.2	27.1	27.1	27.2	26.9
Upland cotton	3,672	3,729	4,349	4,719	4,639	4,509	4,479	4,399	4,369	4,289	4,259	4,179
Soybeans	288	365	460	455	380	310	270	255	240	230	225	225
Prices 3/												
Corn	1.80	1.85	2.00	2.15	2.20	2.20	2.25	2.35	2.40	2.50	2.55	2.60
Sorghum	1.55	1.65	1.75	1.85	1.90	1.90	1.95	2.05	2.10	2.20	2.30	2.35
Barley	2.13	2.25	2.10	2.15	2.20	2.20	2.25	2.25	2.30	2.35	2.40	2.40
Oats	1.12	1.15	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.45	1.45
Wheat	2.48	2.55	2.70	2.95	3.10	3.20	3.20	3.25	3.35	3.45	3.60	3.70
Rice	6.11	6.00	6.10	6.27	6.45	6.62	6.79	6.99	7.17	7.34	7.51	7.71
Soybeans	4.65	4.90	4.55	4.65	4.95	5.25	5.60	5.80	5.95	6.15	6.25	6.30
Soybean oil	0.156	0.165	0.173	0.183	0.195	0.210	0.225	0.235	0.243	0.250	0.255	0.260
Soybean meal	167.0	172.5	157.5	157.0	162.5	166.5	173.5	176.5	178.5	183.5	183.5	182.5

1/ Bushels per acre except for upland cotton and rice (pounds per acre).

2/ Million bushels except for upland cotton (thousand bales), rice (million hundredweight), and soybean meal (thousand tons).

3/ Dollars per bushel except for soybean oil (per pound), rice (per hundredweight), and soybean meal (per ton).

Table 11. Corn baseline

Item	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Acreage (million acres):												
CRP acres:												
Cropping history 1/	5.2	5.5	6.0	6.1	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Planted acres	77.4	79.6	78.5	78.5	79.5	80.5	80.0	80.0	80.5	80.5	81.0	81.0
Harvested acres	70.5	73.0	71.7	71.7	72.7	73.7	73.2	73.2	73.7	73.7	74.2	74.2
Yields (bushels per acre):												
Yield/harvested acre	133.8	139.6	136.1	137.8	139.5	141.2	142.9	144.6	146.3	148.0	149.7	151.4
Supply and use (million bushels):												
Beginning stocks	1,787	1,715	1,817	1,447	1,187	1,102	1,142	1,102	1,022	992	927	917
Production	9,437	10,192	9,760	9,880	10,140	10,405	10,460	10,585	10,780	10,910	11,110	11,235
Imports	15	10	10	10	10	10	10	10	10	10	10	10
Supply	11,239	11,917	11,587	11,337	11,337	11,517	11,612	11,697	11,812	11,912	12,047	12,162
Feed & residual	5,676	5,850	5,850	5,850	5,900	5,950	6,000	6,050	6,075	6,125	6,175	6,225
Food, seed, & industrial	1,913	1,975	2,040	2,075	2,110	2,150	2,185	2,225	2,270	2,310	2,355	2,395
Domestic	7,589	7,825	7,890	7,925	8,010	8,100	8,185	8,275	8,345	8,435	8,530	8,620
Exports	1,935	2,275	2,250	2,225	2,225	2,275	2,325	2,400	2,475	2,550	2,600	2,675
Total use	9,524	10,100	10,140	10,150	10,235	10,375	10,510	10,675	10,820	10,985	11,130	11,295
Ending stocks	1,715	1,817	1,447	1,187	1,102	1,142	1,102	1,022	992	927	917	867
Stocks/use ratio, percent	18.0	18.0	14.3	11.7	10.8	11.0	10.5	9.6	9.2	8.4	8.2	7.7
Prices (dollars per bushel):												
Farm price	1.80	1.85	2.00	2.15	2.20	2.20	2.25	2.35	2.40	2.50	2.55	2.60
Loan rate	1.89	1.89	1.89	1.64	1.64	1.70	1.80	1.85	1.89	1.89	1.89	1.89
Variable costs of production (dollars):												
Per acre	153.27	158.35	160.49	161.82	164.01	166.51	169.03	171.71	174.58	177.70	181.11	184.73
Per bushel	1.15	1.13	1.18	1.17	1.18	1.18	1.18	1.19	1.19	1.20	1.21	1.22
Returns over variable costs (dollars per acre):												
Net returns 2/	122.36	133.41	123.96	134.45	142.89	144.13	152.50	168.10	176.54	192.30	200.63	208.91

1/ The cropping history allocation is based on 1998 plantings on farms with CRP acreage, and is used as a general indicator influencing land available for plantings.
2/ Net returns include estimates of marketing loan benefits.

Table 12. Sorghum baseline

Item	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Acreage (million acres):												
CRP acres:												
Cropping history 1/	1.2	1.3	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Planted acres	9.3	9.0	9.3	9.4	9.5	9.5	9.5	9.6	9.7	9.8	9.9	10.0
Harvested acres	8.5	7.7	8.3	8.4	8.5	8.5	8.5	8.6	8.7	8.8	8.9	9.0
Yields (bushels per acre):												
Yield/harvested acre	69.7	60.7	69.3	69.9	70.5	71.1	71.7	72.3	72.9	73.5	74.1	74.7
Supply and use (million bushels):												
Beginning stocks	65	65	51	56	61	71	76	76	76	76	71	71
Production	595	465	575	585	600	605	610	620	635	645	660	670
Imports	0	0	0	0	0	0	0	0	0	0	0	0
Supply	660	531	626	641	661	676	686	696	711	721	731	741
Feed & residual	290	230	255	255	265	270	275	275	280	280	280	280
Food, seed, & industrial	55	50	60	65	65	70	70	75	75	80	80	80
Domestic	345	280	315	320	330	340	345	350	355	360	360	360
Exports	250	200	255	260	260	260	265	270	280	290	300	315
Total use	595	480	570	580	590	600	610	620	635	650	660	675
Ending stocks	65	51	56	61	71	76	76	76	76	71	71	66
Stocks/use ratio, percent	10.9	10.6	9.8	10.5	12.0	12.7	12.5	12.3	12.0	10.9	10.8	9.8
Prices (dollars per bushel):												
Farm price	1.55	1.65	1.75	1.85	1.90	1.90	1.95	2.05	2.10	2.20	2.30	2.35
Loan rate	1.74	1.71	1.71	1.44	1.42	1.48	1.57	1.60	1.64	1.64	1.65	1.66
Variable costs of production (dollars):												
Per acre	81.57	85.87	86.95	87.36	88.49	89.81	91.15	92.57	94.05	95.62	97.29	99.04
Per bushel	1.17	1.41	1.25	1.25	1.26	1.26	1.27	1.28	1.29	1.30	1.31	1.33
Returns over variable costs (dollars per acre):												
Net returns 2/	44.59	24.00	38.49	41.96	45.46	45.28	48.66	55.65	59.04	66.08	73.14	76.51

1/ The cropping history allocation is based on 1998 plantings on farms with CRP acreage, and is used as a general indicator influencing land available for plantings.
2/ Net returns include estimates of marketing loan benefits.

Table 13. Barley baseline

Item	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Acreage (million acres):												
CRP acres:												
Cropping history 1/	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Planted acres	5.2	5.8	6.0	6.0	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Harvested acres	4.7	5.2	5.5	5.5	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
Yields (bushels per acre):												
Yield/harvested acre	59.2	61.4	61.9	62.5	63.1	63.7	64.3	64.9	65.5	66.1	66.7	67.3
Supply and use (million bushels):												
Beginning stocks	142	111	105	103	111	114	117	115	113	111	109	107
Production	280	320	340	345	340	345	345	350	355	355	360	365
Imports	28	30	40	50	55	55	55	55	55	55	55	55
Supply	449	462	485	498	506	514	517	520	523	521	524	527
Feed & residual	136	150	140	145	150	155	160	165	170	170	175	175
Food, seed, & industrial	172	172	172	172	172	172	172	172	172	172	172	172
Domestic	308	322	312	317	322	327	332	337	342	342	347	347
Exports	30	35	70	70	70	70	70	70	70	70	70	70
Total use	338	357	382	387	392	397	402	407	412	412	417	417
Ending stocks	111	105	103	111	114	117	115	113	111	109	107	110
Stocks/use ratio, percent	32.8	29.4	27.0	28.7	29.1	29.5	28.6	27.8	26.9	26.5	25.7	26.4
Prices (dollars per bushel):												
Farm price	2.13	2.25	2.10	2.15	2.20	2.20	2.25	2.25	2.30	2.35	2.40	2.40
Loan rate	1.59	1.62	1.65	1.40	1.40	1.47	1.53	1.56	1.58	1.58	1.58	1.57
Variable costs of production (dollars):												
Per acre	79.10	82.15	83.35	84.00	85.20	86.55	87.92	89.35	90.87	92.47	94.19	96.01
Per bushel	1.34	1.34	1.35	1.34	1.35	1.36	1.37	1.38	1.39	1.40	1.41	1.43
Returns over variable costs (dollars per acre):												
Net returns 2/	55.28	60.30	62.11	50.37	53.62	53.59	56.76	57.32	59.78	62.87	65.89	65.51

1/ The cropping history allocation is based on 1998 plantings on farms with CRP acreage, and is used as a general indicator influencing land available for plantings.

2/ Net returns include estimates of marketing loan benefits.

Table 14. Oats baseline

Item	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Acreage (million acres):												
CRP acres:												
Cropping history 1/	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Planted acres	4.7	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Harvested acres	2.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Yields (bushels per acre):												
Yield/harvested acre	59.6	64.4	60.6	61.0	61.4	61.8	62.2	62.6	63.0	63.4	63.8	64.2
Supply and use (million bushels):												
Beginning stocks	81	76	76	70	68	65	61	61	60	58	55	56
Production	146	150	140	140	140	140	145	145	145	145	145	150
Imports	99	100	100	105	110	110	115	115	120	120	125	125
Supply	326	326	316	315	318	315	321	321	325	323	325	331
Feed & residual	180	180	175	175	180	180	185	185	190	190	190	195
Food, seed, & industrial	68	68	69	70	71	72	73	74	75	76	77	78
Domestic	249	248	244	245	251	252	258	259	265	266	267	273
Exports	2	2	2	2	2	2	2	2	2	2	2	2
Total use	250	250	246	247	253	254	260	261	267	268	269	275
Ending stocks	76	76	70	68	65	61	61	60	58	55	56	56
Stocks/use ratio, percent	30.4	30.4	28.5	27.5	25.7	24.0	23.5	23.0	21.7	20.5	20.8	20.4
Prices (dollars per bushel):												
Farm price	1.12	1.15	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.45	1.45
Loan rate	1.13	1.16	1.21	0.99	0.94	0.97	1.01	1.03	1.06	1.08	1.09	1.09
Variable costs of production (dollars):												
Per acre	48.05	49.71	50.45	50.87	51.61	52.44	53.27	54.16	55.08	56.06	57.13	58.26
Per bushel	0.81	0.77	0.83	0.83	0.84	0.85	0.86	0.87	0.87	0.88	0.90	0.91
Returns over variable costs (dollars per acre):												
Net returns 2/	30.03	34.66	31.97	19.28	22.07	24.81	27.59	30.35	33.12	35.87	35.38	34.83

1/ The cropping history allocation is based on 1998 plantings on farms with CRP acreage, and is used as a general indicator influencing land available for plantings.
2/ Net returns include estimates of marketing loan benefits.

Table 15. Wheat baseline

Item	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Acreage (million acres):												
CRP acres:												
Cropping history 1/	7.4	7.7	8.3	8.5	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
Planted acres	62.7	62.5	62.0	61.0	62.5	63.5	64.5	64.5	64.5	65.0	65.5	66.0
Harvested acres	53.8	53.2	53.8	53.3	54.6	55.4	56.3	56.3	56.3	56.7	57.2	57.6
Yields (bushels per acre):												
Yield/harvested acre	42.7	42.1	40.8	41.1	41.4	41.8	42.2	42.6	43.0	43.4	43.8	44.2
Supply and use (million bushels):												
Beginning stocks	946	950	888	775	675	638	625	637	639	625	616	591
Production	2,299	2,239	2,195	2,190	2,260	2,315	2,375	2,400	2,420	2,460	2,505	2,545
Imports	95	100	100	105	110	115	115	115	115	115	115	115
Supply	3,339	3,289	3,183	3,070	3,045	3,068	3,115	3,152	3,174	3,200	3,236	3,251
Food	925	940	950	960	970	980	990	1,000	1,010	1,020	1,030	1,040
Seed	92	86	83	85	87	88	88	88	89	89	90	91
Feed & residual	284	250	275	225	225	225	225	225	225	225	225	225
Domestic	1,300	1,276	1,308	1,270	1,282	1,293	1,303	1,313	1,324	1,334	1,345	1,356
Exports	1,090	1,125	1,100	1,125	1,125	1,150	1,175	1,200	1,225	1,250	1,300	1,325
Total use	2,390	2,401	2,408	2,395	2,407	2,443	2,478	2,513	2,549	2,584	2,645	2,681
Ending stocks	950	888	775	675	638	625	637	639	625	616	591	570
Stocks/use ratio, percent	39.7	37.0	32.2	28.2	26.5	25.6	25.7	25.4	24.5	23.8	22.3	21.3
Prices (dollars per bushel):												
Farm price	2.48	2.55	2.70	2.95	3.10	3.20	3.20	3.25	3.35	3.45	3.60	3.70
Loan rate	2.58	2.58	2.58	2.24	2.24	2.32	2.48	2.58	2.58	2.58	2.58	2.58
Variable costs of production (dollars):												
Per acre	55.92	57.64	58.60	59.18	60.12	61.16	62.19	63.29	64.45	65.68	67.01	68.42
Per bushel	1.31	1.37	1.44	1.44	1.45	1.46	1.47	1.49	1.50	1.51	1.53	1.55
Returns over variable costs (dollars per acre):												
Net returns 2/	67.48	63.61	58.90	62.06	68.22	72.60	72.85	75.16	79.60	84.05	90.67	95.12

1/ The cropping history allocation is based on 1998 plantings on farms with CRP acreage, and is used as a general indicator influencing land available for plantings.
2/ Net returns include estimates of marketing loan benefits.

Table 16. Rice baseline

Item	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Acreage (thousand acres):												
Planted	3,531	3,110	3,200	3,200	3,185	3,165	3,145	3,130	3,115	3,075	3,050	3,035
Harvested	3,512	3,085	3,174	3,174	3,160	3,140	3,120	3,105	3,090	3,050	3,026	3,011
Yields (pounds per acre):												
Yield/harvested acre	5,866	6,230	6,150	6,181	6,213	6,246	6,279	6,312	6,345	6,381	6,415	6,449
Supply and use (million cwt):												
Beginning stocks	22.1	27.5	27.1	27.0	27.3	27.3	27.4	27.6	27.2	27.1	27.1	27.2
Production	206.0	192.2	195.2	196.2	196.3	196.1	195.9	196.0	196.1	194.6	194.1	194.2
Imports	10.0	10.3	10.5	10.8	11.0	11.3	11.6	11.9	12.2	12.5	12.8	13.1
Total supply	238.1	230.0	232.8	233.9	234.7	234.7	234.9	235.5	235.5	234.2	234.0	234.5
Domestic use and residual	122.6	122.9	125.8	128.6	131.4	134.3	137.3	140.3	143.4	146.6	149.8	153.1
Exports	88.0	80.0	80.0	78.0	76.0	73.0	70.0	68.0	65.0	60.5	57.0	54.5
Total use	210.6	202.9	205.8	206.6	207.4	207.3	207.3	208.3	208.4	207.1	206.8	207.6
Ending stocks (million cwt.)	27.5	27.1	27.0	27.3	27.3	27.4	27.6	27.2	27.1	27.1	27.2	26.9
Stocks/use ratio, percent	13.1	13.3	13.1	13.2	13.1	13.2	13.3	13.0	13.0	13.1	13.1	12.9
Milling rate, percent	69.1	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5
Prices (dollars per cwt.):												
World price	4.50	3.75	3.85	4.00	4.15	4.30	4.45	4.60	4.75	4.90	5.05	5.20
Average market price	6.11	6.00	6.10	6.27	6.45	6.62	6.79	6.99	7.17	7.34	7.51	7.71
Loan rate	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
Variable costs of production (dollars):												
Per acre	356	375	378	381	387	393	400	407	414	422	430	438
Per cwt.	6.06	6.01	6.15	6.17	6.23	6.30	6.37	6.45	6.53	6.61	6.70	6.80
Returns over variable costs (dollars per acre):												
Net returns 1/	115	171	160	161	160	157	155	154	152	149	145	143

1/ Net returns include estimates of marketing loan benefits.

Table 17. Upland cotton baseline

Item	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Acreage (million acres):												
CRP acres:												
Cropping history 1/	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Planted acres	14.6	15.4	15.0	15.0	14.5	14.4	14.3	14.2	14.1	14.0	13.9	13.8
Harvested acres	13.1	13.4	13.8	13.8	13.3	13.2	13.2	13.1	13.0	12.9	12.8	12.7
Yields (pounds per acre):												
Yield/harvested acre	595	613	635	638	641	644	647	650	653	656	659	662
Supply and use (thousand bales):												
Beginning stocks	3,836	3,672	3,729	4,349	4,719	4,639	4,509	4,479	4,399	4,369	4,289	4,259
Production	16,294	17,079	18,300	18,300	17,800	17,700	17,800	17,700	17,700	17,600	17,600	17,500
Imports	53	55	25	25	25	25	25	25	25	25	25	25
Supply	20,183	20,806	22,054	22,674	22,544	22,364	22,334	22,204	22,124	21,994	21,914	21,784
Domestic use	10,103	9,960	10,000	9,950	9,900	9,850	9,800	9,700	9,600	9,500	9,400	9,300
Exports	6,303	7,125	7,700	8,000	8,000	8,000	8,050	8,100	8,150	8,200	8,250	8,300
Total use	16,406	17,085	17,700	17,950	17,900	17,850	17,850	17,800	17,750	17,700	17,650	17,600
Ending stocks	3,672	3,729	4,349	4,719	4,639	4,509	4,479	4,399	4,369	4,289	4,259	4,179
Stocks/use ratio, percent	22.4	21.8	24.6	26.3	25.9	25.3	25.1	24.7	24.6	24.2	24.1	23.7
Prices (dollars per pound):												
Farm price 2/	0.450	--	--	--	--	--	--	--	--	--	--	--
Loan rate	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192
Variable costs of production (dollars):												
Per acre	274.13	282.46	289.46	294.26	299.96	306.15	312.40	318.86	325.74	332.91	340.43	348.33
Per pound	0.46	0.46	0.46	0.46	0.47	0.48	0.48	0.49	0.50	0.51	0.52	0.53
Returns over variable costs (dollars per acre):												
Net returns 3/	143.92	158.84	160.44	138.05	140.73	144.07	145.22	146.80	147.48	147.35	147.49	146.72

1/ The cropping history allocation is based on 1998 plantings on farms with CRP acreage, and is used as a general indicator influencing land available for plantings.
2/ USDA is prohibited from publishing cotton price projections.
3/ Net returns include estimates of marketing loan benefits.

Table 18. Soybean and products baseline

Item	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Soybeans												
Acreage (million acres)												
Planted	73.7	74.5	75.0	74.0	73.0	73.0	73.5	74.0	74.0	74.3	74.5	74.8
Harvested	72.4	73.0	74.0	73.0	72.0	72.0	72.5	73.0	73.0	73.3	73.5	73.8
Yield/harvested acre (bushels)	36.6	38.7	39.5	40.0	40.5	41.0	41.5	42.0	42.5	43.0	43.5	44.0
Supply (million bushels)												
Beginning stocks, Sep. 1	348	288	365	460	455	380	310	270	255	240	230	225
Production	2,654	2,823	2,925	2,920	2,915	2,950	3,010	3,065	3,105	3,150	3,195	3,245
Imports	4	3	6	5	5	9	7	10	7	10	8	10
Total supply	3,006	3,114	3,296	3,385	3,375	3,339	3,327	3,345	3,367	3,400	3,433	3,480
Disposition (million bushels)												
Crush	1,579	1,615	1,660	1,720	1,760	1,795	1,830	1,865	1,895	1,930	1,960	1,995
Seed and residual	166	169	166	170	170	174	177	180	182	185	188	190
Exports	973	965	1,010	1,040	1,065	1,060	1,050	1,045	1,050	1,055	1,060	1,070
Total disposition	2,719	2,749	2,836	2,930	2,995	3,029	3,057	3,090	3,127	3,170	3,208	3,255
Carryover stocks, Aug. 31												
Total ending stocks	288	365	460	455	380	310	270	255	240	230	225	225
Stocks/use ratio, percent	10.6	13.3	16.2	15.5	12.7	10.2	8.8	8.3	7.7	7.3	7.0	6.9
Prices (dollars per bushel)												
Loan rate	5.26	5.26	5.26	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92	5.07
Soybean price, farm	4.65	4.90	4.55	4.65	4.95	5.25	5.60	5.80	5.95	6.15	6.25	6.30
Variable costs of production (dollars):												
Per acre	76.59	77.82	78.88	79.85	80.87	82.05	83.23	84.45	85.81	87.31	88.95	90.70
Per bushel	2.09	2.01	2.00	2.00	2.00	2.00	2.01	2.01	2.02	2.03	2.04	2.06
Returns over variable costs (dollars per acre):												
Net returns 1/	125.45	135.41	138.77	126.95	128.51	133.20	149.17	159.15	167.07	177.14	182.93	186.50
Soybean oil (million pounds)												
Beginning stocks, Oct. 1	1,520	1,970	1,990	1,885	1,910	1,855	1,685	1,585	1,570	1,555	1,595	1,615
Production	17,845	18,330	18,815	19,520	19,985	20,390	20,805	21,235	21,605	22,030	22,405	22,840
Imports	80	90	80	80	85	90	95	100	105	110	115	115
Total supply	19,445	20,390	20,885	21,485	21,980	22,335	22,585	22,920	23,280	23,695	24,115	24,570
Domestic disappearance	16,100	16,500	16,875	17,200	17,550	17,900	18,250	18,600	18,950	19,300	19,650	20,000
Exports	1,375	1,900	2,125	2,375	2,575	2,750	2,750	2,750	2,775	2,800	2,850	2,900
Total demand	17,475	18,400	19,000	19,575	20,125	20,650	21,000	21,350	21,725	22,100	22,500	22,900
Ending stocks, Sep. 30	1,970	1,990	1,885	1,910	1,855	1,685	1,585	1,570	1,555	1,595	1,615	1,670
Soybean oil price (dollars per lb)	0.156	0.165	0.173	0.183	0.195	0.210	0.225	0.235	0.243	0.250	0.255	0.260
Soybean meal (thousand short tons)												
Beginning stocks, Oct. 1	330	225	250	250	250	250	250	250	250	250	250	250
Production	37,620	38,410	39,475	40,825	41,850	42,625	43,450	44,250	45,025	45,800	46,575	47,350
Imports	50	65	75	75	100	100	100	100	100	100	100	100
Total supply	38,000	38,700	39,800	41,150	42,200	42,975	43,800	44,600	45,375	46,150	46,925	47,700
Domestic disappearance	30,450	31,200	31,900	32,800	33,550	34,275	35,000	35,700	36,375	37,050	37,725	38,400
Exports	7,325	7,250	7,650	8,100	8,400	8,450	8,550	8,650	8,750	8,850	8,950	9,050
Total demand	37,775	38,450	39,550	40,900	41,950	42,725	43,550	44,350	45,125	45,900	46,675	47,450
Ending stocks, Sep. 30	225	250	250	250	250	250	250	250	250	250	250	250
Soybean meal price (dollars per ton)	167.00	172.50	157.50	157.00	162.50	166.50	173.50	176.50	178.50	183.50	183.50	182.50
Crushing yields (pounds per bushel)												
Soybean oil	11.30	11.35	11.34	11.35	11.36	11.36	11.37	11.39	11.40	11.42	11.43	11.45
Soybean meal	47.64	47.50	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)	1.09	1.07	1.15	1.15	1.12	1.09	1.08	1.07	1.05	1.06	1.02	1.01

1/ Net returns include estimates of marketing loan benefits.

Table 19. U.S. sugar: supply, disappearance, and prices, fiscal years 1/

Item	Units	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Sugarbeets													
Planted area	1,000 acres	1,561	1,561	1,518	1,520	1,527	1,528	1,521	1,511	1,501	1,493	1,485	1,478
Harvested area	1,000 acres	1,527	1,375	1,484	1,486	1,493	1,495	1,488	1,478	1,468	1,460	1,453	1,446
Yield	Tons/acre	21.9	22.9	21.4	21.5	21.6	21.7	21.8	21.9	22.0	22.1	22.2	22.3
Production	Mil. s. tons	33.4	31.5	31.8	31.9	32.2	32.4	32.4	32.3	32.2	32.2	32.2	32.2
Sugarcane													
Harvested area	1,000 acres	944	985	979	980	974	957	947	937	930	923	917	911
Yield	Tons/acre	35.3	34.6	35.7	36.1	36.5	36.5	36.5	36.5	36.6	36.6	36.6	36.6
Production	Mil. s. tons	33.3	34.0	34.9	35.4	35.6	34.9	34.6	34.3	34.0	33.8	33.5	33.3
Supply:													
Beginning stocks	1,000 s. tons	1,639	1,944	1,619	1,674	1,743	2,320	2,706	2,907	3,043	3,158	3,853	4,467
Production	1,000 s. tons	9,035	8,446	8,862	8,961	9,058	9,038	9,031	9,016	9,006	9,010	9,013	9,020
Beet sugar	1,000 s. tons	4,950	4,350	4,614	4,648	4,701	4,738	4,750	4,751	4,751	4,759	4,767	4,775
Cane sugar	1,000 s. tons	4,085	4,096	4,248	4,313	4,356	4,300	4,281	4,265	4,255	4,252	4,246	4,244
Total imports	1,000 s. tons	1,610	1,790	1,863	1,913	2,459	2,423	2,380	2,465	2,589	3,300	3,351	3,586
TRQ less NAFTA 2/	1,000 s. tons	1,063	1,158	1,158	1,208	1,208	1,208	1,208	1,208	1,208	1,208	1,208	1,208
Mexico - NAFTA low-tier	1,000 s. tons	28	117	264	264	264	264	209	264	0	0	0	0
Mexico - NAFTA high-tier 3/	1,000 s. tons	4	20	0	0	546	510	523	553	940	1,651	1,702	1,937
Other high-tier tariff	1,000 s. tons	2	5	0	0	0	0	0	0	0	0	0	0
Re-export and polyhydric	1,000 s. tons	388	365	315	315	315	315	315	315	315	315	315	315
Other imports (17029040)	1,000 s. tons	125	125	125	125	125	125	125	125	125	125	125	125
Total supply	1,000 s. tons	12,284	12,179	12,344	12,548	13,260	13,781	14,117	14,388	14,638	15,468	16,217	17,073
Use:													
Exports	1,000 s. tons	125	175	150	150	150	150	150	150	150	150	150	150
Domestic deliveries	1,000 s. tons	10,215	10,385	10,520	10,655	10,790	10,925	11,060	11,195	11,330	11,465	11,600	11,735
Miscellaneous	1,000 s. tons	0	0	0	0	0	0	0	0	0	0	0	0
Total use	1,000 s. tons	10,340	10,560	10,670	10,805	10,940	11,075	11,210	11,345	11,480	11,615	11,750	11,885
Ending stocks	1,000 s. tons	1,944	1,619	1,674	1,743	2,320	2,706	2,907	3,043	3,158	3,853	4,467	5,188
CCC acquisitions	1,000 s. tons	297	528	0	0	446	363	178	113	91	672	591	697
Stocks/use ratio	Percent	18.8	15.3	15.7	16.1	21.2	24.4	25.9	26.8	27.5	33.2	38.0	43.7
Raw sugar prices:													
N.Y. (No. 14)	Cents/lb.	18.40	21.50	20.60	20.37	19.86	19.86	19.86	19.86	19.86	19.86	19.86	19.86
Raw sugar loan rate	Cents/lb.	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00
Beet sugar loan rate	Cents/lb.	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90
Grower prices:													
Sugarbeets	Dol./ton	36.50	38.14	38.13	38.13	38.14	38.14	38.15	38.16	38.16	38.16	38.17	38.17
Sugarcane	Dol./ton	24.10	26.15	25.88	25.55	24.89	24.91	24.93	24.94	24.96	24.97	24.98	24.99

1/ Fiscal year is October 1 through September 30.

2/ Includes 8,000 STRV allocated to Mexico as part of the raw sugar TRQ and 3,256 STRV to Mexico as part of the refined sugar TRQ.

3/ Starting in FY 2008 under NAFTA, Mexico can ship duty-free sugar to the United States with no quantitiative limit.

Table 20. Flue-cured tobacco baseline

Item	Unit	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Acreage, yield, and production:													
Planted area	1,000 acres	304	254	262	278	278	273	260	253	250	250	245	245
Harvested area	1,000 acres	304	254	262	278	278	273	260	253	250	250	245	245
Yield	lbs./acre	2,162	2,352	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250
Production	Mil. lbs.	657	597	590	626	626	614	585	569	563	563	551	551
Supply:													
Beg. stocks	Mil. lbs.	1,234	1,190	1,030	915	855	815	785	745	710	677	650	621
Marketings	Mil. lbs.	654	565	590	625	625	615	585	570	563	563	551	551
Total 1/	Mil. lbs.	1,888	1,755	1,620	1,540	1,480	1,430	1,370	1,315	1,272	1,240	1,201	1,172
Imports	Mil. lbs.	(350)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(310)	(320)	(320)
Use:													
Domestic	Mil. lbs.	437	435	420	405	390	375	360	350	345	340	335	330
Exports	Mil. lbs.	262	290	285	280	275	270	265	255	250	250	250	245
Total 1/	Mil. lbs.	699	725	705	685	665	645	625	605	595	590	585	575
Ending stocks:													
Total	Mil. lbs.	1,190	1,030	915	855	815	785	745	710	677	650	621	597
Price:													
Avg. to growers	$/cwt	174	179	182	185	188	191	194	194	200	203	206	209
Support	$/cwt	163	164	167	170	173	176	179	182	185	188	191	195

1/ Domestic tobacco only.

Table 21. Burley tobacco baseline

Item	Unit	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Acreage, yield, and production:													
Planted area	1,000 acres	301	201	183	183	190	190	190	179	160	160	150	150
Harvested area	1,000 acres	301	201	183	183	190	190	190	179	160	160	150	150
Yield	lbs./acre	1,829	2,048	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100
Production	Mil. lbs.	550	412	384	384	399	399	399	376	336	336	315	315
Supply:													
Beg. stocks	Mil. lbs.	901	1,026	601	531	476	451	441	446	441	402	378	333
Marketings	Mil. lbs.	551	300	385	385	400	400	400	375	336	336	315	315
Total 1/	Mil. lbs.	1,453	1,326	986	916	876	851	841	821	777	738	693	648
Imports	Mil. lbs.	(185)	(175)	(175)	(175)	(185)	(195)	(205)	(210)	(215)	(220)	(220)	(225)
Use:													
Domestic	Mil. lbs.	286	320	310	300	290	280	270	260	260	250	250	240
Exports	Mil. lbs.	140	150	145	140	135	130	125	120	115	110	110	115
Total 1/	Mil. lbs.	426	725	455	440	425	410	395	380	375	360	360	355
Ending stocks:													
Total	Mil. lbs.	1,026	601	531	476	451	441	446	441	402	378	333	293
Price:													
Avg. to growers	$/cwt	190	193	196	200	203	205	209	212	216	219	223	227
Support	$/cwt	179	182	185	188	191	194	197	200	203	206	209	212

1/ Domestic tobacco only. Total use in 2000/01 includes loan settlement of 255 million pounds per the FY-2001 Agriculture Appropriations Act.

Table 22. Fruit, vegetable, and greenhouse/nursery baseline, production and prices

Item	Unit	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Production value:													
Fruit and nuts													
Citrus	$ Mil.	2,459	2,638	2,835	2,909	2,940	2,982	3,042	3,092	3,160	3,223	3,277	3,355
Noncitrus	$ Mil.	8,282	8,956	9,320	9,562	9,733	9,868	10,027	10,258	10,552	10,908	11,313	11,747
Nuts	$ Mil.	1,486	1,799	2,019	2,019	2,168	2,178	2,354	2,293	2,521	2,402	2,667	2,588
Total	$ Mil.	12,227	13,393	14,174	14,490	14,841	15,028	15,424	15,644	16,233	16,534	17,258	17,691
Vegetables													
Fresh 1/	$ Mil.	7,401	7,986	8,472	8,995	9,443	9,831	10,211	10,616	11,051	11,505	11,969	12,443
Processed 2/	$ Mil.	1,733	1,541	1,628	1,628	1,670	1,701	1,728	1,757	1,785	1,813	1,840	1,866
Potatoes	$ Mil.	2,746	2,790	2,898	2,857	2,956	3,089	3,180	3,244	3,285	3,317	3,350	3,388
Sweet potatoes	$ Mil.	215	218	219	225	230	235	239	244	250	255	260	265
Pulses	$ Mil.	656	603	679	786	806	827	847	868	890	912	935	958
Mushrooms	$ Mil.	867	867	855	879	902	924	945	964	983	1,001	1,018	1,033
Total	$ Mil.	13,618	14,007	14,751	15,370	16,007	16,607	17,151	17,695	18,245	18,802	19,371	19,953
Greenhouse/Nursery	$ Mil.	12,239	12,689	13,139	13,589	14,039	14,489	14,939	15,389	15,839	16,289	16,739	17,189
Production:													
Fruit													
Citrus	1,000 MT	12,368	15,788	15,720	15,752	15,779	16,001	16,281	16,422	16,671	16,844	16,901	17,146
Noncitrus	1,000 MT	15,672	16,998	17,537	17,628	17,483	17,222	17,018	16,983	17,081	17,298	17,598	17,938
Nuts	1,000 MT	604	477	510	539	506	566	556	520	625	513	651	563
Total	1,000 MT	28,643	33,263	33,766	33,919	33,768	33,789	33,856	33,924	34,378	34,655	35,150	35,647
Vegetables													
Fresh 1/	1,000 MT	19,810	19,559	20,242	20,745	21,268	21,765	22,255	22,745	23,241	23,745	24,255	24,770
Processed 2/	1,000 MT	17,421	15,287	15,827	16,009	16,375	16,640	16,871	17,105	17,330	17,550	17,767	17,980
Potatoes	1,000 MT	21,692	22,680	22,403	23,249	23,834	24,294	24,568	24,963	25,452	25,976	26,488	26,976
Sweet potatoes	1,000 MT	555	673	633	643	644	647	649	652	655	658	661	664
Pulses	1,000 MT	1,876	1,420	1,851	1,921	2,010	2,062	2,112	2,163	2,215	2,268	2,323	2,378
Mushrooms	1,000 MT	391	394	409	422	435	447	458	469	480	491	501	512
Total	1,000 MT	61,745	60,012	61,364	62,990	64,566	65,854	66,913	68,097	69,373	70,687	71,994	73,281
Prices:													
Grower													
Fruit and nuts	1990-92=100	115	101	113	124	127	129	132	134	137	139	142	144
Vegetables	1990-92=100	108	122	127	129	131	133	135	137	139	141	143	145
Potatoes	$/MT	127	123	129	123	124	127	129	130	129	128	126	126
Dry beans	$/MT	388	463	406	456	444	443	443	442	442	442	442	441
Retail													
Fruit and vegetables	1982-84=100	203	204	210	217	222	229	235	241	247	254	260	267
Fresh fruit	1982-84=100	266	259	268	279	287	295	304	312	321	329	338	347
Fresh vegetables	1982-84=100	209	218	223	230	236	243	250	257	263	270	277	284
Processed fruit & veg.	Dec 1997=100	105	106	108	111	113	116	119	122	125	128	131	134

1/ Includes artichokes, asparagus, snap beans, broccoli, brussels sprouts, cabbage, carrots, cauliflower, celery, sweet corn, eggplant, escarole-endive, garlic, lettuce, bell peppers, onions, spinach, tomatoes, and melons.

2/ Includes asparagus, lima beans, snap beans, broccoli, beets, cabbage, carrots, cauliflower, sweet corn, cucumbers, green peas, spinach, and tomatoes.

Table 23. Fruit, vegetable, and greenhouse/nursery baseline, trade

Item	Unit	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Imports													
Fruit and nuts 1/													
Fresh	$ Mil.	3,256	3,053	3,281	3,378	3,486	3,596	3,708	3,822	3,938	4,054	4,173	4,293
Processed	$ Mil.	3,679	3,741	3,859	3,983	4,110	4,245	4,389	4,540	4,698	4,865	5,040	5,224
Nuts	$ Mil.	760	798	774	789	805	821	837	854	871	889	906	925
Total	$ Mil.	7,695	7,591	7,914	8,151	8,401	8,663	8,934	9,216	9,508	9,808	10,120	10,442
Vegetables 2/													
Fresh	$ Mil.	2,144	2,084	2,264	2,364	2,465	2,572	2,684	2,796	2,908	3,019	3,131	3,243
Processed	$ Mil.	1,082	976	1,024	1,068	1,114	1,163	1,212	1,259	1,303	1,347	1,391	1,435
Potatoes	$ Mil.	420	453	450	457	473	496	524	553	581	608	636	664
Sweet potatoes	$ Mil.	27	22	20	21	22	22	23	24	24	25	26	26
Pulses	$ Mil.	72	67	71	75	79	82	86	90	94	98	101	105
Mushrooms	$ Mil.	163	175	174	173	174	174	175	177	178	180	181	183
Total	$ Mil.	3,908	3,777	4,003	4,157	4,325	4,511	4,704	4,898	5,088	5,276	5,466	5,656
Greenhouse/Nursery	$ Mil.	1,100	1,188	1,271	1,360	1,456	1,558	1,667	1,783	1,908	2,042	2,185	2,338
Exports													
Fruit and nuts 1/													
Fresh	$ Mil.	1,734	1,913	2,060	2,175	2,284	2,380	2,476	2,574	2,673	2,772	2,852	2,931
Processed	$ Mil.	1,959	1,882	1,984	2,083	2,191	2,298	2,404	2,516	2,631	2,754	2,885	3,025
Nuts	$ Mil.	992	963	968	1,023	1,068	1,114	1,150	1,185	1,221	1,256	1,292	1,327
Total	$ Mil.	4,686	4,758	5,012	5,281	5,543	5,792	6,030	6,276	6,525	6,782	7,028	7,282
Vegetables 2/													
Fresh	$ Mil.	1,027	1,087	1,077	1,136	1,143	1,200	1,211	1,263	1,277	1,326	1,343	1,389
Processed	$ Mil.	1,128	1,115	1,171	1,222	1,268	1,315	1,363	1,411	1,459	1,507	1,555	1,603
Potatoes	$ Mil.	806	775	863	890	934	973	1,012	1,051	1,093	1,136	1,180	1,223
Sweet potatoes	$ Mil.	10	13	12	12	13	14	14	15	16	16	17	18
Pulses	$ Mil.	313	267	306	329	338	344	350	356	362	369	375	382
Mushrooms	$ Mil.	21	23	26	27	29	30	31	33	34	35	36	38
Total	$ Mil.	3,306	3,280	3,454	3,617	3,725	3,876	3,982	4,129	4,241	4,389	4,507	4,652
Greenhouse/Nursery	$ Mil.	299	275	303	312	321	331	341	351	362	372	384	395

1/ Fresh fruit includes bananas, excludes melons. Processed fruit includes juices and wine.
2/ Fresh vegetables includes melons. Processed includes seed and juices.
Note: Fiscal year trade value projections for total horticultural products are shown in table 37.

Livestock

The U.S. livestock industry will continue to be influenced by the relatively low grain and soybean meal prices for the near term. Some rebound in these prices is projected early in the baseline with more moderate increases later in the projections. At the same time, most farm-level and retail prices in the livestock industry are projected to increase over the baseline period. The beef and pork sectors are expected to capitalize on relatively low feed costs along with the increased farm-level and retail prices and expand their production. However, biological lags and lags in input decisions will delay beef expansion during the first half of the baseline period. Poultry production continues to rise through the projections.

The trend towards larger and more commercialized livestock systems will continue throughout the baseline period. Vertical coordination (alliances) will increase in the beef sector as strong demand for higher quality beef continues. The transformation to a more vertically coordinated pork sector will continue, with the larger more efficient pork producers increasing their market share. Poultry producers will also continue to benefit from economies of scale and scope, but the rate of efficiency gains will continue to decline. Strengthening milk-feed price ratios, improved management, and dairy productivity gains will continue to push milk output per cow higher and real costs lower.

Reduced real prices of meats combined with increases in real disposable income allow consumers to purchase more total meat with a smaller proportion of disposable income. In the aggregate, per capita meat consumption will increase over the baseline. Although minor reductions in per capita consumption will be seen for beef and pork, significant increases in per capita consumption will continue in the relatively lower priced poultry sector. On a retail weight basis, total poultry consumption is projected to be nearly as high as total red meat consumption by the end of the baseline. Continued low inflation, strong domestic demand from steady income growth, and gains in export sales are expected to contribute to producer returns that encourage higher pork and beef output in the latter stages of the baseline period.

Both table egg production and hatching egg production will show slight expansions during the baseline. Hatching egg gains are mainly a result of expanding broiler production. Per capita consumption of eggs is expected to increase during the forecast period, fueled mainly by increases in processed egg products. Wholesale egg prices are expected to increase during the baseline period.

Milk production grows through the baseline despite declining cow numbers as milk output per cow continues to increase. Productivity gains in the sector will reflect the continued structural shift to larger-sized operations in the sector--many traditional dairy farms, particularly smaller operations, will experience income stress and will exit the industry. Domestic dairy demand is expected to show slow growth. Prices are expected to recover once the market has adjusted to the large gains in milk output of the last few years, and then increase at less than the general inflation rate.

Beef

Beef cattle inventories have continued to be held down by poor forage conditions over the past several years even as cattle returns have improved. With the exception of the Corn Belt and Northeast regions, most major cattle producing areas were hit with severe drought in 2000. Although grain prices were favorable for cattle feeders and feeder cattle prices strengthened, the drought extended the liquidation phase of the cattle cycle that began in 1995/96. Lower feeder cattle prices due to record grain prices in 1995/96 were compounded by poor forage supplies in 1996 through 2000. Large beef cow slaughter in 1996-1998 reflected adjustments to low cow-calf returns during that period. Extended drought in 1999 and 2000 resulted in record heifer slaughter and, combined with the length of the biological lag, is likely to prevent beef cow herd expansion before 2003-2004. Returns above cash costs per cow were near breakeven in 1997 but were under drought-induced pressure since then and more heifers were placed in feedlots rather than retained for calving.

The cattle herd builds from a cyclical low of about 96-97 million head in 2003 to over 106 million by the end of the baseline. The last cattle cycle was 9 years in duration; the present cycle is in its twelfth year, with 2 more liquidation years likely. The next cycle is likely to expand slowly as herd adjustments continue and will likely not peak before 12 to 14 years, of course depending on pasture-range conditions. Shifts toward larger-framed, higher-grading cattle result in heavier slaughter weights, partly offsetting the need for expanding cattle inventories to previous levels.

Drawing from a smaller inventory, beef production declines through 2003 as heifers are retained for the breeding herd. Beef output then increases only gradually through the rest of the baseline. Coupled with larger exports and generally declining imports, per capita beef consumption moderates toward 64 to 65 pounds (retail weight) from the cyclical peak in 2000. The beef production mix continues to shift toward a larger proportion of higher-quality, hotel-restaurant and export-market products as nearly all steers and heifers are fed in feedlots. Calf slaughter will continue at relatively low levels as most are placed on feed.

Feeder cattle will remain on grass longer and will be marketed at heavier weights as inventories increase and as demand for higher grading cattle remains strong. Cattle will remain in feedlots for 120 to 140 days to grade Select or low Choice. However, an increasing proportion of cattle will be fed to higher grades with dressed slaughter weights growing slowly during the baseline. Heavier placement weights will hold down feed grain use and feed fed per pound of fed beef produced. The strongest prices will be received for cattle that grade Choice or higher for the growing export and domestic hotel-restaurant markets. The price spread between Choice and Select beef is likely to remain wide.

Adequate land resources will remain available to the cattle and crop sectors during the next ten years. In addition, the 1996 Farm Act further expands the forage base by allowing haying and grazing at any time on land enrolled in production flexibility contracts. Conservation Reserve Program acreage will remain over 30 million acres. Grazing and haying on CRP acreage will continue to be allowed under restricted conditions during emergencies such as drought and

floods. This potential availability of forage, combined with a shift toward cow-calf-yearling operations, allows flexibility in the use of forage and the marketing of feeder cattle. In the event of poor forage conditions, for example, feeder cattle can be marketed early, allowing the cow herd to be maintained.

Veal production falls throughout the period. A larger share of veal production will come from higher-valued, formula-fed calves marketed at heavier weights. Declining dairy cow numbers reduce the supply of dairy calves. High stocker and feeder cattle prices will encourage more of these dairy calves to move into feedlot channels rather than being slaughtered as young calves.

The United States becomes a net beef exporter near the end of the baseline. Adjustments in world beef trade will continue as market access is opened under the UR agreement. Beef exports will rise from about 8 to 9 percent, reaching 10 to 11 percent of production. The United States remains the primary source of high-quality fed beef for export, including exports for the hotel-restaurant trade. High-quality beef exports continue to increase through the baseline, primarily to Pacific Rim nations. Australia and New Zealand will also increase exports to Pacific Rim nations, although their beef will be mostly lower quality, grass-fed beef. However, the United States will remain an important market for Oceania, especially as U.S. beef cow slaughter remains low.

U.S. emphasis on fed beef production will result in relatively high beef imports of processing beef. Most processing beef will be used in higher valued hamburger as large supplies of low priced processing-quality poultry and pork are used in lower valued manufactured products.

Pork

The U.S. pork sector will continue to transform into a more vertically coordinated industry characterized by a mix of production and marketing contracts. Increasing productivity of the breeding herd continues to reduce costs. Breeding inventories are low relative to pork production and will likely fall further as the number of pigs per litter increases and production efficiencies continue to improve.

Larger, more efficient pork producers will market a greater percentage of the hogs over the next 10 years. These larger operations are able to spread fixed costs across more animals and purchase feed in large quantities, resulting in greater economic efficiency and lower costs. In addition, the larger operations offer packers a reliable supply of hogs at consistent weights and high quality, leading to more coordinated markets. Increased producer/packer coordination will continue the trend toward negotiated hog sales.

The assumed absence of significant supply or demand shocks during the baseline period, combined with a more vertically coordinated industry structure, serves to dampen the amplitude of the hog cycle. Pork production fell below 19 billion pounds in 2000 as producers adjusted to unfavorable returns in 1998 and 1999. Production is projected to recover through 2002 and then decline somewhat in 2003 and 2004, before expanding again for the remainder of the baseline, exceeding 20.3 billion pounds by 2010. The baseline period is thus characterized by moderate

pork production growth, as rising grain prices and competition from poultry throughout the baseline, and from beef in the second half of the projections temper hog producer returns.

U.S. per capita pork consumption on a retail basis remains in a range of 51 to 56 pounds per person during 2000-2010. Nominal hog prices (national base, live equivalent) decline in 2001-2002 and then rise slowly thereafter to $44 per hundredweight at the end of the baseline.

The United States is an important net pork exporter, although projected gains in the baseline are largely dependent on the outcome of competition with Canada in Asian markets as well as in Mexico. U.S. pork exports grow moderately over the next decade, while U.S. pork imports, following strong increases in 1998-2000, rise slowly as U.S. pork markets become more oriented toward cuts-trade with Canada. Longer term gains in pork exports by the U.S. and its competitors will be determined by relative costs of pork production, which include costs of feed, labor, and environmental regulation. Prospects for long-term growth markets for U.S. pork exports remain focused on Pacific Rim nations and Mexico. Yearly trade variations will depend upon major foreign suppliers such as Canada and the EU, as well as exchange rate fluctuations.

Poultry and Eggs

Over the baseline period poultry meat is expected to gain market share due to its relative price compared to beef and pork products. Poultry processing companies are expected to continue to aggressively market their products both domestically and around the globe. In the U.S., the focus will be on further processed products including those seasoned, marinated, and packaged with other food products that emphasize fast meal preparation. Turkey processors are expected to focus on development of products for the further-processing and fast-food markets, along with expanding the markets for exports of turkey meat.

Broiler production gains slowed in 2000 reflecting low product prices in late 1999 and most of 2000. Turkey production increased in 2000 and is expected to continue this growth rate in 2001. Low prices in 1999 and through the first half of 2000 slowed egg production in 2000. While poultry and egg producers have generally suffered from low prices, continued low feed costs have helped to offset some of the pressure on profitability. Poultry and egg production increases are expected to moderate over the coming years. Export markets for most poultry products are expected to rebound reflecting improved economic conditions in many importing countries. However, over much of the baseline period, real poultry prices are expected to continue to decline.

The broiler and turkey industries have kept production costs from increasing at the full rate of inflation through technological advancements and improved production management practices, including taking advantage of economies of size through increasing horizontal and vertical integration. While further technological improvements are expected to occur during the baseline, efficiency gains comparable to those in other decades are likely to be harder to achieve.

Broiler production increases are expected to gradually slow to about 2 percent a year by the end of the baseline period. Per capita consumption is forecast to grow to 95 pounds by 2010 as

broiler products continue to gain a larger share of total meat consumption at the expense of beef and pork.

Strengthening competition from other major broiler producers will hold U.S. exports to moderate gains. After only small gains from 1997 to 1998, export volume in 1999 and 2000 expanded, reflecting improving economic conditions in many Asian countries and a revived market for broiler products in Russia. Asian imports are projected to expand through the rest of the baseline, even with growing domestic broiler production in China. Russian imports grow in the projections reflecting improved economic conditions. Increasing exports are also expected to Mexico, Central America, and the Caribbean.

Table egg production is forecast to expand slowly during the baseline period as real prices for eggs are expected to gradually decline after the mid-2000s. Hatching egg production is expected to increase at a slightly faster rate than overall egg production to accommodate a higher demand for broiler eggs as the broiler sector expands.

Total per capita egg consumption is forecast to increase through the baseline period, continuing a reversal that started in the mid-1990s of what had been a long-term decline in egg consumption. By 2010, per capita egg consumption is expected to grow to almost 269 eggs, up about 9 eggs per person from the 2000 estimate. Processed egg products are forecast to be an increasing part of the egg market as many fast food and food service establishments move to only using broken and pasteurized eggs. The gain in consumption of processed egg products will offset declines in shell egg use.

Wholesale shell egg prices are forecast to increase very slowly through the baseline period, but decline on a real basis. The shell egg market is very competitive, as there is very little product differentiation by producers. The slow growth in wholesale prices and rising production costs are expected to place downward pressure on grower returns.

Dairy

Structural changes are expected to dominate milk production during coming years. Dairy farms are split into two rather distinct groups: traditional operations, and large operations organized along industrial lines with labor divided into highly specialized tasks. The industrialized farms have been increasing in number and size at a fairly rapid rate, while many of the traditional farms have struggled to generate enough income for family living.

Relatively high milk prices during most of the 1996-1999 period provided substantial cash reserves for families looking to expand or construct industrial-style dairy farms. Expansion by such units has been pronounced in western regions. However, development also has been brisk in parts of the Northeast and Midwest. Recent low farm milk prices did little to slow these expansions in 2000 because they had already been planned before the low prices. The low prices expected through the 2001/02 marketing year will slow the growth of these farms, but long-run development of such farms will provide much of the upward trend in milk production.

Traditional dairy farms, particularly those with fewer than 75 cows, will remain under income stress. The higher 1996-1999 returns provided a cushion that enabled them to remain in milk production during 2000. Direct government support payments for milk and grain also helped these producers continue. However, these farmers will be faced with the choice of making the leap to large industrialized milk production, finding ways to greatly reduce their cost structures, or leaving dairying. Most of these farms will eventually exit the industry. The exit rate is projected to accelerate soon and could be fairly heavy through the 2001/02 year.

Better management, greater genetic potential, and relatively inexpensive concentrate feeds will result in continued strong growth in milk per cow. However, the trend may not quite match the rate that similar milk-feed price ratios would have generated in the past. Producers today do not have as much flexibility to boost milk per cow with heavier grain feeding because of past increases in the starch content of rations and changes in feeding practices. In addition, differences between the milk per cow levels of expanding and exiting producers may be narrower than in the past.

Domestic dairy demand is expected to grow slowly. Demand for cheese is projected to rise, although percentage increases in use may not be as large as those of the past. Cheese sales will benefit from likely increases in away-from-home eating and prepared foods. These trends will also help butter demand, although butter is an obvious source of potential reducible fat if consumers choose to adjust their diets. Per capita consumption of fluid milk is projected to shrink slowly. Use of skim solids in processed foods will recover eventually as lower prices and demand for high quality products encourage use. However, the timing and size of this recovery is problematic. In total, commercial use of dairy products is projected to rise slightly faster than the increase in population. But, slight declines in real prices probably will be needed in most years for commercial use to keep pace with production increases.

This past year's relatively strong international prices for nonfat dry milk are expected to ease slightly during the next couple of years, as European supplies become more available again and output by non-subsidizing producers grows further. However, prices in the longer term are expected to trend upward as demand grows in Asia and Latin America. Demand growth in global butter markets is expected to be less than for milk powders, with prices rising slowly.

The United States is not projected to export substantial amounts without subsidy, and levels of subsidized exports will be limited by WTO commitments. The gap between domestic and international prices probably will rule out sizable commercial exports except for brief periods. Even so, exports of whey products probably will grow, and niche markets may well continue to be developed successfully. Imports probably will be largely limited to amounts within TRQ's, as periods when over-TRQ imports are profitable are expected to be brief and infrequent.

Farm milk prices are projected to be low during the current and following marketing years. The very large increases in milk output are likely to overwhelm demand for dairy products. Once production growth begins to slow significantly, prices are projected to recover for several years. After that prices are expected to increase slightly but at a slower rate than inflation. The price support program, which has been extended through December 31, 2001, will be replaced with a recourse loan program.

Table 24. Per capita meat consumption, retail and boneless weight

Item	Units	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Retail weight:													
Total beef	Pounds	69.1	69.7	66.0	65.0	64.1	63.4	63.1	64.0	64.8	64.9	64.5	64.3
Total veal	Pounds	0.7	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.4	0.4
Total pork	Pounds	53.9	52.4	53.2	55.6	54.3	53.3	52.9	52.6	52.3	51.9	51.4	51.1
Lamb and mutton	Pounds	1.2	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9
Total red meat	Pounds	124.8	123.8	120.9	122.2	120.0	118.3	117.6	118.1	118.6	118.2	117.4	116.7
Broilers	Pounds	77.9	78.7	81.3	83.3	85.1	86.8	88.6	90.2	91.5	92.6	93.9	95.0
Other chicken	Pounds	0.6	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8
Turkeys	Pounds	18.0	18.1	18.2	18.7	18.8	19.0	19.0	19.0	18.9	18.7	18.5	18.3
Total poultry	Pounds	96.4	97.7	100.4	102.8	104.8	106.7	108.4	110.0	111.2	112.1	113.2	114.1
Red meat & poultry	Pounds	221.2	221.6	221.4	225.0	224.9	225.0	225.9	228.1	229.8	230.4	230.5	230.8
Boneless weight:													
Total beef	Pounds	65.4	66.0	62.5	61.5	60.7	60.1	59.8	60.6	61.4	61.5	61.1	60.9
Total veal	Pounds	0.6	0.6	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4
Total pork	Pounds	50.6	49.2	50.0	52.2	51.0	50.1	49.7	49.4	49.2	48.8	48.3	48.0
Lamb & mutton	Pounds	0.9	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Total red meat	Pounds	117.5	116.6	113.8	115.0	113.0	111.4	110.7	111.2	111.7	111.3	110.5	109.9
Broilers	Pounds	55.1	55.7	57.6	58.9	60.2	61.4	62.7	63.8	64.8	65.6	66.4	67.2
Other chicken	Pounds	0.4	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5
Turkeys	Pounds	14.2	14.3	14.4	14.8	14.9	15.0	15.0	15.0	14.9	14.8	14.6	14.5
Total poultry	Pounds	69.7	70.6	72.5	74.2	75.7	77.0	78.2	79.3	80.2	80.8	81.5	82.2
Red meat and poultry	Pounds	187.1	187.1	186.3	189.2	188.6	188.4	188.9	190.5	191.9	192.1	192.0	192.1

Table 25. Consumer expenditures for meats

Item	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Beef, dollars per person	198.98	212.43	204.63	202.89	205.86	208.63	210.82	212.58	214.51	217.63	221.21	224.51
Percent of income	0.82	0.83	0.76	0.72	0.70	0.67	0.65	0.62	0.60	0.58	0.57	0.55
Percent of meat expenditures	42.63	43.51	42.06	41.82	41.56	41.32	41.13	41.14	41.17	41.09	40.90	40.73
Pork, dollars per person	129.78	135.23	137.33	135.80	137.23	138.50	139.33	139.22	139.09	139.78	140.89	141.71
Percent of income	0.53	0.53	0.51	0.48	0.46	0.45	0.43	0.41	0.39	0.37	0.36	0.35
Percent of meat expenditures	27.80	27.70	28.23	27.99	27.71	27.43	27.18	26.95	26.70	26.39	26.05	25.71
Broilers, dollars per person	120.22	121.95	125.99	128.12	133.79	139.30	144.16	147.09	150.09	155.22	161.81	168.22
Percent of income	0.49	0.47	0.47	0.45	0.45	0.45	0.44	0.43	0.42	0.42	0.41	0.41
Percent of meat expenditures	25.75	24.98	25.90	26.41	27.01	27.59	28.12	28.47	28.81	29.31	29.92	30.51
Turkeys, dollars per person	17.83	18.59	18.58	18.36	18.44	18.46	18.30	17.79	17.29	17.05	16.95	16.84
Percent of income	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.04	0.04
Percent of meat expenditures	3.82	3.81	3.82	3.78	3.72	3.66	3.57	3.44	3.32	3.22	3.13	3.06
Total meat, dollars per person	466.81	488.20	486.53	485.18	495.32	504.89	512.61	516.67	520.98	529.68	540.85	551.29
Percent of income	1.92	1.90	1.80	1.72	1.67	1.63	1.58	1.52	1.46	1.42	1.39	1.35

Table 26. Beef baseline

Item	Units	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Beginning stocks	Mil. lbs.	393	411	390	365	365	365	365	365	365	365	365	365
Commercial production	Mil. lbs.	26,386	26,810	25,475	25,239	25,230	25,276	25,502	26,171	26,866	27,241	27,467	27,709
Change	Percent	2.9	1.6	-5.0	-0.9	0.0	0.2	0.9	2.6	2.7	1.4	0.8	0.9
Farm production	Mil. lbs.	107	106	106	106	106	106	106	106	106	106	106	106
Total production	Mil. lbs.	26,493	26,916	25,581	25,345	25,336	25,382	25,608	26,277	26,972	27,347	27,573	27,815
Imports	Mil. lbs.	2,874	3,018	3,050	3,075	3,025	2,975	2,925	2,875	2,825	2,775	2,725	2,675
Total supply	Mil. lbs.	29,760	30,345	29,021	28,785	28,726	28,722	28,898	29,517	30,162	30,487	30,663	30,855
Exports	Mil. lbs.	2,411	2,539	2,465	2,425	2,500	2,575	2,650	2,725	2,800	2,875	2,975	3,075
Ending stocks	Mil. lbs.	411	390	365	365	365	365	365	365	365	365	365	365
Total consumption	Mil. lbs.	26,938	27,416	26,191	25,995	25,861	25,782	25,883	26,427	26,997	27,247	27,323	27,415
Per capita, carcass weight	Pounds	98.7	99.5	94.3	92.8	91.6	90.6	90.2	91.4	92.6	92.7	92.2	91.8
Per capita, retail weight	Pounds	69.1	69.7	66.0	65.0	64.1	63.4	63.1	64.0	64.8	64.9	64.5	64.3
Change	Percent	1.5	0.8	-5.2	-1.6	-1.3	-1.1	-0.4	1.3	1.3	0.1	-0.5	-0.4
Prices:													
Beef cattle, farm	$/cwt	63.28	67.84	70.75	71.03	73.35	75.88	77.65	78.10	78.94	80.63	83.01	85.11
Calves, farm	$/cwt	89.62	105.00	104.75	95.27	94.15	99.38	99.34	94.69	96.26	99.20	103.98	106.51
Choice steers, Nebraska	$/cwt	65.56	68.84	73.75	74.04	76.46	79.10	80.94	81.41	82.29	84.05	86.52	88.72
Deflated price	$/cwt	39.36	40.00	41.64	40.64	40.78	41.01	40.78	39.85	39.15	38.86	38.87	38.74
Yearling steers, Okla. City	$/cwt	76.39	85.48	89.00	80.95	79.99	84.44	84.41	80.45	81.78	84.29	88.34	90.50
Deflated price	$/cwt	45.86	49.67	50.25	44.43	42.66	43.77	42.52	39.38	38.91	38.97	39.69	39.52
Retail: Beef and veal	1982-84=100	139.2	147.4	149.0	150.1	154.3	158.1	160.5	159.7	159.1	161.2	164.7	167.9
Retail: Other meats	1982-84=100	148.2	151.5	155.0	156.2	160.5	164.5	166.9	166.1	165.5	167.7	171.4	174.7
ERS retail beef	$/lb.	2.88	3.05	3.10	3.12	3.21	3.29	3.34	3.32	3.31	3.35	3.43	3.49
Costs and returns, cow-calf enterprise:													
Variable expenses	$/cow	188.75	192.82	199.79	202.88	209.28	214.71	219.28	224.91	231.61	237.13	243.72	249.48
Fixed expenses	$/cow	116.62	121.04	125.15	126.06	122.82	122.95	126.25	129.68	133.30	137.10	141.09	145.15
Total cash expenses	$/cow	305.37	313.86	324.95	328.95	332.10	337.66	345.53	354.59	364.92	374.24	384.81	394.63
Returns above cash costs	$/cow	35.42	72.37	83.66	50.79	49.79	69.78	67.90	46.18	46.89	55.39	70.79	78.45
Cattle inventory	1,000 head	99,115	98,048	97,004	96,815	96,738	97,360	99,283	101,628	103,650	104,744	105,529	106,474
Beef cow inventory	1,000 head	33,745	33,546	33,300	33,163	33,075	33,690	35,061	36,203	37,284	37,794	38,272	38,786
Total cow inventory	1,000 head	42,878	42,734	42,500	42,228	42,030	42,580	43,871	44,943	45,944	46,384	46,792	47,226

Table 27. Pork baseline

Item	Units	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Beginning stocks	Mil. lbs.	584	489	525	550	550	550	550	550	550	550	550	550
Commercial production	Mil. lbs.	19,278	18,869	19,350	20,353	20,105	19,932	19,951	20,057	20,161	20,204	20,251	20,326
Change	Percent	1.6	-2.1	2.5	5.2	-1.2	-0.9	0.1	0.5	0.5	0.2	0.2	0.4
Farm production	Mil. lbs.	30	30	30	30	30	30	30	30	30	30	30	30
Total production	Mil. lbs.	19,308	18,899	19,380	20,383	20,135	19,962	19,981	20,087	20,191	20,234	20,281	20,356
Imports	Mil. lbs.	827	999	1,005	1,030	1,055	1,080	1,100	1,115	1,120	1,125	1,130	1,135
Total supply	Mil. lbs.	20,719	20,387	20,910	21,963	21,740	21,592	21,631	21,752	21,861	21,909	21,961	22,041
Exports	Mil. lbs.	1,285	1,253	1,305	1,350	1,425	1,475	1,525	1,600	1,650	1,700	1,775	1,825
Ending stocks	Mil. lbs.	489	525	550	550	550	550	550	550	550	550	550	550
Total consumption	Mil. lbs.	18,945	18,609	19,055	20,063	19,765	19,567	19,556	19,602	19,661	19,659	19,636	19,666
Per capita, carcass weight	Pounds	69.4	67.5	68.6	71.6	70.0	68.7	68.2	67.8	67.4	66.9	66.3	65.8
Per capita, retail weight	Pounds	53.9	52.4	53.2	55.6	54.3	53.3	52.9	52.6	52.3	51.9	51.4	51.1
Change	Percent	2.6	-2.7	1.6	4.4	-2.3	-1.8	-0.8	-0.6	-0.5	-0.8	-0.9	-0.7
Prices:													
Hogs, farm	$/cwt	32.33	42.54	39.68	32.55	36.25	37.99	38.82	39.03	39.21	39.96	40.89	41.56
National base, live eqv	$/cwt	34.00	44.51	41.50	34.62	38.56	40.42	41.30	41.52	41.72	42.51	43.50	44.21
Deflated price	$/cwt	20.41	25.86	23.43	19.00	20.57	20.95	20.81	20.32	19.85	19.65	19.54	19.31
Retail: pork	1982-84=100	145.9	156.5	156.5	148.2	153.2	157.5	159.8	160.6	161.2	163.3	166.1	168.2
ERS retail pork	$/lb.	2.41	2.58	2.58	2.44	2.53	2.60	2.63	2.65	2.66	2.69	2.74	2.77
Costs and returns, farrow to finish:													
Variable expenses	$/cwt	29.59	29.01	28.47	28.27	29.05	29.56	29.79	30.33	31.17	31.61	32.35	32.81
Fixed expenses	$/cwt	4.96	5.15	5.45	5.63	5.64	5.79	5.92	6.06	6.21	6.37	6.55	6.73
Total cash expenses	$/cwt	34.56	34.16	33.93	33.90	34.69	35.35	35.71	36.39	37.38	37.98	38.89	39.54
Returns above cash costs	$/cwt	-0.56	10.35	7.57	0.73	3.87	5.07	5.59	5.13	4.34	4.53	4.60	4.67
Hog inventory, Dec. 1, previous year	1,000 head	62,206	59,337	60,013	62,925	62,205	61,701	61,756	62,064	62,367	62,491	62,629	62,845

Table 28. Young chicken baseline

Item	Units	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Beginning stocks	Mil. lbs.	711	796	850	880	880	880	880	880	880	880	880	880
Federally inspected slaughter	Mil. lbs.	29,741	30,557	31,650	32,555	33,476	34,395	35,307	36,174	36,969	37,724	38,477	39,234
Change	Percent	6.7	2.7	3.6	2.9	2.8	2.7	2.6	2.5	2.2	2.0	2.0	2.0
Production	Mil. lbs.	29,468	30,270	31,324	32,220	33,131	34,041	34,943	35,801	36,588	37,336	38,081	38,830
Total supply	Mil. lbs.	30,183	31,070	32,178	33,104	34,015	34,925	35,827	36,685	37,472	38,220	38,965	39,714
Change	Percent	6.9	2.9	3.6	2.9	2.8	2.7	2.6	2.4	2.1	2.0	2.0	1.9
Exports	Mil. lbs.	4,920	5,256	5,300	5,400	5,500	5,600	5,700	5,800	5,900	6,000	6,100	6,200
Ending stocks	Mil. lbs.	796	850	880	880	880	880	880	880	880	880	880	880
Consumption	Mil. lbs.	24,468	24,964	25,998	26,824	27,635	28,445	29,247	30,005	30,692	31,340	31,985	32,634
Per capita, carcass weight	Pounds	89.6	90.6	93.6	95.8	97.9	99.9	101.9	103.8	105.3	106.6	108.0	109.3
Per capita, retail weight	Pounds	77.9	78.7	81.3	83.3	85.1	86.8	88.6	90.2	91.5	92.6	93.9	95.0
Change	Percent	6.2	1.1	3.3	2.4	2.2	2.0	2.0	1.9	1.4	1.2	1.3	1.2
Prices:													
Broilers, farm	Cents/lb.	36.8	36.1	35.4	33.7	34.5	35.2	35.6	35.5	35.5	36.2	37.2	38.0
12-city market price	Cents/lb.	58.1	55.5	53.8	53.0	54.3	55.4	56.1	55.9	55.9	57.0	58.5	59.8
Deflated wholesale price	Cents/lb.	34.9	32.2	30.4	29.1	28.9	28.7	28.3	27.4	26.6	26.4	26.3	26.1
Change	Percent	-9.9	-7.5	-5.6	-4.4	-0.5	-0.8	-1.6	-3.2	-2.7	-1.0	-0.3	-0.6
Composite retail broiler price	Cents/lb.	154.4	154.9	154.9	153.9	157.3	160.5	162.8	163.1	164.0	167.6	172.4	177.1
Costs and returns:													
Total costs	Cents/lb.	46.26	45.35	45.29	45.75	47.76	49.33	50.48	52.10	54.19	55.66	57.60	59.11
Net returns	Cents/lb.	11.84	10.15	8.51	7.25	6.51	6.07	5.62	3.78	1.75	1.35	0.90	0.72

Table 29. Turkey baseline

Item	Units	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Beginning stocks	Mil. lbs.	304	254	225	275	275	275	275	275	275	275	275	275
Federally inspected slaughter	Mil. lbs.	5,297	5,452	5,600	5,735	5,846	5,943	6,028	6,097	6,136	6,145	6,148	6,148
Change	Percent	0.3	2.9	2.7	2.4	1.9	1.7	1.4	1.2	0.6	0.2	0.0	0.0
Production	Mil. lbs.	5,230	5,382	5,528	5,661	5,771	5,867	5,950	6,019	6,057	6,066	6,069	6,069
Total supply	Mil. lbs.	5,535	5,637	5,754	5,937	6,047	6,143	6,226	6,295	6,333	6,342	6,345	6,345
Change	Percent	-1.7	1.8	2.1	3.2	1.9	1.6	1.4	1.1	0.6	0.1	0.0	0.0
Exports	Mil. lbs.	379	426	420	430	450	470	495	525	550	575	590	605
Ending stocks	Mil. lbs.	254	225	275	275	275	275	275	275	275	275	275	275
Consumption	Mil. lbs.	4,902	4,986	5,059	5,232	5,322	5,398	5,456	5,495	5,508	5,492	5,480	5,465
Per capita	Pounds	18.0	18.1	18.2	18.7	18.8	19.0	19.0	19.0	18.9	18.7	18.5	18.3
Change	Percent	-0.4	0.8	0.6	2.6	0.9	0.6	0.3	-0.1	-0.6	-1.1	-1.0	-1.1
Prices:													
Turkey, farm	Cents/lb.	40.8	41.4	39.6	39.3	39.1	38.9	38.5	37.4	36.6	36.5	36.7	36.8
Hen turkey (whsle.) East	Cents/lb.	69.0	71.0	68.0	65.5	65.2	64.9	64.1	62.4	61.0	60.8	61.1	61.4
Deflated hen turkey	Cents/lb.	41.4	41.3	38.4	36.0	34.8	33.6	32.3	30.5	29.0	28.1	27.4	26.8
Retail frozen turkey	Cents/lb.	99.3	102.7	102.0	98.3	97.9	97.3	96.2	93.6	91.5	91.2	91.6	92.1
Retail: poultry	1982-84=100	157.9	160.0	160.0	158.0	160.6	163.1	164.6	163.9	164.0	166.7	170.7	174.6
Costs and returns:													
Total costs	Cents/lb.	57.67	57.57	57.82	58.18	59.38	60.34	61.06	61.86	62.88	63.56	64.47	65.14
Net returns	Cents/lb.	11.33	13.43	10.18	7.34	5.85	4.55	3.08	0.54	-1.89	-2.75	-3.39	-3.78

Table 30. Egg baseline

Item	Units	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Beginning stocks	Mil. doz.	8	8	10	5	5	5	5	5	5	5	5	5
Production	Mil. doz.	6,912	7,052	7,155	7,262	7,371	7,482	7,587	7,693	7,800	7,902	8,005	8,109
Change	Percent	3.8	2.0	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.3
Imports	Mil. doz.	7	7	5	5	5	5	5	5	5	5	5	5
Total supply	Mil. doz.	6,928	7,067	7,170	7,272	7,381	7,492	7,597	7,703	7,810	7,912	8,015	8,119
Change	Percent	3.8	2.0	1.5	1.4	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.3
Hatching use	Mil. doz.	942	943	980	1,008	1,037	1,065	1,093	1,120	1,145	1,168	1,191	1,215
Exports	Mil. doz.	162	161	170	175	180	185	190	195	200	205	210	215
Ending stocks	Mil. doz.	8	10	5	5	5	5	5	5	5	5	5	5
Consumption	Mil. doz.	5,817	5,953	6,015	6,084	6,160	6,237	6,308	6,383	6,461	6,534	6,608	6,684
Per capita	Number	255.7	259.3	259.8	260.7	261.8	263.0	263.9	264.9	266.0	266.8	267.7	268.6
Change	Percent	4.4	1.4	0.2	0.3	0.4	0.4	0.3	0.4	0.4	0.3	0.3	0.3
Prices:													
Eggs, farm	Cents/doz.	62.2	62.5	61.7	62.7	64.6	66.5	68.4	70.3	72.2	74.1	76.0	77.9
New York, Grade A large	Cents/doz.	65.6	65.4	63.5	66.0	68.0	70.0	72.0	74.0	76.0	78.0	80.0	82.0
Deflated wholesale prices	Cents/doz.	39.4	38.0	35.9	36.2	36.3	36.3	36.3	36.2	36.2	36.1	35.9	35.8
Retail, Grade A, large	Cents/doz.	96	91	91	91	93	96	98	101	103	106	108	111
Retail: Eggs	1982-84=100	128.1	129.0	129.0	130.5	134.4	138.9	143.5	148.1	152.7	157.4	162.0	166.7
Costs and returns:													
Total costs	Cents/doz.	62.39	61.16	61.08	61.70	64.41	66.54	68.08	70.27	73.09	75.07	77.69	79.72
Net returns	Cents/doz.	3.21	4.24	2.42	4.30	3.59	3.46	3.92	3.73	2.91	2.93	2.31	2.28

Table 31. Dairy baseline

Item	Units	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Production data:													
Milk production	Bil. lbs.	167.4	169.4	170.8	172.5	175.6	177.4	179.5	181.6	184.4	186.3	188.5	191.0
Number of cows	1,000	9,208	9,220	9,085	8,975	8,910	8,830	8,760	8,680	8,610	8,540	8,460	8,390
Milk per cow	Pounds	18,175	18,375	18,800	19,215	19,705	20,090	20,490	20,925	21,415	21,820	22,285	22,760
Commercial use:													
Milkfat basis	Bil. lbs.	168.8	173.9	173.5	175.5	178.0	179.7	181.8	184.1	186.8	188.9	191.2	193.6
Skim solids	Bil. lbs.	160.6	173.2	175.3	176.1	179.0	180.8	182.9	185.1	187.9	189.9	192.2	194.7
Net removals:													
Milkfat basis	Bil. lbs.	0.8	0.7	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Skim solids	Bil. lbs.	8.5	7.6	3.2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Prices:													
All milk	$/cwt	12.62	12.30	12.40	12.95	13.45	13.95	14.30	14.65	14.95	15.25	15.60	15.95
Manufactured milk value 1/	$/cwt	10.90	10.60	10.70	11.40	11.95	12.45	12.85	13.20	13.55	13.85	14.20	14.55
Retail, all dairy products	1982-84=100	161.2	159.0	161.5	166.0	170.0	174.0	177.5	181.0	184.5	188.5	192.0	196.0
Costs and returns:													
Ration value	$/cwt	7.04	6.85	7.00	7.20	7.35	7.55	7.70	7.85	8.00	8.15	8.40	8.60
Returns above concentrate costs	$/cwt	9.70	9.46	9.46	9.93	10.36	10.78	11.07	11.35	11.59	11.83	12.07	12.34
Milk-feed ratio	ratio	1.79	1.80	1.77	1.80	1.83	1.85	1.86	1.87	1.87	1.87	1.86	1.85

1/ Estimated value of milk used in manufactured products.

Farm Income and Farm Financial Conditions

Net farm income has been maintained near the average of the 1990s over the past few years largely by sizable direct government payments to the sector that balanced lower cash receipts during this period of generally low commodity prices. Government payments are projected to decline in the baseline, leading to an initial drop in farm income, but then as commodity prices and market receipts recover, net farm income rises through the remainder of the projections.

Net Farm Income and Government Payments

Net farm income prospects for the next decade are on par with the decade of the 1990s. With the production, prices, and government payments projected in the baseline, net farm income during 2001-2010 is expected to average $46 billion compared with $45.2 billion during 1990-99. Net farm income initially declines in the baseline to a low of $35.6 billion in 2002. Net farm income then gradually increases through the rest of the baseline as farm prices strengthen over the decade. By the end of the projections, income exceeds the record of $54.9 billion set in 1996, a year of both exceptional harvests and market opportunities. Overall, net farm income increases nearly 24 percent in the baseline, averaging about 2 percent annually.

Total cash receipts from farm sales are expected to reach $200 billion in 2001 for the first time since 1997. But government payments, which bolstered farm revenues in 1999 and 2000 and will continue to be an important source of farm income again in 2001, are projected to be considerably less in 2002 and beyond. Total government payments, forecast at $22.1 billion for 2000 and $14.1 billion for 2001, fall to $7.8 billion in 2002 and remain below $7 billion throughout the rest of the baseline period. Under existing farm legislation, government payments should be expected to decline. Production flexibility payments, established in the 1996 Farm Act, were mandated to trend downward according to a declining fixed allocation budgeted for each successive year of the program. Production flexibility contract payments are assumed to continue at the 2002 level through the remainder of the baseline.

Loan deficiency payments, which are intended to be countercyclical with commodity prices, also will have reduced importance as a component of government assistance. Lower prices experienced in recent years reduce loan rates for many commodities in 2002 and beyond as the baseline assumes a return to market-price based, formula determination of loan rates for corn, wheat, and soybeans, lowering loan rates for other feed grains and other oilseeds, as well. The combination of lower loan rates and increasing market prices results in smaller per-unit payment rates. As a result of modestly higher prices for several commodities and the lower loan rates offered, loan deficiency payments are expected to fall by nearly $3 billion from 2001 to 2002.

The “emergency” provisions of the Omnibus Consolidated and Emergency Supplemental Appropriations Act for Fiscal Year 1999 and the Agricultural Appropriations Act of 2000 and 2001 provided supplemental assistance in the form of market loss and crop loss payments, adding to gross income in 1998, 1999, 2000, and 2001. On a calendar-year basis, these programs added $2.8 billion to farm revenues in 1998, $7.8 billion in 1999, about $8.9 billion in 2000, and are forecast to provide $3.6 billion in 2001.

In total, direct government payments to the farm sector will be down about $8 billion in 2001 from 2000. Government payments then continue to be a less important component of farm sector income through the rest of the decade.

Farm Cash Receipts

Following a reduction in global trade and U.S. exports at the end of the 1990s, baseline projections indicate exports returning to steady growth through the coming decade. Prices and cash receipts are expected to rise as exports expand. Total cash receipts from sales of farm commodities can be expected to grow at nearly 3 percent per year from 2001 onward. This expected growth will raise projected cash receipts from $200 billion in 2001 to $257.5 billion by 2010.

Overall, total crop output expands through the baseline. Additionally, recovering crop prices will be important to expanding crop receipts over the next decade. By 2010, crop cash receipts are projected to be $133 billion as compared with the $100 billion forecast for 2001. After adjusting for inflation, crop receipts (in 1996 dollars) range between $92 and $96 billion throughout the baseline, remaining well below the $109 billion record of 1997.

Livestock receipts, in contrast to crops, are forecast at a near-record level of $100 billion for 2001. After a small decline in 2002, livestock receipts continue to grow to $124 billion by 2010. The gain in livestock receipts in the baseline is lower than the growth expected for crop receipts. Cattle and calf returns represent 40 percent of the increased livestock receipts; pork, 2 percent; broilers, 14 percent; and dairy, 35 percent.

Farm Production Expenses

Farm production expenses are expected to grow modestly over the entire baseline. In the next few years farmers will try to adjust their costs in the face of lower income prospects, but these efforts will be somewhat hampered by price increases for production items. Feed purchases will begin to move upward again, having retreated the last several years from a peak in 1997, as the cattle cycle is projected to move into its expansion phase in 2003 and feed crop prices rise. Seed expenditures will grow slowly as crop acreage recovers and seed prices rise.

Prices of fuel and oil, which were low in 1998 and early 1999, grew dramatically in the second half of 1999 and 2000. Even with larger equipment and machinery-saving field crop practices, overall costs of fuel and oil are expected to increase over the decade. Fertilizer and pesticide expenses also are expected to increase, reflecting higher prices and recovery in area planted. However, changes in technology and in cropping practices will affect quantities purchased.

Hired labor expenses, which constitute about 11 percent of total production costs, are expected to increase an average of 2.4 percent annually, due to a combination of increased sector output and rising farm wage rates.

While anxiety over inflationary pressures prompted Federal Reserve actions to boost interest rates for 2000, rates during the 2001 to 2010 period are expected to be stable and slightly below

current rates. At the same time, current low prices and expected receipts will prompt farmers to manage debt carefully and lenders to be cautious in offering credit. In the short term, the cautious behavior of both farmers and borrowers should result in a slowdown in the rise in debt in 2001 and 2002. While interest expenses are anticipated to rise in 2001 and 2002, the combination of relatively stable debt levels and retreating interest rates are expected to reduce interest expenses in 2003 and 2004. The conservative behavior of borrowers is expected to result in a low rate of increase in debt as prices and farm cash receipts recover. Consequently, debt and interest expenditures are expected to grow very slowly for the remainder of the baseline. As a share of production costs, interest payments, which averaged 13 percent in the 1980s and 7.3 percent in the 1990s, are expected to decline to about 6.8 percent over the next decade.

Net rent to non-operators rose in 2000 due to higher cash receipts and government payments. Lower government payments more than offset gains in crop cash receipts in 2001, reducing net rents in the near term. In recent experience, share rents have been more downwardly responsive than cash rents. Rents are most likely to rise again as crop receipts begin rising and area planted increases. The projection is for net rent expenditures to rise by about 24 percent from 2000 to 2010 while crop cash receipts are rising 38 percent.

Farm Balance Sheet

With reduced farm income and cash flow over the next few years, debt management will be crucial to the financial condition of the agricultural sector. Even with the near-term cash flow difficulties facing the sector, a strong basic financial position achieved during the 1990s will help farmers weather the lows in major crop prices until exports and prices recover. In the longer run, increasing farm incomes and relatively low interest rates will contribute to asset accumulation and assist in debt management, thus leading to an improving balance sheet.

The value of farm real estate, the largest component of farm assets, is expected to increase more slowly in the next few years. Real estate assets are anticipated to rise at an average rate of 1.8 percent through 2005, a substantial slowdown from the 3.4-percent growth rate of the 1990s. Average farmland values per acre are forecast to rise modestly on a nationwide basis despite near-term projected declines in farm income. In the past, the value of farmland has been slow to respond to decreases in farm income. Further, pressures from non-agricultural sources such as housing and recreational uses also affect farmland values.

Farm business debt is projected to rise 1.2 percent in 2001, following a 2.4-percent increase in 2000. Thereafter, with farm incomes reflecting greater dependence on market forces and less reliance on government payments, debt growth is expected to average about 1 percent through 2010.

Assuming that farmland maintains its value in the near term, rising again as cash receipts recover, and that farm debt remains stable, the financial balance sheet of the aggregate farm sector should weather the current decline in cash income and end the baseline period in a strong position. Under these assumptions, the debt-to-asset ratio for the sector improves from 16.1 percent in 2001 to 13.8 percent in 2010.

Table 32. Farm receipts, expenses, and incomes in nominal dollars

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
						Billion dollars						
Cash receipts:												
Crops	93.1	96.6	100.2	103.7	107.1	110.6	114.1	117.7	121.6	125.4	129.6	133.2
Livestock and products	95.5	99.5	99.8	98.4	100.8	104.7	107.9	110.1	113.4	116.9	120.7	124.3
All commodities	188.6	196.0	200.0	202.0	207.9	215.3	222.0	227.8	234.9	242.3	250.3	257.5
Farm-related income	15.8	16.3	16.1	16.6	16.9	17.2	17.5	17.8	18.1	18.5	18.8	19.2
Government payments	20.6	22.1	14.1	7.8	6.6	6.5	6.4	6.4	6.3	6.3	6.3	6.2
Gross cash income	225.0	234.4	230.2	226.4	231.4	238.9	245.9	251.9	259.4	267.1	275.4	282.9
Cash expenses	170.4	178.0	179.5	180.6	184.2	188.6	192.7	196.5	201.2	206.2	211.7	217.0
Net cash income	54.6	56.4	50.7	45.7	47.2	50.4	53.2	55.5	58.2	60.8	63.7	65.9
Value of inventory change	-0.9	-1.0	0.7	0.3	0.9	2.1	2.2	1.9	2.0	1.3	1.2	1.2
Non-money income	11.4	11.7	12.1	12.2	12.2	12.4	12.6	12.9	13.1	13.4	13.7	14.0
Gross farm income	235.5	245.1	243.0	238.8	244.6	253.4	260.7	266.8	274.6	281.8	290.4	298.2
Noncash expenses	16.0	15.8	16.2	16.4	16.6	16.7	16.9	17.1	17.2	17.4	17.6	17.7
Operator dwelling expenses	5.7	5.9	6.0	6.1	6.2	6.3	6.4	6.5	6.7	6.8	6.9	7.0
Total production expenses	192.1	199.7	201.7	203.2	207.0	211.7	216.0	220.1	225.1	230.4	236.2	241.7
Net farm income	43.4	45.4	41.3	35.6	37.5	41.8	44.7	46.7	49.5	51.4	54.2	56.5
Farm assets	1,116.6	1,121.0	1,132.1	1,137.8	1,148.4	1,183.9	1,224.2	1,265.7	1,308.9	1,355.1	1,403.3	1,454.3
Farm debt	176.4	180.6	182.8	183.7	184.6	186.5	188.3	190.2	192.1	195.0	197.9	200.9
Farm equity	940.1	940.4	949.3	954.1	963.7	997.4	1,035.9	1,075.5	1,116.7	1,160.1	1,205.3	1,253.4
						Percent						
Debt/equity ratio	18.8	19.2	19.3	19.3	19.2	18.7	18.2	17.7	17.2	16.8	16.4	16.0
Debt/assets ratio	15.8	16.1	16.1	16.1	16.1	15.8	15.4	15.0	14.7	14.4	14.1	13.8

Table 33. Farm receipts, expenses, and incomes in 1996 dollars

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
						Billion 1996 dollars 1/						
Cash receipts:												
Crops	88.9	90.0	91.2	91.9	92.5	92.9	93.4	93.8	94.3	94.7	95.3	95.4
Livestock and products	91.1	92.7	90.8	87.2	87.0	88.0	88.3	87.7	88.0	88.3	88.8	89.0
All commodities	180.0	182.7	182.1	179.1	179.4	180.9	181.6	181.5	182.3	183.0	184.1	184.4
Farm-related income	15.1	15.2	14.7	14.7	14.5	14.4	14.3	14.2	14.1	14.0	13.9	13.7
Government payments	19.7	20.6	12.9	6.9	5.7	5.4	5.2	5.1	4.9	4.8	4.6	4.5
Gross cash income	214.8	218.5	209.6	200.6	199.7	200.8	201.2	200.7	201.3	201.7	202.6	202.6
Cash expenses	162.7	165.9	163.4	160.1	159.0	158.5	157.7	156.5	156.1	155.8	155.7	155.4
Net cash income	52.1	52.6	46.2	40.5	40.7	42.3	43.5	44.2	45.1	46.0	46.8	47.2
Value of inventory change	-0.9	-1.0	0.6	0.2	0.8	1.8	1.8	1.5	1.6	1.0	0.9	0.9
Non-money income	10.8	10.9	11.0	10.8	10.6	10.4	10.3	10.3	10.2	10.1	10.1	10.0
Gross farm income	224.8	228.5	221.2	211.6	211.1	213.0	213.3	212.5	213.0	212.9	213.6	213.5
Noncash expenses	15.2	14.8	14.7	14.6	14.3	14.1	13.8	13.6	13.4	13.1	12.9	12.7
Operator dwelling expenses	5.5	5.5	5.5	5.4	5.4	5.3	5.3	5.2	5.2	5.1	5.1	5.0
Total expenses	183.4	186.1	183.6	180.1	178.7	177.9	176.8	175.3	174.6	174.0	173.7	173.1
Net farm income	41.4	42.3	37.6	31.6	32.4	35.1	36.5	37.2	38.4	38.8	39.9	40.4
Farm assets	1,065.7	1,044.9	1,030.5	1,008.5	991.1	994.9	1,001.7	1,008.4	1,015.4	1,023.7	1,032.1	1,041.6
Farm debt	168.4	168.3	166.4	162.8	159.3	156.7	154.1	151.6	149.0	147.3	145.6	143.9
Farm equity	897.3	876.6	864.1	845.7	831.7	838.2	847.6	856.9	866.3	876.4	886.6	897.7

1/ Nominal dollar values divided by the GDP chain-type price index.

Food Prices and Expenditures

The Consumer Price Index (CPI) for food is projected to rise moderately in the baseline, increasing at an average rate of about 2.3 percent from 2000 to 2010. This compares to a 2.9-percent average rise expected in the CPI for all items, continuing a long-term trend of food prices increasing at slightly less than the general inflation rate. Moderate but steady economic growth, with sustained increases in disposable personal income, will have a positive impact on consumer demand for food.

Increases in prices for food away from home, which contain a large service component, are being held down by competition in the food industry. As a result, away-from-home prices rise at a moderate annual average rate of about 2.3 percent from 2000 to 2010. Prices for food at home increase about 2.2 percent per year. For foods purchased for consumption at home, the strongest price increases generally occur among the more highly processed foods such as cereals and bakery products. Prices for these foods are related more to the costs of processing and marketing than to the costs of farm commodities and, therefore, rise at a rate closer to the general inflation rate.

Total food expenditures rise at a 3.8-percent average annual rate in the baseline. Expenditures for meals eaten away from home account for a growing share of food spending, reaching nearly 50 percent of total food expenditures by 2010. Growth in expenditures for food eaten away from home will average 4.3 percent a year while expenditures for food at home will rise 3.4 percent annually.

Table 34. Consumer food price indexes and food expenditures baseline

CPI category	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Consumer price indexes:							*1982-84=100*						
All food	160.7	164.1	167.9	171.3	174.7	179.2	183.7	188.0	192.0	196.0	200.5	205.3	210.2
Food away from home	161.1	165.1	169.0	172.9	176.9	181.0	185.2	189.5	193.9	198.4	203.0	207.7	212.5
Food at home	161.1	164.2	167.9	171.0	174.1	178.8	183.5	187.8	191.6	195.3	199.8	204.7	209.7
Meats	141.6	142.3	150.6	152.2	150.5	155.0	159.0	161.3	161.0	160.7	162.9	166.2	169.1
Beef and veal	136.5	139.2	147.4	149.0	150.1	154.3	158.1	160.5	159.7	159.1	161.2	164.7	167.9
Pork	148.5	145.9	156.5	156.5	148.2	153.2	157.5	159.8	160.6	161.2	163.3	166.1	168.2
Other meats	146.8	148.2	151.5	155.0	156.2	160.5	164.5	166.9	166.1	165.5	167.7	171.4	174.7
Poultry	157.1	157.9	160.0	160.0	158.0	160.6	163.1	164.6	163.9	164.0	166.7	170.7	174.6
Fish and seafood	181.7	185.3	190.9	195.9	200.8	205.8	210.9	216.2	221.6	227.1	232.8	238.6	244.6
Eggs	135.4	128.1	129.0	129.0	130.5	134.4	138.9	143.5	148.1	152.7	157.4	162.0	166.7
Dairy products	150.8	159.6	161.0	160.2	162.8	167.0	171.0	175.0	179.0	182.5	186.0	189.5	193.5
Fats and oils	146.9	148.3	147.3	150.0	153.7	158.0	162.3	166.7	171.2	175.6	180.2	184.9	189.8
Fruits and vegetables	198.2	203.1	203.9	209.7	216.5	222.4	228.5	234.7	241.0	247.0	253.5	259.9	266.5
Sugar and sweets	150.2	152.3	154.0	158.0	161.1	164.3	167.3	170.9	174.6	178.3	182.1	186.0	190.0
Cereals and bakery products	181.1	185.0	188.4	194.1	200.4	206.8	212.9	218.9	225.0	231.4	238.1	245.2	252.4
Nonalcoholic beverages	133.0	134.3	137.7	141.1	144.6	148.2	151.9	155.7	159.6	163.6	167.7	171.9	176.2
Other foods	165.5	168.9	172.1	176.9	181.8	186.9	192.1	197.5	203.1	208.8	214.7	220.7	226.8
Food expenditures:							*Billion dollars*						
All food	751.5	788.6	823.6	855.0	885.1	920.4	956.5	993.5	1,031.4	1,070.1	1,111.6	1,155.6	1,201.4
Food at home	398.9	413.9	432.8	447.1	459.6	476.5	493.4	510.4	527.5	544.4	563.2	583.5	604.6
Food away from home	352.6	374.7	390.8	407.9	425.5	443.9	463.1	483.1	503.9	525.7	548.4	572.1	596.8

Table 35. Changes in consumer food prices, baseline

CPI category	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
							Percent						
All food	2.2	2.1	2.3	2.0	2.0	2.6	2.5	2.3	2.1	2.1	2.3	2.4	2.4
Food away from home	2.6	2.5	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Food at home	1.9	1.9	2.3	1.8	1.8	2.7	2.6	2.3	2.0	1.9	2.3	2.5	2.4
Meats	-1.9	0.5	5.8	1.1	-1.1	3.0	2.6	1.4	-0.2	-0.2	1.4	2.0	1.7
Beef and veal	-0.2	2.0	5.9	1.1	0.7	2.8	2.5	1.5	-0.5	-0.4	1.3	2.2	1.9
Pork	-4.7	-1.8	7.3	0.0	-5.3	3.4	2.8	1.5	0.5	0.4	1.3	1.7	1.3
Other meats	-0.9	1.0	2.2	2.3	0.8	2.8	2.5	1.5	-0.5	-0.4	1.3	2.2	1.9
Poultry	0.3	0.5	1.3	0.0	-1.3	1.6	1.6	0.9	-0.4	0.1	1.6	2.4	2.3
Fish and seafood	2.6	2.0	3.0	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Eggs	-3.3	-5.4	0.7	0.0	1.2	3.0	3.3	3.3	3.2	3.1	3.1	2.9	2.9
Dairy products	3.6	5.8	0.9	-0.5	1.6	2.6	2.4	2.3	2.3	2.0	1.9	1.9	2.1
Fats and oils	3.7	1.0	-0.7	1.8	2.5	2.8	2.7	2.7	2.7	2.6	2.6	2.6	2.7
Fruits and vegetables	5.7	2.5	0.4	2.8	3.2	2.7	2.7	2.7	2.7	2.5	2.6	2.5	2.5
Sugar and sweets	1.6	1.4	1.1	2.6	2.0	2.0	1.8	2.2	2.2	2.1	2.1	2.1	2.2
Cereals and bakery products	2.0	2.2	1.8	3.0	3.2	3.2	2.9	2.8	2.8	2.8	2.9	3.0	2.9
Nonalcoholic beverages	-0.3	1.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Other foods	2.7	2.1	1.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8

Agricultural Trade

Relatively strong growth in the volume of global and U.S. agricultural trade is projected during the next 10 years, aided by ample global supplies and steady demand growth. Demand prospects are driven by the outlook for healthy economic growth in most of Asia, Latin America, North Africa, and the Middle East, moderate gains in developed countries, and continued progress toward freer trade through ongoing unilateral policy reforms and existing multilateral agreements. The solid prospects for trade expansion in these regions are expected to more than offset relatively weak growth in parts of Asia, Africa, and the former Soviet Union.

Global and U.S. commodity prices and trade value have been weak in recent years because of large stocks resulting from weakened global demand and large production in the late 1990s. Even with continued output and productivity gains in exporting countries, commodity prices and export earnings are projected to strengthen in the baseline because of steady growth in import demand and reduced U.S. and foreign stocks.

Future trends in China's agricultural trade are key in the global outlook for commodity trade and prices. The baseline includes steady growth in China's imports of most commodities. However, policy other than market forces determines much of China's trade in agricultural commodities and significant uncertainties exist regarding future policies in China. The size of China's agricultural economy increases the potential significance of these issues for world trade.

The baseline shows improved trade growth for several bulk commodities during 2000-2010, compared with the 1980s and 1990s. Projected growth in wheat and coarse grains trade is particularly strong compared with recent performance, and cotton trade is projected to improve from the contraction of the 1990s. The expansion of grain trade is broad based, driven by rising incomes in developing regions, diet diversification, and increased demand for livestock products and feeds. The phase out of the Multi-Fiber Arrangement (MFA) by 2005 is expected to boost demand for raw cotton in developing countries, while gradually shifting demand in developed countries from raw cotton to processed cotton products (textiles and apparel).

Global trade in soybeans and products is projected to continue growing, but at a much slower rate than the rapid growth of the 1990s. Continued strong gains in developing-country demand for feed protein is projected to be mostly offset by reduced demand in the EU that results from slowed livestock output and increased substitution of grain for protein feeds following Agenda 2000 reforms. Growth in soybean oil trade is projected slower than the very high rate achieved in the 1990s due to increased crushing in developing countries and competition from other oils, particularly palm oil.

U.S. export volume is projected to strengthen for wheat, coarse grains, and soybeans and products, rise gradually for raw cotton, and decline for rice. U.S. wheat, coarse grain, and soybean and soybean product exports expand along with world trade, although continued strong competition is expected in these markets. U.S. wheat and coarse grain exports compete with unsubsidized EU wheat and barley throughout the projection period. Argentina is expected to remain a strong competitor for coarse grain market share. Eastern Europe also begins to make its presence felt as an exporter in world corn markets early in the projection period. U.S. raw

Table 36. International trade summary, by decade or indicated period 1/

Years	Wheat	Rice	Coarse grains	Soybeans	Soybean meal	Soybean oil	Cotton
World trade growth, annual percent 2/							
1960 to 1970 3/	1.1	2.2	4.9	11.4	14.4	11.3	0.8
1970 to 1980	4.7	4.9	8.7	8.2	11.7	12.8	1.2
1980 to 1990	-0.3	0.6	-1.0	-0.4	2.9	0.5	2.5
1990 to 2000	0.0	8.1	0.9	6.4	4.3	8.0	-0.9
2000 to 2010	1.7	1.9	2.6	1.3	2.3	2.5	1.3
U.S. export growth, annual percent							
1960 to 1970 3/	-0.8	6.3	3.8	12.6	13.0	5.3	-5.4
1970 to 1980	6.4	6.8	12.7	7.2	5.8	5.4	6.1
1980 to 1990	-3.3	-0.5	-0.7	-3.7	-1.8	-5.5	2.3
1990 to 2000	-1.4	1.7	1.6	4.8	2.9	5.9	-0.7
2000 to 2010	1.8	-3.9	2.0	0.6	1.9	3.6	1.1
U.S. share of world trade, average percent 2/							
1960 to 1970 3/	37.6	19.0	50.0	90.6	65.6	66.6	18.3
1970 to 1980	43.0	22.1	59.4	82.6	43.5	37.5	19.8
1980 to 1990	37.3	20.2	59.4	72.6	23.7	19.3	21.5
1990 to 2000	30.0	13.7	57.0	63.1	18.5	13.8	25.6
2000 to 2010	29.1	8.1	60.0	57.5	17.0	13.3	29.1

1/ Years refer to the first year of the commodity marketing year.
2/ Trade and trade shares include intra-FSU trade for periods starting in 1990 and later; intra-FSU trade for cotton also is included in the 1980 to 1990 and the 1970 to 1980 periods.
3/ Data for soybeans, soybean meal, and soybean oil begin in 1964.

cotton exports remain strong through the baseline, increasing gradually in the second half of the decade due to rising global demand following the MFA phaseout. U.S. rice exports are expected to fall over the baseline period as domestic demand outpaces U.S. production. U.S. exports of soybeans and products continue to grow, albeit at a much slower pace compared with the 1990s, reflecting projected trends in world trade and increasing competition from Argentina and Brazil.

Global meat trade and U.S. meat exports are projected to recover from the recent slowdown in East Asian and Russian demand, showing strong and steady growth during 2000-2010. Prospects for meat trade are supported by the economic rebound in key Asian markets, and by already-negotiated reductions in trade barriers. However, Russian imports are projected to increase gradually and surpass the record levels reached in the late 1990s by the end of the projection period.

U.S. Agricultural Trade Value

Total U.S. agricultural export value is projected to grow on average 4.1 percent annually between 2000 and 2010, reaching $76 billion in fiscal year 2010, up from nearly $51 billion in fiscal year 2000. U.S. agricultural imports in fiscal year 2010 are projected at $53.4 billion, up

from the $38.9 billion of fiscal year 2000. The resulting agricultural trade surplus of $22.6 billion in fiscal year 2010 is up annually 6.5 percent on average from 2000, although it is still well below the fiscal year 1996 record export surplus.

In fiscal year 2000, revival of strong economic growth in Asia and Latin America offsets continued low bulk commodity prices, large world supplies, foreign export competition, and a strong U.S. dollar to push U.S. agricultural exports up to $50.9 billion from $49.2 billion in fiscal 1999. As economic growth in 2000 raised incomes in the rest of the world, demand for high-value products (HVP) revived, but low prices kept the value of bulk exports unchanged even though volume inched up. Based on information available in November 2000, when work on this baseline was completed, total export value in fiscal year 2001 is expected to increase to $53 billion. This increase reflects growth in both bulk and HVP exports, with bulk commodities anticipated to show the greater gains. And, the share of HVPs in total agricultural exports, which rose sharply in fiscal year 2000, is anticipated to drop back to a more normal 63.6 percent in fiscal year 2001.

Table 37. U.S. agricultural trade values, baseline projections, fiscal years (October 1 - September 30)

	1998	1999	2000	2001 1/	2002	2003	2004	2005	2006	2007	2008	2009	2010	2000-2010 growth rate
							Billion dollars							*Percent*
Agricultural exports:														
Animals and products	11.2	10.1	11.8	11.9	12.0	12.5	13.1	13.5	13.9	14.2	14.6	15.2	15.8	3.0
Grains, feeds, and products	14.1	14.4	13.9	14.6	16.0	17.1	17.7	18.2	18.8	19.7	20.6	21.7	22.7	5.0
Oilseeds and products	11.2	8.7	8.5	9.0	9.1	9.7	10.5	11.1	11.7	12.1	12.5	13.0	13.4	4.6
Horticultural products	10.3	10.3	10.5	10.9	11.4	11.8	12.3	12.8	13.3	13.8	14.3	14.7	15.2	3.8
Tobacco, unmanufactured	1.4	1.4	1.2	1.2	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.3	0.4
Cotton and linters	2.5	1.3	1.8	2.4	2.8	3.1	3.1	3.1	3.2	3.2	3.3	3.3	3.3	6.2
Other exports	2.9	2.9	3.1	3.0	3.3	3.4	3.5	3.6	3.8	3.9	4.0	4.1	4.3	3.4
Total agricultural exports	53.7	49.2	50.9	53.0	56.0	59.0	61.5	63.7	65.9	68.2	70.6	73.4	76.0	4.1
Bulk commodities exports	20.1	17.8	17.8	19.3	20.6	22.0	22.9	23.6	24.4	25.3	26.3	27.5	28.5	4.8
High-value product exports	33.7	31.4	33.1	33.7	35.4	37.0	38.7	40.1	41.5	42.9	44.3	46.0	47.5	3.7
High-value product share	62.7%	63.8%	65.1%	63.6%	63.2%	62.8%	62.8%	63.0%	63.0%	62.9%	62.8%	62.6%	62.5%	
Agricultural imports:														
Animals and products	6.8	7.0	8.1	8.2	8.3	8.5	8.7	8.9	9.0	9.1	9.2	9.4	9.6	1.6
Grains, feeds, and products	2.9	2.9	3.1	3.0	3.1	3.2	3.4	3.5	3.6	3.7	3.8	3.9	4.0	2.7
Oilseeds and products	2.1	1.9	1.9	1.9	1.8	1.9	1.9	2.2	2.4	2.5	2.6	2.7	2.8	4.2
Horticultural products	13.8	15.3	15.8	16.4	17.0	17.6	18.3	19.1	19.8	20.6	21.4	22.2	23.1	3.8
Tobacco, unmanufactured	0.8	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.9	0.9	0.9	3.5
Sugar and related products	1.7	1.6	1.5	1.7	1.7	1.7	2.2	2.1	2.1	2.2	2.3	2.9	2.9	6.7
Coffee, cocoa, and rubber	6.3	5.2	5.2	5.4	5.5	5.6	5.7	5.9	6.0	6.1	6.2	6.4	6.5	2.3
Other imports	2.4	2.6	2.6	2.7	2.8	2.8	3.0	3.1	3.2	3.2	3.4	3.5	3.6	3.2
Total agricultural imports	36.8	37.3	38.9	40.0	40.9	42.2	44.0	45.5	46.8	48.2	49.7	51.9	53.4	3.2
Net agricultural trade balance	16.9	11.9	12.0	13.0	15.1	16.8	17.5	18.2	19.1	20.0	20.9	21.5	22.6	6.5
							Million metric tons							
Agricultural exports (volume):														
Bulk commodity exports	98.4	113.8	115.4	122.9	125.6	126.4	127.1	128.8	130.5	132.9	135.7	138.7	141.3	2.0

1/ The projections were completed in November 2000 based on policy decisions and other information known at that time. For updates of the nearby year forecasts, see USDA's *Outlook for U.S. Agricultural Trade* report, published in February, May, August, and December.

Note: Other exports consists of seeds, sugar and tropical products, and beverages and preparations. Essential oils are included in horticultural products. Bulk commodities include wheat, rice, feed grains, soybeans, cotton, and tobacco. High-value products (HVP's) is calculated as total exports less the bulk commodities. HVP's include semi-processed and processed grains and oilseeds, animals and products, horticultural products, and sugar and tropical products. Other imports includes seeds, beverages except beer and wine, and miscellaneous commodities.

Both bulk and HVP exports are expected to show relatively strong average annual growth in the decade to 2010, while their shares in total U.S. exports remain about stable. HVPs will continue to account for the larger share, about 63 percent of total agricultural exports. HVP agricultural export value is projected up 3.7 percent per year on average, while bulk products rise 4.8 percent annually. Much of the growth expected in HVPs is likely to be for fresh and processed fruits, processed vegetables, beef, sugar and tropical products, and animal feeds. Bulk product growth reflects an expected recovery of prices, since bulk volume is projected up only 2 percent

annually on average. The growth expected in bulk value lends strength to total export earnings, in contrast to the average annual decline in bulk commodity export value in the 1990s. All the major commodity groups that contain bulk commodities—grains and feeds, oilseeds and products, tobacco, and cotton and linters—are expected to show stronger annual growth rates in the coming decade than in the previous decade.

U.S. agricultural imports are expected to increase an average of 3.2 percent per year in 2000-2010, compared to an average 6.8 percent from 1994 to 2000. The average 3.2-percent long-term import growth outlook reflects the real expansion of the domestic economy and the dollar's exchange value. Imports of horticultural products, which made up 41 percent of total U.S. agricultural imports in fiscal year 2000, will increase 3.8 percent annually through 2010, indicating continued strong import demand for fruits, nuts, vegetables, wine, and malt beverages.

Foreign Agricultural Policy Assumptions and Projection Highlights

Policy assumptions underlying both U.S. and foreign projections are based on full compliance with all bilateral and multilateral agreements affecting agriculture and agricultural trade as of October 2000, including the Uruguay Round Agreement on Agriculture and the North American Free Trade Agreement. In contrast, no compliance is assumed for any agreements not formally ratified by October 2000. Several potential multilateral agreements that could have a significant impact on agricultural trade are now under consideration, but are assumed not to occur in these projections. These include:

- No accession to the World Trade Organization (WTO) by China, Taiwan, or any other country not formally admitted as of October 2000;
- No enlargement of the EU-15 to add one or more Central or East European countries;
- No implementation of more liberalized trade among the Asia-Pacific Economic Cooperation (APEC) countries;
- No expansion of NAFTA to include additional countries, and;
- No implementation of any reforms under consideration in the current round of WTO negotiations.

Domestic agricultural and trade policies in individual foreign countries are assumed to continue to evolve along their current path, based on the consensus judgment of USDA's regional and commodity analysts. In particular, economic and trade reform underway in many developing countries is assumed to continue. Similarly, the development and use of agricultural technology and changes in consumer preferences are assumed to continue to evolve based on past performance and analyst judgment regarding future developments. Key assumptions underlying the projections for major foreign countries are summarized below.

European Union

The baseline projections for the EU continue to incorporate EU commitments under the Uruguay Round Agreement that limit subsidized exports and improve access to the EU market. Also incorporated are the Agenda 2000 financial and agricultural policy reforms that were adopted in early 1999. However, impacts of the anticipated accession of the Central and Eastern European countries to the EU are not included in the projections. Although eastward enlargement of the EU is likely to have significant implications for agriculture, it is not incorporated into the baseline because of the high degree of uncertainty regarding the final terms and timing of enlargement. Also excluded from these projections are estimates of any EU consumer response to food safety concerns associated with recent outbreaks of bovine spongiform encephalopathy (BSE), as well as estimates of any shifts in protein meal consumption and trade stemming from the EU's recently imposed temporary ban (six months beginning January 1, 2001) on use of meat and bone meal as a feed additive.

The baseline projections assume that the EU's Uruguay Round commitment to reduce domestic support is not a binding constraint, since many EU domestic support policies meet WTO "production limiting" criteria and are thereby exempt from reduction commitments. Tariffication of non-tariff barriers and tariff reductions are expected to have little impact because the high tariffs established for most products are unlikely to permit significant additional imports. Continued high levels of import protection mean that price transmission from the world market will be negligible for many baseline commodities except wheat, barley, and oilseeds and products. The most important Uruguay Round commitments for the baseline are the limits on subsidized exports and the minimum import levels agreed under the market access provisions. Even with the Agenda 2000 reforms, there is uncertainty about the measures the EU will use to meet these commitments. It is assumed that the EU will use existing policy mechanisms to comply with WTO commitments without excessive stock accumulation.

Agenda 2000 includes reforms of the grains, oilseeds, dairy, and beef sectors for the period 2000-2006. The reforms will shift more intervention from price supports to direct payments and modify supply control measures. The principal reforms affecting the baseline are:

- **Reduced intervention prices:** A 15-percent drop in the cereal intervention price over two years (2000-2001), a 20-percent drop in beef support price over 3 years (2000-2002), and a 15-percent decrease in dairy support prices to be phased in over 3 years starting in 2005.

- **Modified direct income support:** An increase of 9 euros/ton for cereal producers to compensate for half of the drop in the intervention price. Direct payments for oilseeds will be aligned to cereal aid (33-percent drop) in 3 years. An increase in per-animal beef payments, and a new payment per quantity of milk produced starting in 2005.

- **Reduced default land set-aside rate:** The default rate was reduced from 17.5 percent to 10 percent. The set-aside rate will be set at the default rate unless all member states agree on a different rate. A 10-percent set-aside rate is assumed for the duration of the baseline.

- **Maintaining the milk quota:** Dairy quotas are retained for the duration of Agenda 2000 and increased by 2.4-percent. Half of the quota increase is allocated to "deficit" regions from 2000-2001, and the other 1.2-percent increase will be spread over the remaining regions from 2005 to 2008.

For the baseline, basic support prices are set at Agenda 2000 nominal levels for most commodities, and the land set-aside is assumed at the default rate of 10 percent.

Due to a weak euro assumed in the baseline, projected domestic and world prices indicate that EU wheat and barley can be exported without subsidy throughout the projections (see EU box, page 99). Exports of other coarse grains, predominantly rye and oats, continue to require subsidies for exports. However, they are less constrained by the Uruguay Round subsidized export limits because barley exports, which also fall under the WTO limits for coarse grains, are unsubsidized, thereby allowing greater use of subsidies for the other coarse grains. (Note: the WTO-mandated limit on coarse grain export subsidies is applied to the aggregate rather than on individual coarse grains.)

Despite the anticipated ability to export wheat and barley without subsidies throughout the projection period, abundant grain stocks and falling internal grain prices (via Agenda 2000 reforms) combine to reduce the relative cost of feeding grains versus soybean meal. As a result, increases in grain feeding, partly from stocks, are expected to cut EU soybean meal consumption. Consequently, EU imports of soybeans and soybean meal are projected to decline.

Imports of coarse grains reflect the EU's market access commitments for corn, while imports of other coarse grains are minimal. Beef exports are projected to remain at or below WTO-mandated limits on subsidized exports. Subsidized exports of pork and poultry are dictated by WTO commitments, while unsubsidized exports are projected to increase slightly.

The baseline assumes that there will be no enlargement of the EU-15 to add one or more of the Central or East European countries during the projection period. Accession of the larger agricultural-producing countries could cause serious problems for the EU's Common Agricultural Policy in its current form, providing impetus for policy changes to further reduce levels of price and budget support below those implied by the current projections.

Asia and Oceania

Australia. Production for export dominates Australian agriculture. Australian producers are expected to continue to adjust cropping patterns, and to switch between crop and livestock enterprises, to maximize returns. With increasing populations and incomes forecast globally, exports and production of the major commodities are forecast to continue to expand. Key issues in the outlook for production are the response of producers to uncertainties regarding price variability and the availability of water. Until more irrigated area is available, area expansion will be slow for some crops. Under water reforms introduced in 1994, each state is required to allocate water to the environment, which is likely to reduce the volume of water available for agriculture. However, the effect on production may be significantly offset by improved

European Union: Agricultural Sector Impacts of Euro Exchange Rates

The euro was first introduced as a unit of currency on January 1, 1999, in 11 of the 15 countries that make up the European Union. Exchange rates were fixed between the national currencies and the euro, and monetary policy was placed under the control of a single European Central Bank. The actual euro coins and bills will be distributed beginning in 2002; at which time the national currencies will be taken out of circulation.

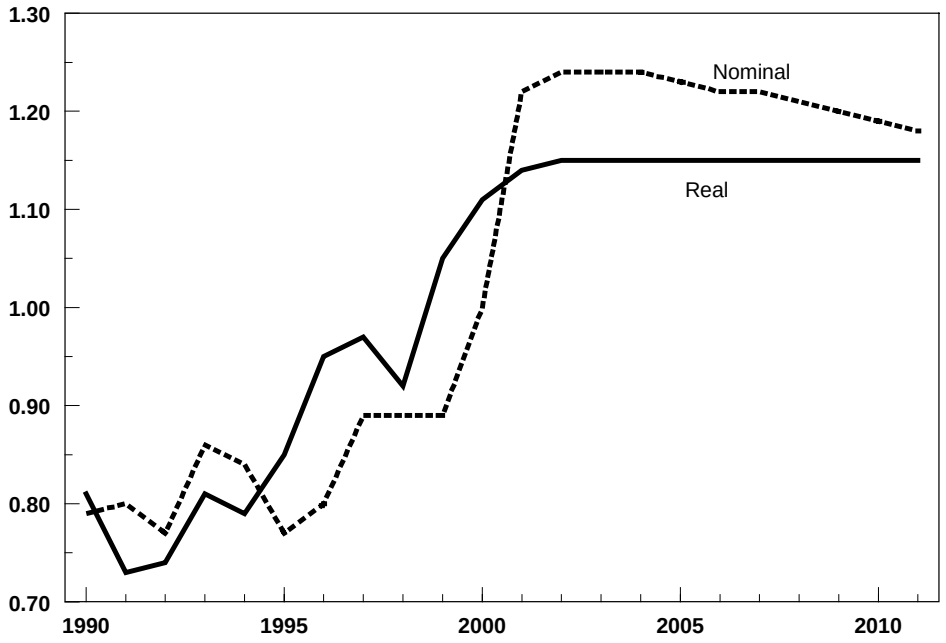
The value of the euro relative to currencies of other countries is important for determining the EU's agricultural trade. Since its introduction, the euro has fallen dramatically in value relative to a dollar (Figure 2). At the introduction of the euro, a dollar was worth 0.83 euro, but by mid-1999 was worth just under 1 euro. By October 2000 the dollar had risen to 1.16 euro. In light of expectations that Europe's economic gains will continue to lag behind U.S. growth, the baseline assumes that the euro will continue to decline in value relative to the dollar through 2003/04 and then remain constant for the rest of the baseline.

Under these exchange rate assumptions, the EU is able to export both wheat and barley without subsidies throughout the baseline period. As a result, the EU is able to continue as the world's leading exporter of barley. In addition, the EU also captures the second-largest share of world wheat trade (behind the United States) early in the baseline period and retains it through 2010.

The exchange rate assumption of a strong dollar relative to the euro also increases EU competitiveness in international markets for high-valued agricultural products, such as processed foods.

Figure 2

Euro - U.S. dollar exchange rates, history and baseline assumptions



efficiency of water use, water-saving technologies, and trade in water entitlements. Also, several new dams are in the planning stage.

Cotton yields remain nearly flat over the projection period. Although cotton is expected to continue providing higher returns than competing field crops, production and export growth are projected to show only moderate gains, as they remain heavily dependent on the availability of irrigation water. Cotton plantings could expand in a number of regions, particularly around St. George and Dirranbandi in Queensland and the Lachlan Valley in New South Wales. Expansion in dryland cotton acreage will continue to depend on suitable seasonal conditions and expected returns relative to competing enterprises such as sorghum and livestock production. Australia is projected to continue exporting about 93 percent of its annual cotton production.

Modest growth in wheat area and yields is projected to support increases in both exports and domestic feeding of wheat. Wheat exports average about a 74- to 75-percent share of production over the period; wheat feeding averages a 15-percent share. Australia also continues to export most of its rice production (averaging 65 to 66 percent of production) through the projection period, much of it destined for the high-priced Japanese market, and is developing varieties specifically for that market. However, further growth in rice exports will be very limited due to constraints on increasing both yield and irrigated area. Barley output is expected to show only incremental growth as declining area offsets yield gains. The share of barley area and exports devoted to malting barley continues to rise. Low prices and more favorable returns for other enterprises result in projected flat growth of the cattle herd, and subsequently for beef production and exports.

China. China's economic growth has consistently been the strongest in Asia for some time. However, growth in China is expected to level off from the double-digit gains of the early 1990s to a more sustainable pace of 7.5 to 8.5 percent over the next decade. Future real output gains will be slowed by China's structural adjustment problems, particularly rising unemployment as privatization of state-owned enterprises accelerates. Nonetheless, with projected population growth of 0.7 to 0.8 percent per year, per capita GDP gains will average an impressive 6.5 to 7.5 percent annually. These gains will penetrate China's poor inner provinces and likely improve productivity in the agricultural sector as more capital-intensive farming and food processing is undertaken. In addition, China is expected to gradually move into more labor-intensive crops, such as high-valued fruit and vegetables, which better match its underlying resource endowments.

China's long-term food supply and demand prospects are for rising agricultural production, but also sustained growth in income-driven demand for meats and edible oils and derived demand for feed grains. China's future per capita consumption of food grains is projected to decline due to falling urban demand for wheat and rice, falling rural demand for rice, and only modest growth in rural wheat demand.

The vast majority of China's future food needs will be met through domestic production. Domestic crop production is projected to increase, primarily via yield growth, as recent policy changes reduce incentives to maximize planted area and output of low-quality grain (see China policy box, page 102). Although grain and cotton area are expected to decline in the short term,

over the longer term, area and yield gains and production growth are expected to be modest but steady. More government investment in agricultural research and development and in agriculture infrastructure, such as irrigation and flood control, will be driving forces in reducing costs and increasing returns to farmers. In addition, production of most major crops is expected to rise as yields are boosted by more use of improved varieties and better management.

China's agricultural trade system is assumed to continue a gradual long-term trend of liberalization as the government attempts to reduce swelling financial outlays supporting the inefficient government-owned agricultural marketing and distribution system. The central government will maintain quotas for trade in key commodities, including wheat, rice, corn, and cotton. The share of trade handled by private, quasi-private, or even joint public-private trade companies is expected to expand gradually. Trade in other agricultural commodities will also be strongly influenced by government policy, but generally only through measures such as licensing, tariffs, and taxes.

The net result of recent agricultural and trade policy changes, combined with somewhat slower growth in domestic demand and rising yields, is a projection of moderate growth in imports of key agricultural commodities. Net imports of wheat, barley, cotton, soybeans, soybean oil, soybean meal, and palm oil grow steadily through the projection period, while China becomes a net corn importer late in the baseline. Assuming normal weather and a relatively stable domestic policy environment, China's agricultural commodity imports are not expected to tax the supply capacity of world markets.

The baseline projections assume that China is not a member of WTO during the projections period. However, the November 1999 agreement between the United States and China on China's accession to WTO suggests that China could become a member in the near future. An initial assessment of implications of the accession agreement is available at http://www.ers.usda.gov/briefing/wto/China.htm.

East Asia. Agricultural trade in this region remains heavily dependent on feed-livestock interactions and each country's willingness (or lack thereof) to look to international markets to help meet demand. International trade commitments dictated by the Uruguay Round agreement play a major role in determining agricultural trade levels in Japan and South Korea. Without these trade commitments, agricultural imports would be significantly smaller as all three countries retain trade barriers that are highly protective of their domestic agricultural sectors.

Japan is assumed to keep its Uruguay Round levels of tariff and quota protection in effect in 2000 through the remainder of the projection period. In South Korea, import barriers continue to fall through 2004, as dictated by the Uruguay Round agreement. Although the timing of Taiwan's entry into the WTO remains highly uncertain (and linked strongly to China's entry), Taiwan has already adhered to agreed-upon trade commitments in advance of its entry.

In Japan, one of the world's highest-priced import markets, imports of meats will grow because of both demand growth and supply declines. Japan's capacity to expand its livestock production to meet demand growth is limited due to population density and problems associated with odor and waste management. Japan's imports of poultry, pork, and beef are all expected to show

China: Agricultural and Trade Policy Assumptions

Despite important market reforms over the past decade, government policy remains a key determinant of China's agricultural trade levels and overall agricultural direction. The focus of China's domestic policy is narrowly centered on the food grain sector and on maintaining domestic self-sufficiency for most agricultural commodities, generally restricting imports to be less than 5 percent of consumption. Government administrative and financial support is expected to continue to emphasize maintaining sufficient domestic wheat, rice, corn, and vegetable oil output and limiting the need for imports. This is expected to come at the expense of support for other commodities.

Rural and inland poverty remains a serious concern for policy makers and international lending agencies. Distribution of food across China is improving, although a significant imbalance continues to exist between urban and rural areas and between coastal and inland regions. Government purchase, distribution, and stockholding of food grains is expected to continue to account for a significant portion (15-30 percent) of grain production. In addition to poverty alleviation programs, the central government intervenes to promote stability in domestic grain markets. Also, government concern for maintaining rural incomes, particularly farm household incomes, through supporting grain prices is expected to limit the pace and extent of further reform in the agricultural sector.

Over the next decade, the government's goal is to maintain stable domestic consumer food prices while striving for rising rural incomes. Reliance on state-managed agricultural trade via state trading companies and unannounced import (and export) quotas for wheat, rice, corn, and cotton will continue to be the primary factors governing China's major bulk agricultural commodity trade. To a lesser extent, trade in other agricultural commodities, e.g., soybeans and soybean products, will also be influenced by government policy, but through licenses, export taxes, value-added taxes, tariffs, and other mechanisms rather than through quotas or state trading.

Within this general policy focus, commodity-specific provisions of China's agricultural policy have fluctuated dramatically in recent years, generally in response to changes in current supply and demand conditions. However, a principal mechanism that the government has consistently used to promote cereal production has been fixed quota purchases.

Recent Policy Reversals. After pushing responsibility for insuring adequate grain supplies down to the provinces (the "Governor's Grain Bag" System) in the mid-1990s, a "Grain Reform" policy was initiated in 1998 reversing several years of liberalization by severely restricting private grain marketing. These two policy initiatives, combined with excellent weather and a slowdown in consumer demand, resulted in rapid growth in government expenditures and burgeoning agricultural commodity stocks. In the 2 years since, agricultural imports have fallen dramatically and exports have risen.

Grain Policy. In 1999, the government began responding to the growing government stocks by announcing strict new quality standards on government grain purchases and the gradual elimination of purchases of the lowest quality grains. Beginning in 2000, government support prices and fixed quota purchases were eliminated for spring wheat produced in Inner Mongolia, northern Hebei,

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China: Agricultural and Trade Policy Assumptions--continued

Heilongjiang, Jilin, and Liaoning provinces, for low-quality winter wheat produced in provinces south of the Yangtze River, and for low-quality early indica rice. Reduced government purchases and elimination of low-quality purchases represent immediate cutbacks in demand, diminish planting incentives, and ultimately reduce supply. In the near term, large stocks are believed to be sufficient to forestall the need to significantly increase grain imports. In the longer run, a reduced grain supply implies higher domestic free market prices, greater incentive to produce higher quality grains, and possibly larger imports. China's wheat imports are projected at nearly 4 million tons by 2010/11. China is expected to remain an important net exporter of 3-4 million tons of rice annually as its large exports of short-grain japonica and low-quality long-grain indica rice easily exceed its growing imports of high-quality long-grain indica rice.

Cotton Policy. In a significant break from the past, China began the 1999/2000-crop year with no official cotton procurement price, instead letting market conditions determine prices and ending the long-standing state-monopolized cotton purchase and sale system. Years of mounting cotton surpluses and growing textile industry losses finally compelled the government to liberalize the cotton sector. The key provisions of the reforms were implemented on September 1, 1999, for the 1999/2000-crop year. However, it is unclear how much competition will ultimately be allowed in the domestic market because individual cotton merchants and uncertified mills will continue to be officially prohibited from buying, processing, or operating cotton-related businesses. Furthermore, the government will continue to have an active role in the country's cotton trade.

If all of the reforms envisioned for China's cotton sector are implemented successfully, China will have a drastically different domestic cotton market. In the immediate future, cotton farmers are likely to suffer falling prices and decreased incomes. Lower cotton prices are expected to increase the competitiveness of China's textile exports. Lower prices may also increase domestic consumption, as lower costs mean cotton is better able to compete with synthetic fiber. The legalization of alternatives to the government's official cotton procurement system could introduce profound changes in the distribution of China's cotton. These and other long-range impacts of the reforms, however, hinge on the successful implementation of the reform program. China's net cotton imports are expected to begin early in the projection and grow throughout the rest of the baseline.

Soybean Complex Policy. Over the last several years, China's soy complex trade has seen a dramatic swing from large state-sanctioned imports of soybean meal and soybean oil to importing enormous quantities of soybeans. The large soybean meal and oil imports of the mid-1990s contributed to soft domestic prices that squeezed margins for China's growing oilseed crushing facilities. The government responded in 1999 and 2000 by resuming value-added taxes on oil and meal imports, and clamping down on edible oil import smuggling to support domestic crush facilities. Strong domestic demand for oil and meal then prompted the government to increase soybean imports—reaching a record 9 million tons in 1999/00 and an estimated 7 million tons in 2000/01. Over the long-term, this policy shift is expected to have only a marginal effect on China's oilseed and products trade as inefficiencies in China's domestic crushing sector are likely to limit their long-term competitiveness. As a result, continued strong import growth is expected for oilseeds (soybean and rapeseed), as well as soybean meal and edible oils.

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China: Agricultural and Trade Policy Assumptions--continued

Meat Policy. Government policy favors restricting meat imports in preference to domestic production, accomplished through high meat import tariffs and a restrictive import-licensing regime. As a result, China is not projected to be a significant importer of beef and pork over the next decade despite strong income growth and subsequent meat demand growth. China's poultry imports are projected to grow steadily through 2010. However, the preference for domestic meat production is expected to result in rising domestic corn consumption to feed the growing livestock numbers. China is projected to shift from being a net corn exporter to a net importer roughly midway through the projection period. China is expected to continue to export 2-3 million tons of corn to East and Southeast Asia throughout the entire period compared with corn imports of over 7 million tons by the end of the baseline.

Research and Development Policy. The forecast assumes that the central government's recent multi-year commitment to a policy of real annual increases in agricultural research and technology investment funding continues throughout the projection period. As a result, China's agricultural yield growth is expected to increase slowly but steadily as new technologies are introduced. Important constraints to yield growth are limited, and in some areas declining, water resources. In the face of limited data, the projections assume slowly rising yields as China successfully manages its limited water resources throughout the projection period.

Policy-Related Trade Effects. Despite the negative impacts the market-specific policy changes may have on grain and cotton prices and output in the near term, the new policy is not expected to significantly boost imports for three reasons:

- First, the main impetus for the new policy is China's enormous stockpile of grain and the consequent financial burden on central and provincial budgets. A gradual drawing down of those stocks is expected to more than offset any decline in grain output, moderate consumer prices, and prevent significant impacts on import demand. This scenario hinges on the assumption that the central government allows the sale of grain stores at current prices, which are significantly lower than the original purchase prices. There is a great deal of resistance on the part of the central government to incur these financial losses. However, opposition to releasing stocks at prices below cost is weakening as carrying costs grow relative to the one-time cost of selling stocks at a loss. The principle effects of drawing down stocks are reduced imports of wheat, rice, and corn and an increase in corn exports, particularly sales from Northeast China to South Korea and Southeast Asia.

- Second, the economic growth forecast for China is now less optimistic than in previous projections. A sustained slowdown in domestic demand growth, combined with intractable structural problems in the financial and state-owned industry sectors, are expected to slow growth in income and agricultural product demand compared with earlier projections.

- Third, China increased government investment in agricultural research, development, and infrastructure during the mid- and late-1990s. Although there is a significant time lag before increases in investment have an impact on crop yields, this new investment is expected to boost China's long-term crop yield growth higher than in earlier projections.

steady annual growth rates of 2 percent or more per year and will provide stability and strength to world meat markets. However, declining domestic meat production is expected to reduce imports of feed grains and protein meals by about 4 percent through 2010/11.

In South Korea, the government wants the nation to be an exporter of both poultry and pork, and to maintain as much domestic beef production as possible. Structural change and the weakness of the won have strengthened pork and poultry meat production in the short run. Korea is expected to resume pork exports to Japan by the middle of the projections, although trade will not exceed the levels reached in the late 1990s. However, as in Japan, Korea's dense population and relatively small land base for agriculture limits the size of intensive animal feeding operations. A shortage of pasture and forage limits cow-calf operations, effectively providing a bottleneck to any increase in the beef cattle herd. In addition, growing imports, spurred by the liberalization of trade, provide important competition and will limit Korean farmers' ability to expand production. Growth in domestic meat consumption, driven by expected growth in incomes and declining real meat prices, will lead to steadily rising imports of poultry, pork, and beef throughout the projection period. However, long-run prospects for feed imports indicate little growth due to the inability to expand domestic meat production.

Taiwan's livestock sector has been deeply affected by liberalization accompanying its WTO membership application, and by the lingering effects of the 1997 outbreak of foot-and-mouth disease (FMD) on its huge hog farms. In advance of its entry into the WTO, Taiwan's volume of imports for certain formerly banned animal items (offal, chicken meat, and pork bellies) has already reached the levels agreed upon for the first year of its WTO accession under various bilateral WTO market access agreements with WTO member countries. The increased competition caused by imports of these animal products will intensify the current structural adjustment in Taiwan's hog and poultry industries.

The outbreak of FMD in March 1997 has completely shut down Taiwan's pork exports and forced Taiwan to cull about one-third of its hog population. Exports of uncooked pork are not expected to resume for a few years, and even then they will show only gradual growth. With a strong poultry industry and a very large domestic demand for pork, however, livestock production is projected to recover gradually from the FMD shock even though Taiwan will still be out of Japan's raw pork market for a couple of years. Feed grain and protein meal consumption and imports, though much smaller than the pre-FMD levels, are projected to recover and grow gradually.

All three East Asian economies are assumed to maintain tight state control over rice trade. Japan and South Korea will continue to meet their minimum access commitments, but will not import above those levels. The tariff levels for over-quota rice imports announced by Japan provide an economic barrier to significant additional trade.

Food grain consumption has flattened out in the maturing markets of Japan, South Korea, and Taiwan. Vegetable oil consumption is expected to increase modestly. However, vegetable oil tariffs give a preference for oilseed imports for domestic crushing. In Japan, the major oilseeds for crushing will continue to be soybeans and canola, which will compete on the basis of prices in the meal and oil markets. Palm oil imports into Japan will show some growth because of food

processing needs. In Korea, a near-zero tariff on soybeans encourages their importation. However, soybean crushing in Korea has been put under pressure by the lowering of tariffs on vegetable oil imports, which will continue. Nearly one-third of Korea's soybean oil consumption was imported in 1998 and 1999, with further growth expected.

The projections assume that East Asian governments will continue enormous expenditures to help domestic agriculture restructure itself. A continued outflow of labor from farming will help full-time farmers achieve larger operations and economies of size.

Southeast Asia. The Asian financial crisis resulted in exchange rate instability and slowed economic growth throughout Southeast Asia during 1997-1999. Three years after the Asian financial crisis, the crisis countries, including Indonesia, Malaysia, Philippines, and Thailand, appear to have recovered more rapidly than at first anticipated. Positive GDP growth rates have returned to most countries of the region. However, average growth rates during the baseline period are expected to remain 1-2 percentage points below historical averages.

Southeast Asia's feed-livestock sector was dealt a severe setback by the financial crisis. Meat production and consumption (as well as feed grain and protein meal consumption and imports) have now begun to recover from, in some cases, sharply reduced levels. Broiler, pork, and egg production are expected to continue to grow quickly, fueled by rising consumer demand over the longer term. Although local feed production is likely to respond to rising demand, most of the region's economies have limited capacities to produce feed energy and protein. Increasingly, corn is not the only feed grain used, but must compete with feed wheat in nearly all Southeast Asian countries, with cassava and broken rice in Thailand, and with sorghum in the Philippines. Relative prices are critical in determining their shares of feed use. Soybean meal use prospects are also linked to the expectations of further growth in animal feeding in the region. Indonesia, Malaysia, the Philippines, Thailand, and Vietnam are all projected to show strong long-term growth in import demand for coarse grain and protein meal.

Rice imports in the region are expected to continue to expand, as production in importing countries, such as Indonesia, the Philippines, and Malaysia, remains handicapped by land constraints and slow increases in yields. Although wheat import demand in the region has been slowed in the near term by smaller incomes, higher local currency prices, and Indonesia's elimination of its consumer subsidy, longer-term prospects are still for strong import growth as wheat continues to account for a growing share of diets in the region.

The impacts of the crisis on the region's agricultural exports, including rice, palm oil, and poultry, are mixed. With their devalued currencies, Thailand and Vietnam are expected to remain large and very competitive rice exporters, and Thailand's exports of poultry continue to receive a competitive boost from devaluation of the baht.

Exportable supplies of palm oil from Malaysia and Indonesia are enormous and continue to depress the world vegetable oil market well into the projection period as new generations of palm tree cohorts begin to produce for the market. The financial and political instability in Indonesia during the 1997-2000 period has resulted in slight reductions in palm oil plantings and

contributes to long-term uncertainty; but the effect on long-term exportable supplies will likely be negligible.

South Asia. India's strong economic growth, about 6 percent per year over the projections period, provides a springboard for demand-driven agricultural growth. In addition, the agricultural sector is responding to the lifting of licensing and quota restrictions on agricultural imports and exports in response to WTO commitments, as well as to an increased emphasis on export expansion as a source of growth. Although India has replaced quotas with high tariffs, the country is moving incrementally toward open trade and greater integration with the global market.

The farm sector has also benefited from improving terms of trade as liberalizing reforms have steadily reduced protection in non-farm sectors, while agricultural price incentives have been maintained. The pace of reforms is likely to continue under the current government. More emphasis is expected on improving domestic market institutions and competitiveness in the world market, as well as on trade liberalization and incentives for private sector participation.

India's vegetable oil demand is projected to grow rapidly, spurred by increases in population, higher incomes, more liberal import policies, and low internal prices. Also a strong dietary preference for meals cooked with oils influences demand. As a result of this demand pull, India's oilseed production has doubled in the past decade and is expected to continue to expand. However, production falls far short of meeting vegetable oil demand. Since 1997, India's vegetable oil imports have surged to between 4-5 million tons annually, placing India as the world's foremost importer. With the tariffication of vegetable oil trade remaining in place, vegetable oil imports are projected to remain strong throughout the period. Import demand will also be boosted by lower domestic consumer prices for vegetable oil, as well as slowed growth in domestic oilseed production. Palmolein imports from nearby Malaysia and Indonesia have dominated India's vegetable oil imports in recent years, but high tariffication on refined vegetable oils are expected to boost crude soybean oil imports.

India's exports of soybean meal are expected to continue to grow, as soybean producer incentives are less affected than other oilseeds by lower internal oil prices, but export growth will be slowed by area constraints and rising domestic feed demand. Price incentives and productivity gains are expected to sustain strong growth in cotton production, with most production consumed domestically to meet domestic and export demand for cotton-based products.

Food grain production has received a boost from government price incentives, and is also likely to benefit from the reduced protection of oilseeds resulting from the tariffication of vegetable oil imports. Surpluses of rice are projected to continue in the baseline, with India's relatively low-quality rice maintaining its price competitiveness and a significant global market share. The current large domestic surpluses of wheat (much of it low quality), created in part by above-market administered prices, however, are not exportable without subsidy under current world market conditions. Despite the surpluses held in northern areas, high domestic prices have led to wheat imports into southern ports. While some wheat imports are projected to continue, it is

assumed that the government will gradually adjust administered prices to balance domestic supply and demand.

Pakistan is projected to have economic growth of about 4 percent a year, the weakest among the major economies of South Asia. This reflects declining capital inflows, chronic budget deficits, and continued low rates of domestic savings and investment. Political turmoil and the persistent Kashmir problem continue to impact the economy negatively.

Pakistan's wheat production has increased recently due to government price incentives and timely planting, which cut back wheat imports. However, it is unlikely that this trend can be sustained given the expectation that agricultural policy will continue to support gains in cotton area and yields. As a result, wheat yields are likely to remain below potential due to late planting on land that is double cropped with first-crop cotton. Dependence on imported wheat is thus projected to continue.

Pakistan's cotton yields are expected to recover gradually from pest-related problems. As with India, most cotton production is likely to be processed domestically, contributing to strong growth in exports of cotton-based products. Small increases in rice area will allow rice exports to slowly expand. Relatively liberal import policies, combined with limited production potential, will likely lead to continued growth in vegetable oil imports. Growing livestock product demand is expected to lead to growing soybean meal imports and the emergence of small amounts of feed corn imports during the baseline.

Bangladesh continues to maintain moderate economic growth near 5 percent over the projection period. Grain production increases will cut back the levels of rice and wheat imports. Cotton imports are expected to rise because of high demand from the export-oriented garment industries.

Africa and the Middle East

Sub-Saharan Africa. Sub-Saharan Africa's per capita GDP is expected to grow at a small, but positive rate (0.3 percent a year) over the projection period compared with a small average annual decline during the 1985-1999 period. This modest reversal represents a significant departure from previous depressed economic conditions. However, a high population growth rate (2.6 percent) and political and social problems in the several of the region's largest countries (e.g., Nigeria and Congo) continue to prevent stronger growth.

Growth in Sub-Saharan Africa's food grain production is projected at about 2.4 percent annually, just short of anticipated annual population growth. The region's food grain imports are linked to the global availability of food aid and movements in international commodity prices. Food grain imports are projected to grow about 1.4 percent per year, rising from their current level of less than 13 million tons to 14.5 million tons in 2010/11. With these supply projections, total food grain consumption will rise at an annual rate of about 2.2 percent, implying about a 0.5-percent annual decline in per capita consumption of cereals.

Global food aid is assumed in the baseline to remain fairly stable over the projection period. However, it is assumed that Sub-Saharan Africa receives a rising share of global food aid

donations over time because the region is recognized as the most vulnerable with respect to food security. By 2010/11, the region's share of global food aid is projected at about 40 percent.

Despite the importance of food aid to the region, food aid imports remain a small share of total grain imports. Commercial purchases currently account for about 80 percent of Sub-Saharan Africa's food grain imports, and this share is projected to remain steady over the projection period.

North Africa. Growth in import demand for grains, feeds, and oils is projected to strengthen during 2000-2010, based on the outlook for improved economic growth, limited arable land, small farm size, limited use of modern production techniques, and the lingering after-effects of recent severe droughts in several of the countries. Further progress with trade liberalization and privatization programs, as well as other specific economic reforms in individual countries of the region, are expected to help sustain economic growth. The region's GDP is projected to grow at a rate of 4 to 5 percent over the projection period.

In Egypt, recent economic reforms have helped improve the long-term outlook. Government investment expenditures were cut in late 2000 to curb the budget deficit. Inflation and interbank interest rates decreased, and the net international foreign reserve improved. The Central Bank decided to float the pound after having been pegged to the U.S. dollar since 1974, effectively depreciating the overvalued currency. As a result, Egypt's competitiveness in international markets is expected to improve, encouraging exports, curbing imports, and perhaps even boosting the tourism sector. However, Egypt has a long way to go to complete the structural transformation of its economy. Movement towards lower tariffs and a more uniform tariff structure is needed. The acceleration of privatization programs in textiles, the oil sector, and the country's banks would revitalize the investment climate and help maintain the momentum of economic growth. Further progress is also needed in raising national savings and investment to sustain the higher economic growth, reduce unemployment, and improve gains in living standards.

Egypt's real GDP growth is projected at 4 to 5 percent annually during the baseline. Rising consumer demand and recent policy reforms are expected to generate more growth in wheat, corn, and soybean imports. Steadily increasing corn imports are projected in response to the booming poultry and livestock sectors, and to growing demand for starch and sweeteners. Soybean imports are expected to expand rapidly due to the startup, after several years of delay, of a new private soybean crushing facility in Alexandria in 2001. Consequently, growth in imports of soybean meal is expected to slow. Rice area is up sharply since 1998, mostly due to a shift out of cotton, boosting rice exports to more than 500,000 tons early in the baseline. Rice area is expected to increase slightly over the period, thereby maintaining exports in excess of 500,000 tons.

Algeria's GDP is expected to grow at a 3 to 4 percent annual rate over the period. The country's economic outlook has improved mainly due to higher oil and gas prices, political stability ending eight years of civil war, and the election of a new President in April 1999. Revenues from petroleum exports improve the country's trade surplus, foreign exchange reserves, and the flows of foreign investment. Nonetheless, further structural reforms and trade liberalization are needed

to move the Algerian economy to higher growth. Imports of wheat, barley, and corn are projected to rise over the projection period as growth in demand for food and feed grains continues to outpace domestic production.

Morocco's reform measures, including privatization programs and liberalization of the economy and trade, and successful political transition continue to stabilize and improve the economy. Morocco's inflation is expected to stabilize at an annual rate of around 3 percent. Real GDP growth, forecast between 4 and 5 percent annually, coupled with a continuation of government reforms and recent steps to liberalize trade, are expected to drive strong growth in imports of grains, oilseeds, and sugar.

Morocco is self sufficient in fruits, milk, and meat, but imports, on average, one third of its cereal consumption and half of its sugar consumption. Moroccan agriculture still depends substantially on rainfall as less than 15 percent of land is irrigated. The sector suffers from many impediments such as small farm size, access to credit, land tenure problems, and minimal use of modern production techniques. As a result, domestic production is unable to meet growing domestic demand.

In the near term, Morocco's agricultural imports have been restrained by a weak currency and limited foreign exchange. Morocco's currency is linked to the euro, which is expected to continue to depreciate against the U.S. dollar early in the period before stabilizing. In addition, Morocco's trade balance has been negatively affected by a decline in its phosphate exports and an increase in the cost of its gas and petroleum imports. As these patterns reverse themselves later in the baseline, agricultural imports are expected to strengthen.

Tunisia is expected to continue to have strong economic growth during the baseline period, backed by strong investment, slowing inflation (under 3 percent by the end of the projection period), increasing privatization to open the economy for foreign competition, and continuing reforms in the banking, telecommunications, and transport sectors. A member of the WTO, Tunisia has also signed a Free Trade Zone agreement with the EU to gradually eliminate tariffs by 2008.

In 2000, Tunisia's agricultural sector suffered from drought, increasing forecasts of near-term import demand for wheat, feed grains, and vegetable oils. Longer term, Tunisia's projected annual real GDP growth of 5 to 6 percent is expected to boost import demand for wheat, feed grains, soybean oil, sunflower oil, refined sugar, and livestock products.

Middle East. Macroeconomic performance in the Middle East region continues to strengthen with the global economy and high oil prices. The region's economies are projected to experience moderate economic growth during 2000-2010, somewhat higher than occurred during the 1980s. Real annual GDP growth is projected at 4 percent while population growth is still around 2 percent. As a result, annual per capita GDP growth in the region is expected to average only about 2 percent during the period. The region's economic performance will, however, remain strongly tied to the typically uncertain outlook for petroleum export earnings.

Projections for Iran assume a continual movement towards integration into the world economy. Prospects for Iran's economy remain highly dependent on both oil prices and the implementation of structural reforms. Real per capita annual GDP growth is projected at a strong 2 percent for the period, driving increases in demand for meat. Growth in the livestock sectors, while sufficient to meet domestic demand, will increase demand for corn, barley, and soybean meal imports, as domestic grain and oilseed production potential is limited. Per capita wheat consumption is likely to decline with higher incomes, although import demand will continue to rise because of strong population growth and constraints on domestic production.

The political and economic situation in Iraq remains murky. Recent increases in oil export revenues have led to rising imports of wheat, rice, and other foodstuffs. The economy is assumed to maintain a moderate recovery path with 5-percent annual GDP growth. With a continued rebound in consumer demand and petroleum export revenues, food consumption is projected to expand from the lows of the early 1990s toward the higher levels achieved in the mid-1980s. Iraq's livestock sector has begun to recover. Among the meats, production of poultry is rising the fastest, with output growth at almost 5 percent yearly, and per capita consumption growing at more than 2 percent. Rising poultry production is projected to stimulate imports of corn and feed protein, neither of which Iraq produces in large quantities.

Saudi Arabia's economy continues to be heavily dependent on the performance of the petroleum export sector. The recent strong recovery in oil prices has again postponed structural reforms and privatization. As a result, the Kingdom's economy will continue to be adversely affected by revenue shortfalls and under pressure to reform its policies. With population growth expected to average 3.7 percent per year, per capita income growth is projected to remain below 1 percent per annum. Although stronger than during the early 1990s, Saudi Arabia's projected per capita income growth is well below the Middle Eastern average of 2 percent. High population growth and a large expatriate community will continue to fuel food demand during the projection period. However, concern with the depletion of water resources is expected to constrain grain output. Imports of wheat and rice are projected to rise, as demand growth outpaces production. Continued strong expansion of the livestock sectors is also projected to boost imports of feed grains and oilseed meals.

Turkey's per capita GDP growth is expected to average a robust 3 percent during 2000-2010. However, the economy continues to struggle with high inflation and rising debt. While Turkey's population growth rate is declining, its population is becoming increasingly urbanized, raising demand for livestock and poultry products. Expanding urban areas are encroaching on agricultural land and raising environmental concerns in Turkey. The lack of a strong commitment to privatization and restructuring of the farm sector is expected to affect both agricultural trade and overall economic performance during the projection period. Lack of a coordinated livestock development program portends continued high meat prices. High grain price supports and high import tariffs translate into relatively high domestic grain prices. For the projections, it is assumed that there will be moderate reductions in producer supports and import tariffs for grains, more transmission of world prices into the domestic market, slowed growth in area and production, and rising net grain imports. Turkey's cotton production is expected to continue to rise, particularly in Southeastern Anatolian where the Southeastern Anatolian Project

is expected to gradually expand area, but fail to keep pace with consumption. As a result, Turkey will increase cotton imports throughout the projection period.

Western Hemisphere

Canada. Economic prospects in Canada appear good. The economy is expected to grow at a healthy 3 percent per year through 2010 and inflation is low. The Canadian dollar is assumed to stabilize at a value of 0.64-0.67 U.S. dollars during the baseline period, compared with the even weaker 0.63 U.S. dollar value it experienced in 1998-99. The trade balance and government fiscal health continue to improve.

Depressed agricultural commodity prices of the past two years have strained Canada's agriculture. However, the Canadian government has several programs in place to help support domestic agriculture. These include the Net Income Stabilization Account, Crop Insurance, Companion Programs, and the Advance Payments Program. Wheat and barley in Western Canada continue to receive marketing support from the Canadian Wheat Board, including price pooling. In addition, Canada maintains supply management programs for dairy, eggs, and poultry products and continues to be isolated from world markets for these three commodity groups. The baseline assumes similar levels of support to continue. No changes are assumed to occur in provincial price stabilization programs, particularly for the Quebec hog program. However, Canada's Agricultural Income Disaster Act is treated as a temporary program and does not affect the long-term projection.

Transportation reform continues to affect Canadian agriculture and trade. When freight subsidies were eliminated in 1995, the cost of shipping Prairie Province crops to export positions increased. This reform measure is expected to lower marketing costs and improve the grain marketing system in Canada in the long run. However, the near-term effect has been to pass the lost subsidy through the marketing channel to the farm-gate in the form of lower prices for grains and oilseeds. Prairie processing and livestock sectors have benefited from the reductions in local prices. As a result, the removal of transport subsidies has contributed to a number of important structural changes now shaping the outlook for Canadian agriculture and trade. Valued-added processing and livestock operations have expanded in the Canadian Prairie Provinces. Most notable is the rapid expansion of hog operations, primarily in Manitoba. In addition, canola production and processing has expanded. Livestock operations (feeding, slaughter, and meat packing) and canola (rapeseed) crushing are all projected to continue increasing moderately in the baseline.

Crop production patterns continue to favor canola in Western Canada, as has been the case in the past several years. However, production of dry peas (field peas) has increased significantly since the middle of 1990s and now offers increased competition to protein meal in livestock rations.

Favorable world and U.S. economic prospects over the baseline period will bolster Canada's export prospects. With more investment in livestock facilities, Canada will slaughter more livestock and increase its meat exports, particularly pork.

Canadian agricultural exports depend heavily on the U.S. market, which accounts for a majority of Canada's agricultural and food product exports. Asia is also an important Canadian export destination. Strengthened Asian economies projected in the baseline mean improved export prospects for Canadian wheat and pork in those markets. This also implies higher feed demand and increasing feed imports from the United States.

Mexico. Mexico is expected to show the fastest economic and population growth in North America over the next decade. Per capita real GDP is projected to grow at an annual rate of about 3.5 percent over the period. Relatively fast growth, along with trade liberalization and domestic policy reform, will be the key factors shaping the outlook for Mexican agriculture during 2000-2010. Mexico is expected to be a progressively larger importer of grains, oilseed products, and meats during the projection period. Production capacity will remain limited by scarce water and land and low levels of technology, while rising incomes drive up demand for livestock products and feeds.

In recent years, Mexico has experienced increasing domestic pressure to limit imports, in large part because of continued low internal prices for most agricultural commodities. However, longer-run agricultural policy is expected to continue to be driven by the Alianza para el Campo, of which the PROCAMPO program is a major component, and by NAFTA. Under PROCAMPO, the government continues to reduce its role in supporting grain prices. The reductions in domestic support coupled with stiff competition from imports are expected to reduce area planted to coarse grains and limit wheat area. PROCAMPO direct payments, which require keeping land in an agricultural use but are otherwise decoupled, will continue to be phased out. Mexico is also expected to continue to reduce consumer subsidies.

Under NAFTA, all tariffs on baseline commodities will be eliminated by 2008. Because of the price-competitiveness and quality of U.S. corn, pork, poultry, and eggs, it is assumed that Mexico will import at least the tariff-rate quota quantities. In the case of poultry, it is assumed that Mexico will continue to not enforce the TRQ, leading to steady, modest growth in imports. Also, Mexico's exports of sugar to the United States are expected to rise following tariff elimination.

New programs aimed at improving agricultural productivity are assumed to have a small impact on farm output during the projection period. The new programs include initiatives for water distribution and irrigation investment, improved genetic material and equipment for livestock producers, technology transfer for the cattle and oilseed sectors, certified seed exchange, and an extension initiative for corn. The objective is to provide producers with the tools to operate in an environment largely free of government intervention but, until there is more progress in implementing the programs, it is assumed that impacts will be relatively small.

South America. Although the Asian financial crisis temporarily reduced economic growth rates in South America in 1998-2000, virtually all of the region's economies are expected to register strong economic growth during the next decade. Growth prospects are led by the two largest economies in the region, Brazil and Argentina. Like many countries in South America, they are expected to continue to benefit from their successful evolution from semi-authoritarian political systems and managed economies to political pluralism and more market-oriented economies.

Brazil's agricultural production prospects are extremely favorable in the long-term, and are benefiting from improvements in infrastructure. Improvements in waterway and railroad transportation systems are expected to make more agricultural production accessible to export terminals at prices that are very competitive in international markets.

The conversion of undeveloped land to arable land in Brazil is expected to gain momentum in the next decade, leading to further gains in soybean area and in cultivated pastures to support livestock expansion. In the center-west states of Goais, Mato Grosso, and Mato Grosso do Sul, for example, the potential exists to more than double the soybean area from about 4.9 million hectares in 1998. In the states of Maranhao and Tocantins in north-central Brazil, the potential exists to increase soybean area from only 0.2 million hectares in 1998 to 4-5 million hectares. Such growth would push production from these areas far beyond that of the traditional soybean producing areas in southeastern Brazil. However, infrastructure development remains the key to the pace of agricultural expansion in the vast interior lands.

Area planted to wheat and corn in Brazil is expected to show little or no growth, however, because production in the temperate southeastern areas faces competition from more efficient producing areas in neighboring Argentina and current varieties for these crops are not economical to produce in the tropical setting of the of the country's interior. As a result of limited wheat production growth in the face of strong urbanization and income growth, Brazil's wheat imports are expected to grow at about 1.6 percent annually, reaching 9.1 million tons by 2010. This import level maintains Brazil as the world's leading wheat importer throughout the projection period.

Argentine production potential will continue to expand rapidly over the course of the baseline projection period. In Argentina, future growth will likely manifest itself in the form of higher yields, rather than area expansion. Yields of wheat and corn are still considerably lower than in the United States. However, with continued adoption of higher-yielding plant varieties and more intensive input use, Argentina may rapidly close this gap.

Livestock dynamics will also play a critical role in determining the evolution of Argentina's field crops area. Presently, Argentina's vast permanent pasturelands (estimated at about 142 million hectares in 1999) are principally used to support a "grass-fed" cattle industry. In 1999, less than 10 percent of beef production was finished in feedlots. Some portion of this permanent pasture could be converted to cropland if market signals provide sufficient economic incentives.

Argentina's transportation infrastructure, which has largely been privatized, continues to be upgraded to handle the expanding supply of products more efficiently and at lower costs. Beef and veal production in Argentina grows at a 1.5-percent annual rate during the baseline.

Transition Economies

Former Soviet Union (FSU). The economic crisis that hit Russia in August 1998 also affected other countries in the FSU region (Ukraine, in particular), mainly through capital flight. The main macroeconomic consequence of the crisis for Russia and Ukraine has therefore been

extreme depreciation of the currency. After depreciation in 1998 and 1999, the Russian ruble and Ukrainian hryvna are expected to stabilize in value, and then begin to appreciate in real terms early in the baseline, thereby reversing much of the recent depreciation.

The initial fears that Russia's economic crisis would cause serious declines in GDP in Russia and throughout the FSU region were not realized, as Russian GDP grew 3.2 percent in 1999. The main reason is that the currency depreciation stimulated production by substantially improving the price competitiveness of domestic producers vis-à-vis the world market. As a major oil and natural gas exporter, Russia also benefited from rising world prices for energy. GDP in both Russia and Ukraine is projected to grow throughout the projection period at annual rates of 3.5-4 percent. Agricultural productivity throughout the FSU region is expected to rise only slightly during the next decade. This reflects pessimism that Russia and its FSU neighbors will enact the institutional reforms in agriculture necessary to promote productivity growth.

Russia elected a new legislature (Duma) in December 1999, and new President (Vladimir Putin) in June 2000, while in November 1999, Ukraine re-elected Leonid Kuchma as President. The early policy signs suggest that neither Putin nor the Duma will try to move Russian economic and agricultural policy strongly in either reform direction--that is, they will not accelerate reform but also not try substantially to reverse it. Major policy shifts in Ukraine also are not expected. These points underlie the cautious assumptions about agricultural productivity growth.

The main effect of Russia's crisis on Russian and FSU agricultural trade is that the depreciation in FSU currencies significantly reduced the region's imports by raising the prices of imports relative to domestic output. Agricultural imports are therefore expected to remain depressed in the short to medium term. However, as currencies begin to appreciate in real terms and economic growth picks up early in the baseline, imports are expected to rise. The main U.S. agricultural export to the FSU region during the reform period has been poultry, with most going to Russia. By the end of the projection period, U.S. poultry exports to the FSU region are projected to rebound and exceed the pre-crisis levels.

Central and Eastern Europe (CEE). The CEE region suffered macroeconomic setbacks in 1999 brought on by fallout from financial crisis in Russia and, in the case of the Balkan countries, by the war in Kosovo. Growth in the region has since rebounded and is projected to average 4-5 percent annually through the baseline.

Progress is assumed to continue towards market reform. As the economic transition proceeds, it is assumed that most of the rigidities inherited from the Communist period of central planning will be removed, leading to fuller transmission of world market prices to internal markets. The projections are based on the assumption that most world agricultural commodity prices will be fully transmitted to domestic markets and that import tariffs in most cases will not exceed 30 percent. In the short term, policies throughout the region have kept domestic producer prices near world levels. These measures have tended to counter the downward pressures on prices coming from lingering bottlenecks in the downstream sectors. As a result, it is assumed that domestic producer prices will not differ greatly from world market prices. Pressure to keep state budgets in balance is expected to remain the principal constraint on agricultural policy.

The projections also incorporate an assumption of a steady increase in efficiency in the agricultural sector, reflected in moderate gains in crop yields and greater feeding efficiency in the livestock sector. These productivity increases are expected to result from continuing progress toward market reform in all the CEE countries. Rising incomes and lower interest rates will bring badly needed investment to both agriculture and food processing. There will likely be some consolidation of the small fragmented farms that currently dominate much of the landscape. It is anticipated that land tenure will become more permanent, bottlenecks in issuing titles will be resolved, and true land markets will develop as capital markets improve.

The baseline assumes that none of the CEE countries will join the EU during the projection period. The EU has now agreed to open negotiations for accession with all the CEE nations. Although some CEE countries may join the EU by 2003, the timing and terms of accession are uncertain. When CEE countries do accede to the EU, significant changes in domestic and trade policies from those assumed here are likely.

Commodity Trade Highlights

Coarse Grains

Demand for coarse grains is expected to grow robustly over the next decade. Coarse grain consumption growth is projected to average 1.8 percent annually, significantly stronger than the 0.8-percent annual growth of the 1990s or the 1.2-percent rate of the 1980s. Projected growth, however, is well below the 7.6-percent annual gain of the 1970s. A key factor that weakened global coarse grain demand over the past decade was the drop in livestock numbers and feeding that occurred in the FSU and CEE as these economies experienced structural reform. With that structural shift now complete, these transition economies are expected to be a source of growth in grain feeding in the next decade.

About two-thirds of global coarse grain supplies are used as animal feed. Coarse grains that are traded are also primarily used as feed. Rising incomes and associated gains in per capita meat consumption, particularly in developing countries, are a key driver of projected increases in coarse grain use and trade. The developing countries of Asia, Latin America, North Africa, and the Middle East are expected to lead world growth in feed grain consumption and trade over the next decade. Industrial uses, such as starch production, ethanol, and malting, are relatively small but growing. Food use of coarse grains is concentrated in parts of Latin America, Africa, and Asia, and has generally declined over time, as consumers tend to shift consumption toward wheat, rice, or other foods as their incomes rise.

Foreign coarse grain production is projected to rise much more rapidly through 2010 than during recent decades. Except for corn, coarse grain area has been falling for decades in most countries, as producers turned to higher priority or more profitable crops. Foreign coarse grain area is expected to stop its decline and expand gradually for the rest of the decade, reaching 280 million hectares by 2010. However, this remains far below the record 306 million hectares reached in 1981. Foreign corn area is expected to continue to increase at the strong pace of recent decades and, with corn yield growth much stronger than for other coarse grains, corn will increasingly dominate feed grain markets. Growing demand and attractive prices for malting barley support

some gains in global barley area. Global sorghum area is projected to continue its long-run decline because of the development of higher yielding, drought-tolerant corn varieties. Other coarse grain area (mostly oats and rye) is expected to increase slowly.

Reversing a period of stagnation that began in the early 1980s, world coarse grain trade is projected to grow over the next decade, expanding 2.6 percent, or about 2.8 million tons, annually from 2001 to 2010. Global coarse grain trade is projected to reach the 1981 record of 108 million tons in 2003 and expand to 131 million tons by 2010. Strong economic growth is expected to fuel higher coarse grain imports in China, North Africa, Southeast Asia, and Latin America. East Asian imports are projected to remain mostly steady, as these countries tend to maintain stable domestic livestock and poultry production, while meat imports satisfy most of the growth in internal demand. Taiwan's and South Korea's feed grain imports are expected to increase slowly, while Japan's decline. Southeast Asian feed grain imports are expected to show strong long-term growth driven by Thailand and Vietnam. After a dip in the first year of the baseline, representing recovery from drought, North Africa and the Middle East imports are also an important source of growth in coarse grain trade. The FSU, one of the world's largest importers during the 1980s, is expected to be a modest net exporter of coarse grains, mostly barley, as animal numbers increase only gradually.

U.S. exports of coarse grains are projected to increase in 2001, despite a slight decline in corn exports, because of an expected recovery in sorghum exports. In 2001, global coarse grain trade increases. Greater export competition from Argentina, Canada, Eastern Europe, and the former Soviet Union partly offsets reduced exports by China and the EU. In 2002, Argentina, Canada, Eastern Europe, and the former Soviet Union are expected to continue to expand exports enough to cause a decline in U.S. coarse grain exports despite continued expanding global trade. U.S. exports stabilize in 2003, as competitors' export growth slows. In 2004 and thereafter, U.S. coarse grain exports expand, but competition remains strong and the U.S. share of global coarse grain trade declines slowly. U.S. market share is expected to decline because rising international prices boost foreign production.

U.S. corn exports are expected to grow an average of about 1 million tons per year over the projections period. The 1979 record level of U.S. corn exports is exceeded in 2007, with corn exports reaching 67.9 million tons by 2010.

World corn trade grows at an increasing rate until the last years of the baseline when increasing prices limit expansion. Global corn trade is expected to exceed the 1989 record of 80 million tons in 2005, reaching 95 million tons by 2010. The largest gains in corn imports are expected to occur in China, Southeast Asia, Latin America, North Africa, and the Middle East, where demand for livestock feed is expected to expand steadily, but production potential is limited. With China reducing corn exports during most of the period, Argentina, Eastern Europe, and the United States will be the major beneficiaries of increasing import demand for corn.

Global barley trade is expected to expand throughout the baseline, although growth early in the period is minimal as North Africa and parts of the Middle East recover from drought. Import growth is expected in China and other malting barley markets. Feed barley imports by Saudi Arabia are expected to expand slowly, but will likely be constrained by limited exporter supplies

and substitution of other feeds. Canada and Australia are expected to expand barley exports in the first years of the period, but the higher profitability of other crops is expected to stall expansion. After an initial decline, EU barley exports are expected to gradually rise through the rest of the baseline and exceed the 2000 record by 2009. The Uruguay Round Agreement limits on subsidized EU coarse grain exports constrain combined exports of barley, rye, and oats. However, in light of a weak euro, projected prices and exchange rates in the baseline indicate that barley can be exported by the EU without subsidy throughout the next 10 years. Thus, the constraint on rye and oats exports becomes less binding as available coarse grain subsidies shift from barley. Global trade in other coarse grains is projected to grow, but the EU is expected to have difficulty finding markets for its large rye stocks.

Sorghum trade is projected to increase gradually through the baseline, driven by Mexico which favors sorghum imports as less politically sensitive than corn. Japan's sorghum imports are expected to stagnate.

Wheat

World use of wheat is projected to grow at an average of 1.4 percent annually between 2000 and 2010, significantly faster than the 0.6-percent annual growth achieved in the 1990s, but still slower than the 1970s or 1980s. Global use grows strongly in the first year of the baseline as North Africa, parts of the Middle East, Eastern Europe, and the former Soviet Union rebound from drought-induced tight supplies. In the latter half of the projections, consumption growth slows to 1.2 percent because of increasing wheat prices. Developing countries account for most of the projected increase in global use. However, the transition economies of the former Soviet Union (FSU) and Central and Eastern Europe (CEE) also show important gains in use, in sharp contrast with the last decade when consumption in the region contracted. Developed countries contribute about 24 percent of expected growth in wheat use. In the United States, total use of wheat is growing sluggishly as increases in food use are driven almost exclusively by very modest population growth. The very slow growth in U.S. domestic use underscores the importance of global trade for future U.S. wheat demand and prices.

World per capita use of wheat and flour is projected to climb slowly from 99 kilograms per year in 2000 to about 100 kilograms by 2010. World per capita use peaked at 107 kilograms in 1990, but then fell to 97 kilograms in 1995 due to the sharp decline in consumption in the FSU and CEE. Global food use is expected to increase at slightly less than the pace of population growth. Substantial increases in wheat feed use are expected in the FSU, China, and the EU, all regions where prices for wheat and competing feed grains are not closely linked to world prices.

World wheat production is projected to increase at between 1.2 and 1.4 percent annually from 2001 to 2010. Global wheat area is projected to show little growth, in part due to higher productivity growth for several competing crops relative to wheat. Instead, most of the growth in global wheat production projected in the baseline comes from increased yields.

World wheat trade (including the wheat equivalent of wheat flour) is projected to grow an average of 2.2 million tons, annually. The projected growth is a reversal of the 1980s and 1990s when trade declined. Growth in imports is concentrated in the developing countries, primarily

North Africa, the Middle East, China, and Indonesia. By the end of the decade, India is projected to join Pakistan as a growing net importer of wheat. Imports by the transition economies of the FSU and CEE are expected to continue to decline during most of the projections, but these declines will not be as globally significant as during the previous two decades.

Although nominal wheat prices are expected to increase over the next 10 years, real wheat prices are projected to decline, limiting incentives to grow wheat for export. Exchange rates are expected to favor some exports. The share of world wheat exports supplied by the EU, CEE, and the FSU is projected to increase over the period, while the export share for Canada, Australia, and Argentina declines. Exports by India, Turkey, and other foreign exporters also contract. The United States is projected to maintain its share of world wheat trade at about 29 percent.

Limits on export subsidies included in the Uruguay Round agreement, Agenda 2000 reforms in the EU, rising wheat prices, and the weak euro assumed in the baseline combine to make export subsidies less important in the future than they have been in the past for determining wheat market shares. However, a portion of budgeted U.S. EEP funds are assumed to be used for wheat starting in 2001/02, so targeted countries receive larger exporter subsidies than in recent years. For the most part, exporter market shares are likely to be determined by the cost effectiveness of wheat production, transportation, and marketing systems. Wheat production and exports in the United States are expected to be limited by the slow growth in wheat yields compared with other crops.

The EU is expected to boost market share significantly the next several years as currency weakness allows EU wheat (and barley) exports to occur without subsidies. Agenda 2000 reforms also lower internal grain prices early in the projection period. However, abundant wheat stocks and limited cropping alternatives will fuel EU wheat exports through 2010. The EU share of world wheat trade is projected to increase from 15 percent in 2000 to nearly 20 percent by 2010. Modest changes in exchange rate assumptions could alter this scenario. Weak exchange rates are also expected to encourage wheat exports from the FSU and CEE.

In Canada, reform of the transportation system has resulted in changes in marketing costs that favor barley production over wheat and thus keep wheat area from expanding. Canada's wheat yield growth was very slow over the last decade and, given varietal constraints, is projected to remain limited for the next decade. As a result, increased domestic demand is expected to limit export growth. In Australia, increasing wool prices and limited areas with enough rainfall will constrain wheat expansion. Argentina is expected to shift area between wheat, corn, and oilseeds, depending on which has the most attractive world price, but total area is limited. Productivity gains for corn are expected to outpace wheat, causing a gradual decline in wheat area.

Rice

Global rice trade is projected to grow slightly less than 2 percent annually from 2000 through 2010. By 2010, global trade is projected to reach 30 million tons, more than 12 percent above the record of 26.8 million set in 1998 and 20 percent above 2001. Projected trade growth is

faster than in the 1980s, but slower than in the 1970s and 1990s. Rice trade as a share of total use remains very small relative to other cereals, despite a projected small increase to almost 7 percent by 2010.

Trade is expected to continue to consist predominantly of long-grain (indica) varieties, which will account for the bulk of the trade growth. Expansion in medium-grain (japonica) trade is projected to be slower, despite the increases since 1995 in medium- and short-grain rice imports by Japan and South Korea under the Uruguay Round Agreement. Asia, the Middle East, and Sub-Saharan Africa are projected to account for the bulk of the import growth.

Nominal prices are expected to rise slowly from recent low levels at a rate slightly greater than the general inflation rate. Global japonica prices are expected to remain above long-grain prices due to limited world exportable supplies of high-quality japonica rice. The bulk of japonica imports are by middle and higher income countries, primarily Japan, South Korea, Turkey, and Jordan. Indica rice is imported by a broad spectrum of countries, with Indonesia, Iran, Iraq, the Philippines, and Latin America the top markets.

Foreign production is projected to rise gradually, growing almost 1 percent per year. Projected growth is slower than in the 1970s, 1980s, and early 1990s when irrigation expanded rapidly in Asia and Green Revolution technology was being widely adopted. Expectations of slower production growth stem primarily from a slowdown in yield increases. Yield growth has slowed since the early 1990s. Expansion in global acreage is expected to remain extremely small, as it has since 1975. India is projected to account for the largest share of expanded rice area and production.

Global rice consumption is projected to rise about 1 percent annually, markedly slower than during the 1980s and the first half of the 1990s. Global per capita consumption is projected to decline over the baseline period, so the expansion in world rice consumption will be driven by population growth. Asia will account for the bulk of the growth in global rice consumption, even though per capita consumption in the region is projected to decline.

Per capita rice consumption in middle and higher income Asian countries has been declining for several years, particularly in Japan, South Korea, and Taiwan, and is expected to continue to decline, reducing total rice consumption in these countries. Higher incomes lead to declines in rice consumption in these countries in favor of other foods, such as wheat products, fruits and vegetables, and meat. Little or no growth in per capita consumption is projected for the largest rice consuming countries in Asia. In China, the world's largest rice consuming country, per capita consumption is projected to continue declining, a result of rising incomes and shifting diets. Even with a rising population, China's total food consumption of rice is projected to decline over the next decade. Per capita growth is projected to be negligible in India, Indonesia, and Bangladesh. However, growing populations will push total rice consumption higher over the next decade in these three major rice-consuming countries.

In contrast, per capita consumption is projected to continue rising in other regions. These are primarily lower income rice producing countries, such as the Philippines, and higher income non-Asian countries, such as Canada, the EU, and the United States. Per capita consumption is

projected to expand slightly in the Middle East and Central and Eastern Europe as well. Per capita consumption in Brazil, the largest non-Asian rice consuming country, is projected to be essentially flat over the next decade, although expanding population will push rice consumption higher.

The United States is a net exporter of rice, shipping high-quality indica and japonica rice to markets worldwide. Both U.S. rice exports and the U.S. share of global rice trade are projected to decline over the next decade. From 1991 to 1995 the U.S. share of the export market for rice varied from 14 percent to 17 percent, but averaged less than 12 percent from 1996 to 2000. It is projected to be 10 percent in 2001 and then slowly decline to slightly less than 6 percent by 2010.

No growth in U.S. production, continued expansion in domestic use, and high U.S. prices relative to Asian competitors are expected to prevent any increase in the volume of U.S. rice exports over the baseline period. By 2010, total U.S. exports are projected at 1.7 million tons, while total imports are expected to rise to 0.4 million tons, leaving the United States a net exporter of only 1.3 million tons of rice. This compares with the estimated 2.8 million tons exported in 1999/00.

Historically, rice trade and prices have exhibited greater volatility than those of other cereals. Much of this volatility stems from a high concentration of global rice production in South and Southeast Asia where production is heavily dependent on the timing and amount of rainfall during the monsoon season. In addition, only a small share (currently about 6 percent) of world rice production is traded each year. These factors will continue to affect the world rice market during the next 10 years, with the potential to create dramatic annual swings in trade and prices that could deviate significantly from the trends projected in this baseline.

Cotton

Growth in foreign consumption and production of cotton both slowed substantially during the 1990s, largely due to difficulties with the transition to market economies in the former Soviet Union and Eastern Europe. Recovery became evident late in the 1990s and is expected to continue during the next decade, although consumption and production are not expected to return to their long-term average growth rate of 1.8 percent per year during the baseline. World cotton consumption is projected to expand approximately 1.2 percent annually during 2000-2010, underpinning the outlook for a rebound in the volume of world cotton trade. However, a key uncertainty in the projection is the extent to which earlier gains in cotton consumption, associated with a shift in consumer fiber preference toward cotton and away from synthetics, can be sustained. Sustained Asian investment in polyester capacity up to the onset of the region's financial reversals suggests vigorous competition for fiber share in coming years. The WTO-mandated end of textile import quotas starting in 2005 also has the potential to significantly transform the global textile industry for all fibers, adding further uncertainty to the outlook.

Foreign cotton production showed little upward trend during the 1990s, as smaller harvests in China and the FSU offset gains elsewhere. High levels of input use and poor water management have rendered useless much of the area abandoned in Central Asia during the 1990s, and this

area is expected to remain out of production during the projection period. Competition from other crops and growing pesticide resistance by major cotton pests hampered production in China, although recently yield growth has resumed. Further losses in these regions are not expected, although production prospects in China, the world's largest cotton producer, are uncertain following extensive policy reforms for cotton during 1999.

World cotton trade is expected to average 1.3-percent annual growth during 2000-2010, reversing much of the decline suffered during the 1990s. World cotton trade fell from a peak of 33.4 million bales in 1988 to 23.8 million in 1998, in large part due to declining Russian imports. China also switched from a large importer to exporter in 1998. The outlook is for import growth in Russia, China, and elsewhere during the forecast period and world exports are projected at 31.3 million bales by 2010.

World trade in the 1990s contracted for two reasons--the virtual collapse of Russia as a consumer and importer of cotton, and the continued shift of spinning from traditional importers to cotton-producing countries. Neither factor is expected to be as important in the future. Russia's cotton consumption fell almost 85 percent between 1989 and 1998 during the restructuring of Russia's political, economic, and foreign trade systems. Elsewhere, other traditional cotton-importing countries found it less expensive to purchase cotton yarn and fabric for their textile industries as inexpensive textile imports flooded their markets, particularly from Pakistan through the early 1990s. At the end of the 1990s, apparel as well as textiles from China, India, and Pakistan played an important role in reducing importers' mill use of cotton fiber, particularly Japan's, and to some extent Korea's and Taiwan's. These textile and apparel imports took the place of imported raw cotton.

With Russian mill consumption beginning to rebound since 1999, and China likely to again become an importer following cotton-sector policy reforms, world cotton trade is likely to grow during the next 10 years. In addition to Russia's return to growth, several countries that were net suppliers to world markets as late as 1990 have become importers instead. In past years, increasing consumption in Mexico, Brazil, and Turkey in part represented shifts in consumption away from importing countries to non-importing producers. As consumption gains have consistently outpaced production in all three countries, they have begun to steadily import, driving world trade higher. Even India and Pakistan became frequent net importers during the second half of the 1990s.

Foreign export growth is expected to recover during 2000-2010, but to remain below the long-term trend. By 2010, foreign exports are expected to total 22.4 million bales. Foreign export growth will be supported by some resumption of trade relations among countries of the FSU, and by growing import demand from China, Latin America, and Southeast Asia.

U.S. exports are also expected to trend up 1.1 percent annually during 2000-2010, growing to near 8.9 million bales by 2010. The U.S. share of world trade is expected to peak in 2002 at almost 30 percent, then decline gradually to about 28 percent by 2010. This is still above its average share of global trade during 1994-2000. U.S. export share was boosted during much of the 1990s by extremely large imports by China and by use of Step 2 of U.S. cotton marketing loan provisions.

While future world consumption is expected to improve compared with the 1990s, the rapid consumption growth of the 1980s, which was spurred by sharp share gains by cotton versus other fibers, is not expected to resume. In the short term, consumption growth by several cotton importers is likely to be constrained by relatively sluggish economic performance and economic restructuring. In the long term, the liberalization of textile trade under the Uruguay Round's Agreement on Textiles and Clothing will also constrain cotton imports by the most developed traditional importers, such as the EU and Japan. In contrast, rapid consumption growth is expected in many developing countries and steady growth in consumption is expected to continue in major cotton-producing countries. The pace of this structural shift will depend on the implementation of the Multi-Fiber Arrangement's phaseout. While it is anticipated that the most significant changes will probably be delayed until the phaseout is complete at the end of 2004, large uncertainties remain about the timing of liberalization and shifts in garment production both to and among developing countries.

Highlights for Major Foreign Cotton Importers. In traditional cotton-importing countries (e.g., Japan, South Korea, Taiwan, and the European Union), cotton consumption is expected to decline steadily. Strong competition from emerging Asian textile suppliers and comparative production disadvantages will accelerate declines in their raw cotton consumption after 2000.

China's consumption is expected to grow more rapidly than production during 2000-2010. While China is forecast to be an exporter over the forecast period, net imports are forecast to resume now that China has reduced its stocks. After first suffering chronic bollworm infestations during the early 1990s, the North China Plain rebounded as a production region during 2000, although it remained far short of its former role as China's pre-eminent growing region. While the Yangtze region's cotton area was much more stable than the North China Plain's during the 1990s, the Yangtze region declined in importance relative to Xinjiang, and China's total area devoted to cotton is expected to remain well below the peaks seen in 1984 and 1992. China's yield growth recovered during the 1990s, but the termination of a government price floor suggests the incentives for maintaining input levels may be smaller during the forecast period.

China's future production and consumption prospects are both subject to considerable uncertainty. Since China is often one of the world's largest importers over some of the projection period, differing assumptions on supply and use developments could significantly influence world trade and U.S. exports. During the course of recent policy reforms, China's cotton prices and farmer enthusiasm have varied widely from year-to-year, and it is unclear where China's initial steps towards the privatization of cotton marketing will take it. Specific areas of uncertainty include the extent to which planted area might return to cotton production after a 5-year, 1.2-million-hectare decline, the extent to which cotton consumption can maintain its initial post-reform surge, and the evolution of agricultural trade policy as China's reforms continue.

In Indonesia and Turkey, consumption and import expansion are expected to resume due to comparatively cheap labor, favorable exchange rates, and foreign investment in their textile industries. Indonesia is expected to be one of the largest importers in the world throughout much

of the forecast period, but Turkey is forecast to surpass Indonesia as the second largest importer in 2002 and replace Mexico as the largest in 2005. Turkey is expected to benefit from continued integration into the EU. Turkey's cotton production is expected to continue to rise, particularly in Southeast Anatolia, but fail to keep pace with consumption.

The integration of textile industries in Mexico and the United States has driven Mexico to become the world's largest importer of raw cotton starting in 2000. Mexico's cotton imports grew about 300 percent between 1994 and 2000, and prospects are good for further, albeit, substantially slower, growth through 2004. The WTO-mandated end of textile import quotas adds uncertainty to Mexico's prospects after 2004 as its preferential access to North American markets erodes, and consumption and import gains are expected to slow further at that point.

Brazil's production rebounded and its imports dipped as cotton production moved north and import tariffs on cotton rose during the second half of the 1990s. Brazil is not expected to return to the import-substitution orientation that governed its economic policy before the 1990s, and cotton import tariffs are likely to remain low, although exceeding their pre-MERCOSUR levels. Consumption is expected to continue outpacing production, but high yields from rapidly expanding area in Matto Grosso will constrain import growth.

After years of plummeting cotton consumption, some FSU countries are beginning to increase consumption again, while CEE consumption continues to lag. For even the most dynamic of the region's traditional importers, cotton consumption and imports are expected to remain well below historic levels throughout 2000-2010. However, Central Asian countries, like Uzbekistan, are likely to consume more cotton than in the past as government policies favor investment in local textile industries.

Demand prospects in the non-cotton-producing republics of the FSU are a major uncertainty in the trade outlook, particularly for Russia. As economies recover in Russia and the other lagging republics, it is not clear if their textile sectors will expand at the same rate as the overall economy, grow faster as a result of promotion aimed at achieving quick gains in export earnings, or suffer due to import competition.

Highlights for Major Foreign Cotton Exporters. Australia and the French-speaking countries of West Africa will continue to channel most of their growing cotton output into the export market throughout the forecast period. There is little prospect of either exporter processing a significant amount of its cotton output domestically, although in the very long run a larger textile industry is likely to develop in Africa.

Pakistan is expected to maintain some regulation of raw cotton exports, favoring domestic producers of products for export over exports of raw cotton. However, restrictions on raw cotton exports are expected to be less severe than before the 1994/95 relaxation, leading to some growth in raw cotton exports, as well as some strengthening of domestic producer and consumer prices with respect to world prices.

The Central Asian countries of the FSU will continue exporting cotton to non-FSU markets at higher levels than during the 1980s. These countries are also expected to increase their exports

within the FSU. Central Asia's ability to export, however, will be heavily dependent on yield gains. Past environmental damage is expected to keep some land out of production indefinitely, and efforts to diversify agricultural production will sustain area for grains and other crops at the expense of cotton.

Supply prospects in Central Asia, currently the source of nearly one-quarter of world cotton exports, are an important uncertainty in the global outlook. Economic and agricultural reform has been slow in the region's major producers, so reform's long run impacts on yield growth and cross-commodity competition remain conjectural. According to the World Bank, the region's largest exporter, Uzbekistan, is pursuing policies that tax agriculture substantially in order to promote industrialization. Under these circumstances, Central Asia's exports would be expected to grow more slowly than the rest of the world, and the region's share of world trade would fall below 20 percent before 2010.

Soybeans and Products

World trade in both total oilseeds and soybeans is projected to increase faster during 2000-2010 than during the 1980s, but much more slowly than in the early 1990s. Global exports of soybeans and soybean meal are projected to rise at annual rates of 1.3 and 2.3 percent over the projection period, reaching 52.7 and 50.3 million tons, respectively, by 2010. Combined exports of soybeans and meal, on a soybean-equivalent basis, are projected to grow from 95.3 million tons in 2000 to 116.5 million tons by 2010.

World soybean oil trade is projected to grow 2.5 percent annually during 2000-2010, compared with 5-percent growth achieved in the 1980s and 1990s. Although both world and U.S. exports of soybean oil are projected to grow faster than soybean exports during 2000-2010, they are projected to slow compared with trade in other vegetable oils. With the outlook for continued trade growth in oils relative to meals, incentives to produce high-oil content oilseeds and palm oil are expected to strengthen.

Soybeans and Soybean Meal. Projections of U.S. exports of soybeans and soybean meal are 29.1 million tons and 8.2 million tons, respectively, by 2010. The U.S. market share for soybean exports is projected to rise to 60 percent by 2003 as domestic supplies grow relative to foreign supplies. But once prices of competing crops strengthen relative to soybeans, cutting domestic soybean production and reducing export supplies, the U.S. export share is projected to drop back to 55 percent by 2010. Similarly, the U.S. market share of soybean meal trade also edges up to almost 18 percent by 2003 but contracts to 16 percent again by 2010 as foreign supplies expand. These projected U.S. market shares contrast with significantly higher trade shares for soybeans (73 percent) and soybean meal (24 percent) achieved in the 1980s, when U.S. production was a greater proportion of the world total. Limited expansion of U.S. acreage and slowing crush rates eventually constrict exportable supplies of soybeans and soybean meal. Another factor slowing U.S. soybean exports in the longer term is thriving exports of meat, especially poultry. This trend will boost the livestock population and boost the share of protein feed supplies consumed within U.S. borders compared with the past.

Sharply lower soybean prices are expected to slow foreign supply growth from the rapid annual increases of the 1970s (9 percent), 1980s (6 percent), and 1990s (5 percent). Foreign soybean production is projected to climb about 2.5 percent annually in the projections. Foreign soybean yields are forecast to rise at a modest 1.6 percent annually. In the near term, low prices will constrain area harvested and application of inputs by foreign producers. A stronger soybean price situation by 2004 should improve returns and output by foreign producers. In Brazil, steadily expanding domestic meal consumption and exports will support crush demand. However, for several years Brazilian soybean exports are likely to stagnate from the surge in U.S. exports and tighter domestic supplies. Argentina's small consumption base and substantial crush capacity assure long term growth in exports of soybean meal but limits on soybean area should slow production growth and flatten soybean exports.

Gains in world soybean meal consumption from 2000 to 2010 are projected at 2.0 percent annually, compared to growth of 4.6 percent in the 1990s. An important factor behind the slower growth is a projected decline in EU imports of soybeans and soybean meal. Despite projections of the EU being able to export wheat and barley without subsidies throughout the baseline, abundant grain stocks and lower internal grain prices (due to Agenda 2000 reforms) combine to reduce the relative cost of feeding grains versus soybean meal. As a result, increases in grain feeding, partly from stocks, are expected to cut EU soybean meal consumption and imports.

Stronger economies in China and other Asian countries should reinvigorate protein meal consumption in the next few years. But, China's policy maximizing domestic crushing capacity instead of importing protein meal and vegetable oil significantly influences the composition of world trade. China is expected to account for half of the world's growth in soybean imports over the next 10 years. With relatively small soybean meal imports by China, competition among the major soybean meal exporters is likely to intensify early in the projection period. Relatively more favorable meal to bean import prices are likely to pressure crush margins for other soybean importers, curtailing their soybean imports in favor of the low-priced products. However, in the case of Mexico, low U.S. soybean prices are expected to continue to encourage robust imports.

Soybean Oil. Foreign soybean oil production is projected to rise 2.3 percent annually (slightly slower than trade). Growth in soybean processing in Mexico, Brazil, Argentina, India, and China accounts for most of the projected gains in foreign soybean oil production. World use of soybean oil is projected to expand at about 2 percent annually from 2000 to 2010, well below the near 5-percent growth rate of the 1990s. Projected consumption gains are concentrated in the developing nations of Asia and Latin America, with slower growth anticipated for Europe, the former Soviet Union, Japan, and the United States.

Growth in soybean oil trade is projected to slow to 2.5 percent during 2000-2010, compared with about 8 percent in the 1990s when developing countries made sharp import gains. Future growth in international soybean oil trade will be curbed by larger vegetable oil output in China. In addition, rising relative prices are seen shifting soybean oil demand toward competing oils, particularly Southeast Asian palm oil.

The U.S. share of global soybean oil exports is projected to rise to over 14 percent by 2004. Slower growth in domestic soybean oil production, greater South American competition, and

global output gains for other vegetable oils should eventually pare the U.S. market share back to about 13 percent, or 1.3 million tons, by 2010.

Beef

World beef production and consumption are projected to increase about 2 percent annually over the projection period. Some of the largest increases in production are expected to be in China, Mexico, Canada, Brazil, and countries of the former Soviet Union. While beef consumption will increase around the world, the majority of the increase in beef consumption is expected to be in Asia. The largest increases in consumption will be in China, but Chinese trade policies are expected to favor domestic beef production and little increase in imports is expected.

The United States will supply a significant share of increased imports by other countries over the next decade. The largest increase in imports is expected to be in Russia, but most will be supplied by European countries and former members of the Soviet Union. Other large growth markets for beef imports include Mexico and South Korea, each increasing by about 300,000 tons. Taiwan, although a smaller beef importer, will also show rapid import growth, averaging 5.7 percent annually. Japan is projected to increase imports by over 130,000 tons, although the annual rate of growth in that maturing market will be a modest 1.3 percent. Imports by Canada will rise only moderately as increased cattle feeding and slaughtering capacity occur in that country.

Large increases in beef exports are projected for Ukraine, but these exports will go almost exclusively to Russia where they will not compete with U.S. beef. Large increases in exports also are seen for Brazil, but in the absence of FMD-free status, these exports also do not compete against U.S. product. The main competitors to the United States in world beef markets over the next 10 years are Canada, Argentina, New Zealand, and Australia. Exports from New Zealand and Argentina are expected to increase about 2 percent a year and exports from Canada rise at nearly a 2.8-percent annual rate. Australian exports are expected to decline somewhat over the projections period. As a result, the United States is likely to increase its share of the Asian market, but can expect competition from both Canada and Argentina as both increase their production of fed beef. Some of the grass-fed beef from New Zealand is also likely to show up in Asian markets but will not compete strongly with American product. A significant portion of the increased New Zealand production will be imported by the United States to satisfy increased demand for processing beef.

Pork

World pork production and consumption are expected to increase moderately over the projection period. Both production and consumption are likely to achieve 2-percent annual growth, based on GDP growth assumptions and expected higher pork prices. Production growth areas during the 2001-2010 projection period will likely be China and Canada. Favorable resource bases also create the potential for significant growth in the pork sectors of Brazil and Mexico. The factors that will determine the extent of growth of Brazilian and Mexican export potential include macroeconomic stability and rates of improvement in infrastructure.

Consumption in mature pork markets, the U.S., the EU, Canada, and Japan, is expected to grow with population and income over the projection period. Potential for strong consumption growth is focused in Asia, particularly China, and in South America.

Import growth over the projection period develops in Asia as population and incomes grow, and as noncompetitive domestic production sectors decline. Canada, a low-cost producer whose export growth is particularly pronounced early in the projection period, will likely contest market shares in Asian markets heretofore dominated by the United States and the EU.

Poultry

During the 2001-2010 forecast period, poultry meat production is expected to continue to expand as worldwide economic growth increases per capita disposal incomes. Higher incomes are expected to raise per capita meat consumption. With cost advantages relative to beef and pork, chicken meat is expected to garner a larger proportion of the increased meat demand.

Poultry meat consumption is also expected to benefit from a number of social changes in both developed and developing countries. In developed countries, the period 2001 to 2010 is expected to see continuing time pressure on meal preparations and higher demand for partially or fully prepared meals for rapid home preparation. Consumers in developing countries will be likely to purchase a larger share of their meals at newly-emerging food outlets. These may be western-style supermarkets, super stores or fast food restaurants. In many areas, increasing consumption through these outlets will mean a higher percentage of poultry consumption coming from poultry parts rather than whole birds. Higher worldwide consumption will also be driven by the continuing ability of poultry industries to increase production efficiencies and maintain a lower per-unit cost for their products relative to beef and pork products.

As worldwide poultry production increases, there will be further consolidation of production and processing facilities. This will be especially true in developing countries as production shifts from small "backyard" production units to larger ones tied not to local markets for live or whole birds, but to centralized processing facilities. These changes will occur in conjunction with new developments in food marketing and trends towards more away-from-home eating and the demands that these changes will place on food suppliers.

Much of the growth in consumption is expected to occur in the expanding economies of Asia, especially China. China is expected to expand its domestic poultry production and its poultry exports, especially of further processed or de-boned poultry products. At the same time, China's poultry imports are expected to rise. The other major market for poultry exporters will be Russia. Domestic poultry production in Russia is expected to gradually increase between 2002 and 2010. However, rising poultry consumption is expected to outpace domestic production and Russia and the rest of the FSU should remain a large market for poultry imports.

Trade in poultry products is expected to grow during the baseline period as processors respond to different consumer preferences for various poultry parts across countries. The forecasted growth in trade is based on processors being able to identify markets that have a higher preference for

specific poultry parts which in the producing country are less desirable. This trade is based on a shift in consumption from whole birds to parts. The U.S. poultry sector is based on the domestic consumption of white meat poultry products and the export of less desirable (by U.S. standards) dark meat products to other countries. However, a country with a domestic preference for dark meat could reverse this marketing pattern and attempt to export white meat products to developed countries with a preference for those products.

Even with expectation of increased global trade in poultry meat over the next decade, there are a number of possible issues that may adversely affect the growth in trade. While multilateral trade agreements have lessened trade restrictions, over the baseline period the poultry industry will have to address conflicts regarding growing conditions, disease restrictions, and slaughtering and processing methods.

Table 38. World production and use for selected commodities, baseline projections 1/

	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Production												
Coarse grains	876.0	863.0	906.2	922.1	951.4	966.4	981.6	996.9	1,011.0	1,028.4	1,042.5	1,063.3
Corn	605.3	592.4	613.8	626.0	653.0	665.8	679.1	692.0	704.0	719.0	731.0	749.5
Wheat	585.9	579.9	609.7	616.9	625.1	634.1	642.7	650.9	659.9	668.4	676.8	685.4
Rice	402.5	397.3	401.3	405.4	409.1	413.1	417.1	420.9	424.9	429.0	433.2	437.4
Soybeans	157.2	166.2	173.4	175.5	176.4	179.3	183.0	186.3	190.4	193.8	197.0	200.0
Soybean meal	108.2	112.4	115.8	118.6	120.8	123.2	125.8	127.7	129.8	132.0	134.8	137.5
Soybean oil	24.5	25.4	26.2	26.8	27.3	27.9	28.5	28.9	29.4	29.9	30.5	31.2
Cotton	87.0	86.9	91.0	95.0	96.0	97.0	98.0	99.0	100.0	101.0	102.5	104.0
Exporters												
Coarse grains	881.0	887.3	920.8	935.4	952.3	969.1	984.3	999.2	1,014.3	1,029.9	1,045.3	1,062.1
Corn	602.6	612.7	627.4	638.4	653.5	668.0	681.4	694.0	706.9	720.2	733.3	747.8
Wheat	594.1	596.7	607.8	616.6	625.2	634.0	642.7	651.3	659.0	667.3	675.7	684.2
Rice	399.7	401.4	403.1	404.9	408.8	412.8	416.9	420.8	424.8	429.0	433.2	437.4
Soybeans	159.1	164.9	170.2	174.7	178.1	181.4	184.6	187.6	190.3	193.2	196.8	200.5
Soybean meal	110.0	112.8	116.2	119.0	121.3	123.7	126.2	128.1	130.2	132.4	135.2	137.9
Soybean oil	24.3	25.7	26.2	26.9	27.5	28.0	28.6	29.1	29.6	30.1	30.7	31.3
Cotton	91.2	92.7	93.8	95.0	95.8	96.5	97.6	98.7	100.0	101.4	102.8	104.2

1/ Million metric tons except for cotton (million 480-pound bales).
The projections were completed in October 2000 based on information known at that time.

Table 39. Coarse grains trade baseline projections

	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
						Million metric tons						
Importers												
Former Soviet Union 1/	2.6	1.0	1.3	1.4	1.6	1.6	1.7	1.8	1.9	2.0	2.1	2.3
Eastern Europe	1.8	1.8	1.3	1.5	1.3	1.4	1.4	1.5	1.6	1.7	1.7	1.8
Japan	20.5	20.0	20.3	20.3	20.2	20.1	20.1	20.0	19.9	19.8	19.7	19.5
South Korea	9.1	8.5	8.5	8.8	9.1	9.3	9.4	9.5	9.6	9.7	9.7	9.8
Taiwan	5.3	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.5	5.6	5.7
China	2.6	2.7	4.7	5.0	5.1	5.6	6.3	7.0	7.9	8.8	10.0	11.3
Mexico	9.3	9.5	9.9	10.2	10.5	10.9	11.2	11.5	11.9	12.2	12.5	13.0
European Union 2/	3.0	3.0	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Latin America 3/	11.1	10.2	9.5	9.5	9.8	10.3	10.8	11.7	12.8	13.8	14.3	14.8
N. Africa & Middle East	23.3	25.5	25.2	25.6	26.2	26.9	27.6	28.4	29.2	30.0	30.8	31.5
Other Asia & Oceania	5.1	5.0	5.8	5.7	5.9	6.2	6.4	6.8	7.2	7.6	8.0	8.4
Sub-Saharan Africa 4/	1.7	1.8	1.9	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2
Other foreign 5/	4.5	4.2	4.7	4.7	4.7	4.6	4.6	4.6	4.6	4.6	4.6	4.6
United States	2.8	2.7	3.0	3.2	3.4	3.4	3.5	3.5	3.6	3.6	3.7	3.7
Total trade	102.5	101.3	104.4	106.0	108.0	110.5	113.2	116.5	120.4	124.3	127.7	131.4
Exporters												
European Union 2/	12.7	13.3	9.9	9.8	10.1	10.7	11.2	11.7	12.2	12.6	13.2	13.8
China	10.0	4.0	2.9	2.9	2.8	2.7	2.4	2.3	2.1	2.0	1.9	1.8
Argentina	9.7	9.4	10.5	11.2	12.3	13.0	13.8	14.5	15.5	16.0	16.5	16.9
Australia	3.7	4.0	4.2	4.2	4.2	4.2	4.3	4.3	4.4	4.4	4.4	4.5
Canada	3.5	3.5	5.0	5.5	5.4	5.4	5.5	5.5	5.5	5.6	5.6	5.7
Rep. of South Africa	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.2	1.4	1.6	1.7
Eastern Europe	3.2	0.8	1.6	2.4	2.7	2.9	3.1	3.3	3.4	4.2	4.9	5.0
Former Soviet Union 1/	2.1	1.7	2.3	2.6	3.0	3.0	3.0	3.0	3.0	3.1	3.1	3.2
Other foreign	1.4	1.6	1.6	1.7	1.7	1.7	1.6	1.5	1.5	1.4	1.3	1.3
United States	56.2	63.7	65.2	64.7	64.7	65.9	67.3	69.4	71.5	73.7	75.2	77.5
						Percent						
U.S. trade share	54.8	62.9	62.5	61.0	59.9	59.7	59.5	59.5	59.4	59.3	58.9	59.0

1/ Includes intra-FSU trade.
2/ Excludes intra-EU trade, covers EU-15.
3/ Excludes Mexico.
4/ Includes South Africa.
5/ Includes unaccounted.
The projections were completed in October 2000 based on policy decisions and other information known at that time.

Table 40. Corn trade baseline projections

	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
						Million metric tons						
Importers												
Former Soviet Union 1/	0.8	0.3	0.7	0.8	0.9	0.9	1.0	1.1	1.2	1.3	1.4	1.4
Japan	16.3	16.3	16.0	15.9	15.9	15.8	15.8	15.7	15.7	15.6	15.5	15.4
South Korea	8.5	8.0	7.8	8.0	8.3	8.4	8.6	8.7	8.8	8.9	8.9	8.9
Taiwan	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.2	5.3	5.3
China	0.2	0.2	1.7	2.0	2.1	2.4	3.0	3.7	4.4	5.3	6.3	7.6
Mexico	4.6	5.8	5.5	5.6	5.8	6.1	6.2	6.3	6.5	6.6	6.6	6.7
European Union 2/	2.9	2.9	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Latin America 3/	10.5	9.7	9.0	9.0	9.3	9.8	10.3	11.2	12.2	13.2	13.7	14.3
North Africa & Middle East	13.4	14.3	14.4	14.8	15.1	15.6	16.1	16.7	17.2	17.8	18.2	18.7
Other Asia & Oceania	5.0	4.9	5.7	5.7	5.8	6.1	6.3	6.7	7.1	7.5	7.9	8.3
Sub-Saharan Africa 4/	1.4	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.8	1.8	1.9	1.9
Other 5/	3.9	3.2	3.6	3.7	3.6	3.6	3.6	3.6	3.6	3.7	3.7	3.7
United States	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total trade	72.9	72.5	73.5	74.5	75.9	78.0	80.1	82.9	86.0	89.3	91.9	94.6
Exporters												
European Union 2/	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
China	10.0	4.0	2.9	2.8	2.8	2.7	2.4	2.2	2.1	1.9	1.9	1.8
Argentina	9.0	8.7	9.7	10.5	11.6	12.3	13.2	14.0	15.0	15.5	16.0	16.5
Republic of South Africa	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.2	1.3	1.6	1.7
Eastern Europe	2.8	0.7	1.0	1.8	2.1	2.3	2.5	2.7	2.8	3.6	4.2	4.4
Former Soviet Union 1/	0.5	0.2	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.8
Other foreign	1.0	0.9	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3
United States	49.2	57.8	57.2	56.5	56.5	57.8	59.1	61.0	62.9	64.8	66.0	67.9
						Percent						
U.S. trade share	67.4	79.7	77.7	75.8	74.5	74.1	73.7	73.6	73.1	72.6	71.9	71.8

1/ Includes intra-FSU trade.
2/ Excludes intra-EU trade, covers EU-15.
3/ Excludes Mexico.
4/ Includes South Africa.
5/ Includes unaccounted.
The projections were completed in October 2000 based on policy decisions and other information known at that time.

Table 41. Sorghum trade baseline projections

	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
						Million metric tons						
Importers												
Japan	2.2	1.6	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Mexico	4.5	3.5	4.2	4.3	4.4	4.4	4.6	4.7	4.9	5.2	5.4	5.8
Other N. Africa & M. East	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other S. America	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Sub-Saharan Africa	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Taiwan	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 1/	0.7	0.7	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7
Total trade	7.8	6.2	7.7	7.7	7.7	7.7	7.8	7.9	8.1	8.3	8.5	8.8
Exporters												
Argentina	0.7	0.6	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.3	0.3
Australia	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Other foreign	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4
United States	6.4	5.1	6.5	6.6	6.6	6.6	6.7	6.9	7.1	7.4	7.6	8.0
						Percent						
U.S. trade share	81.0	82.3	84.6	86.0	85.4	85.7	86.4	87.1	87.9	88.8	89.6	90.4

1/ Includes unaccounted.
The projections were completed in October 2000 based on policy decisions and other information known at that time.

Table 42. Barley trade baseline projections

	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
						Million metric tons						
Importers												
Former Soviet Union 1/	1.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.6
Japan	1.6	1.6	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6
South Korea	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Taiwan	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
China	2.3	2.4	2.5	2.6	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3
European Union 2/	0.0	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Latin America 3/	0.6	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.9	0.9
Algeria	0.6	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6
Saudi Arabia	4.8	4.8	5.5	5.6	5.7	5.8	5.9	6.0	6.1	6.2	6.3	6.5
Morocco	0.9	1.2	1.0	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.3
Tunisia	0.2	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Iran	0.8	1.0	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.3
Iraq	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Turkey	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Other N. Africa/M. East	2.1	2.4	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.4	2.4
Other foreign 4/	1.5	1.8	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.8	1.9	1.9
United States	0.6	0.7	0.9	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Total trade	17.4	18.6	18.7	19.2	19.7	20.0	20.4	20.9	21.3	21.8	22.3	22.8
Exporters												
European Union 2/	10.3	10.6	7.7	7.7	8.0	8.6	9.0	9.5	10.1	10.4	11.0	11.6
Australia	3.0	3.6	3.9	3.9	3.9	3.8	3.9	4.0	4.0	4.0	4.1	4.1
Canada	1.7	2.0	2.9	3.4	3.3	3.2	3.2	3.2	3.1	3.1	3.0	3.0
Former Soviet Union 1/	1.4	1.4	1.3	1.3	1.6	1.6	1.5	1.5	1.5	1.6	1.6	1.6
Eastern Europe	0.4	0.1	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.6	0.6	0.5
Turkey	0.2	0.5	0.4	0.5	0.5	0.4	0.3	0.3	0.2	0.1	0.1	0.0
Other foreign	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
United States	0.7	0.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
						Percent						
U.S. trade share	3.8	4.1	8.1	8.0	7.8	7.6	7.5	7.3	7.1	7.0	6.8	6.7

1/ Includes intra-FSU trade.
2/ Excludes intra-EU trade, covers EU-15.
3/ Includes Mexico.
4/ Includes unaccounted.
The projections were completed in October 2000 based on policy decisions and other information known at that time.

Table 43. Wheat trade baseline projections

	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
						Million metric tons						
Importers												
Egypt	5.8	6.2	6.5	6.7	6.9	7.0	7.1	7.3	7.4	7.4	7.5	7.6
Iran	6.9	7.5	4.5	4.6	4.7	4.9	5.1	5.2	5.4	5.6	5.8	5.9
Other North Africa & Middle East	20.8	21.3	20.4	20.9	21.3	21.7	22.0	22.2	22.6	22.9	23.2	23.5
Sub-Saharan Africa 1/	7.4	7.2	7.2	7.4	7.6	7.8	7.9	8.0	8.1	8.3	8.4	8.5
Brazil	7.2	7.7	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	9.1
Mexico	2.6	2.4	2.7	2.7	2.8	2.8	2.9	3.0	3.1	3.2	3.3	3.4
Former Soviet Union 2/	8.0	6.0	6.1	5.9	6.1	5.8	5.5	5.3	5.2	5.3	5.3	5.3
Japan	6.0	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.8	5.8	5.8	5.8
South Korea	3.8	3.5	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.8	3.8
Indonesia	3.9	3.7	3.8	4.0	4.1	4.3	4.5	4.7	4.9	5.1	5.3	5.5
China	1.0	2.0	2.7	2.8	2.8	3.0	3.1	3.3	3.4	3.6	3.8	3.9
Pakistan	2.0	0.2	0.5	1.1	1.5	1.6	1.9	2.3	2.6	3.0	3.3	3.7
Other	32.5	32.1	30.8	31.2	31.8	32.4	32.8	33.3	33.9	34.7	35.4	36.1
Total trade	107.9	105.6	102.7	105.1	107.3	109.0	110.6	112.5	114.8	117.3	119.7	122.1
Exporters												
European Union 3/	16.0	16.0	17.4	18.0	19.6	20.0	20.4	20.9	21.7	22.5	22.8	23.9
Canada	19.2	18.0	16.0	16.3	16.4	16.4	16.5	16.8	17.1	17.3	17.4	17.6
Australia	17.0	16.5	16.0	16.3	16.4	16.7	16.7	16.8	17.0	17.2	17.4	17.4
Argentina	10.8	11.0	10.5	10.7	10.9	11.1	11.2	11.5	11.7	11.8	12.0	12.0
Former Soviet Union 1/	7.0	5.3	5.5	5.2	5.4	5.6	5.8	6.0	6.3	6.6	6.9	7.4
Eastern Europe	3.5	2.5	3.2	3.3	3.4	3.5	3.7	3.7	3.7	3.8	3.8	3.8
Other foreign	4.8	5.4	4.3	4.6	4.6	4.4	4.3	4.1	4.0	4.0	4.0	4.1
United States	29.7	30.6	29.9	30.6	30.6	31.3	32.0	32.7	33.3	34.0	35.4	36.1
						Percent						
U.S. trade share	27.5	29.0	29.1	29.1	28.5	28.7	28.9	29.0	29.0	29.0	29.6	29.5

1/ Includes South Africa.
2/ Includes intra-FSU trade.
3/ Excludes intra-EU trade, covers EU-15.
The projections were completed in October 2000 based on policy decisions and other information known at that time.

Table 44. Rice trade baseline projections

	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
						Million metric tons						
Importers												
Canada	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Mexico	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6
Central America/Caribbean	1.1	1.2	1.2	1.3	1.3	1.4	1.4	1.5	1.5	1.6	1.6	1.7
Brazil	0.7	0.7	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1
Other South America	0.4	0.4	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.6
European Union 1/	1.6	1.6	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5
Former Soviet Union 2/	0.5	0.7	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5
Other Europe 3/	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4
China	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5
Japan	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
South Korea	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Indonesia	2.0	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
Malaysia	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.9	0.9	0.9
Philippines	0.7	1.0	1.1	1.2	1.2	1.2	1.3	1.3	1.4	1.5	1.5	1.5
Other Asia & Oceania	2.0	2.7	2.8	2.9	2.9	2.9	3.0	3.0	3.1	3.1	3.1	3.2
Iraq	1.0	1.0	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9
Iran	1.1	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.7
Saudia Arabia	0.8	0.8	0.8	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.1
Turkey	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Other N. Africa & M. East	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.6
Sub-Saharan Africa	4.5	4.5	4.4	4.4	4.5	4.6	4.6	4.7	4.7	4.8	4.9	4.9
Republic of South Africa	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7
Unaccounted	2.1	1.0	1.6	1.6	1.5	1.6	1.6	1.6	1.5	1.5	1.6	1.6
United States	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Total imports	23.4	25.3	25.0	25.5	26.0	26.5	27.1	27.6	28.2	28.7	29.3	30.0
Exporters												
Australia	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7
Argentina	0.5	0.4	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.9	1.0	1.0
Other South America	1.4	1.3	1.4	1.4	1.5	1.5	1.6	1.6	1.7	1.7	1.8	1.8
European Union 1/	1.3	1.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
China	3.2	3.4	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.2	4.4	4.5
India	1.2	1.7	2.4	2.5	2.7	2.9	3.1	3.2	3.3	3.4	3.5	3.6
Pakistan	1.9	1.8	1.9	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4
Burma	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Thailand	6.0	6.6	6.8	6.9	7.1	7.1	7.2	7.4	7.5	7.7	7.8	8.0
Vietnam	3.4	4.0	4.2	4.2	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9
Other foreign	1.3	1.6	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
United States	2.8	2.5	2.5	2.5	2.4	2.3	2.2	2.1	2.0	1.9	1.8	1.7
Total exports	23.4	25.3	25.0	25.5	26.0	26.5	27.1	27.6	28.2	28.7	29.3	30.0
						Percent						
U.S. trade share	11.8	10.0	10.1	9.7	9.2	8.7	8.1	7.8	7.3	6.6	6.1	5.7

1/ Excludes intra-EU trade, covers EU-15.
2/ Includes intra-FSU trade.
3/ Other Western Europe and Central and Eastern Europe.
The projections were completed in October 2000 based on policy decisions and other information known at that time.

Table 45. All cotton trade baseline projections

	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
						Million bales						
Importers												
European Union 1/	4.0	4.3	4.1	3.9	3.8	3.7	3.5	3.4	3.3	3.2	3.1	3.0
Former Soviet Union 2/	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.5	2.5
Indonesia	2.0	2.1	2.2	2.3	2.3	2.4	2.5	2.6	2.7	2.7	2.8	2.9
Thailand	1.7	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.4
Brazil	1.3	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.2	1.3	1.3	1.3
Eastern Europe	1.0	0.9	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.1	1.1
Other Asia & Oceania	5.4	4.7	5.0	5.1	5.1	5.2	5.3	5.4	5.5	5.7	5.9	6.1
Japan	1.3	1.2	1.0	0.9	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.4
South Korea	1.5	1.4	1.4	1.4	1.3	1.3	1.2	1.2	1.2	1.1	1.1	1.1
China	0.1	0.7	1.5	1.7	1.8	1.8	1.9	2.0	2.1	2.2	2.2	2.3
Mexico	1.9	2.3	2.3	2.4	2.5	2.6	2.7	2.7	2.7	2.7	2.7	2.7
Other foreign	4.6	4.8	5.1	5.3	5.5	5.6	5.8	5.9	6.1	6.3	6.5	6.7
United States	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total imports	27.1	27.2	28.4	28.8	29.0	29.3	29.6	29.9	30.3	30.7	31.1	31.6
Exporters												
Former Soviet Union 2/	6.0	5.7	5.8	5.8	5.7	5.8	5.8	5.8	5.9	6.0	6.1	6.2
Australia	3.2	3.2	3.2	3.4	3.4	3.5	3.6	3.7	3.8	4.0	4.1	4.3
Argentina	0.4	0.5	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8
Pakistan	0.5	0.6	1.1	0.8	1.0	1.0	1.0	1.0	0.9	0.7	0.7	0.5
India	0.1	0.1	0.0	0.0	0.2	0.3	0.4	0.6	0.6	0.7	0.7	0.8
China	1.7	0.7	0.7	0.6	0.6	0.7	0.7	0.7	0.7	0.6	0.6	0.6
Turkey	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Egypt	0.4	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Other Latin America	0.6	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Other Sub-Saharan Africa 3/	4.6	4.5	4.4	4.5	4.5	4.5	4.5	4.6	4.7	4.8	4.9	5.1
Other foreign	2.9	2.8	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.2	3.2	3.3
United States	6.8	7.6	8.2	8.5	8.5	8.5	8.6	8.6	8.7	8.8	8.8	8.9
Total exports	27.3	26.7	28.1	28.5	28.7	29.0	29.3	29.6	30.0	30.4	30.8	31.3
						Percent						
U.S. trade share	24.8	28.4	29.2	29.9	29.7	29.4	29.3	29.2	29.0	28.8	28.6	28.3

1/ Includes intra-EU trade, covers EU-15.
2/ Includes intra-FSU trade.
3/ Includes Republic of South Africa.
Note: Imports exceed exports in projection years by 300,000 bales due to statistical differences across countries' reported trade.
The projections were completed in October 2000 based on policy decisions and other information known at that time.

Table 46. Soybean trade baseline projections

	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
						Million metric tons						
Importers												
European Union 1/	16.3	16.1	16.6	16.8	16.6	16.2	16.0	15.8	15.6	15.4	15.4	15.4
Japan	4.9	4.8	4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.6	4.6	4.5
South Korea	1.6	1.7	1.8	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.5
Taiwan	2.3	2.3	2.4	2.4	2.5	2.5	2.6	2.6	2.7	2.7	2.7	2.8
Mexico	4.0	4.2	4.2	4.4	4.5	4.6	4.8	4.9	5.1	5.2	5.4	5.6
Former Soviet Union 2/	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Eastern Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	9.7	7.3	7.8	8.0	8.3	8.6	9.0	9.4	9.8	10.2	10.7	11.2
Malaysia	0.6	0.7	0.7	0.7	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.1
Indonesia	1.3	1.5	1.6	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8
Other	7.3	6.5	6.9	7.2	7.4	7.7	7.7	8.0	8.0	8.3	8.4	8.6
Total imports	48.0	45.2	47.1	47.8	48.4	48.9	49.2	49.9	50.4	51.1	51.8	52.7
Exporters												
Argentina	4.8	4.5	3.7	3.4	3.2	3.3	3.3	3.3	3.3	3.3	3.1	2.9
Brazil	10.6	10.0	11.1	11.3	11.3	11.7	12.3	13.0	13.4	14.2	14.5	15.3
China	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
Other foreign	4.3	4.4	4.6	4.6	4.7	4.8	4.9	4.9	5.0	5.1	5.2	5.2
United States	26.4	26.3	27.5	28.3	29.0	28.8	28.6	28.4	28.6	28.7	28.8	29.1
Total exports	46.3	45.3	47.1	47.8	48.4	48.9	49.2	49.9	50.4	51.5	51.8	52.7
						Percent						
U.S. trade share	57.0	58.0	58.3	59.2	59.9	59.1	58.1	57.0	56.7	55.7	55.7	55.2

1/ Includes intra-EU trade, covers EU-15.
2/ Includes intra-FSU trade.
The projections were completed in October 2000 based on policy decisions and other information known at that time.

Table 47. Soybean meal trade baseline projections

	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
						Million metric tons						
Importers												
European Union 1/	20.0	19.7	19.8	19.8	19.7	19.5	19.3	19.4	19.4	19.5	19.6	19.6
Former Soviet Union 2/	0.5	0.3	0.4	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2
Eastern Europe	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.0	3.1	3.2	3.3
Canada	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9
Japan	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
China	0.5	1.0	1.6	1.9	2.2	2.5	2.8	3.1	3.4	3.7	4.0	4.3
Southeast Asia	3.9	4.3	4.5	4.6	4.8	5.0	5.3	5.5	5.7	6.0	6.3	6.5
Latin America	3.9	4.0	4.2	4.2	4.2	4.3	4.3	4.4	4.4	4.5	4.6	4.6
North Africa & Middle East	3.9	4.1	4.2	4.3	4.4	4.5	4.7	4.8	4.9	5.0	5.2	5.3
Other	2.6	2.5	2.7	2.8	2.9	3.0	3.1	3.2	3.2	3.3	3.5	3.6
Total imports	39.3	39.9	41.4	42.3	43.2	43.9	44.7	45.8	46.8	47.9	49.1	50.3
Exporters												
Argentina	13.1	13.7	15.3	15.5	15.8	16.0	16.6	16.6	17.1	17.4	17.9	18.4
Brazil	9.3	10.2	10.4	10.6	10.8	11.2	11.3	12.2	12.6	13.1	13.7	14.2
India	2.4	2.5	2.4	2.4	2.4	2.5	2.5	2.6	2.6	2.7	2.7	2.8
European Union 1/	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
Other foreign	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.6
United States	6.6	6.6	6.9	7.3	7.6	7.7	7.8	7.8	7.9	8.0	8.1	8.2
Total exports	38.0	39.5	41.4	42.3	43.2	43.9	44.7	45.8	46.8	47.9	49.1	50.3
						Percent						
U.S. trade share	17.5	16.7	16.7	17.4	17.6	17.5	17.3	17.1	16.9	16.8	16.5	16.3

1/ Includes intra-EU trade, covers EU-15.
2/ Includes intra-FSU trade.
The projections were completed in October 2000 based on policy decisions and other information known at that time.

Table 48. Soybean oil trade baseline projections

	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
						Million metric tons						
Importers												
European Union 1/	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
China	0.6	0.8	0.8	0.9	1.0	1.1	1.2	1.2	1.3	1.4	1.5	1.5
Other Asia	2.1	2.3	2.4	2.4	2.5	2.6	2.7	2.7	2.8	2.9	3.0	3.1
Latin America	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
North Africa & Middle East	1.9	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.2
Former Soviet Union & Eastern Europe 2/	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4
Other	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Total imports	7.2	7.8	8.0	8.2	8.5	8.7	8.9	9.1	9.2	9.4	9.7	9.9
Exporters												
Argentina	2.8	2.9	3.2	3.3	3.3	3.4	3.5	3.5	3.6	3.7	3.8	3.9
Brazil	1.2	1.3	1.4	1.4	1.5	1.6	1.7	1.9	1.9	2.1	2.2	2.3
European Union 1/	1.7	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.4
Other foreign	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.1
United States	0.6	0.9	1.0	1.1	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3
Total exports	7.2	7.6	8.0	8.2	8.5	8.7	8.9	9.1	9.2	9.4	9.7	9.9
						Percent						
U.S. trade share	8.7	11.4	12.1	13.1	13.8	14.4	14.1	13.8	13.7	13.5	13.4	13.3

1/ Includes intra-EU trade, covers EU-15.
2/ Includes intra-FSU trade.
The projections were completed in October 2000 based on policy decisions and other information known at that time.

Table 49. Beef trade baseline projections

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
						Thousand metric tons, carcass weight						
Importers												
United States	1,304	1,368	1,383	1,395	1,372	1,349	1,327	1,304	1,281	1,259	1,236	1,213
Japan	967	1,000	990	1,013	1,030	1,048	1,068	1,085	1,100	1,113	1,124	1,133
South Korea	210	268	340	368	392	416	442	468	494	518	542	566
Taiwan	93	95	99	104	110	117	124	132	140	148	156	165
European Union 1/	325	347	331	331	331	331	331	331	331	331	331	331
Russia	700	450	450	495	520	544	580	618	659	697	736	775
Easten Europe	55	50	68	63	56	54	55	53	52	50	48	45
Mexico	340	400	425	468	472	485	517	550	588	622	658	699
Canada	261	280	290	292	294	296	298	299	301	303	305	307
Major importers	4,255	4,258	4,376	4,530	4,578	4,640	4,742	4,839	4,947	5,041	5,136	5,234
Exporters												
United States	1,094	1,152	1,118	1,100	1,134	1,168	1,202	1,236	1,270	1,304	1,349	1,395
Australia	1,263	1,213	1,210	1,202	1,198	1,196	1,188	1,181	1,175	1,171	1,167	1,164
New Zealand	420	460	495	508	518	526	534	542	547	551	554	556
European Union 1/	854	646	600	620	645	670	694	738	792	813	817	817
Eastern Europe	100	95	183	176	171	168	161	154	147	141	136	131
Ukraine	131	80	50	168	172	180	188	196	205	215	226	238
Argentina	346	360	390	399	408	418	417	417	417	424	427	431
Brazil	556	625	675	699	742	774	766	763	752	760	772	782
Canada	508	565	575	597	619	641	657	674	689	706	724	745
Major exporters	5,272	5,196	5,296	5,468	5,607	5,741	5,807	5,900	5,994	6,085	6,172	6,258

1/ Excludes intra-EU trade, covers EU-15
The projections were completed in October 2000 based on policy decisions and other information known at that time.

Table 50. Pork trade baseline projections

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
						Thousand metric tons, carcass weight						
Importers												
United States	375	453	456	467	479	490	499	506	508	510	513	515
Japan	857	880	900	918	936	955	974	994	1,014	1,034	1,054	1,076
Hong Kong	260	264	275	283	292	302	308	314	321	328	334	341
South Korea	155	140	70	95	100	105	110	116	122	129	138	149
Russia	500	300	400	424	449	476	505	535	567	601	638	676
Mexico	100	130	150	156	162	169	175	182	190	197	205	213
Canada	64	70	70	76	79	81	82	84	86	87	89	91
Major importers	2,311	2,237	2,321	2,419	2,497	2,578	2,653	2,731	2,808	2,886	2,971	3,061
Exporters												
United States	583	571	592	616	640	666	692	720	745	771	798	826
Brazil	75	85	100	102	104	106	110	112	114	116	118	120
Canada	631	750	850	876	902	929	947	966	976	986	996	1,006
Mexico	30	35	40	42	43	45	47	49	51	53	55	57
European Union 1/	1,368	1,141	1,100	1,000	900	896	895	895	895	895	894	894
Eastern Europe	301	306	311	318	324	332	340	349	360	371	383	396
Taiwan	1	0	0	0	0	0	0	25	31	39	49	61
China	119	110	110	111	112	113	114	116	117	118	119	120
Major exporters	3,108	2,998	3,103	3,065	3,025	3,087	3,145	3,232	3,289	3,349	3,412	3,480

1/ Excludes intra-EU trade, covers EU-15.
The projections were completed in October 2000 based on policy decisions and other information known at that time.

Table 51. Poultry trade baseline projections

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
						Thousand metric tons, ready to cook						
Importers												
Russia	920	1,000	1,050	1,076	1,103	1,131	1,159	1,188	1,218	1,248	1,279	1,311
European Union 1/	245	273	273	280	287	294	301	309	317	325	333	341
Japan	568	565	550	558	567	575	584	593	601	610	620	629
Hong Kong	1,106	1,120	1,165	1,200	1,236	1,273	1,311	1,351	1,371	1,391	1,412	1,434
China	1,183	1,210	1,250	1,317	1,351	1,384	1,418	1,455	1,473	1,492	1,511	1,530
South Korea	56	64	70	74	77	81	86	90	95	100	105	110
Saudi Arabia	372	373	361	362	369	376	382	388	393	398	401	404
Egypt	2	4	5	5	5	5	5	5	5	5	5	5
Mexico	235	270	284	296	308	320	332	344	355	368	380	393
Canada	134	150	160	165	168	171	174	178	181	184	187	191
Major importers	4,821	5,029	5,168	5,332	5,471	5,610	5,753	5,901	6,009	6,121	6,232	6,347
Exporters												
Brazil	794	900	986	987	991	1,002	1,051	1,103	1,160	1,210	1,264	1,296
European Union 1/	875	833	807	856	845	841	836	832	828	822	816	811
Hungary	114	110	115	117	118	120	122	124	126	128	130	131
China	345	395	420	433	447	462	476	496	507	524	540	558
Hong Kong	780	800	850	864	890	917	944	972	987	1,002	1,017	1,032
Thailand	278	273	273	283	293	303	313	325	331	337	344	353
Saudi Arabia	20	20	20	21	22	22	23	24	24	25	26	26
United States	2,582	2,716	2,748	2,794	2,853	2,912	2,973	3,037	3,098	3,159	3,216	3,273
Major exporters	5,788	6,047	6,218	6,356	6,460	6,579	6,738	6,912	7,061	7,206	7,352	7,480

1/ Excludes intra-EU trade, covers EU-15.
The projections were completed in October 2000 based on policy decisions and other information known at that time.

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