Agricultural Baseline Projections to 2005, Reflecting the 1996 Farm Act

Interagency Agricultural Projections Committee

Agricultural Baseline Projections to 2005, Reflecting the 1996 Farm Act. World Agricultural Outlook Board, Office of the Chief Economist, U.S. Department of Agriculture. Prepared by the Interagency Agricultural Projections Committee. Staff Report No. WAOB-97-1, 120 pp.

Abstract

This report provides long-run baseline projections for the agricultural sector through 2005 that incorporate provisions of the Federal Agriculture Improvement and Reform Act of 1996 (1996 Farm Act). The baseline assumes that the new farm legislation remains in effect through 2005. Projections cover agricultural commodities, agricultural trade, and aggregate indicators of the sector, such as farm income and food prices. Generally favorable global economic growth is projected in the baseline which, combined with liberalized trade associated with both the GATT agreement and unilateral policy reforms, supports strong growth in global trade and U.S. agricultural exports. Greater market orientation in the domestic agricultural sector under the 1996 Farm Act puts U.S. farmers in a favorable position for competing in the global marketplace. A tightening of the balance between productive capacity and demands results in rising nominal market prices, increasing farm income, and stability in the financial condition of the agricultural sector. However, management of risk will be important for farmers. With the reduced role of the Government in the sector under the 1996 Farm Act, farmers in general face greater risk of income volatility due to price variation, reflecting market price variability more directly. Consumer food prices are projected to continue a long term trend of rising less than the general inflation rate. The baseline projections presented are one representative scenario for the agricultural sector through the middle of the next decade, assuming no shocks and based on specific assumptions regarding macroeconomic conditions, policy, weather, and international developments. 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 October through December 1996, reflecting a composite of model results and judgmental analysis.

Keywords: 1996 Farm Act, agriculture, baseline, crops, livestock, projections, trade.

Washington DC 20250-3812   February 1997

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Features in this Report

A Note to Users of USDA Baseline Projections

This report is the fourth release of long-term projections by the U.S. Department of Agriculture. Agricultural baseline projections presented here 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. Baseline projections are typically made in conjunction with the President's Budget analysis. Future long-term projections reports are planned to be released annually following each year's President's Budget analysis. The next annual projections report is planned for the winter of 1998.

The baseline projections incorporate provisions of the 1996 Farm Act and tables in this report have been changed to reflect the new policies. For example, tables for each production flexibility contract (PFC) crop now include total PFC payments for the crop, payment rates per PFC acre, and payment rates per pricing unit (feed grains and wheat, bushel; upland cotton, pound; and rice, hundredweight). Supply management and income support categories of prior law, such as ARPs, 0,50/85-92 programs, target prices, and deficiency payments, are no longer in effect.

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. Trade projections in this report for 1997/98 incorporate long-term assumptions concerning weather, foreign trend yields, and foreign use and do not reflect short-term conditions which 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 had the lead role in preparing this report. The projections and the report were reviewed and cleared by the Interagency Agricultural Projections Committee, chaired by the World

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Agricultural Baseline Projections to 2005, Reflecting the 1996 Farm Act

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Introduction

This report provides long-run baseline projections for the agricultural sector through 2005 that incorporate provisions of the Federal Agriculture Improvement and Reform Act of 1996 (1996 Farm Act). The baseline assumes that the new farm legislation remains in effect through 2005. 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, the weather, and international developments. 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 assumptions.

The projections in this report were prepared in October through December 1996, in conjunction with the fiscal 1998 President's Budget analysis. Projections reflect a composite of model results and judgmental analysis. Normal weather is assumed. The baseline reflects major agricultural policy decisions made through mid-November 1996 and includes short term projections from the November 1996 *World Agricultural Supply and Demand Estimates* report.

Summary of Projections

Trends toward greater market orientation in agriculture are accelerated, as the 1996 Farm Act fundamentally changed most agricultural commodity programs, particularly income support and supply management programs for major field crops and the dairy program. Under the new farm law, producers will respond to signals from the marketplace rather than to government commodity programs, making agricultural production economically more efficient. Generally favorable global economic growth is projected in the baseline which, combined with liberalized trade associated with both the GATT agreement and unilateral policy reforms, supports strong growth in global trade and U.S. agricultural exports. Greater market orientation in the domestic agricultural sector under the new farm legislation puts U.S. farmers in a favorable position for competing in the global marketplace.

A tightening of the balance between productive capacity and projected demands results in rising nominal market prices, increasing farm income, and stability in the financial condition of the

agricultural sector. The trend toward fewer but larger farms continues. The sector will be highly competitive, with successful producers having strong technical and managerial skills.

Management of risk will be important for farmers. The reduced role of the Government in the sector under the 1996 Farm Act includes the elimination of deficiency payments that partly countered market price variations. Farmers in general face greater risk of income volatility, as market price variability more directly affects total revenue. Alternative marketing arrangements, such as marketing contracts and integrated ownership, are likely to be used more to manage risks. Consumer food prices are projected to continue a long term trend of rising less than the general inflation rate.

Macroeconomic Assumptions

Macroeconomic assumptions used for these baseline projections provide a setting for strong growth in agricultural demand. Domestic macroeconomic assumptions include deficit reduction which results in balancing the Federal budget. This results in lower interest rates, higher productivity, and stronger growth in gross domestic product (GDP). Chain weighted measures of real output and prices, now used in National Income and Products Accounts, show real GDP growth averaging about 2.5 percent from 1995 to 2005, with inflation averaging about 3 percent.

Global economic growth averages about 3 percent annually over the next decade, well above growth during the first half of the 1990s. Macroeconomic growth in developed countries averages about 2.5 percent through 2005 as these economies rebound from growth slowdowns in the mid-1990s. Market reforms lead to projected economic growth for the former Soviet Union (FSU) and the countries in Central and Eastern Europe, following years of economic decline during the transition from centrally planned economies. Aggregate growth for developing countries over the next 10 years is projected to average about 5.5 percent, somewhat faster than over the previous decade. This anticipated growth, for many developing countries, occurs at income levels that can generate significant gains in demand for agricultural products as diets diversify and include more meats and other higher valued products. These macroeconomic growth projections, combined with more open and less regulated markets, support strong gains in global trade and U.S. agricultural exports.

Agricultural Policy Assumptions

The Federal Agriculture Improvement and Reform Act of 1996 (1996 Farm Act) was enacted April 4, 1996, providing new U.S. agricultural law for 1996 to 2002. The baseline projections incorporate provisions of the 1996 Farm Act and assume the new law is extended through the end of the baseline. The baseline also includes policy decisions as of mid-November 1996.

The 1996 Farm Act is a milestone in the evolution of U.S. agricultural policy because it fundamentally redesigns income support programs and discontinues supply management programs for producers of major field crops. The 1996 Farm Act changes income supports for wheat, corn, grain sorghum, barley, oats, rice, and upland cotton by replacing the target price/deficiency payment program, which was in place since the early 1970s, with a new program of decoupled

payments for 7 years that generally are not related to current plantings or to market prices. The new law also expands planting flexibility and lets authority expire for Acreage Reduction Programs (ARPs) and 0,50/85-92 provisions. Dairy policy changes under the 1996 Farm Act with phaseout of price supports and consolidation of milk marketing orders. The new law alters the sugar and peanut programs, eliminates the rye loan program, and repeals the honey program.

The 1996 Farm Act addresses a wide range of environmental and conservation programs. Many conservation programs were simplified to make them more consistent and workable. The Conservation Reserve Program (CRP) is reauthorized in the 1996 Farm Act. Maximum CRP area is set at 36.4 million acres. The new law permits the Secretary to re-enroll current land at contract expiration and to enroll new land into the CRP to replace acreage leaving the CRP through expired contracts or early termination. A competitive bid process is used for new CRP contracts. Enrollment of new and expiring CRP acres is assumed to target the most environmentally cost effective land. Over 20 million acres of CRP contracts expire in 1997. CRP enrollments in 1997 are assumed to keep the CRP from falling below 30 million acres. Enrollments in subsequent years are assumed to gradually increase the CRP to over 36 million acres by 2001.

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 GATT Agreement. The baseline assumes no accession to the World Trade Organization (WTO) by the FSU, China, or Taiwan; no enlargement of the European Union beyond its current 15 members; and no expansion of the North American Free Trade Agreement (NAFTA). Agricultural and trade policies in individual foreign countries are assumed to continue to evolve along their current paths.

U.S. trade and food aid programs in the 1996 Farm Act focus more heavily, compared with prior legislation, on market development. This includes programs on emerging markets with high potential for U.S. export growth.

Annual quantity and expenditure levels for the Export Enhancement Program (EEP) are assumed to be in compliance with GATT reductions, which require that by 2000 subsidized exports be reduced by 21 percent in volume and 36 percent in budget outlays from 1986-1990 levels. However, the 1996 Farm Act reduced total EEP funding during fiscal years 1996-1999 from the maximum levels permitted under the GATT agreement. The 1997 Agriculture Appropriations Act further lowered the fiscal 1997 EEP level.

The 1996 Farm Act authorizes P.L. 480, Title I agreements with private entities in addition to foreign governments, and broadens the range of commodities available for P.L. 480 programs. Total P.L. 480 program levels are assumed constant in the baseline for fiscal 1998 and later years. Program levels for other trade promotion and credit programs, including the Market Access Program and the GSM-102 and GSM-103 credit guarantee programs, are assumed constant in the baseline.

Crops

Productive capacity for crops in the United States is projected to rise due to increases in resource and input use and in productivity. For most crops, yields are projected to rise at or near their long-term trends. These gains reflect in part the acquisition of some agricultural land by larger, generally more-efficient farms, continuing a long-term trend. However, with the CRP remaining above 30 million acres in the baseline, the balance between productive capacity and projected demands tightens significantly as the land base is pressured. Planted area for major crops rises 10 to 15 million acres above average plantings of the past 5 years. The increased area must be drawn into crop production based on market incentives from acreage that producers previously chose to idle. The suspension of authority to implement domestic sugar marketing allotments under the 1996 Farm Act could create opportunities for more efficient beet sugar producers to increase production.

Domestic demand for most crops is projected to grow slightly faster than population. Notably stronger domestic growth for rice reflects a greater emphasis on dietary concerns and increasing numbers of Americans of Asian and Latin American origins. Reduced trade barriers under the GATT agreement combined with strong global economic growth raise world agricultural trade and U.S. crop exports. U.S. exports of feed grains and wheat expand the fastest. Increasing coarse grain exports largely reflect stronger economic growth in developing regions, where higher incomes result in diet diversification and rising demand for meat. This leads to expanding livestock sectors and demand for feed. U.S. wheat export growth slows after 2000 as global wheat prices rise high enough to allow unsubsidized competition from the European Union.

Following several years of adjustments from recent unusually tight market conditions and high prices for many crops, long-term trends in supply/demand balances imply tightening stocks-to-use ratios and strengthening nominal prices for crops, particularly beyond 2000.

Livestock

The livestock sector will continue to undergo adjustments over the next few years, in response to recently high feed costs, although differences in biological production lags among species affect the speed of these adjustments. Nonetheless, lower feed prices than in 1995/96, replenishment of forage supplies, continued low inflation, and domestic and export demand strength result in producer returns encouraging increasing red meat and poultry supplies. Then, as feed costs accelerate towards the end of the baseline, gains in meat production slow, particularly for red meats.

Cattle herds will likely stabilize beyond 2000 at a lower level, near 97 million head, although shifts toward a breeding herd of larger cattle, and heavy slaughter weights partially offset the need for expanding cattle inventories to previous levels. The beef production mix continues to shift toward a larger proportion of fed beef. Pork production will become more vertically coordinated with generally larger size operations, but is less likely to follow poultry's example of vertical integration. Continued technological advances and improved production management practices are expected in the broiler and turkey industries, although gains are not anticipated to limit production costs as significantly as in the past 10 years.

Record total meat supplies are projected through the baseline, although red meat production gains are small. Consumers purchase more meat, but a larger proportion is poultry as per capita consumption of red meats declines. The long term decline in real prices for meats continues. Declining real prices along with increases in real disposable income allow consumers to buy more total meat with a smaller proportion of disposable income.

The phaseout of the dairy price support program under the 1996 Farm Act and generally rising feed costs result in reduced net returns to dairy farming. Nonetheless, dairy productivity gains allow milk production to grow over the next 10 years despite declining cow numbers. The consolidation of milk marketing orders will expand the size of marketing order areas, and could have regional price impacts by raising prices received by some farmers while reducing prices for others. Regional impacts could affect dairy prices in some locations more than the reduction in national price supports. Real milk prices fall in the baseline.

Agricultural Trade

Generally favorable global economic growth and freer trade associated with the GATT agreement and unilateral policy reforms support strong growth in world agricultural trade and U.S. exports. Income growth enhances demand for agricultural goods, both through increases in direct food use and through derived demand for livestock feeds to meet increases in meat demand. Developing regions are a major source of export demand growth, particularly China, Asia, North Africa, and the Middle East, as their economic conditions and effective demand improve. Export promotion, credit assistance, and food aid programs has a role in determining global trade, although under the GATT agreement, the funding for and the volume of subsidized exports are lower. Some countries will face significantly higher prices as subsidies decline. This report assumes there is no increase in the nominal value of credit and food aid.

World trade in most major bulk agricultural commodities is projected to expand more rapidly during 1995-2005 than during the 1980s or early 1990s. Trade in grains, particularly coarse grains, is projected to grow the fastest among bulk commodities. These gains reflect strong economic growth in developing regions where higher incomes result in diet diversification and rising meat demand, leading to expanding livestock sectors and demand for feed. Wheat trade also increases due to strong global demand growth. Combined trade in soybeans and meal strengthens, benefiting from the same expansion of developing country feed-livestock sectors that will push up coarse grain trade. Growth in soybean oil trade is also projected to be higher than in the 1980s, but will remain slower than competing oils because of its high relative price. Raw cotton demand and trade is projected to be stronger than in the early 1990s, but slower than in the 1980s when there was increased substitution of cotton for synthetic fibers.

U.S. export growth strengthens for most bulk commodities. Generally larger gains are projected through 2000 than later in the baseline as U.S. supply constraints and more foreign competition begin to affect U.S. exports and market share beyond 2000. U.S. exports of wheat and coarse grains are projected to expand the fastest, with particularly strong gains in 1995 to 2000. After 2000, U.S. wheat export growth is projected to slow because of anticipated unsubsidized

competition from the European Union (EU) as world wheat prices rise. A notable exception to the gains in U.S. exports is rice, with exports falling as strong domestic rice demand for high-quality U.S. rice leads to a widening premium between domestic prices and those of key competitors. Exports of U.S. soybeans and products are projected to rise faster than in the 1980s, but competition from South American producers and slowing U.S. acreage gains limit export growth relative to competitors. In contrast, U.S. raw cotton exports are projected to strengthen throughout the baseline, benefiting from rising demand and reduced competition in some countries.

Continuing reductions in trade barriers and gains in global incomes spur growth in meat demand and trade in the baseline, particularly to the Pacific Rim, Central and South America, and the Middle East. The United States is well positioned to provide a variety of meat products to these markets. Growth in meat import demand in the FSU is projected to slow because domestic FSU production of meat is projected to begin increasing. Nonetheless, the United States continues supplying low-priced parts and trimmings to that market.

U.S. beef exports increase, with the main growth markets being Japan, South Korea, and Mexico. Beef exports rise to 12 percent of U.S. production in 2005, up from 9 percent in 1997. The United States assumes a dominant role in global pork trade in the baseline, increasing exports by over 30 percent from 1997 to 2005, particularly to Japan and Mexico. The United States maintains or expands its share of world poultry meat trade, with U.S. poultry exports increasing most notably to China. The value of U.S. meat exports slows somewhat from the rapid assent of the past several years, in part reflecting the increasing share of low-valued meat products exported.

The total value of U.S. agricultural exports initially declines from record fiscal 1996 levels, but then begins a steady rise in fiscal 1998 and approaches $80 billion in 2005. U.S. agricultural import values also rise, but with exports increasing more, the net agricultural trade balance rises about $10 billion from 1995 to 2005. For 1998 to 2005, high-value product (HVP) exports are projected to account for about 60 percent of total U.S. agricultural exports, with the HVP gains principally in exports of horticultural products and animal products.

Farm Income and Farm Financial Conditions

Net farm income falls from recent high levels to $36 billion in 1998, before gradually rising through the rest of the baseline as strong agricultural demand leads to strengthening prices. Real net farm income is nearly flat from 1998 to 2005. The agriculture sector increasingly relies on the marketplace for its income as direct Government payments fall through the baseline and represent less than 3 percent of gross cash income beyond 2000. 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 stabilize, with cash expenses representing about 78 percent of gross cash income.

Farm asset values increase less rapidly than in the early 1990s, mainly because of slowing gains in agricultural land values. Increases in farm debt are not beyond the ability of farmers to service the debt. The farm credit system has largely recovered from the problems of the 1980s, so the

availability of credit will not be a major concern. Debt-to-asset ratios stay flat at near 15 percent, remaining well below levels of the mid-1980s. With asset values increasing more than debt, farm equity rises slowly. After declining from recent high levels, increasing nominal farm income in the baseline, combined with rising farm equity, means relative stability in the financial condition of the farm sector. The sector will be highly competitive. The trend toward fewer but larger farms continues, as producers who are more efficient and better managers acquire the production resources of exiting farmers.

The 1996 Farm Act transfers income variability risk from the Government to farmers, so management of risk will be important for farmers. Although baseline projections assume no shocks, normal variations in supply and demand will occur in the future. With the new farm law, net farm income is potentially more variable from year to year in response to these supply and demand variations because production flexibility contract payments are fixed regardless of market prices. The Government carries little risk while farmers in general will face greater risk of income volatility due to price variability, as total revenue reflects market price variation more directly. Previously, a portion of this risk was managed through deficiency payments which were linked to market prices. Marketing alternatives to manage risk and buffer a portion of this potentially greater income volatility will become more important for many farmers. Some farmers will expand their use of futures and options markets, possibly using new instruments such as yield contracts. Many producers continue to use crop insurance for yield protection and may expand coverage using revenue insurance now available in some areas. Other alternatives to manage risk include diversification of production, contracting in advance for the future sale of the commodity, integrated ownership, and involvement with more value-added processing beyond the farm gate.

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. Expenditures for meals eaten away from home account for a growing share of food spending, reaching almost half of total food spending by 2005.

Macroeconomic Assumptions

This section presents the macroeconomic projections underlying the USDA baseline. Domestic macroeconomic projections are presented first, followed by a discussion of the international projections. The open U.S. economy is increasingly affected by international macroeconomic conditions, trade policies, and exchange rate policies which in turn affect the demand for U.S. farm products, costs of production, farm income, farm asset values, and food prices.

Domestic Macroeconomic Projections

Forecasts are based on data available through October 1996. The projections through 1997 are the short-term forecasts as of October. The long-term projections for 1998-2005 assume trend growth of the major macroeconomic indicators. Shocks, such as large unexpected oil price hikes, cannot be anticipated, and the use of trend projections focuses on the long-term basic forces driving the economy.

Short-term U.S. Macroeconomic Outlook

The U.S. economy is in the mature phase of the economic recovery that began in 1991. Gross Domestic Product (GDP) growth was a modest 2 percent in 1995. In 1996, GDP expanded by about 2.4 percent, with unemployment averaging 5.4 percent, down 0.2 percent from 1995's rate. Consumer prices in 1996 rose 3 percent, only slightly faster than in 1995 despite near-full employment and a sharp rise in the price of crude oil. Imported crude oil prices went from $17 per barrel in 1995 to over $22 by early November 1996, but could fall below $20 per barrel in 1997.

The tight labor market at this stage of the business cycle ordinarily would mean sharply higher wage-induced inflation in 1997. However, CPI inflation in 1997 is only modestly higher than 1996's 3 percent. GDP and employment growth will slow from the rapid pace of the second quarter of 1996 largely because of slowing real personal income growth and tighter credit conditions. This slowdown in growth will prevent labor market and production bottlenecks and insure relatively stable inflation through 1998.

Consumer and producer equipment spending will rise in 1997, offsetting sluggish government spending and a higher trade deficit. Despite improved economic prospects in Canada, Japan, and Europe in 1997, the stronger dollar in 1996 will dampen 1997 exports, encourage imports, and leave the trade deficit between $110 to $120 billion. Consistent with modest growth, U.S. interest rates are stable in 1997.

Long-term U.S. Macroeconomic Outlook

Major assumptions underlying the long-term U.S. macroeconomic projections are:

- Fiscal policy is tight, in line with a path to a balanced federal budget by 2002. Even with higher local government spending picking up some of the federal cuts, overall government

spending growth averages only 0.5 percent per year from 1999 through 2005. By 2005, government purchases of goods and services slip from second to third place among the components of GDP, behind consumption and investment.

- The Federal Reserve remains committed to containing inflation even as the government deficits shrink. Money supply expands 5.3 percent annually between 1998 and 2005, reflecting moderately tight monetary policy and trend GDP growth.

- Real crude oil prices rise by 2.2 percent per year from 2001 to 2005, consistent with medium-term Department of Energy projections made in January 1996.

- Labor productivity growth will be in the 1.1 to 1.2 percent range from 1998 to 2005. This represents a modest improvement in productivity over the previous 15 years, largely attributed to a higher investment share in GDP and lower real interest rates than there would have been without deficit reduction. Trade liberalization from the NAFTA and GATT agreements also enhances productivity growth in the baseline.

- Employment grows about 1.3 to 1.4 percent a year, which is broadly consistent with Bureau of Labor Statistics projections, the tightened welfare and disability qualifications now in place, and expected immigration.

- Real GDP in OECD countries, minus the United States, grows at about 2.4 percent through 2001 and slows to 2.2 percent thereafter.

- Federal deficit reduction and lower inflation expectations mean smaller interest rate differentials relative to U.S. trading partners. U.S. inflation will remain higher than in Canada and Japan, but close to that of Germany, France, Italy, and the United Kingdom. The inflation differential drives the modest decline in the real value of the dollar from 2000 to 2005.

The baseline macroeconomic projections show a long-term recovery from the below-trend growth of the late 1980s and early 1990s. From 1998 to 2005, the economy grows by 2.6 percent annually. Compensation continues to lag productivity growth, mainly because of a more open economy. Business and dividend income increases relative to wages, which supports personal income growth. Disposable income increases at about the same rate as GDP.

In the absence of commodity price shocks or abrupt changes in macroeconomic policy, stable growth generally implies stable inflation. Consumer price inflation is projected to average 3 percent over the next decade. This moderate inflation outlook assumes that monetary policy is primarily aimed at containing inflation. Real short-term Treasury-bill rates average 3 percent, reflecting relatively tight Federal Reserve policy as well as beneficial effects of fiscal deficit reduction. Real long-term Treasury-bond rates of about 4 percent reflect lower demand for long-term credit, with reduced government debt relative to private debt.

The stable domestic financial environment, global trade liberalization induced by the GATT and NAFTA accords, low oil prices, and moderate growth in OECD countries will mean that U.S.

What Deficit Reduction Means for the U.S. Economy

Balancing the Federal budget will lower short-term real Treasury-bill yields and will reduce the difference between short-and long-term interest rates. Short-term rates drop because the demand for credit falls from lower deficits. Long-term rates fall more because of lower demand for credit, lower expected future short-term rates, and less investor fear of inflation or Fed actions to increase the money supply rapidly to lower the burden of the federal government deficits. Lower interest rates reduce the costs of short-term business debt and make credit more available for plant and equipment spending. Since lower interest rates will lower the value of the dollar below what it would have been for the first few years, export growth will be faster. In agriculture, real estate assets will appreciate more rapidly.

Lower interest rates also mean faster growth of the capital stock, increased productivity and competitiveness of manufacturing, and consequently faster export growth throughout the baseline. This results in a declining real trade deficit.

Adjustments in the economy are not costless. As the problems of firms in the aerospace and defense industries illustrate, a changing structure of production means stress for industries that lose demand or face greater competition. As a result of these pressures, 1997 GDP growth is 0.2 percent below what it would have otherwise been. However, in subsequent years, the aggregate impact of deficit reduction on GDP growth is positive.

exports grow faster than imports. Thus, the U.S. trade deficit falls sharply from current levels by 2005.

Strong export growth combined with gains in domestic consumer demand provide impetus for strong growth in capital investment, similar to that seen in the 1960s. Gross investment will be further enhanced by a high depreciation rate as more capital spending is devoted to relatively short-lived equipment and less to plant construction. Low real interest rates and less competition from the federal government in credit markets will provide major support for strong investment growth.

Eliminating the budget deficit and reducing the real trade deficit lead to only small adjustments in domestic consumption, resulting in consumption growing about as fast as GDP. Thus, the consumption share of GDP is about the same in 2005 as in 1995. However, because of lower government spending, the investment and export shares of GDP increase.

Labor force growth will be above growth of the working age population as economic factors induce increasing labor participation rates. Expected higher costs for housing and medical care and the need to save more for retirement delay retirements. Further, tightened welfare and disability requirements will raise labor force participation for the next decade. An average unemployment rate of 5.4 percent is assumed through 2005. Real compensation is helped by a modest pickup in productivity resulting from increased global competition and freer trade. A high proportion of workers employed in the relatively low wage service and small business sectors will keep disposable income growth in line with GDP growth.

Table 1. Changes in growth rates in revised data for major
National Income and Product Account series, selected periods

	1960-1987	1987-1994
	Percent	
GDP growth	0.3	-0.1
Business fixed investment growth	0.2	-1.7
Consumer spending growth	0.1	-0.1
Disposable income growth	0.2	-0.2

Revised Macroeconomic Data

The National Income and Product Accounts (NIPA) data used to measure macroeconomic activity are revised to reflect a methodological change to chain-weighted output and price measures and now use a 1992 base year (see box). These changes resulted in revised historical growth rates for NIPA series as shown in table 1. Revised macroeconomic data also necessitated the re-estimation of parts of the model used for baseline projections. Near-term implications are lower GDP growth for 1996 to 1998, largely reflecting revised 1994 and 1995 growth being sharply reduced from earlier estimates.

Major Changes in the National Income and Product Accounts

Real GDP and related price indices are now chain-weighted. Chain weighting improves the accuracy of output and inflation measures by reducing the bias from shifts in relative prices that distort the measurement of real aggregate output and inflation. To illustrate, weighting computers based on 1987 prices, as computer prices have fallen, has systematically overestimated computer investment by, in effect, saying there is more computing power than there actually is. Much of the fall in investment growth in the revised series is due to this overestimate. Chain weighting will make future revisions smaller.

Government purchases that produce services for more than one year are now included in gross investment and distinguished from government consumption spending. This change makes the U.S. NIPA accounts comparable to those of other developed countries and more accurately measures investment.

Measured capital goods depreciation now uses depreciation rates implied by market prices for used capital goods. This market valuation more accurately measures depreciation, thus improving net investment estimates.

The NIPA revisions make models that depend on macroeconomic variables such as GDP or the GDP deflator obsolete. The rebenchmarking to 1992 base data, even absent changes in estimation methodology, could necessitate reestimation of these models. The 1992-based NIPA updating lowers GDP growth beginning in 1987 and raises growth prior to 1987. Further, chain-weighting alters the statistical properties of the NIPA data. Models using quarterly NIPA data are especially in need of reestimation as changes in statistical properties are larger than those in annual data.

International Macroeconomic Projections

The world macroeconomic outlook is favorable over the next decade, with global real GDP growth averaging near 3 percent annually, up from an average of 1.9 percent during 1990-1995. The outlook includes improved growth prospects across most developed, developing, and transition economies. Developed-country growth is projected to strengthen to about 2.4 percent annually during 1996-2005, providing a environment for sustained growth in global demand and output. Among developing countries, annual real GDP growth improves from 4.7 percent during 1990-1995 to 5.5 percent during 1996-2005. The prospects for relatively strong growth in incomes in developing countries, where food demand is most responsive to rising incomes, is a key factor in the agricultural trade outlook. Also important are prospects for a return to positive economic growth by the transition economies of Eastern Europe and the former Soviet Union.

Developed Countries

Macroeconomic growth in developed countries is projected to average about 2.5 percent through 2005, up from the average 1.9 percent rate of the first half of the 1990s. These economies will be rebounding from mid-decade growth slowdowns, but structural problems in many developed countries prevent growth from exceeding 3 percent.

Europe

Over the next two years Germany, France, Italy, and the United Kingdom, along with the other countries of Western Europe will consolidate their recoveries from the 1996 slowdown and will show faster growth. From then through mid-forecast, they will be in a more mature phase of their business cycle recovery, with slowing growth, but no recession. This growth will take place in a low inflation environment (German inflation is currently 1.5 percent) since growth will be modest, and expected labor market conditions (unemployment around 10 percent) will retard wage growth. Through mid-forecast, fiscal spending is restrained, driven by the Maastricht Treaty's deficit-to-GDP requirements. Monetary policy over the same time period keeps short-term interest rates only modestly above (about 50 basis points) their current levels.

By mid-forecast, and continuing through forecast end, European economic growth should settle into the mid-2 percent range, while inflation stays around 3.0 to 3.5 percent. Unemployment remains at or near double digits in many countries, holding down wage growth and consumption spending. Additionally, higher taxes to reduce fiscal deficits to acceptable levels for monetary union will further dampen consumption growth. Investment growth looks to be the strength of many European economies, but will not reach levels of the late 1980s. In part, this is due to uncertainties regarding monetary union as it conflicts with domestic needs.

The baseline projections assume that at least limited monetary union occurs in Europe, on schedule. But the push for unification is the principal source of forecast uncertainty.

There is a gathering momentum for monetary union to occur on schedule with more countries participating in the first wave. Spain, Portugal, and Italy are pressing to be included in this group, even though they will not strictly meet all requirements. Early entry of these countries changes prospects for the U.S. dollar's value. Currently the baseline has the U.S. dollar showing near-term strength, with very slight weakness in the out years, a development that tends to reduce the EU's ability to export unsubsidized wheat in competition with the U.S. If participation in monetary union is widespread, then European monetary policy would have to be more accommodative, and the dollar would appreciate throughout the forecast period.

With expectations increasing that monetary union will occur on schedule, governments will have to install fiscal and tax policies that move government deficits toward the Maastricht limits earlier than some might have expected. For the marginal countries, this could lower growth expectations significantly. Monetary decisions by central banks will continue focusing on stabilizing currency values against the Mark, but marginal countries intent on being among those initially included in the union may well have to pursue stricter policies. Again, this could result in slower growth than assumed in the forecast.

Japan

Japan's near-term prospects have improved. Overall, economic signals are mixed for the near term, although the weakened yen, low interest rates, and improved consumer sentiment will help lead Japan's economy out of recession and help maintain modest growth through mid-forecast (2.0 to 2.5 percent). Japan's banking crisis holds lending and investment spending below historic levels. Unemployment is at historic high levels, with companies yet to expand hiring. Labor markets will only slowly improve, and therefore personal savings remains high.

Recent fiscal policy has been stimulatory, but the government will soon have to show restraint as it seeks to lower the recession-era deficit. Low inflation expectations, however, will allow long-term monetary policy to be accommodating, with real interest rates in the 1 to 2 percent range. Overall, fiscal and monetary policy will be slightly stimulatory, but Japanese trend growth of about 2 percent will still be lower than previously seen.

The lower growth is partly due to Japan's rapidly aging population and the resulting impact on labor force growth. Investment growth, too, will be slower than previously seen, reflecting low capacity utilization -- a remnant of the investment boom of the late 1980s and early 1990s--higher costs of investment, and lower corporate profits. Also, high unit labor costs, caused in part by lifetime employment policies, will push investment offshore. With an inflation outlook that is low relative to other major economies, the Yen should strengthen slightly towards forecast end. This will result in import growth slightly outstripping export growth in the out years.

Canada

Canadian fiscal policy will be tight for the next several years as the Federal budget moves to balance and Provincial budgets run modest surpluses. In 1995 Canada had the highest debt-to-GDP ratio in the G-7. Yet, in 1995 and 1996, Canada made better progress in reducing its

structural budget deficit than any other G-7 country. Short-term interest rates have been 1 percent below comparable U.S. rates, and Canada registered a current account surplus in the second quarter of 1996--both events not seen since the 1970s. Uncertainty about the Canadian dollar has subsided as Quebec postponed the next secession vote to 2000 or later. Because of a good inflationary environment, and the favorable political and fiscal policy climate, the Bank of Canada (BOC) will continue to keep short-term rates low, allowing modest currency appreciation.

GDP growth in 1996 will be less than 2.0 percent, largely due to a weak first half. But, Canada should see above-trend growth for the next four years. This is despite expected moderate U.S. growth over the same period. Modest, and continuing recovery in real wages and low short-term interest rates will bring double-digit construction spending growth. These factors also result in good growth in consumer durable spending, particularly since Canada has an aging fleet of automobiles. The expected strong equipment spending growth stimulated by low interest rates will largely offset the negative impacts of lower Government spending on domestic growth.

As the Canadian economy has substantial slack, inflation should be below 2.0 percent for the next two years, and then slightly accelerate. Low inflation and continued political stability will allow a gradual appreciation of the Canadian dollar. That movement, however, will be slowed by the low interest rate policy of the BOC. With the second lowest unit labor costs among the G-7, and expected moderate growth in its trading partners, net exports will be strong. With GDP growth the strongest of all developed economies, unemployment will move well below its current rate of 10.0 percent.

Over the longer-term, the NAFTA and declining long-term interest rates should stimulate investment spending and exports. Additionally, the competitiveness of the Canadian dollar will further support export expansion. Unemployment and wage growth will also improve as productive capacity and capacity utilization rise. With the steady improvement in Canada's economic environment, growth is nearly 3.0 percent in 2001 to 2005, giving it the best long-term outlook among industrialized countries.

Developing Countries

Growth in developing countries, where the demand for food and feeds is most responsive to income growth, has a significant impact on global and U.S. agricultural trade. Led by Asia, aggregate growth during 1996-2005 is projected to average about 5.5 percent, somewhat faster than the past decade. While Asian growth may slow somewhat, growth prospects in other developing regions, including South America, North Africa, and the Middle East, are improving. Recent trends toward freer markets, characterized by fewer price controls and trade barriers, better fiscal and monetary discipline, and the phaseout of controlled exchange rates, are expected to continue to strengthen long-term growth prospects in many developing economies.

Mexico

Growth of at least 3 percent in 1996, after 1995's deep recession, puts Mexico on a path of 4.2-percent average annual growth over the mid-term. Longer-run growth prospects are brighter at

5.5 percent as the economy returns to full employment and to the consumption and investment patterns that held before the December 1994 peso devaluation. This means a gradual appreciation of the real exchange rate, moderate inflation rates of less than 10 percent, and domestic investment growing at more than twice the pace of private consumption. The NAFTA will generate or enhance the chances for expanded trade volume, the return of previous levels of foreign direct investment, and restored purchasing power in Mexico.

Beyond 2000, the projections assume that previous gains will be sustained. This assumes a policy environment that favors investment, productivity growth, and the continued importation of foreign capital.

China

China's economy will maintain the strongest growth in Asia over the next 10 years, averaging about 9 percent in the next five years and 8.4 percent in 2001-2005. With population growth slowing to an average 0.8 percent annually, per capita GDP growth will be at least 7 percent per year. Although relatively high inflation contributes to real appreciation of the yuan over the next few years, devaluation maintains a relatively constant real exchange rate over the longer term. Inefficient state-owned enterprises will continue to burden the government's fiscal well-being, but a high savings rate is likely to limit the impact on private investment. Trade volume and investment flows are likely to grow even more as the yuan becomes fully convertible before the end of the century. Trade competition with its fast-developing neighbors also implies a broadening of industrial technology and less dependence on labor-intensive industries.

East and Southeast Asia

The economies of this region are the most integrated among the developing countries--by trade and intra-regional investment. Industrial development is fast approaching that of the developed economies as measured in per capita GDP, driven in part by direct investments from Japan. Overall output growth settles down to a more sustainable pace as domestic investment decelerates, but growth will remain strong relative to other developing regions. The region's trade competitiveness can be maintained only if openness to trade and foreign investment is kept high. This allows a shift to higher-value exports from lower-value products which increasingly face competition from newly emerging exporters such as China and India. ASEAN and APEC trade relations as well as appreciating currencies have pushed import barriers and undervalued exchange rates aside in gaining export advantages.

South Asia

Growth in South Asia averages 5.5 to 5.7 percent annually during 1996-2005, stronger than the early 1990s, but below rates projected in neighboring Southeast Asia. Annual per capita GDP growth of about 4 percent will increase per capita incomes in this low income region by more than a third between 1995 and 2005. More liberal trade, exchange rate, and investment regimes will help drive growth across the region. But, with large and fast-growing populations, growing internal demand will likely be the key to rapid gains in economic activity in India, Pakistan, and Bangladesh, the region's major economies. Industrial deregulation and high rates of infrastructure

investment will be important to economic performance, but are unlikely to occur at a pace that can push growth rates toward those achieved in Southeast Asia.

Africa and the Middle East

Countries in North Africa and the Middle East are projected to start achieving positive per capita GDP growth, after showing little or no growth in the first half of the 1990s. Increases in the real price of crude oil rejuvenates economic growth in the Middle East and North Africa. In Sub-Saharan Africa, however, per capita real GDP gains will be only slightly positive as economic growth strains to keep ahead of population growth. Somewhat stronger per capita economic growth is projected for South Africa.

South America

Strong growth is projected for South America, led by the MERCOSUR core countries of Brazil and Argentina. Freer trade will further integrate the economies of these countries as they move toward eventual hemispheric free trade with NAFTA countries. Behind the anticipated output expansion is increased intra-regional trade and heavier foreign direct investment. Recent market-oriented reforms and growing private sectors are also behind the region's better prospects. The past environment of overvalued currencies, rising trade deficits, large fiscal deficits, and low internal investment does not return. New macroeconomic policies now permit lower inflation and more competitive industries as import barriers fall.

Transition Economies

After five years of economic decline, gains in real output have lifted per capita GDP over levels before market reforms began in most of Central and East Europe, particularly in the northern tier countries (Poland, Czech Republic, and Hungary). Lagging reforms in the countries of the FSU have stalled recovery until 1999. Reducing inflation was critical in halting and reversing the output contractions that initially characterize the transition from central planning. Stagnant population growth and a rapidly aging labor force mean lower long-term growth in the FSU than in other transition economies.

Central and East Europe

This group of transition economies initiated market reforms earlier and to a greater extent than the former Soviet Union and are now reaping the economic rewards of fast growth. Average GDP expansion of 5 percent is expected over the next few years, with 4.7 percent growth projected from 2001 to 2005. Like developing countries, gross fixed investment will be the fastest growing component of total domestic demand. Inflation will remain relatively high in the mid-term before falling to single digits after the year 2000. More stable exchange rates and improved terms of trade are projected over the coming decade. Direct foreign investment into the region will continue to be strong as these countries become more economically and politically integrated with the European Union.

As in Asia, the key to sustained high growth of 5 percent or more is trade -- within the region and with the EU and the FSU. Direct foreign investments are likely to follow naturally from open trade, as has occurred in the northern tier countries of Poland, Hungary, and the Czech Republic. This cycle of trade and investment will lift per capita GDP. Central and Eastern Europe has now recovered the output lost during the recession years of the early 1990s and, by 2000, per capita GDP is projected to be 17 percent higher than when the transition began.

In the southern tier countries--Bulgaria and Romania--market reforms and privatization were initiated more slowly or much later. Exchange rates have continued to depreciate, undermined by low foreign exchange reserves. Financial conditions will improve only slowly. As a result, output growth is lagging behind rates in Poland, Hungary, and the Czech Republic. However, because output is currently low, output growth in the next few years will be able to catch up with current growth rates of those northern tier neighbors.

Former Soviet Union

Market reforms are continuing to transform these formerly centrally planned economies, but at varied speeds and extent. The largest economy, Russia, will be among the first to post positive economic growth, but not until late in the decade. The transition to a market system has been slow and protracted. The financial sector, including banking and equity markets in these countries, had to be created practically from scratch. The allocation of domestic savings into private investment is limited by slow development of a modern capital market. The banking system had to be restructured, particularly in those countries that introduced new national currencies. After almost a decade of reforms, market-based pricing, and continuing privatization, the economies of the FSU will begin to grow again by the end of the decade.

Over the next decade, aggregate growth of about 3 percent is projected for the FSU. A more optimistic outlook will depend on the extent of privatization and foreign ownership, how much current fiscal imbalances are reduced, and how soon exchange rates stabilize. Inflation will remain in the double digits but on a downward trend. This will cause currencies to depreciate in real terms and help make exports more competitive. The expected strong demand for capital imports, however, will bring the current account into deficit. The region's comparative advantage in natural resource-based exports will provide much of the earnings needed to finance the capital imports. More foreign investment should be forthcoming to develop these resources.

Population Growth Assumptions

Population assumptions for the United States and the rest of the world are based on projections made by the U.S. Department of Commerce, Bureau of the Census. The projections show slowing population growth rates in virtually all countries and regions over the 1996-2005 projection period. The highest rates of population growth are in North Africa, the Middle East, and Sub-Saharan Africa. Population growth is slowest in the relatively developed regions of Europe, North America, the former Soviet Union, and East Asia. These assumptions are used to estimate per capita GDP growth in all countries as a measure of comparative wealth gain over time.

Income Growth, Dietary Change, and Food Demand

Per capita income and income growth are principal determinants of the pattern of import demand across countries and commodities. While other factors, such as variations in trade or price policies, consumer preferences, and comparative advantage in production, are also important, there is often a strong correspondence between national per capita income and import demand for food grains, feeds, and meats in the long run. Further, projections of global trade across commodities are often shaped by the pattern of expected income growth across higher and lower income countries.

Four stages in the development of agricultural import demand can be identified for descriptive purposes. Because other factors--such as those noted above--also affect imports, the income ranges for each category are not tightly defined, but are instead representative of the pattern of agricultural demand. Definition of the stages is also hampered by inability to precisely measure the purchasing power associated with per capita income, and by sometimes sharp differences across countries in the distribution of income. Thus, the ranges used are generalizations that may not hold in all cases.

Stage 1: Lowest Income Countries. In the lowest income countries, with per capita incomes of less than about $500, national average per capita use of food staples -- food grains or tubers -- is generally still rising. There is typically very limited effective demand for higher-valued goods, notably livestock products. In this and higher stages, as incomes and urbanization increase, consumer preferences are likely to begin shifting toward preferred food staples, such as wheat and higher quality rice, and away from less preferred traditional staples, such as tubers or coarse grains.

In the lowest income countries, food staples often account for a relatively large share of consumer expenditure. If the price of food staples--or so-called "wage goods"--rises faster than wages, then nutrition and consumer welfare can deteriorate quickly. As a result, the governments of these countries often give priority to food staple import needs when allocating scarce foreign exchange. Examples of countries at this stage of food demand are Bangladesh, India, and many Sub-Saharan African countries.

--continued

Income Growth, Dietary Change, and Food Demand, continued

Stage 2: Moderate Income Countries. As national per capita income rises through a range of roughly $500-$1,000, an important transition in food demand often begins. Demand for staples generally slows, and may begin to decline, although the shift toward preferred staples continues. In addition, the number of higher income consumers becomes sufficient to stimulate growth in demand for livestock and other higher valued products at the national level. The emergence of significant effective demand for meats and other livestock products generates derived demand for feed grains and proteins--demand that can expand rapidly because it typically takes 2 to 4 units of feed to produce 1 unit of product.

A country's "takeoff" point for meat demand is complicated by the role of factors such as income distribution, dietary customs, local production costs, and marketing infrastructure. The type of meat preferred is affected by cultural preferences, with pork and beef facing limited acceptance in some societies. It is, however, common for poultry meat and egg demand to show the fastest initial growth because of relatively widespread acceptance and low production costs. The takeoff point for feed import demand is affected not only by meat demand, but by local supply potential for both commercial and residual feeds, feeding efficiency, and trade policies. Major countries at this stage of demand are China, Egypt, Indonesia, Pakistan, and the Philippines.

Stage 3: Moderate-to-High Income Countries. When per capita income is in the range of roughly $1,000-$10,000, per capita demand for food staples is generally declining. The strongest consumption growth occurs in livestock products and feeds, and other higher-valued food products. Increased urbanization, higher labor force participation, and higher incomes raise effective demand for more diverse diets and spur demand for more processed and more convenient foods.

At this stage, the takeoff point for feed grain and protein imports has likely been reached, unless there is capacity for sufficient local feed production, or financial or trade policy constraints curb both feed trade and meat output. Although most countries at this stage choose to produce meat locally, meat rather than feed may be imported if the conditions do not exist for efficient local meat production. In a similar fashion, rising demand is likely to lead to the emergence of imports of other high-valued foods, depending on local production capacity, financial conditions, and trade policies.

A large number of countries, including many in North Africa, the Middle East, Southeast Asia, Central Europe, and Central and South America, are at this stage of demand and typically show the fastest growth in agricultural import demand.

Stage 4: High Income Countries. Countries with per capita incomes of above roughly $10,000 typically are "mature" markets that may exhibit high levels of agricultural import demand, but relatively slow growth. Per capita use of food staples is normally stable or declining, while demand for livestock and other high-valued goods is growing at a moderate, but steady, rate. Per capita meat demand often continues growing up to average income levels of about $15,000 before stabilizing. At this stage, demand for higher quality goods may increasingly affect the choice of goods and supplier. In addition, demand for environmental quality may begin to limit intensive local production of meats and other products. All of the major developed countries, including Australia, Canada, Japan, the EU, and the United States are at this stage of demand.

Table 2. U.S. macroeconomic baseline assumptions

Item	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GDP, billion dollars												
Nominal	6,936	7,254	7,591	7,971	8,413	8,886	9,392	9,932	10,506	11,094	11,721	12,384
Real 1992 chained dollars	6,609	6,743	6,901	7,056	7,238	7,428	7,620	7,816	8,020	8,223	8,429	8,636
percent change	3.5	2.0	2.4	2.2	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5
Disposable personal income												
Nominal	5,019	5,311	5,605	5,915	6,240	6,597	6,982	7,384	7,818	8,256	8,717	9,203
percent change	4.8	5.8	5.5	5.5	5.5	5.7	5.8	5.8	5.9	5.6	5.6	5.6
Nominal per capita, dol	19,264	20,224	21,111	22,075	23,070	24,167	25,347	26,571	27,891	29,207	30,578	32,017
percent change	3.9	5.0	4.4	4.6	4.5	4.8	4.9	4.8	5.0	4.7	4.7	4.7
Real 1992 chained dollars	4,778	4,946	5,089	5,218	5,350	5,490	5,631	5,776	5,927	6,077	6,231	6,386
percent change	2.4	3.5	2.4	2.6	2.5	2.6	2.6	2.6	2.6	2.5	2.5	2.5
Real per capita, 92 dollars	18,330	18,799	19,166	19,475	19,781	20,110	20,445	20,787	21,145	21,499	21,859	22,215
percent change	1.4	2.6	2.0	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.6
Inflation Measures												
GDP price index, chained	104.9	107.6	110.0	113.0	116.2	119.6	123.3	127.1	131.0	134.9	139.1	143.4
percent change	2.3	2.5	2.2	2.7	2.9	2.9	3.0	3.1	3.1	3.0	3.1	3.1
CPI-U, 82-84=100	148.2	152.4	157.0	162.0	166.7	171.7	177.2	182.7	188.5	194.1	199.9	206.0
percent change	2.6	2.8	3.0	3.2	2.9	3.0	3.2	3.1	3.2	3.0	3.0	3.0
PPI, finished goods 82=100	125.5	127.9	131.1	134.1	137.7	141.0	144.5	148.2	151.9	155.6	159.5	163.5
percent change	0.6	1.9	2.5	2.3	2.7	2.4	2.5	2.5	2.5	2.5	2.5	2.5
PPI, crude goods 82=100	101.7	102.8	113.7	114.5	116.8	120.0	123.0	126.1	129.2	132.4	135.7	139.1
percent change	-0.7	1.0	10.7	0.7	2.0	2.7	2.5	2.5	2.5	2.5	2.5	2.5
Crude oil price, $/barrel												
Refiner acq. cost, imports	15.5	17.1	20.0	19.2	20.3	21.5	22.8	24.3	25.6	26.9	28.3	29.9
percent change	-4.0	10.4	16.4	-3.9	5.8	5.9	6.0	6.5	5.4	5.3	5.3	5.4
Real cost, 92 chained	13.1	15.9	18.1	17.0	17.5	18.0	18.5	19.1	19.5	19.9	20.4	20.8
percent change	0.2	21.7	13.9	-6.4	2.9	2.9	2.9	3.3	2.2	2.2	2.2	2.2
Labor compensation per hour												
nonfarm business, 89=100	122.4	126.6	131.4	135.8	140.5	145.6	150.9	156.6	162.5	168.4	174.7	181.3
percent change	3.3	3.5	3.7	3.3	3.5	3.6	3.7	3.8	3.7	3.6	3.7	3.8
Interest rates, percent												
3 month T-bills	4.3	5.5	5.1	5.4	5.8	6.0	5.8	6.1	6.0	6.0	6.2	6.0
6 month commercial paper	4.9	5.9	5.5	5.8	6.2	6.4	6.3	6.5	6.4	6.5	6.7	6.6
Bank prime rate	7.1	8.9	8.3	8.5	8.8	8.9	8.6	8.8	8.5	8.5	8.7	8.5
Treasury bonds	7.1	6.7	6.5	6.6	6.8	6.9	7.0	7.1	7.1	7.1	7.2	7.1
Moody's Aaa bonds	8.0	7.7	7.5	7.6	7.7	7.8	7.8	7.9	7.6	7.8	7.8	7.9
Civilian unemployment												
rate, percent	6.1	5.6	5.4	5.5	5.4	5.4	5.4	5.4	5.5	5.4	5.4	5.4
Nonfarm payroll emp., mil	114.0	115.6	118.1	119.7	121.5	123.0	124.6	126.4	128.1	129.9	131.5	133.1
percent change	3.0	1.3	2.2	1.4	1.5	1.3	1.3	1.4	1.4	1.4	1.3	1.2
Total population, mil	260.8	263.1	265.5	267.9	270.5	273.0	275.4	277.9	280.3	282.7	285.1	287.4

Note: All real variables measured in billions of chained 1992 dollars; nominal variables in billions of current dollars. The macroeconomic assumptions were completed in October 1996.

Table 2. U.S. macroeconomic baseline assumptions, continued

Item	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
International indicators												
Real GDP growth in OECD countries less U.S.												
Percent change	2.4	2.0	1.7	2.4	2.4	2.3	2.5	2.4	2.3	2.2	2.2	2.2
Private consumption deflator OECD less U.S.												
Percent change	3.6	2.3	1.7	1.8	2.2	2.3	2.4	2.5	2.6	2.6	2.6	2.7
Exchange rates, Federal Reserve index												
Nominal (March 1973=100)	91.3	84.3	87.0	88.0	92.0	96.0	98.0	97.1	96.2	95.4	94.5	93.7
Real (March 1973=100)	88.6	82.4	83.1	85.0	89.5	94.0	96.7	96.4	96.1	95.6	95.1	94.5
U.S. National Accounts												
Final sales												
Real	6,550	6,706	6,880	7,025	7,207	7,397	7,589	7,784	7,988	8,195	8,396	8,599
percent change	2.9	2.4	2.6	2.1	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.4
Consumer spending												
Nominal	4,701	4,925	5,178	5,450	5,759	6,085	6,435	6,793	7,183	7,579	8,000	8,441
Real	4,473	4,578	4,701	4,808	4,938	5,064	5,190	5,314	5,446	5,579	5,719	5,857
percent change	3.1	2.3	2.7	2.3	2.7	2.5	2.5	2.4	2.5	2.4	2.5	2.4
Real per capita, 1992 dollars	17,144	17,402	17,705	17,945	18,257	18,550	18,843	19,125	19,429	19,735	20,062	20,375
percent change	2.0	1.5	1.7	1.4	1.7	1.6	1.6	1.5	1.6	1.6	1.7	1.6
Investment, real	980	1,010	1,047	1,087	1,131	1,178	1,229	1,279	1,329	1,379	1,433	1,482
Fixed	921	977	1,026	1,057	1,101	1,148	1,197	1,247	1,298	1,351	1,401	1,446
percent change	10.1	6.1	5.0	3.0	4.2	4.3	4.3	4.2	4.1	4.1	3.7	3.2
Business inventory change	59	33	21	31	31	30	32	32	31	28	32	37
Exports												
Nominal	719	807	836	883	927	989	1,059	1,136	1,224	1,313	1,403	1,509
Real	712	775	800	834	866	914	968	1,025	1,090	1,156	1,219	1,293
percent change	8.2	8.9	3.2	4.2	3.9	5.5	5.9	5.9	6.3	6.0	5.5	6.1
Imports												
Nominal	814	902	942	987	1,036	1,092	1,158	1,227	1,315	1,410	1,518	1,634
Real	818	883	916	950	987	1,022	1,063	1,105	1,154	1,206	1,266	1,330
percent change	12.0	8.0	3.7	3.7	3.9	3.5	4.0	3.9	4.4	4.5	5.0	5.0
Net exports												
Nominal	-94	-95	-107	-104	-109	-104	-99	-91	-91	-98	-115	-126
Real	-106	-108	-116	-116	-121	-108	-95	-79	-63	-50	-47	-36
Government spending, real	1,260	1,260	1,269	1,276	1,289	1,293	1,296	1,302	1,308	1,316	1,324	1,333
percent change	-0.1	0.0	0.7	0.6	1.0	0.3	0.2	0.4	0.5	0.6	0.6	0.7
Federal	490	472	465	457	449	435	422	410	397	385	378	371
State and local	770	789	804	820	840	858	874	892	911	930	946	962
Other Variables												
Money supply, M2, billion dollars	3,606	3,702	3,890	4,042	4,240	4,464	4,701	4,950	5,213	5,489	5,780	6,086
percent change	1.9	2.7	5.1	3.9	4.9	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Chained Price indices, 92=100												
GDP	104.9	107.6	110.0	113.0	116.2	119.6	123.3	127.1	131.0	134.9	139.1	143.4
PCE	105.1	107.6	110.1	113.4	116.6	120.2	124.0	127.8	131.9	135.9	139.9	144.1
Exports	101.0	104.1	104.4	106.0	107.0	108.2	109.4	110.8	112.3	113.6	115.1	116.7
percent change	1.1	3.1	0.3	1.5	1.0	1.1	1.2	1.3	1.3	1.2	1.3	1.4
Imports	99.5	102.2	102.9	103.9	105.0	106.9	109.0	111.1	114.0	117.0	119.9	122.9
percent change	0.8	2.7	0.7	1.0	1.1	1.8	1.9	2.0	2.6	2.6	2.5	2.5

Note: All real variables measured in billions of chained 1992 dollars; nominal variables in billions of current dollars. The macroeconomic assumptions were completed in October 1996.

Table 3. Foreign real GDP baseline growth assumptions

Region/country	1994	1995	1996	1997	1998	1999	2000	Average 1990-1995	Average 1996-2000	Average 2001-2005
						Percent change				
World	2.6	2.3	2.6	2.9	3.1	3.1	3.1	1.9	3.0	3.2
less U.S.	2.3	2.5	2.7	3.2	3.3	3.3	3.4	2.0	3.2	3.3
Developed economies	2.7	1.9	2.1	2.4	2.5	2.4	2.5	1.9	2.4	2.5
United States	3.5	2.0	2.4	2.2	2.6	2.6	2.6	1.8	2.5	2.5
Canada	4.5	2.3	1.5	2.8	3.0	3.1	3.1	1.3	2.7	2.9
Japan	0.7	0.7	2.5	2.2	2.0	2.1	2.1	1.9	2.1	2.1
Australia	5.4	3.5	3.3	2.7	2.9	2.6	2.5	2.6	2.8	2.3
European Union-15	2.8	2.5	1.3	2.5	2.5	2.3	2.6	2.1	2.2	2.3
France	2.7	2.4	1.1	2.7	2.6	2.3	2.7	1.4	2.3	2.4
Germany	2.3	1.8	1.2	2.8	2.4	2.3	2.4	4.0	2.2	2.5
Italy	2.2	3.0	1.6	2.0	2.7	2.3	2.4	1.4	2.2	2.2
Spain	2.0	3.0	2.6	3.0	3.0	2.5	2.7	1.8	2.8	2.5
United Kingdom	3.8	2.4	2.2	2.7	2.1	2.2	2.2	1.0	2.3	2.2
Transition economies	-11.9	-2.0	-1.1	0.5	1.8	2.6	3.3	-7.0	1.4	3.9
Eastern Europe	3.2	5.0	5.0	5.0	5.0	4.5	4.7	-1.6	4.9	4.7
Czech Republic	2.6	4.8	5.9	5.2	4.9	4.5	4.1	-2.5	4.9	4.1
Hungary	2.1	1.5	2.5	5.5	5.4	5.4	5.2	-1.7	4.8	5.7
Poland	5.5	7.1	6.1	5.3	5.1	4.0	4.5	2.4	5.0	4.5
Former Soviet Union	-17.8	-5.4	-4.4	-2.2	-0.2	1.3	2.3	-11.6	-0.6	3.2
Russia	-15.0	-3.7	-4.0	-2.0	0.0	1.5	2.5	-10.9	-0.4	3.3
Ukraine	-26.7	-12.3	-7.0	-4.0	-2.0	0.0	1.0	-12.5	-2.4	2.9
Developing Countries	5.4	4.6	5.3	5.6	5.5	5.5	5.6	4.7	5.5	5.5
Asia	8.0	7.7	7.4	7.1	6.9	6.9	6.8	7.3	7.0	6.6
East & Southeast Asia	9.1	8.2	8.0	7.4	7.3	7.2	7.2	8.1	7.4	7.0
China	12.4	10.2	10.0	9.0	8.9	8.8	8.7	10.6	9.1	8.4
Korea	8.0	9.0	6.8	6.6	6.4	6.1	6.0	7.7	6.4	5.6
Taiwan	6.1	6.1	5.7	5.8	5.4	5.7	5.7	6.4	5.7	5.6
Indonesia	7.1	4.3	6.8	6.0	6.8	6.7	6.8	6.3	6.6	6.8
Malaysia	8.7	9.3	8.5	8.0	7.6	7.6	7.6	8.8	7.9	7.5
Philippines	4.3	5.3	6.5	6.8	4.2	4.2	4.3	2.4	5.2	4.3
Thailand	8.6	8.5	7.4	6.1	6.9	6.7	6.6	8.9	6.7	6.3
Vietnam	8.8	8.0	9.7	9.7	9.7	9.5	9.5	7.3	9.6	9.3
South Asia	4.9	6.0	5.5	6.1	5.6	5.6	5.5	4.4	5.7	5.5
India	5.2	6.2	5.6	6.3	5.7	5.7	5.6	4.3	5.8	5.5
Pakistan	4.1	5.1	5.6	5.7	5.8	5.8	5.8	4.8	5.8	5.8
Bangladesh	4.5	5.1	5.0	5.0	4.3	4.3	4.3	4.7	4.6	4.3
Latin America	4.3	0.8	2.9	4.1	4.3	4.3	4.6	2.5	4.0	4.8
Caribbean & Central America	2.4	2.8	3.0	3.0	3.1	3.2	3.3	2.8	3.1	3.3
Mexico	3.8	-6.9	3.2	4.1	4.2	4.6	5.1	1.4	4.2	5.5
South America	4.5	2.5	2.8	4.3	4.5	4.4	4.7	2.7	4.1	4.8
Argentina	7.4	-4.4	2.0	4.0	4.6	4.7	4.7	4.4	4.0	5.1
Brazil	4.1	4.1	2.5	4.6	4.5	4.3	4.8	1.4	4.1	5.1
Middle East	-0.1	1.6	2.5	4.2	3.7	3.6	3.7	2.9	3.6	3.8
Iran	-4.0	1.8	2.7	2.9	3.1	3.3	3.6	4.6	3.1	4.4
Iraq	14.9	1.5	6.0	11.0	4.3	4.4	4.4	-9.2	6.0	4.4
Saudi Arabia	-1.7	-2.4	-0.1	4.6	3.8	3.5	3.2	3.0	3.0	3.2
Turkey	-5.3	6.8	3.0	3.8	4.8	4.8	4.5	4.3	4.2	4.4
Africa	1.9	3.1	3.4	3.3	3.2	3.3	3.3	1.3	3.3	3.2
North Africa	1.5	2.5	4.6	3.8	3.9	3.9	3.9	1.1	4.0	3.8
Algeria	-0.2	4.3	4.6	2.8	2.8	2.8	2.8	0.2	3.2	2.8
Egypt	2.0	4.2	5.2	5.0	5.3	5.1	5.1	1.9	5.1	4.6
Morocco	11.2	-5.0	5.0	4.8	5.0	5.1	5.1	1.9	5.0	5.1
Tunisia	3.5	3.2	6.1	5.6	5.6	5.6	5.6	4.8	5.7	5.6
Sub-Saharan Africa	2.0	3.5	2.0	2.9	2.7	3.0	3.0	3.1	2.7	3.0
South Africa	2.4	3.5	4.2	3.5	3.3	3.0	2.6	0.4	3.3	2.3

Sources: DRI; Project LINK; Economic Research Service, U.S. Department of Agriculture.
The macroeconomic assumptions were completed in October 1996.

Table 4. Baseline population growth assumptions

Region/country	1994	1995	1996	1997	1998	1999	2000	Average 1990-1995	1996-2000	2001-2005
					Percent change					
World	1.5	1.4	1.4	1.4	1.4	1.3	1.3	1.5	1.4	1.2
Less U.S.	1.5	1.5	1.4	1.4	1.4	1.4	1.3	1.6	1.4	1.3
Developed Economies	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.7	0.5	0.5
United States	1.0	0.9	1.0	0.9	0.9	0.9	0.8	1.0	0.9	0.8
Canada	1.3	1.2	1.1	1.0	1.0	1.0	0.9	1.3	1.0	0.9
Japan	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2
Australia	1.1	1.0	1.0	1.0	0.9	0.9	0.9	1.2	0.9	0.8
European Union-15	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.3	0.3
France	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.5	0.3	0.4
Germany	1.0	0.8	0.7	0.6	0.6	0.6	0.7	0.9	0.7	0.5
Italy	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.0	0.1	0.1
Spain	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.3
United Kingdom	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.3	0.2	0.1
Transition Economies	-0.1	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.1	0.3
Eastern Europe	-0.3	-0.2	-0.2	-0.1	0.0	0.1	0.2	-0.3	0.0	0.2
Czech Republic	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.0	0.1	0.2
Hungary	-0.6	-0.7	-0.7	-0.7	-0.6	-0.5	-0.4	-0.5	-0.6	-0.3
Poland	0.2	0.2	0.1	0.1	0.2	0.3	0.3	0.3	0.2	0.4
Former Soviet Union	0.0	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.2	0.4
Russia	-0.1	0.0	-0.1	-0.1	-0.1	0.0	0.1	0.1	0.0	0.1
Ukraine	-0.4	-0.5	-0.4	-0.4	-0.3	-0.2	-0.1	-0.1	-0.3	-0.1
Developing Countries	1.8	1.8	1.7	1.7	1.6	1.6	1.5	1.8	1.6	1.5
Asia	1.5	1.5	1.5	1.4	1.4	1.3	1.3	1.6	1.4	1.2
East & Southeast Asia	1.8	1.7	1.7	1.6	1.6	1.6	1.5	1.8	1.6	1.4
China	1.1	1.0	1.0	1.0	0.9	0.9	0.8	1.2	0.9	0.7
Korea	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.8	1.0	0.9
Taiwan	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.9	0.9	0.8
Indonesia	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.9	1.6	1.4
Malaysia	2.2	2.2	2.1	2.1	2.0	2.0	1.9	2.2	2.0	1.8
Philippines	2.3	2.3	2.2	2.2	2.1	2.1	2.0	2.3	2.1	1.9
Thailand	1.1	1.1	1.0	1.0	1.0	1.0	0.9	1.2	1.0	0.8
Vietnam	1.8	1.7	1.6	1.6	1.5	1.4	1.3	1.9	1.5	1.3
South Asia	1.9	1.9	1.8	1.8	1.7	1.7	1.6	2.0	1.7	1.5
India	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.9	1.6	1.4
Pakistan	2.3	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.0
Bangladesh	1.9	1.9	1.9	1.9	1.8	1.8	1.7	1.9	1.8	1.6
Latin America	1.6	1.6	1.5	1.5	1.4	1.4	1.4	1.7	1.4	1.3
Caribbean & Central America	1.7	1.7	1.7	1.6	1.6	1.6	1.5	1.9	1.6	1.5
Mexico	2.0	1.9	1.9	1.9	1.8	1.8	1.8	2.0	1.8	1.6
South America	1.5	1.5	1.4	1.4	1.3	1.3	1.2	1.6	1.3	1.1
Argentina	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.1	1.0
Brazil	1.3	1.3	1.2	1.1	1.1	1.0	0.9	1.4	1.1	0.9
Middle East	2.6	2.7	2.7	2.6	2.5	2.5	2.5	2.7	2.6	2.4
Iran	1.8	2.4	2.3	2.2	2.1	2.0	2.2	2.8	2.2	2.2
Iraq	3.8	3.8	3.8	3.7	3.7	3.6	3.6	2.6	3.7	3.5
Saudi Arabia	3.8	3.8	3.6	3.5	3.5	3.5	3.4	3.0	3.5	3.4
Turkey	1.8	1.7	1.7	1.7	1.6	1.6	1.6	1.8	1.6	1.5
Africa	2.5	2.7	2.6	2.6	2.5	2.5	2.4	2.7	2.5	2.3
North Africa	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.3	2.0	1.9
Algeria	2.4	2.3	2.3	2.2	2.2	2.1	2.1	2.4	2.2	2.0
Egypt	2.0	2.0	1.9	1.9	1.9	1.8	1.8	2.2	1.9	1.7
Morocco	2.2	2.1	2.1	2.1	2.0	2.0	1.9	2.2	2.0	1.8
Tunisia	1.9	1.9	1.8	1.8	1.8	1.7	1.7	1.9	1.8	1.6
Sub-Saharan Africa	2.7	2.9	2.8	2.7	2.7	2.7	2.6	2.9	2.7	2.5
South Africa	1.7	1.8	1.8	1.7	1.6	1.5	1.5	2.0	1.6	1.2

Source: U.S. Bureau of the Census.

Agricultural Policy Assumptions

This baseline reflects provisions of the Federal Agriculture Improvement and Reform Act of 1996 (1996 Farm Act), which was signed into law on April 4, 1996. The 1996 Farm Act is a milestone in the evolution of U.S. agricultural policy because it fundamentally redesigns income support programs and discontinues supply management programs for producers of major field crops. The new law replaces a system of deficiency payments for wheat, corn, grain sorghum, barley, oats, rice, and upland cotton, based on the difference between a pre-set target price and the higher of the market price or the loan rate, with a system of fixed production flexibility contract payments that are largely decoupled, since there is virtually no link between payments and current plantings. The 1996 Farm Act expands planting flexibility and lets authority expire for Acreage Reduction Programs (ARPs) and 0,50/85-92 provisions.

Dairy policy changes under the 1996 Farm Act include the phaseout of price supports and consolidation of milk marketing orders. The new law alters the sugar and peanut programs, eliminates the rye loan program, and repeals the honey program. It also reauthorizes the Conservation Reserve Program, reduces Export Enhancement Program (EEP) funding, and targets trade programs to growing export markets.

The 1996 Farm Act encompasses a wide range of programs related to agriculture, including commodities, trade, conservation, nutrition assistance, agricultural promotion, credit, rural development, and research, extension, and education. Major changes related to production agriculture are in the commodity provisions (Title I), the agricultural trade provisions (Title II), and the conservation provisions (Title III) of the 1996 Farm Act. The most important impacts result from policy changes in four main areas covering income-supported crops, price-supported commodities, agricultural trade, and conservation (see box, page 25).

Supply Management and Income Support Changed for Contract Crops

The 1996 Farm Act fundamentally changed U.S. agricultural programs by eliminating supply management, increasing planting flexibility, and changing income supports for "contract crops" (wheat, corn, grain sorghum, barley, oats, rice, and upland cotton).

The 1996 Farm Act changes income supports by replacing the target price/deficiency payment program, which was in place since the early 1970s, with a new program of decoupled payments for 7 years that are not related to most farm-level production decisions or market prices. To receive payments and be eligible for loans on contract commodities, a producer must enter into a production flexibility contract for 1996-2002. That contract requires the participating producer to comply with conservation, wetland, and planting flexibility provisions, as well as to keep the land in agricultural uses. Land eligible to enter into a contract includes land enrolled in acreage reduction programs for any of the crop years 1991 through 1995, land considered planted under program rules (certified acreage), or land that had been enrolled in the CRP that had a crop acreage base associated with it. Farmers receive production flexibility contract payments for 7 years, 1996-2002. Payments are based on enrolled contract acreage and generally are not related to current plantings.

Four Areas of Policy Change in the 1996 Farm Act

Supply management/income support changed for contract crops
- Decouples most production decisions from program payments
- Eliminates income-stabilizing feature by removing link between government payments and farm prices
- Fixed payment yields retained
- Most planting restrictions eliminated, with ARP authority expiring, base acreage planting constraints eliminated, and planting flexibility expanded
- Federal income support payments fixed and reduced over time
- Maximum loan rates specified for many crops
- Marketing loan provisions retained
- Authority for loan extensions discontinued
- Farmer-Owned Reserve suspended
- Crop insurance not mandatory

Programs for price-supported commodities altered
- Dairy support price phased out, assessments eliminated, and marketing orders consolidated and reformed
- Sugar marketing allotments suspended, marketing assessments increased, and loans made recourse depending on tariff-rate import quota
- Peanut program becomes "no net cost", with elimination of minimum national poundage quota, reduced loan rate for quota peanuts, and increased assessments to offset Federal expenditures

Trade provisions targeted
- Export promotion strategy to emphasize markets with greatest potential for U.S. export gains
- Emerging markets targeted
- High-value products emphasized
- CCC regulations governing stockholding and selling eased
- Market Promotion Program renamed Market Access Program and funding cut
- Food Security Commodity Reserve replaces Food Security Wheat Reserve
- EEP funding reduced in early years

Environmental programs consolidated and extended
- Environmental Quality Incentives Program consolidates cost share and technical assistance programs for crop and livestock producers
- CRP authorization extended, enrollment capped at 36.4 million acres, with early termination of some contracts and authority to enroll new acreage
- Producers provided more flexibility in meeting conservation compliance and wetland provisions

Cumulative outlays for contract payments for fiscal 1996-2002 are capped at slightly over $36 billion. Total contract payments will be lower, reflecting payment limitations. Production flexibility contracts are assumed to continue beyond 2002 in the baseline. The fiscal 2002 funding level for production flexibility contracts of $4.008 billion is assumed for subsequent years, as well.

Payment levels are allocated among contract commodities according to percentages specified in the 1996 Farm Act (see table 6). Adjustments are made in 1996 and 1997 for payments of previous years' deficiency payments that occur in those years and repayments of unearned deficiency payments that are due in those years. An additional adjustment is made to add $8.5 million annually 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 payments (before payment limitation reductions) by the corresponding total payment quantity on all enrolled acreage for the commodity. Production flexibility contract payments to individual farmers are then based on the derived payment rate times the payment quantity on the farm (see box, page 27).

Annual production flexibility contract payments will be made no later than September 30 of each fiscal year. Starting in fiscal 1997, a 50-percent advance payment will be made at the option of the owner or producer on either December 15 or January 15 of the fiscal year. Owners and producers must give advance notice as to which date they prefer for the advance payment, and the date selected may change from year to year.

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 advances), a $10,000 reduction from the previous $50,000 limit on deficiency payments. Limits on marketing loan gains and loan deficiency payments are unchanged at $75,000 per person per crop year, and the three-entity rule is retained.

Planting flexibility increases under the 1996 Farm Act. Participating producers are permitted to plant 100 percent of their contract acreage plus any other cropland acreage on the farm to any crop (with limitations on fruits and vegetables) with no loss in payments, as long as the producer does not violate conservation and wetland provisions. Haying and grazing restrictions and minimum planting requirements of previous legislation have been eliminated on contract acres. Additionally, the new law lets authority expire for ARPs and the 0,50/85-92 provisions.

The 1996 Farm Act retains nonrecourse commodity loans, in a modified form. Loan rates for most crops continue to be based on 85 percent of the preceding 5-year average of farm prices, excluding the high- and low-price years. Maximum loan rates are specified in the new law for wheat, corn, upland cotton, soybeans, and minor oilseeds. Corn, wheat, and upland cotton loan rates are capped at their 1995 levels, while soybean loan rates can vary between $4.92 (the 1995 level) and $5.26 per bushel. Corn and wheat loan rates may be further reduced based on

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Calculating Production Flexibility Contract Payments: An Example

Total funding available for production flexibility contract payments under the 1996 Farm Act is $5.8 billion for fiscal 1998. The allocation for corn in the new law is 46.22 percent of the total available funding, or $2.681 billion (see table 5). The annual payment rate for corn equals total annual corn payments ($2.681 billion) divided by the sum of all individual corn payment quantities for the year. For corn, as for other program commodities, an individual farm's payment quantity equals 85 percent of the farm's corn contract acreage multiplied by the farm's program payment yield. Land eligible for contract acreage includes land enrolled in acreage reduction programs for any of the crop years 1991 through 1995, land considered planted to program crops (certified acreage) in any of those crop years, and land leaving the CRP that had an acreage base. Program payment yields are determined in the same manner as under previous legislation. Contract acreage and payment yields remain fixed throughout the contract period, adjusted for changes in CRP enrollment. An individual farmer's production flexibility contract payment is his or her payment quantity times the annual payment rate.

The baseline projects the corn payment rate for fiscal 1998 at 37 cents per bushel. With this payment rate, a farmer with 100 corn acres under a production flexibility contract and a baseline projected average program yield of 102.7 bushels per acre would receive payments on 8,730 bushels (0.85 times 100 contract acres times 102.7 bushels per acre payment yield). Multiplying this payment quantity times the 37 cents per bushel payment rate gives the farmer $3,230 in fiscal 1998 corn contract payments.

Similarly, a farmer with 100 wheat contract acres would receive a payment of $1,923, based on the baseline projected 1998 payment rate of 65 cents per bushel, a 34.8 bushel-per-acre program payment yield, and the wheat funding allocation of 26.26 percent of the total 1998 funding available for production flexibility contract payments.

Table 5. Production flexibility contract payments for corn and wheat under the 1996 Farm Act, fiscal 1998

Category	Corn	Wheat
Total 1996 Farm Act contract payments, fiscal 1998	$5.800 billion	$5.800 billion
1996 Farm Act commodity share	46.22 %	26.26 %
Commodity payments	$2.681 billion	$1.523 billion
Baseline projected payment rate, 1998	$0.37 per bushel	$0.65 per bushel
Example farm, 100 enrolled acres:		
Production flexibility contract acres	100 acres	100 acres
Baseline projected payment yield	102.7 bushels per acre	34.8 bushels per acre
Payment quantity 1/	8,730 bushels	2,958 bushels
Baseline projected payment rate, 1998	$0.37 per bushel	$0.65 per bushel
Production flexibility contract payments	$3,230	$1,923

1/ Payment quantity equals 0.85 times production flexibility contract acres times payment yield.
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stocks-to-use ratios. Loan rates for sorghum, barley, and oats are 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 frozen for the 1996-2002 crop years at its 1995 level of $6.50 per hundredweight. Marketing loan provisions are retained.

Programs for Price-Supported Commodities, as Altered in the 1996 Farm Act

The 1996 Farm Act also makes program changes for dairy, sugar, and peanuts. Benefits for producers of these commodities historically have been through price supports rather than through direct payments.

Dairy Price Support Phased Out

Under the 1996 Farm Act, dairy price supports are phased down from $10.35 per hundredweight in 1996 to $9.90 in 1999, and the program ends on December 31, 1999. Starting January 1, 2000, a recourse loan program, in which loans must be repaid with interest, is implemented for butter, nonfat dry milk, and cheddar cheese at loan rates equivalent to $9.90 per hundredweight for milk to assist processors in the management of dairy product inventories. Dairy marketing assessments were eliminated May 1, 1996. Also under the 1996 Farm Act, Federal milk marketing orders must be consolidated within 3 years from the current 32 orders into 10-14 orders, reserving one order for California. The Dairy Export Incentive Program (DEIP) is extended through 2002 and its program objective is expanded to emphasize market development. The Secretary is directed to use DEIP to the maximum extent permitted under the expenditure and quantity limits of the Uruguay Round GATT Agreement.

Sugar Program Modified

The 1996 Farm Act freezes the raw cane sugar loan rate at 18 cents per pound, the level in effect since the 1985 crop. The refined beet sugar loan rate is also fixed, at its 1995 level of 22.9 cents per pound. Nonrecourse loans are available when the tariff-rate quota for sugar imports exceeds 1.5 million short tons. Sugar program loans are recourse in years when the tariff-rate quota is at or below 1.5 million short tons, but such loans convert to nonrecourse loans if the tariff-rate quota is increased above 1.5 million short tons. 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 under a nonrecourse loan. Sugar marketing assessments, paid on all processed sugar, are increased by 25 percent under the new law. USDA authority in past legislation to implement domestic sugar marketing allotments was suspended.

Peanut Program Made "No Net Cost"

The 1996 Farm Act revises the peanut program. The minimum national poundage quota is eliminated, requiring the quota to be set equal to projected domestic edible and related uses. Carryover to subsequent years of undermarketings of quota from earlier years is eliminated. Marketing assessments for peanuts are set at 1.15 percent of the loan rate for the 1996 crop and 1.2 percent for the 1997-2002 crops, shared by producers and purchasers. Marketing assessments must be increased to offset any program losses to the CCC.

The loan rate for quota peanuts is set at $610 per short ton in the new law, down from $678 in 1995. Under previous legislation, the quota support rate was adjusted annually to reflect changes in costs of production. At the farm level, quota marketings plus a seed peanut allocation are

eligible for the quota price support loan rate. Above-quota "additionals" to be used for the crush and export markets receive a lower loan rate, set by the Secretary to ensure no losses to the CCC.

Major Trade Provisions More Focused under the 1996 Farm Act

Trade and food aid programs in the 1996 Farm Act are focused more heavily on market development, including an emphasis in some programs on emerging markets with high potential for U.S. export growth.

Total EEP funding during fiscal 1996-1999 was reduced in the 1996 Farm Act by more than $1.6 billion below the maximum levels permitted under the GATT Uruguay Round Agreement. The 1997 Agriculture Appropriations Act further lowered fiscal 1997 EEP levels by another $150 million. The resulting reduced levels of EEP funding are $100 million in fiscal 1997, $500 million in fiscal 1998, and $550 million in fiscal 1999. EEP funding is then assumed to return to the maximum levels permitted under the GATT Uruguay Round Agreement of $579 million in fiscal 2000, and $478 million in fiscal 2001 and subsequent years.

The 1996 Farm Act mandates annual program levels of $5.5 billion for GSM-102 and GSM-103 credit guarantee programs. An additional $1 billion for fiscal 1996-2002 is provided for emerging market countries, assumed in this baseline at $200 million a year over 1998-2002. The resulting program level of $5.7 billion annually for fiscal 1998-2002 is then assumed to continue for subsequent years.

The Market Promotion Program was renamed the Market Access Program in the 1996 Farm Act. Funding authority was capped at $90 million annually for fiscal 1996-2002, and is assumed to remain at that level in later years.

The 1996 Farm Act authorizes P.L. 480, Title I agreements with private entities in addition to foreign governments. Other changes broaden the range of commodities available for P.L. 480 programs, provide greater program flexibility, and improve the operation and administration of the program. P.L. 480 program levels available for fiscal 1997 are $252.768 million for Title I Credit, $34.154 million for Title I Ocean Freight, $837.798 million for Title II, and $29.5 million for Title III. A rescission request in the President's Budget would reduce Title I Credit by $56.9 million and Title I Ocean Freight by $3.5 million. For fiscal 1998 and subsequent years, P.L. 480 program levels are assumed at $112.899 million for Title I Credit, $10.25 million for Title I Ocean Freight, $837 million for Title II, and $30 million for Title III.

The Food Security Commodity Reserve, formerly the Food Security Wheat Reserve, can contain up to 4 million metric tons of grain to meet humanitarian food aid needs and was expanded to include rice, corn, and sorghum in addition to wheat. The 1996 Farm Act authorizes replenishment of the reserve, but does not set a specific time for replenishment. Also, funds for any commodity purchases for replenishment must be authorized in an appropriations Act. The baseline assumes that funds for replenishment of the reserve through commodity purchases will not be appropriated.

Major Conservation Provisions Consolidated and Extended in the 1996 Farm Act

The 1996 Farm Act addresses a wide range of environmental and conservation programs. Many conservation programs were simplified to make them more consistent and workable. An Environmental Quality Incentives Program (EQIP) is authorized at $1.33 billion over 7 years to provide technical, educational, and cost-share assistance and incentive payments to crop and livestock producers in implementing structural and management practices to protect soil and water resources. At least half of the fund must be allocated to livestock practices. EQIP is to be operated to maximize the environmental benefits per dollar spent.

The Conservation Reserve Program (CRP) is reauthorized in the new law. Maximum CRP area is set at 36.4 million acres. Farmers can remove less environmentally sensitive land from the program prior to contract expiration if it has been enrolled for at least 5 years and if the contract was entered into before 1995. Land in expiring CRP contracts or in contracts terminated prior to expiration is eligible to be enrolled in production flexibility contracts when leaving the CRP if that land had an acreage base. The 1996 Farm Act permits the Secretary to re-enroll current land at contract expiration and to enroll new land into the CRP to replace acreage leaving the CRP through expired contracts or early termination. Funding for the CRP and other conservation programs was changed from appropriations to the CCC budget.

Over 20 million acres of CRP contracts expire in 1997. CRP enrollments in 1997 are assumed to keep the CRP from falling below 30 million acres. Enrollments in subsequent years are assumed to gradually increase the CRP to over 36 million acres by 2001 (see table 8). Two allocations of the CRP to specific crops are provided in table 8. At the time the baseline was prepared, final long-term CRP rules and regulations had not been announced. Therefore, the CRP allocations used in the baseline are guided by eligibility and selection criteria of the proposed rule announced in September 1996.

The planting history allocation reflects crops previously grown on CRP acreage, and is based on data from USDA's National Resources Inventory, a national survey of rural non-Federal lands. This CRP allocation is useful for assessing the general effects of the CRP on land availability for plantings.

The second crop-specific allocation of the CRP shown in table 8 indicates reductions in potential production flexibility contract acreage, and is used in the determination of production flexibility contract payment rates. This CRP allocation reflects different CRP regulations than previously used for reductions in crop-specific effective acreage bases. Under previous law, the effective acreage base was reduced in proportion to CRP enrollment relative to the total crop acreage on the farm. With new rules and regulations under the 1996 Farm Act, new CRP acreage may first be allocated to land on the farm that is not eligible for production flexibility contracts before resulting in reductions in acreage eligible for those contracts. The net result of this change is less CRP land being allocated to crops eligible for production flexibility contracts and more CRP land being allocated to the "other" category.

Enrollment of new and expiring CRP acres is assumed to target the most environmentally cost-effective land, with selection based on an environmental benefits index that takes government costs into account. The environmental benefits index includes soil erosion, water quality, wildlife habitat, and costs.

A competitive bid process is used for new CRP enrollments. Producers submit rental rate bids for land they would like to enroll (or re-enroll) in the CRP and compete with all other CRP enrollment bids for acceptance into the program. Maximum allowable CRP rental rates that the Government would consider for acceptance (bid caps) are determined based on local rental rates adjusted for soil-based productivity factors. These bid caps are made available to producers in advance of their bid submissions. By submitting a bid lower than the land's bid cap, a producer can improve the chance of acceptance of the CRP bid submission.

Other Agricultural Policy Assumptions

- *Ethanol tax credit*: The federal tax credit for ethanol use is assumed to be extended beyond 2000 in this baseline.

- *Tobacco*: The tobacco support program was not included in the 1996 Farm Act because it had been continued by earlier legislation. Tobacco marketing quotas and allotments continue, in accordance with the Agricultural Adjustment Act of 1938. Imports of flue-cured, burley, and certain other tobaccos are covered by a tariff rate quota as authorized by GATT implementing legislation. A tobacco marketing assessment equal to 0.5 percent of the national price support level is assumed to be collected from both the producers and purchasers. Additionally, an assessment on tobacco imports is assumed to be imposed.

- *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 GATT Agreement.

- *Export Subsidy Carryover Credit*: The baseline assumes no carryover of unused, GATT-permitted export subsidies to later years.

- *World Trade Organization (WTO)*: The baseline assumes no accession to the WTO by the FSU, China, or Taiwan.

- *EU Enlargement*: The baseline assumes no enlargement of the EU-15.

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

- *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
1996 Farm Act contract payments								
	Percent				*Million dollars*			
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
Contract payments adjusted for prior crop year deficiency payment obligations and repayments 1/								
Wheat		1,976	1,414	1,523	1,471	1,347	1,085	1,053
Corn		1,771	3,416	2,681	2,590	2,371	1,909	1,852
Sorghum		206	344	296	286	262	211	205
Barley		141	116	125	121	111	89	87
Oats		9	8	9	8	8	6	6
Upland cotton		746	626	675	652	597	480	466
Rice 2/		472	465	500	483	443	358	348
Total adjusted payments		5,321	6,389	5,809	5,612	5,139	4,139	4,017
Projected contract payments after payment limitations								
Wheat		1,947	1,386	1,493	1,442	1,320	1,063	1,032
Corn		1,744	3,393	2,654	2,564	2,347	1,890	1,834
Sorghum		202	338	290	281	257	207	201
Barley		137	114	123	119	109	87	85
Oats		9	8	9	8	8	6	6
Upland cotton		703	601	648	626	573	461	447
Rice		454	455	490	473	434	351	341
Total payments		5,196	6,296	5,707	5,513	5,048	4,065	3,945

1/ All outstanding repayments of 1995 deficiency payments were assumed to be repaid in FY 1996 except for corn and sorghum; for corn and sorghum, all were assumed to be repaid in FY 1997.

2/ Rice payments not adjusted for final 1995 deficiency payments; 1996 Farm Act includes additional rice payments of $8.5 million annually, fiscal years 1997 through 2002.

Table 7. Summary baseline policy variables

	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
ARP (percent)												
Corn	0	7.5	---	---	---	---	---	---	---	---	---	---
Sorghum	0	0	---	---	---	---	---	---	---	---	---	---
Barley	0	0	---	---	---	---	---	---	---	---	---	---
Oats	0	0	---	---	---	---	---	---	---	---	---	---
Wheat	0	0	---	---	---	---	---	---	---	---	---	---
Rice	0	5	---	---	---	---	---	---	---	---	---	---
Upland cotton	11	0	---	---	---	---	---	---	---	---	---	---
Participation rate (percent)												
Corn	81.6	76.0	98.3	98	98	98	98	98	98	98	98	98
Sorghum	81.2	76.9	98.8	99	99	99	99	99	99	99	99	99
Barley	83.9	82.0	98.9	99	99	99	99	99	99	99	99	99
Oats	39.8	43.9	97.0	97	97	97	97	97	97	97	97	97
Wheat	87.0	84.8	98.8	99	99	99	99	99	99	99	99	99
Rice	95.4	94.7	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6
Upland cotton	89.2	79.1	99.4	99	99	99	99	99	99	99	99	99
Target prices (Dollars per unit)												
Corn	2.75	2.75	---	---	---	---	---	---	---	---	---	---
Sorghum	2.61	2.61	---	---	---	---	---	---	---	---	---	---
Barley	2.36	2.36	---	---	---	---	---	---	---	---	---	---
Oats	1.45	1.45	---	---	---	---	---	---	---	---	---	---
Wheat	4.00	4.00	---	---	---	---	---	---	---	---	---	---
Rice	10.71	10.71	---	---	---	---	---	---	---	---	---	---
Upland cotton	0.729	0.729	---	---	---	---	---	---	---	---	---	---
Loan rates (Dollars per unit)												
Corn	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89
Sorghum	1.80	1.80	1.81	1.76	1.76	1.75	1.73	1.69	1.69	1.69	1.70	1.72
Barley	1.54	1.54	1.55	1.56	1.55	1.59	1.61	1.61	1.59	1.59	1.58	1.58
Oats	0.97	0.97	1.03	1.10	1.10	1.12	1.14	1.17	1.14	1.14	1.15	1.16
Wheat	2.58	2.58	2.58	2.58	2.58	2.58	2.58	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	0.500	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192
Soybeans	4.92	4.92	4.97	5.23	5.26	5.24	5.24	5.14	5.14	5.24	5.26	5.26
Milk support *	10.10	10.35	10.20	10.05	9.90	9.90	9.90	9.90	9.90	9.90	9.90	9.90
Deficiency payment rates through 1995/96; Production flexibility contract payment rates thereafter												
Corn	0.57	0.00	0.25	0.48	0.37	0.36	0.33	0.27	0.26	0.26	0.26	0.26
Sorghum	0.59	0.00	0.32	0.53	0.45	0.43	0.40	0.32	0.31	0.31	0.31	0.31
Barley	0.53	0.00	0.33	0.28	0.28	0.27	0.24	0.20	0.19	0.19	0.19	0.19
Oats	0.23	0.00	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02
Wheat	0.61	0.00	0.87	0.63	0.65	0.62	0.57	0.46	0.45	0.45	0.45	0.45
Rice	3.79	3.22	2.77	2.72	2.93	2.83	2.60	2.10	2.04	2.04	2.04	2.04
Upland cotton	0.046	0.000	0.089	0.075	0.079	0.077	0.070	0.057	0.055	0.055	0.055	0.055

* Milk support changed on January 1 if different from previous year. The dairy price support program ends on December 31, 1999. Starting January 1, 2000, a recourse loan program is implemented.

Note: Units for target prices, loan rates, and payment rates are dollars per bushel except for upland cotton (per pound) and rice (per hundredweight). Units for milk support are dollars per hundredweight.

Table 8. Conservation Reserve Program acreage assumptions

	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
					Million acres						
Estimated Cropping History *											
Corn	3.6	3.4	3.1	3.7	4.5	5.0	5.1	5.1	5.0	5.0	5.0
Sorghum	2.0	1.9	1.7	1.7	2.0	2.1	2.2	2.2	2.2	2.2	2.2
Barley	1.1	1.1	1.1	1.1	1.3	1.4	1.4	1.4	1.4	1.4	1.4
Oats	0.7	0.6	0.6	0.8	1.0	1.0	1.0	1.1	1.1	1.1	1.1
Wheat	11.7	11.6	11.5	10.7	12.0	12.7	12.8	12.9	12.9	12.9	12.9
Upland cotton	1.4	1.4	1.3	1.2	1.4	1.5	1.5	1.5	1.5	1.5	1.5
Soybeans	3.9	3.7	3.6	3.3	3.6	3.8	3.8	3.8	3.7	3.7	3.7
Subtotal	24.5	23.6	23.0	22.5	25.8	27.5	27.8	27.8	27.9	27.9	27.9
Other	10.1	9.9	9.8	7.9	8.3	8.5	8.6	8.6	8.5	8.5	8.5
Total	34.6	33.5	32.8	30.4	34.1	36.0	36.3	36.4	36.4	36.4	36.4
**Estimated Production Flexibility Contract Acreage Reductions ** **											
Corn	4.2	3.9	3.5	2.7	2.9	3.0	3.0	2.9	2.8	2.8	2.8
Sorghum	2.3	2.2	2.0	1.5	1.6	1.7	1.7	1.7	1.7	1.7	1.7
Barley	2.7	2.6	2.6	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Oats	1.3	1.3	1.3	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Wheat	10.3	10.1	10.1	6.9	6.9	6.7	6.7	6.7	6.6	6.6	6.6
Upland cotton	1.4	1.4	1.2	1.0	1.0	1.1	1.1	1.1	1.0	1.0	1.0
Soybeans	3.9	3.7	3.6	3.3	3.6	3.8	3.8	3.8	3.7	3.7	3.7
Subtotal	26.1	25.3	24.4	18.2	19.0	19.1	19.2	18.9	18.7	18.7	18.7
Other	8.5	8.2	8.4	12.2	15.1	16.9	17.2	17.5	17.7	17.7	17.7
Total	34.6	33.5	32.8	30.4	34.1	36.0	36.3	36.4	36.4	36.4	36.4

* The cropping history allocation represents crops previously grown on CRP acreage, and is used as a general
   indicator influencing land available for plantings.

** The production flexibility contract acreage reduction allocation of the CRP affects the acreage available for
   production flexibility contracts and, therefore, is used in the determination of PFC payment rates. Soybean
   allocation is cropping history.

Crops

The baseline assumes a continuation of the 1996 Farm Act through the entire projection period. The 1996 Farm Act accelerates trends of the 1985 Act and 1990 farm legislation toward greater market orientation. The new farm law changes income support for wheat, corn, grain sorghum, barley, oats, rice, and upland cotton by replacing the target price/deficiency payment provisions of the previous legislation with production flexibility contract payments. Production flexibility contract payments decline over the next 7 years and then are assumed to stay constant beyond 2002. Because these payments are unrelated to current production levels or prices, market returns play the primary role in determining what crops are planted. Planting flexibility is increased under the 1996 Farm Act since any crop may be planted on contract acreage, except for fruits and vegetables. The new law also eliminated annual Acreage Reduction Programs (ARPs), further enhancing farmer flexibility in responding to market prices in cropping decisions.

Land Use

Total acreage planted to the eight major field crops (corn, soybeans, sorghum, barley, oats, wheat, rice, and upland cotton) rises from 257.5 million acres in 1997 to 264.2 million acres in 2005, with most of those changes accounted for by corn and wheat (table 9). Harvested acreage for these crops is up from 236.1 million to 242.2 million acres. The increase in planted acreage reflects the response of producers to higher prices and market returns, and the 1996 changes in farm policy which eliminated ARPs and the 0,50/85-92 programs. Total plantings of feed grains stay high due to continued large plantings of corn. Acreage planted to wheat increases by 7 million acres. Soybean planted acreage varies between 62 and 64 million acres while rice plantings grow slowly within a 2.9 million to 3.0 million acre range. Upland cotton plantings acreage rises from 13.3 million acres to 14.2 million acres in 2005.

The Conservation Reserve Program (CRP) is assumed to decline to about 30 million acres before rebuilding to over 36 million acres by 2001 (see Policy Assumptions chapter, page 30, and table 8). Most land enrolled in the CRP is in areas traditionally planted to major field crops, thus limiting the response of planted acreage to rising prices and net returns.

Crop Supply and Demand Overview

The growth in total usage (domestic and exports) for the major field crops outstrips production increases, causing tighter stocks-to-use ratios with rising prices from 1998 to 2005. Although there is higher domestic utilization for the major field crops during the projection period, the biggest driver in demand growth is exports, especially for wheat and corn. Also, a substantial amount of acreage remains in the CRP, which tightens supplies.

Feed grain production rises through 2005, primarily reflecting increasing acreage and yields for corn. Larger livestock and poultry inventories boost feed use by 8 percent while food, seed, and industrial (FSI) use increases by 18 percent, mainly due to higher corn sweetener and ethanol use. Feed grain exports, primarily corn, show the strongest growth, rising by 35 percent from 1997 to

2005. Higher global incomes, diet diversification, and trade liberalization resulting from both the GATT agreement and ongoing unilateral policy reforms in developing countries raise feed grain exports. Competition with corn for cropland limits soybean acreage in the baseline and soybean production growth slows. However, total soybean usage grows at a steady rate for both crushings and exports.

Greater flexibility in planting choices permitted under the 1996 Farm Act allows wheat production to expand in order to meet the increased demand for wheat both domestically and internationally. Growth in per capita consumption of wheat in the United States continues but at a slower rate than recent years. U.S. wheat exports rise steadily over the projection period but face greater EU competition after 2001 because strong international wheat prices allow the EU to export wheat without subsidies, thus resulting in EU wheat exports higher than its quantity limits on subsidized wheat exports in the GATT agreement.

Unlike feed grains, wheat, and soybeans, domestic use of rice and cotton increases more than exports over the baseline. Rice production is lower than in recent years, mostly reflecting reduced acreage as producer incentives to plant rice have fallen under provisions of the 1996 Farm Act. Domestic food use of rice continues to grow, however, as greater emphasis on dietary concerns and increasing Asian and Latin American populations in the U.S. keep demand strong. The strength of domestic demand for high-quality U.S. rice leads to a widening premium between domestic prices and those of key competitors. As a result, U.S. rice exports decline through 1998, and then remain steady at a lower level. Cotton production expands in response to rising prices and producer returns. Domestic mill use rises 16 percent from 1997 through 2005, although easing of textile import quota restrictions slow growth after 2001. Cotton exports increase by 11 percent, maintaining a 25-percent global market trade share.

Sugar production rises in the baseline, led by gains in beet sugar production. Beet sugar rises from 55 percent of domestic sugar production in 1997 to 58 percent in 2005. Per capita sugar use rises 3 to 4 pounds per person in the baseline, with growth slowing from recent years due to continued substitution of other sweeteners. Grower prices for sugarbeets and sugarcane show little change in the baseline. Sugar imports are projected to remain above the level of 1.5 million tons necessary to assure nonrecourse loan price support. However, normal production variations could lead to a Tariff Rate Quota on sugar imports at or below 1.5 million tons in some years, with the sugar loan program offering recourse loans.

Tobacco production declines steadily after 1997 due to reduced domestic disappearance and declining leaf exports. Domestic use falls as cigarette exports stabilize and domestic consumption continues its long-term decline due to higher taxes, increased regulation limiting smoking and sales, and heightened awareness of links between smoking and various diseases. Leaf exports decline due to the price and quality competitiveness of other producers.

The farm value of U.S. horticultural crop production increases over 3 percent annually through 2005. Production of fresh vegetables is up about 1 percent annually from 1997 to 2005, which, combined with higher net imports, allows per capita fresh vegetable consumption to increase. Per capita consumption of noncitrus fruits increases about 1 percent annually. Fresh citrus

consumption declines, however, as increases in production are used for processing or exports. The United States becomes a net exporter of fresh fruits (in terms of value) by 2000. The use of fruits and vegetables for processing is projected to increase during 1997 to 2005, due to increases in both domestic and export demand.

Market-Oriented Supply Response Under the 1996 Farm Act

The Federal Agriculture Improvement and Reform Act (1996 Farm Act) became law on April 4, 1996, covering crop years 1996 through 2002. The new legislation continues the trends of the previous two major farm acts toward greater market orientation that have gradually reduced the Government's commodity program influence in the agricultural sector. U.S. crop producers have been increasingly responding to market signals during the last 10 years. Farm commodity programs became more market oriented through features such as freezing program payment yields implemented under the 1985 Farm Act and planting flexibility with 15 percent nonpayment acres in 1990 legislation.

Title I of the 1996 Farm Act, the Agricultural Market Transition Act, introduces several major changes for wheat, feed grains, cotton, and rice. First, it significantly alters many of the commodity programs that have been in existence, in some form, since the 1930s. Second, it takes the United States to an almost fully market oriented farm policy by decoupling planting decisions from program parameters (increased planting flexibility); eliminating annual supply control programs; and eliminating ties of government payments to market conditions.

Supply response becomes especially important in a market where resources can adjust to market signals. In addition to a more market oriented commodity policy, reduced trade barriers and passage of GATT and NAFTA are leading to freer trade and increased trade growth. With this increased market orientation in the sector, questions arise about the response of acreage to changes in prices. Under the old program, acreage response depended largely on program rules and planting constraints. However, under the new policy era these rules have changed and new acreage response measures are needed.

What Will Happen to Land Previously Idled Under Government Programs?

Conservation Reserve Program (CRP). The baseline assumptions regarding the CRP reflect a combination of old contracts, expiring contracts for land leaving the CRP, new contracts for some acreage already in the program, and enrollments of new land. Factors that influence plantings of land leaving the CRP will be important for supply response. Land coming out of the CRP by choice will most likely be planted. Land leaving the CRP because it does not meet new program criteria or because it is not accepted in the CRP competitive bid process may or may not be planted depending upon producer returns net of variable costs of production.

0,50/85-92 Program.[1] Since wheat and feed grain producers were largely making decisions to plant 0/85-92 acreage based on market prices, markets prices should direct the use of this land. Without the 50/85 program, some rice producers will probably plant less, especially in regions such as southwest Louisiana and Texas, where production costs are high and use of these provisions was high.

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[1]The term 0,50/85-92 provisions refers to the 50/85 and 50/92 provisions for rice and cotton and the 0/85 and 0/92 provisions for wheat and feed grains that were in effect in various forms over the last 10 years. Under these provisions, farmers could idle all or part of their permitted acreage, putting the land in a conserving use, and receive deficiency payments for part of the acreage. A minimum planting requirement of 50 percent of maximum payment acreage applied for rice and cotton.

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Market-Oriented Supply Response Under the 1996 Farm Act, continued

Acreage Reduction Program (ARP). With previous farm legislation, ARP acreage was required to be idled as a condition for enrollment in annual supply management/income support programs. Under the 1996 Farm Act, prices and net returns will determine land use of prior ARP land.

Supply Response

Program crop producers have near full planting flexibility under the 1996 Act, but under the 1990 farm legislation market-based planting flexibility applied only to the 15 percent normal flex acres. How should one estimate new acreage response equations when historical data are non-existent or sparse? Existing econometric models are heavily influenced by effects of the previous commodity programs, but these structural relationships may no longer hold under the current program. Such a situation requires a reevaluation of existing analytical tools and may require a new approach to derive supply response that differs from past methods.

Supply Response on Normal Flex Acres. One approach to estimating supply response is to base computations on normal flex acres (NFA) for program crops during 1991 through 1995. Such a procedure provides an estimate of how acreage responds to price in a more flexible environment. A regional approach can be taken with supply response for each region estimated by combining cross-section and time-series data. At present, results from the North Central Region are available and are used here to illustrate the procedure of calculating regional supply elasticities. When other regional estimates are completed, the results will be summed to a national total to derive a U.S. acreage price elasticity.

The econometric model for these calculations is specified as the percent of corn NFA planted to corn expressed as a linear function of expected net return per acre of corn, expected net return per acre of soybeans, and dummy variables for the States in the region. Results are estimated with ordinary least squares.

Computation of Elasticities: An Illustration. Computations of acreage price elasticities (own and cross) are divided into two parts. First, elasticities for normal flex acreage are computed from the estimated regression equation. Second, these elasticities are then combined with elasticities for payment acreage to derive elasticities for the whole farm. This illustration uses an example of a corn farm with a 100 acre base.

Own-Price Effect -- Based on results of the econometric model, an acreage price elasticity of 1.11 is computed for NFA, covering 15 acres of a 100 acre base corn farm. With the ARP averaging 6 percent during 1991-1995, this corn farm would have idled 6 acres on average under the ARP in those years. The remaining 79 acres are assumed to be planted to corn. An acreage own-price elasticity of 0.17 is assumed for the 79 payment acres, which was estimated for the 1991-1995 period when 1990 farm legislation was in effect. Combining the elasticities from both the NFA and the payment acres provides an estimate of the corn acreage own-price elasticity of 0.26 for the whole corn farm, when evaluated at average planting levels. This means that a 1-percent rise in corn prices would result in a 0.26-percent increase in corn plantings.

Cross-Price Effect--A cross-price elasticity of -1.75 between soybean prices and corn acreage is similarly derived from the econometric model results for corn NFA acreage. A cross-price elasticity of -0.10 is assumed for the 79 corn payment acres. The resulting estimated cross-price elasticity between soybean prices and corn acreage is -0.25 for the corn farm, again evaluated at average planting levels. This means that a 1-percent rise in soybean prices would result in a 0.25-percent reduction in corn plantings.

Feed Grains

U.S. feed grain production is projected to increase steadily through 2005, mainly reflecting gains in corn. However, after 1998, demand growth outpaces increases in production, resulting in declines in stocks. Feed grain prices weaken initially from recent high levels, but then strengthen as the supply and demand balance tightens.

Total feed grain production surpasses the previous record high (set in 1994) by 2001. Increases in production are primarily driven by increasing yields, except for corn where more acreage also accounts for gains in some years. Total acreage planted to feed grains peaks in 1997, and after 2 years of declines, it then builds to nearly equal this peak again by 2005. Feed grain supply increases are virtually all due to gains in corn. Imports, mainly oats and barley, are projected to be very stable through 2005.

Corn is the only individual feed grain projected to reach new production records. Other feed grains fail to match even their recent production highs of the early 1990s. Corn output matches the 1994 record of 10.1 billion bushels by 2001, and then continues higher to 10.7 billion bushels in 2005. Corn yields are projected to increase 1.7 bushels per acre per year based on the long-term trend. Yield growth for the other feed grains is much more subdued, although these projections are mainly based on trends as well.

With favorable market conditions and producer returns, planted acreage for feed grains remains relatively high even in the initial years when stocks are increasing, particularly for corn. Further, with the end of the ARP supply management policy tool and the 0/85-92 program, there is now little incentive to leave land idle. However, some feed grain acres switch to other crops.

Corn plantings are projected to remain at or above 80 million acres throughout the baseline, an acreage level last achieved in the mid-1980s. By 2002, corn planted acres top out at 82 million, with strong competition from soybeans limiting additional expansion. Also, land enrolled in the Conservation Reserve Program (CRP) from areas traditionally planted to corn and soybeans will constrain corn plantings. Outside of the Corn Belt in southern States, corn will also compete strongly with cotton and rice.

Sorghum area planted drops from the 1996 high of over 13 million acres and remains around 11 million acres. In 1996, plantings were unusually high because much sorghum was planted on failed wheat acres. However, the projected level is more than 1 million acres higher than plantings in 1993-1995, the last years under the old farm program. This reflects more expected rotations with wheat since there is no need to maintain base.

Barley planted acres increase slightly at the beginning of the period, but then slip back to the 1996 level of 7.2 million acres and level out. This is low by historical standards, with more producers projected to favor wheat due to better expected returns. Oats plantings also remain relatively flat at a historically low level, with oats no longer needed as a cover crop for much land idled under the old farm programs. In contrast to the sharp declining trend of recent years, oats acres are projected to bottom out, assuming oats remain useful for rotation purposes.

Demand growth for feed grains is fairly robust over the period, led by sharp gains in exports. Total feed grain use exceeds the 1994 record high by 1998 and continues upward, fueled by gains in corn. Use of the other feed grains is relatively flat, reflecting stable or declining growth in their supplies. In the case of sorghum, strong export gains are projected, while domestic feed use contracts.

Feed use of corn increases through the entire period because of higher corn supplies and growth in livestock and poultry inventories. Growth in production of meat for export is incorporated in this increased feed use. While the quantity increases are smaller, FSI use is projected to grow at a faster rate than feed use. Most of the increase comes from use for corn sweeteners and ethanol.

Corn exports show the biggest gains of all categories, rising 35 percent between 1997 and 2005 to nearly 3 billion bushels. A major factor driving this increase in exports is per capita income growth for several East Asian countries. These countries, including China, Indonesia, and the Philippines, are at or are projected to reach income levels that result in increased demand for meat as part of dietary diversification. They are not self-sufficient in feed grain production, and feed imports expand.

Despite a modest rise at the beginning of the baseline, corn stocks trend down from 1999 to less than 800 million bushels by 2005. Other feed grains stocks also trend down, and the ratio of total feed grain stocks to use is projected at 7.9 percent in 2005. This tightening outlook supports prices. Corn prices rise from a low of $2.45 per bushel in 1997 and 1998 to $3.10 a bushel by 2005.

Market revenue for most producers of feed grains is supplemented by production flexibility contract payments, with program participation close to 100 percent for each feed grain. For corn, average net returns for program participants are projected to decline from about $200 per acre in 1996 to a low of $182 in 1998. Thereafter, returns strengthen and reach $270 per acre by 2005.

Wheat

For most of the baseline period, demand growth for wheat outstrips yield growth and additional land is brought into production. Beginning in 1998, increasing prices draw more land into wheat. However, the large amount of land enrolled in the CRP from areas that have traditionally been planted to wheat limits the response of planted acreage to rising wheat prices. Nonetheless, wheat plantings rise to 79 million acres by 2005.

Declining prices in 1996/97, combined with the late corn and soybean harvests, result in reduced wheat planted acres in 1997/98. Beginning in 1998/99, strong global import demand and larger U.S. exports result in tightening U.S. supplies and rising prices, pulling in additional U.S. and foreign acreage. Competition from foreign exporters remains keen throughout the baseline.

Wheat prices increase at a faster rate than for other crops, in part because of slower yield growth for wheat than for most other crops. Planting flexibility under the 1996 Farm Act will allow

wheat area to continue to shift to higher yielding feed grains and soybeans in regions where these crops are viable. Initially, increased wheat area will likely come from regions where there are few alternatives. By 2000, when wheat prices begin to exceed $4.00 per bushel, land that had shifted to other crops will begin to move back to wheat.

Domestic use of wheat grows through the baseline. Increases in food use of 15 million bushels a year imply increasing per capita food use of wheat, but at a slowing rate. Feed and residual use declines after 1997, stays low until 2002, and then declines further as wheat prices rise compared with other feeds.

U.S. wheat exports will rebound from the low 1996/97 level as global imports expand. Also, reduced competition from the EU, which faces limits on the amount of subsidized wheat it can export, increases marketing opportunities for the United States through 2000. By 2001, however, global prices are projected to rise high enough that the EU will be able to export wheat without subsidies. This, together with tight supplies and strengthening prices, will lead to slow growth in U.S. exports in the latter years of the baseline.

Production flexibility contract payments decline through the baseline. Producer returns over variable costs will depend increasingly on market prices which will be rising. Despite the drop in contract payments, strong prices, especially after 2000, will result in net returns for program participants rising more than a third between 1997/98 and 2005/06, reaching $124 per acre by 2005.

Rice

The long-term outlook for the U.S. rice sector under the provisions of the 1996 Farm Act includes smaller production, higher prices, and lower exports than if the previous farm programs had been maintained. However, strong U.S. and world prices for high quality rice, combined with steady growth in the domestic market, will limit any contraction in area resulting from the termination of target prices, deficiency payments, and the rice minimum planting requirement of previous farm programs.

U.S. rice planted area declines in 1997/98--the third consecutive annual decline--to 2.88 million acres. Starting in 1998/99, area will gradually rise to about 3 million acres by 2005, an annual increase of about 0.5 percent, in response to strong domestic and world prices for high-quality rice.

The 1996 crop was essentially unchanged from a year earlier even though area dropped 6 percent as record yields were achieved. Lower acreage in 1997 will pull rice production down to about 166 million hundredweight. Starting in 1998, very small gains in average yields of about 0.5 percent a year, combined with the slight rise in acreage, will allow rice production to increase gradually, reaching almost 180 million hundredweight by 2005. However, this level of production would be only about 6 million hundredweight greater than the weather-damaged 1995 crop and well below the 1994 record production of 197.8 million hundredweight.

U.S. rice import gains are modest in the baseline as most traded rice is of lower quality than demanded domestically. U.S. rice imports are primarily high quality, specialty varieties not grown domestically that are typically sold in niche markets. Quality and reliability limit the presence of additional foreign rices in the U.S. market.

Total domestic use is projected to rise annually to 118.4 million hundredweight by 2005/06, up nearly 20 percent from 1996/97. Food use will account for over 95 percent of the growth in domestic use, rising about 2.5 percent a year, reaching 98.5 million hundredweight by 2005/06. A growing share of the U.S. population from Asia and Latin America and a greater emphasis on healthier life styles account for most of the expansion in domestic food use of rice. However, food use expansion will be slower than the nearly 4 percent annual growth achieved during the previous decade.

Brewers' use of rice, which has been virtually stagnant since 1992/93 and below its 1991/92 level of 15.4 million hundredweight, is projected to expand about 100,000 hundredweight annually from 1996/97 to 2005/06, reaching 15.8 million hundredweight. Declining per capita beer consumption accounts for the slow growth in brewers' use of rice. Seed use, essentially a function of planted area, will expand slightly to match the modest area growth, rising to 4.2 million hundredweight in 2005 from 4.0 million hundredweight in 1997.

The combination of only modest U.S. rice production gains and strong domestic demand for high quality U.S. rice results in an increasing differential between domestic rice prices and those of key competitors. This makes U.S. rice exports less competitive in some international markets and results in lower U.S. rice exports in the baseline. U.S. rice exports are projected to drop from 74 million hundredweight in 1996/97 to about 64 million hundredweight by 2005/06. Most of the drop occurs in 1997/98, with exports maintaining a level of around 64 million hundredweight from 1998/99 through 2005/06. With the domestic market growing each year, this leveling of exports means that the international market will account for a declining share of U.S. rice use. The export share of total use is projected to drop from over 40 percent in 1996/97 to 33 percent in 2005/06. The smaller reliance on the international market will likely reduce price risk for producers since the domestic market is more stable.

Ending stocks will grow slightly each year after 1997/98, maintaining a near constant stocks-to-use ratio of 14 percent, a ratio low by historical standards. Ending stocks expand from 24.5 million hundredweight in 1997/98 to 26.8 million in 2005/06.

Strong demand growth in the domestic market with only modest expansion in production will cause season-average U.S. farm prices to rise annually, from $9.70 per hundredweight in 1997/98 to almost $11 per hundredweight in 2005/06, well above levels reported during most of the 1980s and early 1990s.

Upland Cotton

At the time the 1996 Farm Act went into effect, the upland cotton acreage base totaled 16.3 million acres. Upland cotton producers enrolled nearly all (99 percent) of their eligible acreage into production flexibility contracts covering the 1996 through 2002 marketing years. Upland cotton producers will receive over $4 billion in production flexibility contract payments (11.63 percent of the total allocation) during the 7 years covered by the 1996 Farm Act. Upland cotton producers will also receive payments on acreage enrolled in the CRP. Enrolled CRP acreage ranges between 1.0 and 1.2 million acres over the baseline period.

The national average upland cotton yield rises 8 pounds per year reaching 732 pounds per harvested acre in 2005. Harvested area declines to 12.4 million acres in 1997 as stocks have been rebuilt, then increases reaching 13.3 in 2005. Production declines in 1997, then increases thereafter, reaching 20.3 million bales by 2005 to meet increases in domestic mill use and exports.

Growth in domestic mill use and exports will be affected by the GATT accord, which lowers trade barriers and increase world trade. Mill use increases by 2 to 3 percent annually, reaching 12.3 million bales by 2001. However, as textile import quota restrictions are eased, mill use growth slows after 2001, increasing between 1 and 2 percent each year through 2005. Although significant increases in textile imports, primarily apparel, are likely, larger U.S. exports of cotton yarn, fabric, and semi-finished apparel should continue to support growing mill use.

Export demand for U.S. cotton rebounds in 1997 to 6.4 million bales as foreign consumption and imports rise. Competitive cotton prices and lower foreign exportable supplies should allow the U.S. to capture a 25 percent market share of world trade. After 1997 world trade is projected to expand 1.0 to 1.5 percent annually. U.S. cotton exports should also rise, reaching 7.1 million bales in 2005 and maintaining a 25-percent market share.

Net returns to producers enrolled in production flexibility contracts vary only slightly in the baseline, ranging from $212 to $237 per acre. Increasing prices about offset declining contract payments between 1999 and 2005.

Soybeans

Soybean planted area will remain a comparatively large 64.0 million acres in 1997/98 and 1998/99. Corn prices strengthen relative to soybeans in the ensuing years, lowering soybean plantings through 2002. Then, as soybean net returns improve relative to cotton returns, soybean acreage begins to edge up again.

Based on significant yield gains in recent years, much faster growth in average soybean yields is expected over the next 3 years. More universal adoption of narrow row planting, a trend enhanced by introduction of Roundup-Ready™ varieties, is anticipated. The soybean yield is projected to increase from 38.5 to 40.0 bushels per acre in the short span between 1997/98 and 1999/2000. A more typical growth rate of 0.4 bushels per acre per year resumes following the initial gains in yields.

Domestic crush initially grows robustly, coinciding with the rapid expansion of supply and increased meal demand from the livestock sector to support rising meat production for both domestic consumption and exports. A more moderate crush trend emerges beyond 2000/01, when soybean prices begin moving back up and domestic livestock sector meal demand slows.

A steady, upward trend in soybean exports is projected, increasing to 950 million bushels by 2005/06. Carryout soybean stocks rise to 265 million bushels in 1999/2000, with a stocks-to-use ratio exceeding 10 percent. But the situation tightens again by 2002/03, with stocks declining to around 200 million bushels.

Average farm prices rise to $7.25 per bushel by the end of the baseline, after turning up from a low of $5.90 projected for 1999/2000. While slipping over the next 3 years, rising market prices increase projected average net returns to soybean producers to $216 per acre by 2005/06, nearly 40 percent above the 1997/98 level. The price strength in the latter part of the baseline is influenced greatly by tightening soybean oil inventories.

Soybean oil prices remain flat for the next 3 years. Prices under 23 cents per pound help enable U.S. exporters to better compete, raising exports to 2,350 million pounds by 2000/01. However, domestic demand growth eventually outstrips new supplies raising prices to about 29 cents per pound by 2005/06, also trimming exports. Year-end soybean oil inventories are reduced to around 1.5 billion pounds by 2005/06.

Expanding soybean supplies and crush pressure soybean meal prices for the next 3 years, which then recover as soybean supplies tighten through 2005/06. Domestic meal disappearance accelerates through 1999/2000, which is followed by a more moderate pace as domestic livestock sector demand slows. U.S. meal exports grow slowly as world importers increasingly favor soybean imports and because of continued price competition from Brazil and Argentina.

Sugar

New farm legislation passed in 1996 extends the sugar price support program for 7 years, through fiscal 2003. The raw cane sugar loan rate is fixed at 18 cents a pound, raw value, the level in effect since the 1985 crop. The refined beet sugar loan rate is fixed at 22.90 cents a pound, the 1995 crop level. If the tariff-rate import quota (TRQ) is at or below 1.5 million tons, CCC loans to sugar processors will be recourse loans, instead of nonrecourse loans as under previous law. The new legislation also eliminates domestic sugar marketing allotments. The baseline assumes a continuation of the commitment of the United States in the GATT agreement to provide minimum low-duty sugar import access of 1.256 million short tons, raw value.

By imposing a 1-cent-per-pound penalty on any raw sugar forfeited to the Government under the sugar loan program (1.07 cents for refined beet sugar), the new legislation lowers the effective support price by about 1 cent a pound. The raw sugar price (New York No. 14 contract) averaged 22.50 cents a pound in fiscal 1996, and is projected to average 22.00 cents a pound through the remainder of the baseline.

Sugar beet area harvested is down 6.5 percent in fiscal 1997 to 1.32 million acres, due partly to poor weather, and partly to high prices of alternative crops combined with low returns to sugarbeets last year. Acreage rebounds by fiscal 1999 to 1.42 million acres, and rises 15,000 acres per year afterwards. The gradual shift of acreage from higher-cost areas to lower-cost non-irrigated areas continues. The combination of a rising beet sugar recovery rate (on trend) and stagnant sugar beet yields per acre (also on trend) results in a slowly rising yield of beet sugar per acre. Beet sugar production rises about 60,000 tons a year, to 4.67 million tons in fiscal 2005.

A new beet sugar factory is scheduled to open in the State of Washington in 1998, the first new factory in the United States since 1975. The beet sugar share of total domestic sugar production grows from 55 percent in 1997 to 58 percent in 2005. Sugar production from the desugaring of beet molasses (net of sugar which would have been produced from prior-technology desugaring processes that have been discontinued) is 260,000 tons in 1997, and rises at a trend rate of about 10,000 tons a year to 350,000 tons.

Sugarcane acreage drops from 893,000 acres in 1996 to 849,000 acres in 1999, then rises slowly to 888,000 acres by 2005. As acreage has declined in Hawaii, national average yields have fallen, since Hawaii's yields are much higher than those in other states. After 2000, national average yields stabilize, as research and development create better varieties and Hawaii's acreage stabilizes. The cane sugar recovery rate rises on trend.

In Florida, some land is taken out of cane to be used for Everglades restoration purposes. From current levels of about 420,000 acres, annual area harvested for sugar declines to 390,000 acres by the year 1999/2000 and then remains stable. Florida's sugar production declines from 1.76 million tons in 1996/97 to 1.67 million tons in 1999/2000, then rises slowly as yields and recovery rates rise on trend.

In Louisiana, sugarcane acreage harvested increases from the freeze-reduced 1996/97 level of 325,000 acres to 430,000 acres in 2004/05. Some of this additional land was previously in western Louisiana under pasture and rice. Louisiana sugar production rises to 1.2 million tons by the year 2004/05, from 900,000 tons in 1996/97 and over 1 million tons the two previous years. Production in Texas is relatively stable, at 150,000 tons in 2005.

Hawaiian sugar production declines from a forecast 390,000 tons in 1997 to 300,000 tons by 1998/99 and then stabilizes. The Puerto Rican sugar industry continues to decline.

Domestic disappearance rises about 150,000 tons a year from 1996 to 2005. Per capita sugar disappearance rises from 66.5 pounds, refined basis, in 1996 to 70 pounds in 2005. The rapid substitution of corn sweeteners for sugar ended in about 1986. Since then, sugar consumption has grown at about 2 percent a year, compared to 3.9 percent for high fructose corn syrup (HFCS). The projected growth rate of sugar consumption is 1.4 percent a year from 1996 to 2005, lower than the recent trend in part due to expected continued substitution of other sweeteners, including low-calorie sweeteners, and the saturation of the sweeteners market. HFCS

consumption will continue to grow more rapidly than sugar, and is projected to overtake sugar consumption by the end of the baseline.

The fiscal 1997 raw sugar TRQ is under a new administrative plan, with an initial allocation of 1.87 million tons. Three additions to the TRQ of 220,000 tons each will be allocated in January, March, and May 1997 if the ending stocks-to-use forecast for crop-year 1996/97 in USDA's *World Agricultural Supply and Demand Estimates* report for those months is less than or equal to 15.5 percent.

The fiscal 1997 Most Favored Nation refined sugar TRQ of 22,425 short tons was filled on the first day of the fiscal year, October 1, 1996, under a first-come, first-served basis. Under NAFTA provisions, Mexico was declared a net surplus producer and received an allocation of 27,558 tons, which can be shipped as either raw or refined sugar.

Projected sugar imports for consumption in fiscal 1997 of 2.56 million tons are the highest since 1984, due to lower U.S. production the last 2 years and to growing consumption. Imports for consumption are projected to reach 2.73 million tons by 2005. While imports are shown to remain above the level of 1.5 million tons necessary to assure price support, normal variations of production will likely result in high variation in actual import needs over the projection period, perhaps leading to a TRQ at or below 1.5 million tons in some years, with the sugar loan program being recourse.

Domestic sugar prices are projected to be flat through the baseline. Grower prices for sugar beets derive from the wholesale refined beet sugar price, and grower prices for sugarcane derive from the raw cane sugar price.

Tobacco

Projected U.S. tobacco production rises in 1997 because of larger quotas due to higher purchase intentions by U.S. cigarette manufacturers and low reserve stocks. Larger purchase intentions reflect expectations of stable domestic consumption of cigarettes in 1997 and higher cigarette exports. After 1997, leaf production declines steadily due to reduced domestic disappearance and declining leaf exports. Domestic use is projected to fall as cigarette exports stabilize and domestic consumption continues its long-term decline due to higher taxes, increased regulation limiting smoking and sales, and heightened awareness of links between smoking and various diseases. Leaf exports will decline due to the price and quality competitiveness of other producers.

Cigarette exports stabilize after 1998 in the baseline. Purchases of domestic cigarette leaf stocks by manufacturers has increased use of U.S. leaf by domestic manufacturers. However, the new Tariff Rate Quota, which superseded the minimum domestic content rule for U.S. manufactured cigarettes, is less restrictive on imports, allowing greater use of imported leaf. As a result, the proportion of foreign leaf in U.S. cigarettes could rise slightly in the baseline.

Flue-cured tobacco production rises in 1997 because of a larger quota, low stocks, stable cigarette consumption, increasing cigarette exports, and steady or increasing shipments of

semiprocessed leaf. Beginning in 1998, production declines an average of 2.5 percent annually to the year 2005. Domestic use of flue-cured tobacco rose in 1996 because of increased cigarette exports, higher manufacturing of semiprocessed leaf for exports, and level U.S. cigarette consumption. After 1996, domestic leaf use will gradually decline because of lower cigarette production. Also, some foreign-grown leaf will be substituted for U.S. grown leaf. Projected flue-cured leaf exports decline steadily through 2005. Competition from countries such as Zimbabwe and Brazil and declining cigarette consumption in some key markets will reduce leaf exports.

Projected burley production will likely rise in 1997, but then will decline steadily through 2005 to levels below those of 1993/94. Domestic burley use will rise in 1996 because of increased cigarette exports, but then will decline from 1997 to 2005. Burley leaf exports will decline because of increased competition from countries such as Malawi, Zimbabwe, Argentina, and Brazil.

Prices for U.S. grown tobacco rise through 2005/06 in correspondence with increases in the support price.

Tobacco yields remain constant throughout the period because poundage quotas diminish incentives to raise production per acre.

Horticulture

The farm value of U.S. horticultural crop production is projected to reach $35 billion in 1997, up an estimated 3 percent from 1996 and 1 percent above 1995. The value of horticultural production is projected to increase $1.25 billion to $1.3 billion annually during 1998-2005. The 2-percent decrease in production value for 1996 is due to lower expected prices for both the fall-season potato crop and fresh vegetables.

The 1996 fall potato crop is forecast up 11 percent from a year earlier, and 5 percent above the previous record crop in 1994. To market the 1996 crop, growers take sharply lower prices during the marketing season through August 1997. Following the large 1996 potato crop and expected weaker prices, U.S. growers are likely to cut back on planted area in 1997. Consequently, reduced supplies in the fall of 1997 are likely to lift grower prices and crop value for the 1997 potato crop.

Fresh-market vegetable growers reduce acreage in 1997. Responding to lower prices during 1996, the reduced area is likely to curtail supplies and increase grower returns. Grower prices for fresh vegetables in 1996 averaged about 10 percent below a year earlier, because of estimated higher U.S. production and imports. Estimated area harvested for fresh vegetables indicates 1996 production is up 3 percent from a year earlier. Imports of fresh vegetables and melons also were up almost 20 percent in 1996 over 1995.

Per capita consumption of fresh vegetables is projected to increase about 0.5 pounds annually (0.4 percent) during 1997-2005, which combined with population growth will raise demand for U.S.-produced fresh vegetables by over 1 percent a year. The increase in U.S. production of fresh

vegetables will be slightly less than for consumption, as the rise in projected imports exceeds gains in exports.

Fruit production in 1997 is projected to increase slightly over 1996. For domestic producers, the projected continuation of flat consumption of U.S.-produced fresh fruit points to the importance of export demand for higher prices and production value. U.S. per capita consumption of bananas, of which almost all are imported, is projected to increase nearly 2 percent annually during 1997-2005. Per capita consumption of other noncitrus fruits, such as apples, grapes, pears, and peaches, is projected to increase less than 1 percent annually, while fresh citrus consumption is projected to decline over the baseline period. U.S. export volume of fresh fruits was flat in 1996, partly due to higher domestic prices for fresh apples. Fresh fruit exports have increased from about 20 percent of domestic production in 1986 to over 25 percent in 1996. With this trend continuing, the U.S. is projected to be a net exporter of fresh fruits (in terms of value) at the turn of the century.

The use of fruits and vegetables for processing is projected to increase during 1997 to 2005, due to increases in both domestic and export demand. The major processed products from fruits are juices and wine, accounting for about 50 percent of 1996 total fruit production. Frozen potatoes accounted for 35 percent of the potato crop, and tomatoes for processing accounted for about 30 percent of all vegetable production (excluding potatoes and pulses). Per capita consumption of processed fruits and vegetables is projected to increase from about 415 pounds (farm-weight equivalent) in 1996 to 445 pounds in 2005. The value of processed exports are projected to continue increasing along with that of other high-value farm products. However, the recent strength in domestic demand for noncitrus juices and wine will increase demand for imports. Long run baseline projections assume that U.S. producers will meet any increases in demand for orange and grapefruit juices, processed potatoes, tomatoes, and other canned, frozen, and dehydrated vegetables.

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

	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
						Million acres						
Planted acreage, 8 major crops												
Corn	79.2	71.2	79.6	81.5	80.5	80.0	80.5	81.3	82.0	82.0	82.0	82.0
Sorghum	9.8	9.5	13.3	11.3	11.3	11.1	10.9	10.9	10.9	10.9	10.9	11.1
Barley	7.2	6.7	7.2	7.5	7.5	7.4	7.3	7.2	7.2	7.2	7.2	7.2
Oats	6.6	6.3	4.7	5.0	5.0	4.9	4.8	4.7	4.7	4.7	4.7	4.7
Wheat	70.3	69.1	75.6	72.0	73.0	73.5	74.5	75.5	76.5	77.0	78.0	79.0
Rice	3.4	3.1	2.9	2.9	2.9	2.9	2.9	2.9	3.0	3.0	3.0	3.0
Upland cotton	13.6	16.7	14.0	13.3	13.5	13.8	13.9	14.0	14.0	14.1	14.1	14.2
Soybeans	61.7	62.6	64.3	64.0	64.0	63.5	62.5	62.3	62.3	62.5	62.8	63.0
Total	251.8	245.2	261.6	257.5	257.7	257.1	257.3	258.8	260.6	261.4	262.7	264.2
Harvested acreage, 8 major crops												
Corn	72.9	65.0	73.3	75.2	74.2	73.7	74.2	75.0	75.7	75.7	75.7	75.7
Sorghum	8.9	8.3	12.0	10.2	10.2	10.0	9.8	9.8	9.8	9.8	9.8	10.0
Barley	6.7	6.3	6.8	7.1	7.1	7.0	6.9	6.8	6.8	6.8	6.8	6.8
Oats	4.0	3.0	2.7	3.0	3.0	2.9	2.9	2.8	2.8	2.8	2.8	2.8
Wheat	61.8	60.9	62.9	62.5	63.5	63.9	64.8	65.7	66.6	67.0	67.9	68.7
Rice	3.3	3.1	2.9	2.8	2.8	2.8	2.9	2.9	2.9	2.9	2.9	2.9
Upland cotton	13.2	15.8	12.5	12.4	12.6	12.9	13.0	13.1	13.1	13.2	13.2	13.3
Soybeans	60.9	61.6	63.4	62.9	62.9	62.5	61.5	61.3	61.3	61.5	61.8	62.0
Total	231.7	224.0	236.5	236.1	236.3	235.7	236.0	237.4	239.0	239.7	240.9	242.2
Idled acreage, ARP, 8 major crops												
Corn	0.0	4.7	---	---	---	---	---	---	---	---	---	---
Sorghum	0.0	0.0	---	---	---	---	---	---	---	---	---	---
Barley	0.0	0.0	---	---	---	---	---	---	---	---	---	---
Oats	0.0	0.0	---	---	---	---	---	---	---	---	---	---
Wheat	0.0	0.0	---	---	---	---	---	---	---	---	---	---
Rice	0.0	0.2	---	---	---	---	---	---	---	---	---	---
Upland cotton	1.5	0.0	---	---	---	---	---	---	---	---	---	---
Soybeans	---	---	---	---	---	---	---	---	---	---	---	---
Total	1.5	4.9	---	---	---	---	---	---	---	---	---	---
Idled acreage, 0/85-92 and 50/85-92 for 8 major crops												
Corn	2.4	3.0	---	---	---	---	---	---	---	---	---	---
Sorghum	1.6	1.7	---	---	---	---	---	---	---	---	---	---
Barley	2.7	2.9	---	---	---	---	---	---	---	---	---	---
Oats	0.6	0.8	---	---	---	---	---	---	---	---	---	---
Wheat	5.2	6.1	---	---	---	---	---	---	---	---	---	---
Rice	0.3	0.3	---	---	---	---	---	---	---	---	---	---
Upland cotton	0.2	0.2	---	---	---	---	---	---	---	---	---	---
Soybeans	---	---	---	---	---	---	---	---	---	---	---	---
Total	13.0	15.0	---	---	---	---	---	---	---	---	---	---

-- = not applicable.

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

	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Yields 1/												
Corn	138.6	113.5	126.5	128.0	129.7	131.4	133.1	134.8	136.5	138.2	139.9	141.6
Sorghum	72.8	55.6	68.4	67.6	68.2	68.8	69.4	70.0	70.6	71.2	71.8	72.4
Barley	56.2	57.3	58.5	59.5	60.0	60.5	61.0	61.5	62.0	62.5	63.0	63.5
Oats	57.1	54.7	57.8	58.0	58.3	58.6	58.9	59.2	59.5	59.8	60.1	60.4
Wheat	37.6	35.8	36.3	37.5	37.7	37.9	38.1	38.4	38.7	39.0	39.3	39.6
Rice	5,964	5,621	5,981	5,896	5,923	5,951	5,979	6,008	6,036	6,064	6,093	6,122
Upland cotton	705	533	691	668	676	684	692	700	708	716	724	732
Soybeans	41.4	35.3	37.9	38.5	39.3	40.0	40.5	40.9	41.3	41.7	42.1	42.5
Production 2/												
Corn	10,103	7,374	9,265	9,625	9,625	9,685	9,875	10,110	10,335	10,460	10,590	10,720
Sorghum	649	460	820	690	695	690	680	685	690	700	705	725
Barley	375	360	397	420	425	425	420	420	420	425	430	430
Oats	229	162	155	175	175	170	170	165	165	165	170	170
Wheat	2,321	2,183	2,282	2,345	2,394	2,422	2,469	2,523	2,577	2,613	2,668	2,721
Rice	197.8	173.9	174.0	166.1	167.8	169.4	171.1	172.8	174.5	176.2	177.9	179.7
Upland cotton	19,324	17,532	18,027	17,300	17,700	18,400	18,700	19,100	19,300	19,700	19,900	20,300
Soybeans	2,517	2,177	2,403	2,420	2,470	2,500	2,490	2,505	2,530	2,565	2,600	2,635
Exports 2/												
Corn	2,177	2,228	1,950	2,175	2,375	2,500	2,575	2,625	2,675	2,750	2,825	2,925
Sorghum	223	198	225	225	265	275	285	285	290	300	310	315
Barley	66	62	35	60	70	70	70	70	70	70	70	70
Oats	1	2	3	3	3	3	3	3	3	3	3	3
Wheat	1,188	1,241	950	1,100	1,275	1,300	1,350	1,375	1,400	1,450	1,475	1,500
Rice	100.9	82.3	74.0	65.2	64.1	64.0	64.0	64.0	64.0	64.0	64.0	63.9
Upland cotton	8,978	7,375	5,375	6,400	6,600	6,700	6,700	6,700	6,800	6,900	7,000	7,100
Soybeans	838	851	870	860	870	890	900	910	920	930	940	950
Soybean meal	6,717	5,966	6,300	6,300	6,350	6,400	6,400	6,400	6,450	6,500	6,550	6,600
Ending stocks 2/												
Corn	1,558	426	1,107	1,462	1,457	1,262	1,082	982	977	937	872	777
Sorghum	72	18	85	116	112	103	79	70	66	62	58	64
Barley	113	100	105	109	113	107	106	105	99	93	92	91
Oats	101	66	69	91	103	100	92	74	66	63	65	62
Wheat	507	376	435	490	469	449	415	394	381	349	337	343
Rice	31.4	25.0	25.6	24.5	24.7	24.9	25.2	25.5	25.8	26.2	26.5	26.8
Upland cotton	2,588	2,541	4,790	4,500	4,100	4,000	3,900	4,000	4,000	4,100	4,100	4,200
Soybeans	335	183	210	230	255	265	245	220	200	195	195	205
Prices 3/												
Corn	2.26	3.24	2.70	2.45	2.45	2.55	2.70	2.80	2.80	2.90	3.00	3.10
Sorghum	2.13	3.19	2.40	2.20	2.20	2.25	2.45	2.50	2.50	2.65	2.80	2.90
Barley	2.03	2.89	2.60	2.25	2.30	2.35	2.50	2.60	2.60	2.65	2.75	2.80
Oats	1.22	1.68	1.85	1.55	1.45	1.50	1.60	1.70	1.75	1.80	1.85	1.90
Wheat	3.45	4.55	4.30	3.75	3.85	3.95	4.10	4.30	4.40	4.65	4.80	4.80
Rice	6.78	9.15	9.25	9.70	9.85	10.00	10.15	10.31	10.47	10.63	10.79	10.96
Soybeans	5.48	6.77	6.50	6.10	5.90	5.90	6.15	6.45	6.70	7.05	7.20	7.25
Soybean oil	0.276	0.248	0.228	0.223	0.223	0.225	0.228	0.235	0.248	0.263	0.278	0.290
Soybean meal	162.6	236.0	217.5	202.0	193.5	192.5	201.5	210.0	215.0	222.5	222.0	219.0

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 short ton).

Table 11. Corn baseline

Item	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Program variables:												
ARP (percent)	0	7.5	---	---	---	---	---	---	---	---	---	---
Participation (percent)	81.6	76.0	98.3	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4
Acreage (million acres):												
Idled ARP acres	0.0	4.7	---	---	---	---	---	---	---	---	---	---
0/85-92 acres	2.4	3.0	---	---	---	---	---	---	---	---	---	---
CRP acres:												
Cropping history 1/	---	3.6	3.4	3.1	3.7	4.5	5.0	5.1	5.1	5.0	5.0	5.0
PFC acreage reduction 2/	---	4.2	3.9	3.5	2.7	2.9	3.0	3.0	2.9	2.8	2.8	2.8
Total planted acres	79.2	71.2	79.6	81.5	80.5	80.0	80.5	81.3	82.0	82.0	82.0	82.0
Total harvested acres	72.9	65.0	73.3	75.2	74.2	73.7	74.2	75.0	75.7	75.7	75.7	75.7
Yields (bushels per acre):												
Yield/harvested acre	138.6	113.5	126.5	128.0	129.7	131.4	133.1	134.8	136.5	138.2	139.9	141.6
Program yield	105.5	106.2	102.9	102.9	102.7	102.7	102.7	102.7	102.7	102.7	102.7	102.7
Supply and use (million bushels):												
Beginning stocks	850	1,558	426	1,107	1,462	1,457	1,262	1,082	982	977	937	872
Imports	10	16	10	10	10	10	10	10	10	10	10	10
Production	10,103	7,374	9,265	9,625	9,625	9,685	9,875	10,110	10,335	10,460	10,590	10,720
Supply	10,962	8,948	9,702	10,742	11,097	11,152	11,147	11,202	11,327	11,447	11,537	11,602
Feed & residual	5,536	4,711	4,975	5,350	5,450	5,525	5,575	5,650	5,700	5,750	5,800	5,825
Food, seed, & industrial	1,691	1,583	1,670	1,755	1,815	1,865	1,915	1,945	1,975	2,010	2,040	2,075
Domestic	7,227	6,294	6,645	7,105	7,265	7,390	7,490	7,595	7,675	7,760	7,840	7,900
Exports	2,177	2,228	1,950	2,175	2,375	2,500	2,575	2,625	2,675	2,750	2,825	2,925
Total use	9,405	8,522	8,595	9,280	9,640	9,890	10,065	10,220	10,350	10,510	10,665	10,825
Ending stocks	1,558	426	1,107	1,462	1,457	1,262	1,082	982	977	937	872	777
Stocks/use ratio, percent	16.6	5.0	12.9	15.8	15.1	12.8	10.8	9.6	9.4	8.9	8.2	7.2
Prices (dollars per bushel):												
Target price	2.75	2.75	---	---	---	---	---	---	---	---	---	---
Loan rate	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89
Farm price	2.26	3.24	2.70	2.45	2.45	2.55	2.70	2.80	2.80	2.90	3.00	3.10
Deficiency/PFC payment rate	0.57	0.00	0.25	0.48	0.37	0.36	0.33	0.27	0.26	0.26	0.26	0.26
PFC rate, $ per PFC acre	---	---	21.94	42.09	32.72	31.69	29.04	23.38	22.67	22.63	22.63	22.63
Defic/PFC payments ($ mil.)	3,199	71	1,744	3,393	2,654	2,564	2,347	1,890	1,834	1,834	1,834	1,834
Variable costs of production (dollars):												
Per acre	147.08	158.13	162.26	164.94	168.61	171.70	174.63	177.82	181.15	184.46	187.98	191.66
Per bushel	1.06	1.39	1.28	1.29	1.30	1.31	1.31	1.32	1.33	1.33	1.34	1.35
Returns over variable costs (dollars per acre):												
Market returns	166.16	209.61	179.29	148.66	149.16	163.37	184.74	199.62	201.05	216.32	231.72	247.30
Participant returns	217.27	192.17	201.23	190.75	181.88	195.05	213.79	223.00	223.71	238.95	254.35	269.93

1/ The cropping history allocation represents crops previously grown on CRP acreage, and is used as a general indicator influencing land available for plantings.

2/ The production flexibility contract acreage reduction allocation of the CRP affects the acreage available for production flexibility contracts and, therefore, is used in the determination of PFC payment rates.

Table 12. Sorghum baseline

Item	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Program variables:												
ARP (percent)	0	0	---	---	---	---	---	---	---	---	---	---
Participation (percent)	81.2	76.9	98.8	98.9	98.9	98.9	98.9	98.9	98.9	98.9	98.9	98.9
Acreage (million acres):												
Idled ARP acres	0.0	0.0	---	---	---	---	---	---	---	---	---	---
0/85-92 acres	1.6	1.7	---	---	---	---	---	---	---	---	---	---
CRP acres:												
Cropping history 1/	---	2.0	1.9	1.7	1.7	2.0	2.1	2.2	2.2	2.2	2.2	2.2
PFC acreage reduction 2/	---	2.3	2.2	2.0	1.5	1.6	1.7	1.7	1.7	1.7	1.7	1.7
Total planted acres	9.8	9.5	13.3	11.3	11.3	11.1	10.9	10.9	10.9	10.9	10.9	11.1
Total harvested acres	8.9	8.3	12.0	10.2	10.2	10.0	9.8	9.8	9.8	9.8	9.8	10.0
Yields (bushels per acre):												
Yield/harvested acre	72.8	55.6	68.4	67.6	68.2	68.8	69.4	70.0	70.6	71.2	71.8	72.4
Program yield	59.2	59.2	57.3	57.1	56.6	56.7	56.8	56.8	56.8	56.8	56.8	56.8
Supply and use (million bushels):												
Beginning stocks	48	72	18	85	116	112	103	79	70	66	62	58
Imports	0	0	0	0	0	0	0	0	0	0	0	0
Production	649	460	820	690	695	690	680	685	690	700	705	725
Supply	697	532	839	775	811	802	783	764	760	766	767	783
Feed & residual	400	312	525	430	430	420	415	405	400	400	395	400
Food, seed, & industrial	3	4	4	4	4	4	4	4	4	4	4	4
Domestic	402	316	529	434	434	424	419	409	404	404	399	404
Exports	223	198	225	225	265	275	285	285	290	300	310	315
Total use	625	514	754	659	699	699	704	694	694	704	709	719
Ending stocks	72	18	85	116	112	103	79	70	66	62	58	64
Stocks/use ratio, percent	11.5	3.5	11.3	17.6	16.0	14.7	11.2	10.1	9.5	8.8	8.2	8.9
Prices (dollars per bushel):												
Target price	2.61	2.61	---	---	---	---	---	---	---	---	---	---
Loan rate	1.80	1.80	1.81	1.76	1.76	1.75	1.73	1.69	1.69	1.69	1.70	1.72
Farm price	2.13	3.19	2.40	2.20	2.20	2.25	2.45	2.50	2.50	2.65	2.80	2.90
Deficiency/PFC payment rate	0.59	0.00	0.32	0.53	0.45	0.43	0.40	0.32	0.31	0.31	0.31	0.31
PFC rate, $ per PFC acre	---	---	15.76	25.91	21.48	20.95	19.27	15.53	15.08	15.08	15.08	15.08
Defic/PFC payments ($ mil.)	292	25	202	338	290	281	257	207	201	201	201	201
Variable costs of production (dollars):												
Per acre	80.39	84.81	87.03	88.20	89.93	91.50	93.03	94.69	96.38	98.05	99.84	101.70
Per bushel	1.10	1.53	1.27	1.30	1.32	1.33	1.34	1.35	1.37	1.38	1.39	1.40
Returns over variable costs (dollars per acre):												
Market returns	74.67	92.55	77.13	60.52	60.11	63.30	77.00	80.31	80.12	90.63	101.20	108.26
Participant returns	104.36	92.55	92.89	86.43	81.59	84.25	96.27	95.85	95.19	105.71	116.29	123.34

1/ The cropping history allocation represents crops previously grown on CRP acreage, and is used as a general indicator influencing land available for plantings.

2/ The production flexibility contract acreage reduction allocation of the CRP affects the acreage available for production flexibility contracts and, therefore, is used in the determination of PFC payment rates.

Table 13. Barley baseline

Item	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Program variables:												
ARP (percent)	0	0	---	---	---	---	---	---	---	---	---	---
Participation (percent)	83.9	82.0	98.9	98.9	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0
Acreage (million acres):												
Idled ARP acres	0.0	0.0	---	---	---	---	---	---	---	---	---	---
0/85-92 acres	2.7	2.9	---	---	---	---	---	---	---	---	---	---
CRP acres:												
Cropping history 1/	---	1.1	1.1	1.1	1.1	1.3	1.4	1.4	1.4	1.4	1.4	1.4
PFC acreage reduction 2/	---	2.7	2.6	2.6	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Total planted acres	7.2	6.7	7.2	7.5	7.5	7.4	7.3	7.2	7.2	7.2	7.2	7.2
Total harvested acres	6.7	6.3	6.8	7.1	7.1	7.0	6.9	6.8	6.8	6.8	6.8	6.8
Yields (bushels per acre):												
Yield/harvested acre	56.2	57.3	58.5	59.5	60.0	60.5	61.0	61.5	62.0	62.5	63.0	63.5
Program yield	47.1	47.0	47.2	47.2	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5
Supply and use (million bushels):												
Beginning stocks	139	113	100	105	109	113	107	106	105	99	93	92
Imports	66	41	45	50	55	55	55	55	55	55	55	55
Production	375	360	397	420	425	425	420	420	420	425	430	430
Supply	580	513	541	575	589	593	582	581	580	579	578	577
Feed & residual	235	185	235	240	240	250	240	240	245	250	250	250
Food, seed, & industrial	166	166	166	166	166	166	166	166	166	166	166	166
Domestic	401	351	401	406	406	416	406	406	411	416	416	416
Exports	66	62	35	60	70	70	70	70	70	70	70	70
Total use	467	413	436	466	476	486	476	476	481	486	486	486
Ending stocks	113	100	105	109	113	107	106	105	99	93	92	91
Stocks/use ratio, percent	24.2	24.2	24.0	23.4	23.7	22.0	22.3	22.1	20.6	19.1	18.9	18.7
Prices (dollars per bushel):												
Target price	2.36	2.36	---	---	---	---	---	---	---	---	---	---
Loan rate	1.54	1.54	1.55	1.56	1.55	1.59	1.61	1.61	1.59	1.59	1.58	1.58
Farm price	2.03	2.89	2.60	2.25	2.30	2.35	2.50	2.60	2.60	2.65	2.75	2.80
Deficiency/PFC payment rate	0.53	0.00	0.33	0.28	0.28	0.27	0.24	0.20	0.19	0.19	0.19	0.19
PFC rate, $ per PFC acre	---	---	13.35	11.04	10.97	10.59	9.65	7.78	7.54	7.55	7.55	7.55
Defic/PFC payments ($ mil.)	163	40	137	114	123	119	109	87	85	85	85	85
Variable costs of production (dollars):												
Per acre	67.68	74.67	76.51	77.70	79.35	80.81	82.21	83.71	85.24	86.75	88.37	90.05
Per bushel	1.20	1.30	1.31	1.31	1.32	1.34	1.35	1.36	1.37	1.39	1.40	1.42
Returns over variable costs (dollars per acre):												
Market returns	46.41	90.93	75.59	56.18	58.65	61.37	70.29	76.19	75.96	78.87	84.88	87.75
Participant returns	67.62	90.93	88.94	67.22	69.62	71.96	79.95	83.97	83.50	86.42	92.43	95.30

1/ The cropping history allocation represents crops previously grown on CRP acreage, and is used as a general indicator influencing land available for plantings.

2/ The production flexibility contract acreage reduction allocation of the CRP affects the acreage available for production flexibility contracts and, therefore, is used in the determination of PFC payment rates.

Table 14. Oats baseline

Item	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Program variables:												
ARP (percent)	0	0	---	---	---	---	---	---	---	---	---	---
Participation (percent)	39.8	43.9	97.0	97.0	97.2	97.1	97.1	97.1	97.1	97.1	97.1	97.1
Acreage (million acres):												
Idled ARP acres	0.0	0.0	---	---	---	---	---	---	---	---	---	---
0/85-92 acres	0.6	0.8	---	---	---	---	---	---	---	---	---	---
CRP acres:												
Cropping history 1/	---	0.7	0.6	0.6	0.8	1.0	1.0	1.0	1.1	1.1	1.1	1.1
PFC acreage reduction 2/	---	1.3	1.3	1.3	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Total planted acres	6.6	6.3	4.7	5.0	5.0	4.9	4.8	4.7	4.7	4.7	4.7	4.7
Total harvested acres	4.0	3.0	2.7	3.0	3.0	2.9	2.9	2.8	2.8	2.8	2.8	2.8
Yields (bushels per acre):												
Yield/harvested acre	57.1	54.7	57.8	58.0	58.3	58.6	58.9	59.2	59.5	59.8	60.1	60.4
Program yield	48.6	47.8	50.8	50.8	50.6	50.6	50.6	50.6	50.6	50.6	50.6	50.6
Supply and use (million bushels):												
Beginning stocks	106	101	66	69	91	103	100	92	74	66	63	65
Imports	93	81	85	100	100	100	100	100	100	100	100	100
Production	229	162	155	175	175	170	170	165	165	165	170	170
Supply	428	343	307	344	366	373	370	357	339	331	333	335
Feed & residual	202	152	115	125	135	145	150	155	145	140	140	145
Food, seed, & industrial	124	123	120	125	125	125	125	125	125	125	125	125
Domestic	326	275	235	250	260	270	275	280	270	265	265	270
Exports	1	2	3	3	3	3	3	3	3	3	3	3
Total use	327	277	238	253	263	273	278	283	273	268	268	273
Ending stocks	101	66	69	91	103	100	92	74	66	63	65	62
Stocks/use ratio, percent	30.9	23.8	29.0	36.0	39.2	36.6	33.1	26.1	24.2	23.5	24.3	22.7
Prices (dollars per bushel):												
Target price	1.45	1.45	---	---	---	---	---	---	---	---	---	---
Loan rate	0.97	0.97	1.03	1.10	1.10	1.12	1.14	1.17	1.14	1.14	1.15	1.16
Farm price	1.22	1.68	1.85	1.55	1.45	1.50	1.60	1.70	1.75	1.80	1.85	1.90
Deficiency/PFC payment rate	0.23	0.00	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02
PFC rate, $ per PFC acre	---	---	1.42	1.31	1.35	1.32	1.21	0.97	0.94	0.94	0.94	0.94
Defic/PFC payments ($ mil.)	16	3	9	8	9	8	8	6	6	6	6	6
Variable costs of production (dollars):												
Per acre	50.47	48.71	49.87	50.79	51.99	52.98	53.90	54.89	55.92	56.93	58.00	59.12
Per bushel	0.88	0.89	0.86	0.88	0.89	0.90	0.92	0.93	0.94	0.95	0.97	0.98
Returns over variable costs (dollars per acre):												
Market returns	19.19	43.19	57.06	39.11	32.55	34.92	40.34	45.75	48.21	50.71	53.18	55.64
Participant returns	28.69	43.19	58.48	40.42	33.90	36.23	41.54	46.72	49.15	51.65	54.12	56.58

1/ The cropping history allocation represents crops previously grown on CRP acreage, and is used as a general indicator influencing land available for plantings.

2/ The production flexibility contract acreage reduction allocation of the CRP affects the acreage available for production flexibility contracts and, therefore, is used in the determination of PFC payment rates.

Table 15. Wheat baseline

Item	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Program variables:												
ARP (percent)	0	0	---	---	---	---	---	---	---	---	---	---
Participation (percent)	87.0	84.8	99	99	99	99	99	99	99	99	99	99
Acreage (million acres):												
Idled ARP acres	0.0	0.0	---	---	---	---	---	---	---	---	---	---
0/85-92 acres	5.2	6.1	---	---	---	---	---	---	---	---	---	---
CRP acres:												
Cropping history 1/	---	11.7	11.6	11.5	10.7	12.0	12.7	12.8	12.9	12.9	12.9	12.9
PFC acreage reduction 2/	---	10.3	10.1	10.1	6.9	6.9	6.7	6.7	6.7	6.6	6.6	6.6
Total planted acres	70.3	69.1	75.6	72.0	73.0	73.5	74.5	75.5	76.5	77.0	78.0	79.0
Total harvested acres	61.8	60.9	62.9	62.5	63.5	63.9	64.8	65.7	66.6	67.0	67.9	68.7
Yields (bushels per acre):												
Yield/harvested acre	37.6	35.8	36.3	37.5	37.7	37.9	38.1	38.4	38.7	39.0	39.3	39.6
Program yield	34.4	34.4	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8
Supply and use (million bushels):												
Beginning stocks	568	507	376	435	490	469	449	415	394	381	349	337
Production	2,321	2,183	2,282	2,345	2,394	2,422	2,469	2,523	2,577	2,613	2,668	2,721
Imports	92	68	70	85	100	115	120	120	115	115	110	110
Supply	2,981	2,757	2,728	2,865	2,984	3,006	3,038	3,058	3,086	3,109	3,127	3,168
Food	853	884	910	925	940	955	970	985	1,000	1,015	1,030	1,045
Seed	89	104	108	100	100	102	103	104	105	105	105	105
Feed & residual	344	152	325	250	200	200	200	200	200	190	180	175
Domestic	1,287	1,140	1,343	1,275	1,240	1,257	1,273	1,289	1,305	1,310	1,315	1,325
Exports	1,188	1,241	950	1,100	1,275	1,300	1,350	1,375	1,400	1,450	1,475	1,500
Total use	2,475	2,381	2,293	2,375	2,515	2,557	2,623	2,664	2,705	2,760	2,790	2,825
Ending stocks	507	376	435	490	469	449	415	394	381	349	337	343
Stocks/use ratio, percent	20.5	15.8	19.0	20.6	18.6	17.6	15.8	14.8	14.1	12.6	12.1	12.1
Prices (dollars per bushel):												
Target price	4.00	4.00	---	---	---	---	---	---	---	---	---	---
Loan rate	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58
Farm price	3.45	4.55	4.30	3.75	3.85	3.95	4.10	4.30	4.40	4.65	4.80	4.80
Deficiency/PFC payment rate	0.61	0.00	0.87	0.63	0.65	0.62	0.57	0.46	0.45	0.45	0.45	0.45
PFC rate, $ per PFC acre	---	---	25.85	18.50	19.14	18.49	16.88	13.60	13.18	13.18	13.18	13.18
Defic/PFC payments ($ mil.)	1,146	109	1,947	1,386	1,493	1,442	1,320	1,063	1,032	1,032	1,032	1,032
Variable costs of production (dollars):												
Per acre	59.98	65.34	66.89	67.98	69.46	70.74	71.95	73.24	74.58	75.90	77.31	78.78
Per bushel	1.60	1.83	1.84	1.81	1.84	1.87	1.89	1.91	1.93	1.95	1.97	1.99
Returns over variable costs (dollars per acre):												
Market returns	69.74	97.55	89.20	72.65	75.68	78.96	84.26	91.88	95.70	105.45	111.33	111.30
Participant returns	87.58	97.55	115.05	91.14	94.82	97.45	101.14	105.47	108.88	118.63	124.51	124.48

1/ The cropping history allocation represents crops previously grown on CRP acreage, and is used as a general indicator influencing land available for plantings.

2/ The production flexibility contract acreage reduction allocation of the CRP affects the acreage available for production flexibility contracts and, therefore, is used in the determination of PFC payment rates.

Table 16. Rice baseline, rough basis

Item	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Program variables:												
ARP (percent)	0	5	---	---	---	---	---	---	---	---	---	---
Participation (percent)	95.4	94.7	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6
Acreage (thousand acres):												
Idled ARP acres	0	197	---	---	---	---	---	---	---	---	---	---
0/85-92 acres	258	279	---	---	---	---	---	---	---	---	---	---
Planted	3,353	3,121	2,935	2,875	2,890	2,905	2,920	2,935	2,950	2,965	2,980	2,995
Harvested	3,316	3,093	2,909	2,818	2,832	2,847	2,862	2,876	2,891	2,906	2,920	2,935
Yields (lbs per acre):												
Yield/harvested acre	5,964	5,621	5,981	5,896	5,923	5,951	5,979	6,008	6,036	6,064	6,093	6,122
Program yield	4,863	4,860	4,818	4,818	4,818	4,818	4,818	4,818	4,818	4,818	4,818	4,818
Supply and use (million cwt.):												
Beginning stocks	25.8	31.4	25.0	25.6	24.5	24.7	24.9	25.2	25.5	25.8	26.2	26.5
Production	197.8	173.9	174.0	166.1	167.8	169.4	171.1	172.8	174.5	176.2	177.9	179.7
Imports	7.0	7.4	7.8	8.1	8.5	9.0	9.4	9.9	10.4	10.9	11.5	12.0
Supply	230.6	212.7	206.7	199.9	200.9	203.1	205.5	207.9	210.4	213.0	215.5	218.2
Domestic use	93.3	96.2	99.1	101.1	103.1	105.2	107.3	109.4	111.6	113.8	116.1	118.4
Exports	100.9	82.3	74.0	65.2	64.1	64.0	64.0	64.0	64.0	64.0	64.0	63.9
Residual	5.0	9.3	8.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Total use	199.2	187.7	181.1	175.3	176.2	178.1	180.2	182.4	184.6	186.8	189.1	191.4
Ending stocks (million cwt.)	31.4	25.0	25.6	24.5	24.7	24.9	25.2	25.5	25.8	26.2	26.5	26.8
Stocks/use ratio, percent	15.8	13.3	14.2	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
Milling rate, percent	74.1	71.4	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0
Prices (dollars per cwt.):												
Target price	10.71	10.71	---	---	---	---	---	---	---	---	---	---
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
Average market price	6.78	9.15	9.25	9.70	9.85	10.00	10.15	10.31	10.47	10.63	10.79	10.96
World price	6.10	7.71	7.00	7.11	7.21	7.32	7.43	7.54	7.65	7.77	7.89	8.00
Deficiency/PFC payment rate	3.79	3.22	2.77	2.72	2.93	2.83	2.60	2.10	2.04	2.04	2.04	2.04
PFC rate, $ per PFC acre	---	---	113.47	111.74	120.20	116.18	106.55	86.18	83.69	83.69	83.69	83.69
Defic/PFC payments ($ mil.)	558	471	454	455	490	473	434	351	341	341	341	341
Variable costs of production (dollars):												
Per acre	342.96	342.67	352.05	356.20	363.54	370.66	377.77	385.39	393.05	400.59	408.67	417.13
Per cwt.	5.75	6.10	5.89	6.04	6.14	6.23	6.32	6.42	6.51	6.61	6.71	6.81
Returns over variable costs (dollars per acre):												
Market returns	61.37	171.72	201.20	215.50	219.73	224.41	229.33	233.99	238.84	244.08	249.02	253.85
Participant returns	246.06	288.08	314.46	327.03	339.70	340.37	335.68	320.00	322.38	327.61	332.56	337.39

Table 17. Upland cotton baseline

Item	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Program variables:												
ARP (percent)	11	0	---	---	---	---	---	---	---	---	---	---
Participation (percent)	89.2	79.1	99	99	99	99	99	99	99	99	99	99
Acreage (million acres):												
Idled ARP acres	1.5	0.0	---	---	---	---	---	---	---	---	---	---
0/85-92 acres	0.2	0.2	---	---	---	---	---	---	---	---	---	---
CRP acres:												
Cropping history 1/	---	1.4	1.4	1.3	1.2	1.4	1.5	1.5	1.5	1.5	1.5	1.5
PFC acreage reduction 2/	---	1.4	1.4	1.2	1.0	1.0	1.1	1.1	1.1	1.0	1.0	1.0
Total planted acres	13.6	16.7	14.0	13.3	13.5	13.8	13.9	14.0	14.0	14.1	14.1	14.2
Total harvested acres	13.2	15.8	12.5	12.4	12.6	12.9	13.0	13.1	13.1	13.2	13.2	13.3
Yields (pounds per acre):												
Yield/harvested acre	705	533	691	668	676	684	692	700	708	716	724	732
Program yield	606	600	608	608	608	608	608	608	608	608	608	608
Supply and use (thousand bales):												
Beginning stocks	3,303	2,588	2,541	4,790	4,500	4,100	4,000	3,900	4,000	4,000	4,100	4,100
Imports	18	400	495	5	5	5	5	5	5	5	5	5
Production	19,324	17,532	18,027	17,300	17,700	18,400	18,700	19,100	19,300	19,700	19,900	20,300
Supply	22,645	20,520	21,063	22,095	22,205	22,505	22,705	23,005	23,305	23,705	24,005	24,405
Domestic use	11,109	10,502	10,895	11,200	11,500	11,800	12,100	12,300	12,500	12,700	12,900	13,100
Exports	8,978	7,375	5,375	6,400	6,600	6,700	6,700	6,700	6,800	6,900	7,000	7,100
Total use	20,087	17,877	16,270	17,600	18,100	18,500	18,800	19,000	19,300	19,600	19,900	20,200
Ending stocks	2,588	2,541	4,790	4,500	4,100	4,000	3,900	4,000	4,000	4,100	4,100	4,200
Stocks/use ratio, percent	12.9	14.2	29.4	25.6	22.7	21.6	20.7	21.1	20.7	20.9	20.6	20.8
Prices (dollars per pound): 3/												
Target price	0.729	0.729	---	---	---	---	---	---	---	---	---	---
Loan rate	0.5000	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192	0.5192
Deficiency/PFC payment rate	0.046	0.000	0.089	0.075	0.079	0.077	0.070	0.057	0.055	0.055	0.055	0.055
PFC rate, $ per PFC acre	---	---	46.06	38.51	40.83	39.56	36.32	29.23	28.35	28.32	28.32	28.32
Defic/PFC payments ($ mil.)	280	6	703	601	648	626	573	461	447	447	447	447
Variable costs of production (dollars):												
Per acre	276.95	298.41	310.61	315.51	322.62	329.34	336.06	343.18	350.44	357.65	365.39	373.50
Per pound	0.39	0.56	0.45	0.47	0.48	0.48	0.49	0.49	0.49	0.50	0.50	0.51
Returns over variable costs (dollars per acre):												
Market returns	288.69	149.95	203.31	173.68	185.95	190.41	196.69	195.73	202.28	201.91	208.25	206.48
Participant returns	274.51	149.95	249.21	212.19	226.78	229.97	233.00	224.96	230.64	230.23	236.57	234.80

1/ The cropping history allocation represents crops previously grown on CRP acreage, and is used as a general indicator influencing land available for plantings.

2/ The production flexibility contract acreage reduction allocation of the CRP affects the acreage available for production flexibility contracts and, therefore, is used in the determination of PFC payment rates.

3/ USDA is prohibited from publishing cotton price projections.

Table 18. Soybean and products baseline

Item	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Soybeans												
Acreage (million acres)												
Planted	61.7	62.6	64.3	64.0	64.0	63.5	62.5	62.3	62.3	62.5	62.8	63.0
Harvested	60.9	61.6	63.4	62.9	62.9	62.5	61.5	61.3	61.3	61.5	61.8	62.0
Yield/harvested acre (bushels)	41.4	35.3	37.9	38.5	39.3	40.0	40.5	40.9	41.3	41.7	42.1	42.5
Supply (million bushels)												
Beginning stocks, Sept 1	209	335	183	210	230	255	265	245	220	200	195	195
Production	2,517	2,177	2,403	2,420	2,470	2,500	2,490	2,505	2,530	2,565	2,600	2,635
Imports	5	4	4	5	5	6	6	7	8	9	10	11
Total supply	2,731	2,516	2,590	2,635	2,705	2,761	2,761	2,757	2,758	2,774	2,805	2,841
Disposition (million bushels)												
Crush	1,405	1,370	1,390	1,425	1,455	1,480	1,490	1,500	1,510	1,520	1,540	1,555
Seed and residual	153	112	120	120	125	126	126	126	128	129	130	131
Exports	838	851	870	860	870	890	900	910	920	930	940	950
Total disposition	2,396	2,333	2,380	2,405	2,450	2,496	2,516	2,537	2,558	2,579	2,610	2,636
Carryover stocks, August 31												
Total ending stocks	335	183	210	230	255	265	245	220	200	195	195	205
Prices (dollars per bushel)												
Loan rate	4.92	4.92	4.97	5.23	5.26	5.24	5.24	5.14	5.14	5.24	5.26	5.26
Effective marketing loan	4.92	4.92	4.97	5.23	5.26	5.24	5.24	5.14	5.14	5.24	5.26	5.26
Soybean price, farm	5.48	6.77	6.50	6.10	5.90	5.90	6.15	6.45	6.70	7.05	7.20	7.25
Variable costs of production (dollars):												
Per acre	75.76	75.93	77.80	79.11	80.79	82.25	83.67	85.22	86.83	88.42	90.11	91.86
Per bushel	1.83	2.15	2.05	2.05	2.06	2.06	2.07	2.08	2.10	2.12	2.14	2.16
Returns over variable costs (dollars per acre):												
Market returns	151.11	163.05	168.55	155.74	151.08	153.75	165.40	178.58	189.88	205.56	213.01	215.90
Soybean oil (million pounds)												
Beginning stocks, Oct. 1	1,103	1,137	2,007	2,185	2,445	2,625	2,725	2,680	2,535	2,315	2,020	1,765
Production	15,613	15,236	15,500	16,010	16,360	16,655	16,785	16,905	17,025	17,145	17,380	17,555
Imports	17	100	78	75	70	70	70	75	80	85	90	95
Total supply	16,733	16,472	17,585	18,270	18,875	19,350	19,580	19,660	19,640	19,545	19,490	19,415
Domestic disappearance	12,916	13,480	13,650	13,875	14,100	14,325	14,550	14,775	15,000	15,225	15,450	15,650
Exports	2,680	986	1,750	1,950	2,150	2,300	2,350	2,350	2,325	2,300	2,275	2,250
Total demand	15,597	14,466	15,400	15,825	16,250	16,625	16,900	17,125	17,325	17,525	17,725	17,900
Ending stocks, Sept. 30	1,137	2,007	2,185	2,445	2,625	2,725	2,680	2,535	2,315	2,020	1,765	1,515
Soybean oil price ($/lb)	0.276	0.248	0.228	0.223	0.223	0.225	0.228	0.235	0.248	0.263	0.278	0.290
Soybean meal (thousand short tons)												
Beginning stocks, Oct. 1	150	223	229	225	225	225	225	225	225	225	225	225
Production	33,269	32,517	33,066	33,820	34,575	35,125	35,425	35,675	35,825	36,125	36,525	36,925
Imports	64	80	80	80	75	75	75	75	75	75	75	75
Total supply	33,483	32,820	33,375	34,125	34,875	35,425	35,725	35,975	36,125	36,425	36,825	37,225
Domestic disappearance	26,542	26,625	26,850	27,600	28,300	28,800	29,100	29,350	29,450	29,700	30,050	30,400
Exports	6,717	5,966	6,300	6,300	6,350	6,400	6,400	6,400	6,450	6,500	6,550	6,600
Total demand	33,260	32,591	33,150	33,900	34,650	35,200	35,500	35,750	35,900	36,200	36,600	37,000
Ending stocks, Sept. 30	223	229	225	225	225	225	225	225	225	225	225	225
Soybean meal price ($/ton)	162.6	236.0	217.5	202.0	193.5	192.5	201.5	210.0	215.0	222.5	222.0	219.0
Crushing yields (pounds per bushel)												
Soybean oil	11.11	11.12	11.15	11.24	11.25	11.26	11.27	11.27	11.28	11.28	11.29	11.29
Soybean meal	47.36	47.46	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50	47.50
Crush margin ($ per bushel)	1.43	1.58	1.21	1.20	1.20	1.20	1.20	1.19	1.20	1.20	1.21	1.23

Table 19. U.S. Sugar: Supply, disappearance, and prices, fiscal years 1/

Item	Units	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Beets													
Planted	1000 acres	1,438	1,476	1,445	1,424	1,425	1,440	1,455	1,470	1,485	1,500	1,515	1,530
Harvested	1000 acres	1,409	1,443	1,417	1,324	1,400	1,415	1,430	1,445	1,460	1,475	1,490	1,505
Yield	Tons/acre	18.6	22.1	19.8	20.2	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3
Production	Mil. S. Tons	26.2	31.9	28.0	26.8	28.4	28.7	29.0	29.3	29.6	29.9	30.2	30.6
Cane-Harvested	1000 acres	927	889	893	841	874	849	849	859	868	878	888	888
Yield	Tons/acre	32.7	32.5	32.8	31.7	31.4	31.3	31.2	31.2	31.2	31.1	31.1	31.2
Production	Mil. S. Tons	30.0	28.9	29.3	26.6	27.4	26.6	26.5	26.8	27.1	27.3	27.6	27.7
Supply:													
Beginning Stocks	1000 S. Tons	1,704	1,337	1,241	1,495	1,496	1,540	1,560	1,580	1,600	1,620	1,640	1,660
Production	1000 S. Tons	7,655	7,927	7,370	7,130	7,480	7,460	7,530	7,640	7,750	7,870	7,970	8,040
Beet sugar 2/	1000 S. Tons	4,090	4,493	3,916	3,950	4,230	4,290	4,360	4,420	4,490	4,550	4,610	4,670
Cane sugar 3/	1000 S. Tons	3,565	3,434	3,454	3,180	3,250	3,170	3,170	3,220	3,260	3,320	3,360	3,370
Total imports	1000 S. Tons	1,772	1,853	2,775	3,021	2,824	2,950	3,010	3,030	3,050	3,070	3,110	3,180
For consumption 4/	1000 S. Tons	1,169	1,614	2,235	2,561	2,374	2,500	2,560	2,580	2,600	2,620	2,660	2,730
Other imports 5/	1000 S. Tons	656	239	540	460	450	450	450	450	450	450	450	450
Total supply	1000 S. Tons	11,131	11,117	11,386	11,646	11,800	11,950	12,100	12,250	12,400	12,560	12,720	12,880
Use:													
Domestic disappearance	1000 S. Tons	9,333	9,337	9,553	9,900	9,930	10,060	10,190	10,320	10,450	10,590	10,730	10,870
Exports	1000 S. Tons	454	502	385	250	330	330	330	330	330	330	330	330
Miscellaneous 6/	1000 S. Tons	7	37	-47	0	0	0	0	0	0	0	0	0
Total use	1000 S. Tons	9,794	9,876	9,891	10,150	10,260	10,390	10,520	10,650	10,780	10,920	11,060	11,200
Ending stocks	1000 S. Tons	1,337	1,241	1,495	1,496	1,540	1,560	1,580	1,600	1,620	1,640	1,660	1,680
Stocks/use ratio	Percent	13.7	12.6	15.1	14.7	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Raw sugar prices:													
World (No. 11)	Cents/lb.	11.25	13.86	12.40	10.50	11.10	11.70	11.80	12.10	12.50	12.80	13.20	13.50
N.Y. (No. 14) 7/	Cents/lb.	22.05	22.76	22.50	22.10	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00
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.	23.62	23.43	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90
Grower prices: 8/													
Sugarbeets	Dol./ton	39.00	38.80	39.80	41.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
Sugarcane	Dol./ton	28.50	29.20	29.40	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00

NA = Not applicable.

1/   Fiscal year is October 1 through September 30. The 1995 crop corresponds with fiscal 1996, etc. Historic data for area planted, harvested, yield, production, and prices of sugarbeets and sugarcane are on the NASS crop year basis; all other data are on a fiscal year basis.

2/   Beet sugar yield, raw value, per ton of beets (not including sugar from molasses) rises on trend, at 0.04 percentage points each year. Desugaring of molasses adds a net 275,000 tons in 1996, 260,000 tons in 1997, 290,000 tons in 1998, and then rises about 10,000 tons a year.

3/   Raw cane sugar yield per ton of cane rises 0.4 percent per year as new processing technology is adopted.

4/   Quota imports, both raw and refined, at the low rate of duty and very small amounts of high-duty imports. Projected imports do not necessarily reflect the determination by the Secretary which will be made pursuant to Additional U.S. Note 3 of Chap. 17 of the HTSUS.

5/   For re-export & for polyhydric alcohol.

6/   Includes CCC disposals, refining loss, and a statistical adjustment to account for invisible stock change.

7/   Through 1996, fiscal year average of the nearest futures, No. 14 contract, New York Coffee Sugar & Cocoa Exchange; for 1997 forwards, projected.

8/   For 1997 forwards, projected.

Table 20. Flue-cured tobacco baseline

Item	Unit	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Acreage, yield, and production:													
Planted area	1,000 acres	360	386	415	433	389	356	356	353	347	300	280	250
Harvested area	1,000 acres	360	386	415	433	389	356	356	353	347	300	280	250
Yield	lbs./ac.	2,420	1,933	2,130	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250
Production	Mil. lbs.	871	746	884	974	875	800	800	795	780	675	630	563
Supply:													
Beg. stocks	Mil. lbs.	1,295	1,187	1,166	1,173	1,273	1,288	1,243	1,213	1,193	1,173	1,168	1,138
Marketings	Mil. lbs.	807	854	897	975	875	800	800	795	780	780	750	750
Total 1/	Mil. lbs.	2,102	2,041	2,063	2,148	2,148	2,088	2,043	2,008	1,973	1,953	1,918	1,888
Use:													
Domestic	Mil. lbs.	569	530	550	540	530	520	510	500	490	480	480	470
Export	Mil. lbs.	346	345	340	335	330	325	320	315	310	305	300	300
Total 1/	Mil. lbs.	915	875	890	875	860	845	830	815	800	785	780	770
Ending stocks:													
Total	Mil. lbs.	1,187	1,166	1,173	1,273	1,288	1,243	1,213	1,193	1,173	1,168	1,138	1,118
Price:													
Avg. to growers	$/Cwt	170.3	179.0	183.7	177.0	179.0	181.0	183.0	185.0	187.0	189.0	191.0	193.0
Support	$/Cwt	158.3	159.7	160.1	163.0	165.0	167.0	169.0	171.0	173.0	175.0	177.0	179.0

1/ Domestic tobacco only

Table 21. Burley tobacco baseline

Item	Unit	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Acreage, yield, and production:													
Planted area	1,000 acres	266	234	282	281	257	243	229	214	214	214	214	214
Harvested area	1,000 acres	266	234	282	281	257	243	229	214	214	214	214	214
Yield	lbs./ac.	2,300	1,863	2,071	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100	2,100
Production	Mil. lbs.	612	436	584	590	540	510	480	450	450	450	450	450
Supply:													
Beg. stocks	Mil. lbs.	1,014	959	890	900	930	925	905	870	820	785	765	735
Marketings	Mil. lbs.	569	482	580	590	540	510	480	450	450	450	440	440
Total 1/	Mil. lbs.	1,583	1,441	1,470	1,490	1,470	1,435	1,385	1,320	1,270	1,235	1,205	1,175
Use:													
Domestic	Mil. lbs.	465	386	405	400	390	380	370	360	350	340	340	335
Export	Mil. lbs.	159	165	165	160	155	150	145	140	135	130	130	130
Total 1/	Mil. lbs.	624	551	570	560	545	530	515	500	485	470	470	465
Ending stocks:													
Total	Mil. lbs.	959	890	900	930	925	905	870	820	785	765	735	710
Price:													
Avg. to growers	$/Cwt	184.0	186.0	194.0	195.0	198.0	201.0	204.0	207.0	210.0	212.0	215.0	217.0
Support	$/Cwt	171.0	173.0	174.0	178.0	181.0	184.0	187.0	190.0	193.0	196.0	199.0	202.0

1/ Domestic tobacco only

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

Item	Unit	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Production value:	$ Mil.	32,432	34,774	34,006	35,070	36,680	37,892	39,119	40,369	41,644	42,944	44,270	45,623
Fruits	$ Mil.	10,122	10,884	11,490	10,636	11,043	11,465	11,897	12,345	12,809	13,289	13,786	14,301
Vegetables	$ Mil.	12,232	13,660	12,016	13,634	14,433	14,898	15,367	15,844	16,331	16,826	17,330	17,843
Greenhouse/Nurs.	$ Mil.	10,078	10,229	10,500	10,800	11,204	11,529	11,854	12,179	12,504	12,829	13,154	13,479
Production:	1,000 MT	87,796	85,959	89,407	90,344	91,572	93,016	94,436	95,865	97,301	98,746	100,198	101,659
Fruits													
Citrus	1,000 MT	13,210	14,333	14,523	15,345	15,609	15,874	16,135	16,398	16,661	16,925	17,191	17,457
Noncitrus	1,000 MT	15,889	14,983	14,516	14,856	15,048	15,240	15,428	15,617	15,806	15,997	16,188	16,381
Nuts	1,000 MT	420	320	436	443	450	457	464	471	478	485	492	499
Total	1,000 MT	29,519	29,636	29,475	30,645	31,107	31,572	32,027	32,485	32,945	33,407	33,871	34,337
Vegetables													
Fresh	1,000 MT	17,986	17,621	18,366	18,304	18,521	18,739	18,952	19,166	19,382	19,600	19,819	20,040
Processed	1,000 MT	16,614	15,917	16,896	16,893	17,174	17,457	17,734	18,012	18,290	18,569	18,849	19,130
Potatoes 1/	1,000 MT	21,793	20,707	22,883	22,680	22,907	23,345	23,780	24,219	24,661	25,106	25,555	26,007
Pulses	1,000 MT	1,540	1,720	1,429	1,462	1,494	1,527	1,560	1,592	1,625	1,658	1,691	1,725
Mushrooms	1,000 MT	344	358	357	361	368	376	383	391	398	406	413	421
Total	1,000 MT	58,277	56,322	59,932	59,700	60,465	61,444	62,409	63,380	64,356	65,339	66,327	67,322
Fl/Greenhouse/Nurs	1,000 MT	--	--	--	--	--	--	--	--	--	--	--	--
Trade: 2/													
Imports	$ Mil.	9,242	10,151	11,207	11,471	11,991	12,528	13,055	13,593	14,146	14,715	15,300	15,903
Fruit													
Fresh	$ Mil.	1,908	2,081	2,238	2,245	2,337	2,432	2,528	2,628	2,729	2,833	2,940	3,049
Processed	$ Mil.	509	512	606	624	642	661	680	700	721	742	763	786
Other	$ Mil.	2,194	2,269	2,601	2,599	2,683	2,769	2,859	2,950	3,044	3,141	3,241	3,344
Total	$ Mil.	4,610	4,862	5,445	5,468	5,662	5,862	6,067	6,278	6,494	6,716	6,944	7,179
Vegetables													
Fresh	$ Mil.	1,272	1,538	1,794	1,905	2,020	2,139	2,261	2,388	2,519	2,654	2,794	2,938
Processed	$ Mil.	576	543	538	564	582	600	619	639	659	679	700	722
Potatoes	$ Mil.	162	181	263	192	203	216	228	242	255	269	284	299
Pulses	$ Mil.	29	35	33	34	36	37	39	40	42	43	45	47
Other	$ Mil.	843	984	1,018	1,076	1,135	1,194	1,252	1,311	1,370	1,428	1,487	1,546
Total	$ Mil.	2,882	3,281	3,645	3,772	3,976	4,186	4,400	4,620	4,844	5,074	5,310	5,551
Greenhouse/Nurs.	$ Mil.	700	842	893	947	1,003	1,064	1,100	1,133	1,167	1,202	1,238	1,275
Exports	$ Mil.	8,487	8,743	9,165	10,055	10,722	11,405	12,125	12,839	13,570	14,318	15,085	15,870
Fruits													
Fresh	$ Mil.	1,871	1,887	1,935	2,164	2,287	2,414	2,545	2,680	2,820	2,964	3,113	3,267
Processed	$ Mil.	644	687	686	747	769	792	815	839	863	888	914	941
Other	$ Mil.	1,776	1,968	2,387	2,529	2,697	2,868	3,044	3,223	3,407	3,595	3,787	3,984
Total	$ Mil.	4,291	4,542	5,009	5,441	5,753	6,074	6,403	6,742	7,090	7,447	7,814	8,191
Vegetables													
Fresh	$ Mil.	1,005	1,029	910	1,111	1,181	1,253	1,327	1,404	1,483	1,565	1,650	1,737
Processed	$ Mil.	547	597	627	679	735	794	854	917	982	1,049	1,118	1,190
Potatoes	$ Mil.	572	618	604	630	685	743	802	863	927	992	1,060	1,130
Pulses	$ Mil.	281	301	310	332	349	366	383	402	420	439	459	480
Other	$ Mil.	1,553	1,431	1,465	1,613	1,760	1,907	2,055	2,202	2,350	2,497	2,644	2,792
Total	$ Mil.	3,958	3,975	3,917	4,366	4,711	5,063	5,422	5,788	6,161	6,543	6,932	7,329
Greenhouse/Nurs.	$ Mil.	238	226	239	248	258	268	300	309	319	329	339	350
Prices:													
Grower													
Fruits	1990-92=100	89	97	118	120	123	125	127	129	132	134	136	139
Vegetables	1990-92=100	109	119	107	109	112	114	116	119	121	123	126	128
Potatoes	$/MT	123	149	101	148	152	155	159	162	166	169	173	176
Dry beans	$/MT	496	425	480	494	497	501	504	508	511	515	519	522
Retail													
Fruits													
Fresh	1982-84=100	201	219	234	232	243	253	264	274	285	295	306	316
Processed	1982-84=100	133	137	145	150	153	156	159	162	166	169	172	175
Vegetables													
Fresh	1982-84=100	172	193	189	194	201	208	216	223	230	237	245	252
Processed	1982-84=100	137	138	144	148	152	155	159	162	166	170	173	177

-- = Production quantities not available.
 1/ Includes sweet potatoes.
 2/ Total for imports includes beer and malt beverages. Fruit imports includes bananas. Melons are included in vegetables. Other fruit includes juices, wine, and tree nuts. Other vegetables includes mushrooms, dehydrated vegetables, and miscellaneous processed foods.

Livestock

Record grain prices and weather extremes, both wet and dry, in the 1995/96 crop year resulted in rapid adjustments in the meat complex in 1996. These adjustments will be worked out of the poultry sector quickly, will affect the pork sector over the next 1 to 2 years, and will impact the beef sector over the next 3 to 5 years, reflecting differences in producer response to changes in returns as well as differences in biological production lags. Lower feed prices than in 1995/96, replenishment of forage supplies, continued low inflation, domestic demand strength from slow but steady income growth, and strong gains in the increasingly important export market result in producer returns that encourage higher red meat and poultry output. However, as feed costs accelerate towards the end of the baseline, meat production gains slow, particularly for red meats. Pork production will become more vertically coordinated with generally larger-size operations, but is less likely to follow poultry's example of vertical integration.

Decreases in 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, continuing a long-term trend. Consumption gains exceed population growth with per capita meat consumption reaching nearly 225 pounds (retail weight) by 2005. The meats will vie for domestic market share through product development, advertising, and promotion of meat. Poultry gains a larger proportion of both total meat consumption and total meat expenditures, reflecting its lower production costs and prices relative to other meats.

Total egg production expands slightly in the baseline in part to support larger broiler production. Per capita consumption of shell eggs may be stabilizing and total egg use per person has risen due to growing use in processed foods. Real egg prices continue to fall.

Although milk-feed price ratios could become less favorable, dairy productivity gains continue into the next decade, pushing milk output per cow higher and real cost lower. Milk production will grow despite slowly declining cow numbers throughout the period. Real milk prices will fall.

Beef

Sharply lower feeder cattle prices due to record grain prices in 1995/96 were compounded by poor forage supplies in 1996 through winter 1997 as some areas suffered drought and other areas were overly wet. Given low returns to the cow-calf sector, herd expansion is not likely until the turn of the century. Returns above cash costs per cow are positive starting in 1998, but may not be sufficient to encourage large expansion. The cattle herd will likely stabilize beyond 2000 near 97 million head. Shifts toward larger-framed cattle and heavier slaughter weights partly offset the need for expanding cattle inventories to previous levels.

Beef production declines over the next few years, reflecting sector adjustments to low cow-calf returns. From 2000 to 2005, production gradually rises but less than gains in population. Coupled with larger exports and slowly rising imports after 1998, per capita beef consumption drops nearly 10 pounds retail weight from 1996 to 2005. The beef production mix continues to

shift toward a larger proportion of fed beef as nearly all steers and heifers are feedlot fed. Calf slaughter returns to relatively low levels as a larger proportion of the herd is placed on feed.

Feeder cattle remain on grass longer and will be marketed at heavier weights as grains remain relatively expensive. Cattle will remain in feedlots for 120 to 140 days to Select or Choice grade, with dressed slaughter weights growing slowly over the baseline years. Heavier placement weights coupled with less finish required to reach Choice grade 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.

Adequate land resources will remain available to the cattle and crop sectors into the next century. 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 flood-affected areas. This increased availability of forage for the reduced cattle sector, 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 through 2005. A larger share of veal production will come from higher valued formula fed calves marketed at heavier weights. Declining dairy cow numbers will 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 emergence of the United States as a long-term net beef exporter will be delayed until the turn of the century as the cattle inventory is reestablished. Adjustments in world beef trade will continue as market access is opened under the GATT agreement. The U.S. remains the primary source of high quality fed beef for export, and will see exports of high quality steaks and roasts continue to increase, primarily to Pacific Rim nations. Australia and perhaps New Zealand will also increase exports to Pacific Rim nations, although their beef will be lower quality, grass-fed beef with limited amounts of fed beef.

U.S. emphasis on fed beef production and the smaller cattle inventory will result in marginal beef import growth for 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 pork sector will continue to transform into a more vertically coordinated industry. 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 grain in large quantities, resulting in greater efficiency.

Pork production grows slowly from 17.2 billion pounds in 1996 to nearly 20 billion pounds by 2005, with 4 to 5 percent jumps in 1998 and 1999 as larger producers expand following an exodus of smaller producers in 1995/96 due to record grain prices. Accelerating feed grain prices beyond 2000 reduce producer returns, and slow gains in hog inventories and production.

Per capita pork consumption on a retail basis rises from 49 pounds in 1996 to a cyclical peak near 54 pounds per person in 2000 before dropping off to about 51 pounds in 2005. Nominal hog prices show a relatively stable pattern in 1999 through 2005.

The United States becomes an increasingly important net pork exporter. Exports will continue to expand while pork imports decline modestly. Pork exports rise as competitors such as Taiwan limit their production growth. The major growth markets for U.S. pork exports are Pacific Rim nations and Mexico. Yearly trade variations will depend upon major foreign suppliers such as Canada and Denmark, as well as exchange rate fluctuations.

Poultry and Eggs

Poultry production expands as broiler meats gain an increasing share of total meat consumption. Poultry meat will be less expensive than other meats so consumers can purchase more poultry meat per dollar. Poultry firms will continue aggressive market development and promote poultry's image of providing lean, convenient products. Production gains for turkeys reflect projected growth in the further-processed market and exports.

Poultry production increases slow from rates of recent years as broiler producers respond to more moderate net returns. Poultry meat prices decline in real terms. Lower real feed costs early in the baseline will allow poultry producers to maintain profitability as their production expands, although production gains will slow as real feed costs flatten beyond 2000.

The broiler and turkey industries have kept the cost of production 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 vertical integration. While some further technological improvement and continued vertical integration occurs during the baseline, it will not affect production costs as significantly as in the past 10 years.

Continued competition in the world poultry meat market holds U.S. poultry exports to moderate gains. Increases are expected in exports of broiler parts as U.S. real prices decline, especially for dark meat. Exports to the former Soviet Union are assumed to decline somewhat from the high levels of 1997.

Table egg producers expand production slowly through the baseline in response to low industry net returns. A larger expansion in total U.S. egg production reflects increased broiler hatching egg production to accommodate broiler sector expansion.

Shell egg consumption per person falls more slowly than the long-term historical declining trend of 1 to 3 eggs a year. Per capita consumption of total eggs increases throughout the baseline.

Processed egg products are an increasing part of the egg market as ingredients in many prepared foods. As consumers opt for more convenience foods, consumption of egg products will continue to increase, as negative egg attributes are less noticeable in processed products.

Wholesale egg prices trend upward, with increases less than the inflation rate. A competitive market with little product differentiation will result in supplies that keep prices near the cost of production.

U.S. egg exports are fairly constant over the baseline as many countries will likely continue to experience surpluses of eggs. World import demand will remain relatively static as domestic production will generally meet increased domestic demands in most countries.

Dairy

The 1996 Farm Act altered three provisions of government support for the dairy sector. First, the minimum support price for milk will decline from $10.35 in 1996 to $9.90 in 1999. The reductions will be $0.15 per hundredweight each year. Support for milk prices during this period will continue to rely on government purchases of butter, nonfat dry milk, and cheese. A recourse loan program for dairy processors will begin in 2001. The loan rates will be at rates equivalent to $9.90 per hundredweight for milk.

Under the Agricultural Reconciliation Act of 1990, milk producers were assessed 11.25 cents per hundredweight between 1992 and 1995. Producers who did not increase milk marketings from the previous year received a refund of that year's assessment. Under the 1996 Farm Act, production assessments ended April 30, 1996, and producers whose 1996 milk marketings do not exceed 1995 will receive a refund of any assessments collected in 1996.

The third significant change in U.S. dairy policy in the 1996 Farm Act is the restructuring of the Federal milk marketing orders. The 32 marketing orders will be reduced to 10 to 14 orders, with one reserved for California. The Agricultural Marketing Service, which oversees the marketing order system, has begun soliciting comments from interested parties and has tentatively scheduled late spring 1997 for preliminary announcement of the new marketing order locations.

Milk cow numbers decline slowly, continuing a long-term trend. Nonetheless, milk production grows throughout the baseline period. Productivity gains and structural changes that lower production costs and cause supply shifts continue. Despite relatively unfavorable milk-feed price ratios, growth in milk per cow is projected to be near trend because of continued adoption of bST. Introduced in 1994, the use of bST is assumed to exceed 35 percent of dairy cows by 2005.

Declining real milk prices through the baseline will place considerable pressure on farms unable to lower costs enough to remain competitive. Expansion of lower-cost producers in northern areas and continued growth of western dairy areas will offset production losses from exiting farms.

Real price declines, income growth, and population increases will boost commercial use. Growth in cheese sales continues, while demand for milkfat and skim solids as ingredients in processed foods stays strong.

Although generally smaller in the past, the gap between domestic and international prices is significant, limiting commercial dairy exports. Exports under the Dairy Export Incentive Program (DEIP) are expected at GATT limits. No price support purchases are projected through 1999, when the purchase program will be eliminated under the provisions of the 1996 Farm Act. All Government net removals of dairy products from 1996 to 2005 are DEIP exports.

Table 23. Per capita meat consumption, retail and boneless weight

Item	Units	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Retail weight:													
Total beef	Pounds	67.0	67.5	67.9	65.7	63.8	60.0	60.0	59.6	59.6	59.4	58.7	58.2
Total veal	Pounds	0.9	1.0	1.2	1.0	1.0	0.9	0.9	0.9	0.9	0.8	0.8	0.8
Total pork	Pounds	53.1	52.5	49.3	49.5	51.2	53.1	53.7	53.4	52.8	52.2	51.7	51.3
Lamb & mutton	Pounds	1.2	1.2	1.1	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.9
Total red meat	Pounds	122.2	122.1	119.5	117.2	116.9	115.1	115.6	114.8	114.3	113.3	112.0	111.1
Broilers	Pounds	69.8	69.6	71.6	74.4	78.8	80.8	82.5	84.1	86.1	88.2	90.1	91.9
Other chicken	Pounds	1.6	1.5	1.1	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Turkeys	Pounds	17.8	17.9	18.5	18.7	18.9	18.7	19.0	19.2	19.4	19.5	19.6	19.7
Total poultry	Pounds	89.2	89.0	91.1	94.0	99.1	101.0	103.0	104.8	107.0	109.2	111.2	113.2
Red meat & poultry	Pounds	211.4	211.1	210.6	211.3	216.1	216.1	218.5	219.6	221.3	222.5	223.3	224.3
Boneless weight:													
Total beef	Pounds	63.9	64.4	64.8	62.7	60.9	57.3	57.3	56.8	56.9	56.6	56.0	55.5
Total veal	Pounds	0.8	0.8	1.0	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.6
Total pork	Pounds	49.9	49.3	46.3	46.5	48.1	49.9	50.4	50.2	49.6	49.0	48.6	48.2
Lamb & mutton	Pounds	0.9	0.9	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6
Total red meat	Pounds	115.4	115.4	112.9	110.8	110.5	108.7	109.1	108.4	107.9	107.0	105.8	105.0
Broilers	Pounds	48.8	48.7	50.1	52.0	55.1	56.5	57.7	58.9	60.3	61.7	63.0	64.3
Other chicken	Pounds	1.0	0.9	0.7	0.6	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Turkeys	Pounds	14.1	14.1	14.6	14.7	14.9	14.8	15.0	15.2	15.3	15.4	15.5	15.6
Total poultry	Pounds	63.9	63.8	65.3	67.4	70.9	72.2	73.6	75.0	76.5	78.0	79.5	80.8
Red meat & poultry	Pounds	179.3	179.1	178.2	178.2	181.4	180.9	182.8	183.4	184.4	185.0	185.3	185.8

Table 24. Consumer expenditures for meats

Item	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Beef, dollars per person	189.60	191.66	190.12	187.18	182.53	182.36	182.51	183.48	184.29	184.98	185.86	186.98
Percent of income	0.98	0.95	0.90	0.86	0.80	0.76	0.73	0.69	0.66	0.63	0.61	0.58
Percent of meat expenditures	45.81	46.45	44.66	43.70	43.15	41.69	41.38	41.00	40.76	40.43	40.00	39.64
Pork, dollars per person	105.08	102.28	108.51	110.45	108.58	110.92	110.86	111.09	111.04	111.03	111.23	111.45
Percent of income	0.55	0.51	0.52	0.51	0.48	0.46	0.44	0.42	0.40	0.38	0.36	0.35
Percent of meat expenditures	25.39	24.79	25.49	25.79	25.67	25.36	25.13	24.83	24.56	24.26	23.94	23.63
Broilers, dollars per person	101.41	100.32	107.83	111.55	112.82	124.03	127.51	132.44	136.31	140.95	146.60	152.12
Percent of income	0.53	0.50	0.51	0.51	0.49	0.52	0.51	0.50	0.49	0.48	0.48	0.47
Percent of meat expenditures	24.50	24.32	25.33	26.04	26.67	28.35	28.91	29.60	30.15	30.80	31.55	32.25
Turkeys, dollars per person	17.84	18.31	19.23	19.13	19.12	20.14	20.20	20.47	20.51	20.62	20.93	21.14
Percent of income	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07
Percent of meat expenditures	4.31	4.44	4.52	4.47	4.52	4.60	4.58	4.58	4.54	4.51	4.50	4.48
Total meats, dollars per person	413.94	412.57	425.70	428.30	423.05	437.45	441.08	447.48	452.16	457.58	464.62	471.70
Percent of income	2.15	2.04	2.03	1.96	1.85	1.83	1.75	1.69	1.62	1.56	1.51	1.47

Table 25. Beef baseline

Item	Units	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Beginning stocks	Mil. Lbs.	529	548	508	475	475	475	475	475	475	475	475	475
Commercial production	Mil. Lbs.	24,278	25,115	25,585	25,375	24,454	23,293	23,561	23,613	23,872	24,035	23,988	24,053
Change	Percent	5.8	3.4	1.9	-0.8	-3.6	-4.7	1.1	0.2	1.1	0.7	-0.2	0.3
Farm production	Mil. Lbs.	108	107	107	107	107	107	107	107	107	107	107	107
Total production	Mil. Lbs.	24,386	25,222	25,692	25,482	24,561	23,400	23,668	23,720	23,979	24,142	24,095	24,160
Imports	Mil. Lbs.	2,369	2,103	2,134	2,050	2,405	2,495	2,545	2,595	2,635	2,675	2,725	2,765
Total supply	Mil. Lbs.	27,284	27,873	28,334	28,007	27,441	26,370	26,688	26,790	27,089	27,292	27,295	27,400
Exports	Mil. Lbs.	1611	1821	1921	2225	2140	2325	2440	2530	2625	2725	2820	2950
Ending stocks	Mil. Lbs.	548	519	475	475	475	475	475	475	475	475	475	475
Total consumption	Mil. lbs.	25,125	25,533	25,938	25,307	24,826	23,570	23,773	23,785	23,989	24,092	24,000	23,975
Per capita, carcass wgt	Pounds	96.4	97.1	97.7	94.5	91.8	86.4	86.4	85.7	85.8	85.4	84.4	83.7
Per capita, retail wgt	Pounds	67.0	67.5	67.9	65.7	63.8	60.0	60.0	59.6	59.6	59.4	58.7	58.2
Change	Percent	3.0	0.7	0.6	-3.3	-2.9	-5.9	0.0	-0.8	0.1	-0.5	-1.2	-0.8
Prices:													
Beef cattle, farm	$/cwt	66.70	61.80	57.73	62.00	64.46	67.20	68.20	69.40	70.18	71.14	72.39	73.79
Calves, farm	$/cwt	87.20	73.10	58.58	71.50	85.15	82.37	83.83	82.77	82.83	84.57	85.91	87.07
Choice steers, Nebraska	$/cwt	68.84	66.24	64.61	66.25	68.88	71.80	72.87	74.15	74.99	76.02	77.35	78.85
Deflated price	$/cwt	46.45	43.44	41.15	40.90	41.32	41.82	41.12	40.59	39.78	39.16	38.70	38.27
Yrlg steers, Okla City	$/cwt	77.72	68.03	60.55	68.00	80.98	78.34	79.73	78.72	78.77	80.43	81.71	82.81
Deflated price	$/cwt	52.44	44.61	38.57	41.98	48.58	45.63	44.99	43.09	41.79	41.44	40.87	40.20
Retail: Beef & veal	1982-84=100	136.0	134.9	134.5	136.0	136.5	144.9	145.0	147.0	147.5	148.7	151.2	153.4
Retail: Other meats	1982-84=100	137.0	139.0	144.0	145.0	145.5	154.4	154.5	156.6	157.1	158.5	161.1	163.4
ERS retail beef	$/lb.	2.83	2.84	2.80	2.85	2.86	3.04	3.04	3.08	3.09	3.12	3.17	3.21
Costs and returns, cow-calf enterprise:													
Variable expenses	$/cow	189.52	193.84	194.66	199.94	196.92	200.40	205.75	212.07	217.54	221.44	227.16	233.13
Fixed expenses	$/cow	105.21	112.30	114.29	116.41	118.48	120.91	123.98	126.88	129.83	132.56	135.69	138.55
Total cash expenses	$/cow	294.73	306.14	308.95	316.35	315.41	321.31	329.73	338.95	347.37	354.00	362.84	371.68
Returns above cash costs	$/cow	36.22	-17.68	-38.98	-27.21	40.31	26.26	27.36	18.80	15.79	21.72	23.89	25.45
Cattle inventory	1000 head	100,988	102,755	103,819	102,040	100,607	97,168	97,048	97,343	97,600	97,536	97,234	97,000
Beef cow inventory	1000 head	34,650	35,156	35,333	34,435	33,321	31,741	32,008	32,180	32,307	32,311	32,232	32,150

Table 26. Pork baseline

Item	Units	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Beginning stocks	Mil. lbs.	359	438	396	420	400	400	400	400	400	400	400	400
Commercial production	Mil. lbs.	17,658	17,811	17,157	17,500	18,257	19,129	19,504	19,631	19,643	19,626	19,674	19,750
Change	Percent	3.7	0.9	-3.7	2.0	4.3	4.8	2.0	0.7	0.1	-0.1	0.2	0.4
Farm production	Mil. lbs.	38	38	38	38	38	38	38	38	38	38	38	38
Total production	Mil. lbs.	17,696	17,849	17,195	17,538	18,295	19,167	19,542	19,669	19,681	19,664	19,712	19,788
Imports	Mil. lbs.	743	664	614	605	605	600	598	595	588	577	569	559
Total supply	Mil. lbs.	18,798	18,951	18,205	18,563	19,300	20,167	20,540	20,664	20,669	20,641	20,681	20,747
Exports	Mil. lbs.	531	771	909	1064	1080	1092	1120	1175	1230	1285	1340	1395
Ending stocks	Mil. lbs.	438	396	420	400	400	400	400	400	400	400	400	400
Total consumption	Mil. lbs.	17,829	17,784	16,876	17,099	17,820	18,675	19,020	19,089	19,039	18,956	18,941	18,952
Per capita, carcass wgt	Pounds	68.4	67.6	63.6	63.8	65.9	68.5	69.1	68.8	68.1	67.2	66.6	66.1
Per capita, retail wgt	Pounds	53.1	52.5	49.3	49.5	51.2	53.1	53.7	53.4	52.8	52.2	51.7	51.3
Change	Percent	1.4	-1.2	-6.0	0.4	3.3	3.9	1.0	-0.5	-1.1	-1.2	-0.9	-0.7
Prices:													
Hogs, farm	$/cwt	39.90	40.50	53.10	52.64	46.38	42.82	41.20	41.09	41.43	41.95	42.21	42.34
Iowa, So. Minn. market	$/cwt	40.03	42.35	53.45	53.00	47.38	43.82	42.20	42.09	42.43	42.95	43.21	43.34
Deflated price	$/cwt	27.01	27.77	34.04	32.72	28.42	25.52	23.82	23.04	22.51	22.13	21.62	21.04
Retail: Pork	1982-84=100	133.9	134.8	148.2	150.0	142.8	140.4	139.0	139.9	141.4	143.2	144.7	146.1
ERS retail pork	$/lb.	1.98	1.95	2.20	2.23	2.12	2.09	2.07	2.08	2.10	2.13	2.15	2.17
Costs and returns, farrow to finish:													
Variable expenses	$/cwt	33.55	32.24	37.89	34.84	33.50	33.62	34.34	35.36	36.10	36.25	37.01	37.78
Fixed expenses	$/cwt	4.23	4.69	4.53	4.69	4.87	4.80	4.75	4.70	4.65	4.59	4.56	4.52
Total cash expenses	$/cwt	37.77	36.93	42.42	39.53	38.37	38.42	39.09	40.06	40.75	40.84	41.57	42.31
Returns above cash costs	$/cwt	2.26	5.42	11.03	13.47	9.01	5.39	3.11	2.03	1.68	2.10	1.65	1.03
Hog inventory,													
Dec. 1, previous year	1000 head	57,904	59,990	58,200	57,350	59,655	62,311	63,453	63,840	63,877	63,826	63,973	64,201

Table 27. Young chicken baseline

Item	Units	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Beginning stocks	Mil. lbs.	358	458	560	600	640	650	660	675	685	707	728	750
F.I. slaughter	Mil. lbs.	23,846	25,021	26,460	28,000	29,769	30,836	31,987	33,124	34,239	35,331	36,424	37,522
Change	Percent	7.5	4.9	5.8	5.8	6.3	3.6	3.7	3.6	3.4	3.2	3.1	3.0
Production	Mil. Lbs.	23,666	24,827	26,250	27,772	29,532	30,591	31,733	32,861	33,967	35,050	36,135	37,224
Total supply	Mil. Lbs.	24,024	25,285	26,810	28,372	30,172	31,241	32,393	33,536	34,652	35,757	36,864	37,974
Change	Percent	7.3	5.2	6.0	5.8	6.3	3.5	3.7	3.5	3.3	3.2	3.1	3.0
Exports	Mil. Lbs.	2,876	3,894	4,607	5,075	5,300	5,521	5,902	6,294	6,524	6,752	6,981	7,210
Ending stocks	Mil. Lbs.	458	560	600	640	650	660	675	685	707	728	750	773
Consumption	Mil. Lbs.	20,690	20,831	21,603	22,657	24,222	25,060	25,816	26,557	27,421	28,276	29,132	29,992
Per capita, carcass wgt	Pounds	79.4	79.2	81.4	84.6	89.6	91.9	93.8	95.7	98.0	100.3	102.5	104.6
Per capita, retail wgt	Pounds	69.8	69.6	71.6	74.4	78.8	80.8	82.5	84.1	86.1	88.2	90.1	91.9
Change	Percent	2.2	-0.3	2.8	3.9	5.9	2.6	2.1	2.0	2.4	2.3	2.2	2.0
Prices:													
Broilers, farm	Cents/lb.	35.0	34.4	37.8	35.4	30.9	33.7	33.9	34.7	34.8	35.1	35.8	36.5
12-city market price	Cents/lb.	55.7	56.4	60.4	56.5	51.5	56.2	56.6	57.8	57.9	58.6	59.7	60.9
Deflated whsle price	Cents/lb.	37.6	37.0	38.5	34.9	30.9	32.7	31.9	31.6	30.7	30.2	29.9	29.6
Change	Percent	-1.6	-1.6	4.0	-9.3	-11.5	6.0	-2.4	-0.9	-2.8	-1.9	-0.9	-1.1
Composite retail broiler price	Cents/lb.	145.3	144.1	150.7	150.0	143.2	153.5	154.7	157.4	158.2	159.9	162.7	165.4
Costs and returns:													
Total costs	Cents/lb.	49.84	48.81	56.00	51.91	50.32	50.87	52.28	54.14	55.58	56.16	57.63	59.12
Net returns	Cents/lb.	5.86	7.59	4.40	4.59	1.13	5.29	4.29	3.65	2.37	2.39	2.11	1.75

Table 28. Turkey baseline

Item	Units	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Beginning stocks	Mil. lbs.	249	254	271	300	300	275	275	275	275	275	275	275
F.I. slaughter	Mil. lbs.	4,992	5,129	5,463	5,575	5,712	5,781	5,913	6,025	6,129	6,218	6,306	6,395
Change	Percent	3.0	2.7	6.5	2.1	2.5	1.2	2.3	1.9	1.7	1.4	1.4	1.4
Production	Mil. lbs.	4,937	5,069	5,399	5,509	5,645	5,713	5,844	5,954	6,058	6,145	6,232	6,320
Total supply	Mil. lbs.	5,186	5,323	5,670	5,809	5,945	5,988	6,119	6,229	6,333	6,420	6,507	6,595
Change	Percent	2.3	2.6	6.5	2.5	2.3	0.7	2.2	1.8	1.7	1.4	1.3	1.4
Exports	Mil. lbs.	280	348	461	510	565	605	610	625	630	640	650	670
Ending stocks	Mil. lbs.	254	271	300	300	275	275	275	275	275	275	275	275
Consumption	Mil. lbs.	4,652	4,704	4,909	4,999	5,105	5,108	5,234	5,329	5,428	5,505	5,582	5,650
Per capita	Pounds	17.8	17.9	18.5	18.7	18.9	18.7	19.0	19.2	19.4	19.5	19.6	19.7
Change	Percent	0.7	0.2	3.4	0.9	1.2	-0.8	1.6	1.0	1.0	0.6	0.6	0.4
Prices:													
Turkey, farm	Cents/lb.	40.4	41.6	42.8	42.8	39.3	41.7	41.2	41.4	41.0	41.0	41.4	41.6
Hen turkey (whsle) East	Cents/lb.	65.7	66.4	66.3	66.3	65.5	69.6	68.7	68.9	68.4	68.3	68.9	69.4
Deflated hen turkey	Cents/lb.	44.3	43.5	42.2	40.9	39.3	40.5	38.7	37.7	36.3	35.2	34.5	33.7
Retail frozen turkey	Cents/lb.	100.0	102.4	104.0	102.5	101.2	107.5	106.1	106.6	105.7	105.6	106.6	107.3
Retail: Poultry	1982-84=100	141.5	143.5	152.4	151.0	145.2	155.3	155.8	158.2	158.6	159.9	162.4	164.8
Costs and returns:													
Total costs	Cents/lb.	63.20	60.83	73.00	69.00	67.33	68.88	69.56	69.82	69.51	68.86	69.43	69.45
Net returns	Cents/lb.	2.50	5.57	-6.70	-2.70	-1.85	0.68	-0.90	-0.88	-1.14	-0.53	-0.49	-0.07

Table 29. Egg baseline

Item	Units	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Beginning stocks	Mil. Doz.	11	15	11	12	12	13	14	15	15	15	15	15
Production	Mil. Doz.	6,178	6,190	6,376	6,600	6,699	6,799	6,901	7,005	7,110	7,217	7,325	7,435
Change	Percent	2.9	0.2	3.0	3.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Imports	Mil. doz.	4	4	5	4	5	5	5	5	5	5	5	5
Total supply	Mil. doz.	6,192	6,209	6,392	6,616	6,716	6,817	6,920	7,025	7,130	7,237	7,345	7,455
Change	Percent	2.8	0.3	3.0	3.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Hatching use	Mil. Doz.	805	847	863	910	950	984	1,021	1,057	1,093	1,127	1,162	1,197
Exports	Mil. Doz.	188	209	260	280	275	280	285	290	295	300	305	310
Ending stocks	Mil. Doz.	15	11	12	12	13	14	15	15	15	15	15	15
Consumption	Mil. Doz.	5,185	5,142	5,258	5,414	5,478	5,539	5,600	5,663	5,727	5,794	5,863	5,932
Per capita	Number	238.6	234.5	237.6	242.5	243.2	243.8	244.3	245.0	245.7	246.6	247.5	248.4
Change	Percent	1.1	-1.7	1.3	2.1	0.3	0.2	0.2	0.3	0.3	0.3	0.4	0.4
Prices:													
Eggs, farm	Cents/doz.	61.4	64.0	67.7	64.8	65.7	66.7	67.8	68.5	69.3	69.9	70.6	71.3
New York, Grade A large	Cents/doz.	67.3	72.9	85.8	75.0	76.0	77.1	78.4	79.2	80.1	80.8	81.6	82.4
Deflated whsle prices	Cents/doz.	45.4	47.8	54.6	46.3	45.6	44.9	44.2	43.4	42.5	41.6	40.8	40.0
Retail, Grade A, large	Cents/doz.	86	93	110	103	103	105	106	107	108	109	110	111
Retail: Eggs	1982-84=100	114.3	120.5	142.1	137.0	138.6	141.4	144.5	146.9	149.4	151.6	153.9	156.3
Costs and returns:													
Total costs	Cents/doz.	67.48	67.50	78.00	72.30	70.09	70.85	72.82	75.41	77.41	78.23	80.27	82.35
Net returns	Cents/doz.	-0.18	5.40	7.80	2.70	5.91	6.25	5.58	3.79	2.69	2.57	1.33	0.05

Table 30. Dairy baseline

Item	Units	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Milk production	Bil. lbs.	155.7	154.5	155.5	157.8	160.3	162.2	164.0	165.8	167.6	170.2	171.8	173.8
Commercial use	Bil. lbs.	154.1	155.5	156.2	158.5	160.7	163.0	165.0	166.9	168.8	171.4	173.1	175.1
Net removals:													
Milkfat basis	Bil. lbs.	2.9	0.2	0.4	1.1	1.5	1.2	1.1	1.1	1.1	1.1	1.1	1.1
Skim solids	Bil. lbs.	4.9	1.1	1.5	2.4	2.2	1.9	1.8	1.8	1.8	1.8	1.8	1.8
Production data:													
Number of cows	Thousand	9,474	9,389	9,290	9,240	9,200	9,125	9,085	9,030	8,970	8,910	8,850	8,790
Milk per cow	Pounds	16,437	16,456	16,735	17,075	17,420	17,780	18,055	18,360	18,685	19,105	19,410	19,775
bST use	% of Cows	8.5	9.5	13.25	16	20	22	23	25	28	32	35	37
Prices:													
Support/loan rate *	$/cwt	10.10	10.35	10.20	10.05	9.90	9.90	9.90	9.90	9.90	9.90	9.90	9.90
All milk	$/cwt	12.54	14.42	13.80	13.25	13.25	13.50	14.00	14.10	14.40	14.70	14.95	15.25
Assessments	$/cwt	0.1617	0.0789	0	0	0	0	0	0	0	0	0	0
Effective price	$/cwt	12.38	14.34	13.80	13.25	13.25	13.50	14.00	14.10	14.40	14.70	14.95	15.25
Retail index	1982-84=100	132.2	138.3	145.4	143.5	145.2	148.0	152.0	154.3	157.5	160.7	163.7	167.0
Costs and returns:													
Concentrate costs	$/cwt	3.31	4.76	4.11	3.76	3.70	3.79	4.00	4.16	4.19	4.34	4.43	4.51
Other cash costs	$/cwt	7.40	7.42	7.44	7.46	7.47	7.49	7.51	7.53	7.55	7.57	7.59	7.61
Total cash costs	$/cwt	10.71	12.18	11.54	11.21	11.17	11.29	11.51	11.69	11.74	11.91	12.02	12.12
Returns above cash costs	$/cwt	1.67	2.16	2.26	2.04	2.08	2.21	2.49	2.41	2.66	2.79	2.93	3.13

* Support changed on January 1 if different from previous year. The dairy price support program ends on December 31, 1999. Starting January 1, 2000, a recourse loan program is implemented.

Agricultural Trade

World trade in most major bulk agricultural commodities is projected to expand more rapidly during 1995-2005 than during the 1980s or early 1990s. Trade in grains, particularly coarse grains, is projected to grow the fastest among bulk commodities. These gains are driven largely by projections of stronger economic growth in developing regions, primarily China, Asia, North Africa, and the Middle East. In these regions, rising incomes are leading to diet diversification, rising meat demand, expanding livestock sectors, and higher demand for feed. Wheat trade is also projected to increase, due to strong global demand growth. Combined trade in soybeans and meal strengthens, benefiting from the same expansion of developing country feed-livestock sectors that will push up coarse grain trade. Growth in soybean oil trade is also projected to be faster than in

Table 31. International trade summary, by decade or indicated period 1/

Years	Wheat	Rice	Coarse grains	Soybeans	Soybean meal	Soybean oil	Cotton
World trade growth 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	-0.3	3.5	1.3	2.8	2.0	3.9	-0.3
1995 to 2000	3.4	-0.4	4.3	1.3	0.4	1.2	0.7
2000 to 2005	2.4	2.6	3.2	2.0	2.2	2.5	1.4
1995 to 2005	2.7	1.4	3.6	1.7	1.5	2.1	1.2
U.S. export growth							
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	0.6	-2.0	4.6	4.3	0.7	7.7	0.2
1995 to 2000	4.6	-5.1	6.0	1.0	1.2	16.1	0.7
2000 to 2005	2.2	0.0	2.5	1.1	0.7	-0.9	1.2
1995 to 2005	3.6	-1.8	4.0	1.1	0.7	5.4	1.1
U.S. share of world trade, average 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	32.4	14.0	62.5	69.1	18.5	15.5	25.6
1995 to 2000	32.9	12.0	68.0	72.2	17.7	15.8	25.4
2000 to 2005	34.3	10.2	68.7	70.0	16.8	17.1	25.2
1995 to 2005	33.5	11.1	68.2	71.1	17.2	16.3	25.3

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.

the 1980s, but will remain slower than some competing oils because of its high relative price. Raw cotton demand and trade is projected to be stronger than in the early 1990s, but not match the 1980s when there was increased substitution of cotton for synthetic fibers.

U.S. export growth strengthens for most bulk commodities. U.S. exports of wheat and coarse grains are projected to expand the fastest, with particularly strong gains in 1995 to 2000. After 2000, U.S. wheat export growth is projected to slow because of anticipated unsubsidized competition from the European Union (EU) as world wheat prices rise. U.S. rice export volume declines because provisions of the 1996 Farm Act lead to reduced U.S. rice plantings, and U.S. demand increases steadily. Exports of U.S. soybeans and products are projected to rise faster than in the 1980s, but foreign competition and slowing U.S. acreage gains are likely to constrain export growth relative to competitors. In contrast, U.S. raw cotton exports are projected to strengthen throughout the 1995-2005 period, benefiting from rising demand and reduced competition in some countries.

U.S. wheat is projected to gain a rising share of world trade during 1997-2000, with the U.S. share then stabilizing because of anticipated unsubsidized EU competition. For other crops, projected U.S. market shares generally follow historical trends. Reduced competition leads to a continued rise in the U.S. share of world coarse grain trade, although the emergence of competitors such as Eastern Europe limit U.S. gains in coarse grains trade after 2000. U.S. rice market share is projected to decline, limited by minimal domestic rice production gains and strong domestic use. U.S. market shares in soybeans and products are also projected to continue to decline as a result of competition from South American producers, as well as anticipated U.S. acreage constraints. The U.S. share of world cotton trade is projected at about 25 percent through the baseline, as many foreign producers reduce raw cotton exports by channeling production toward consumption and value-added textile products.

The generally favorable world economic outlook spurs growth in meat demand and trade in the baseline. Additional impetus is expected from the continuing reduction in trade barriers, primarily in East Asia. Meat consumption growth occurs in several countries in the Pacific Rim and Latin America. The Pacific Rim provides the greatest growth in both consumption and import demand. Rapidly increasing incomes in China, Taiwan, South Korea, and a number of other countries in the region stimulate demand for meat. The United States is well positioned to provide a variety of meat products to these markets.

Growth in meat import demand in the FSU is projected to slow. Although meat consumption declines slow and turn upward by the end of the baseline, domestic FSU production of meat is also projected to begin increasing. This could reduce the region's dependence on imported meat, although the United States continues supplying low-priced parts and trimmings to that market.

The value of U.S. meat exports is projected to grow an average of about 4 percent annually during 1997 to 2005, somewhat slower than the rapid assent of the past several years. Although export volume rises, the increasing share of low-valued meat products may slow the growth in total value.

U.S. Agricultural Trade Value

The total value of U.S. agricultural exports is projected to rise from a record $59.8 billion in fiscal 1996 to $62.7 billion (current dollars) in fiscal year 2000, and approach $80 billion in 2005. U.S. imports are projected to rise from $32.4 billion in fiscal 1996 to $44.4 billion in 2005, resulting in the agricultural trade surplus rising from $27.4 billion in 1996 to more than $35 billion in 2005.

Much of the record fiscal 1996 export value reflected high bulk commodity prices for grains and oilseeds. With lower prices projected for bulk commodities, bulk exports initially fall in the baseline. As a result, total agricultural export value declines in fiscal 1997, but then begins a steady rise in 1998. For fiscal 1998 to 2005, export growth is about 5 percent annually. Throughout these years, high-value product (HVP) exports are projected to account for about 60 percent of total U.S. agricultural exports. Much of the HVP gain is in horticultural products, which are projected to rise 5.5 percent annually from 1998 to 2005. Animal product exports, led by beef, pork, poultry, grow about 4.7 percent annually over this period. Bulk exports decline during the next 2 years, and then begin to increase in 1999. Between fiscal 1998 and 2005, bulk exports grow at about 5 percent annually.

U.S. imports are projected to rise about 3.5 percent annually from 1996 to 2005. Horticultural imports, the largest import category, grow at about 4 percent annually. Growth in animal product imports slows from over 7 percent in fiscal 1996 to 2000, to about 3 percent in 2000 to 2005.

Table 32. U.S. agricultural trade values, baseline projections, fiscal years

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
						Billion dollars						
Agricultural exports:												
Animals and products	8.8	10.8	11.5	12.4	12.4	13.3	13.8	14.4	15.0	15.6	16.3	17.1
Grains, feeds, and products	13.1	17.3	21.3	16.2	16.1	17.7	18.9	20.4	21.5	22.1	23.5	24.8
Oilseeds and products	6.9	9.1	9.7	9.8	9.3	9.3	9.6	10.2	10.8	11.4	12.2	12.7
Horticultural products	8.7	9.9	10.2	10.7	11.7	12.4	13.2	13.9	14.7	15.4	16.2	17.0
Tobacco, unmanufactured	1.3	1.3	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.3
Cotton and linters	2.3	3.5	3.0	2.1	2.6	2.7	2.8	2.8	2.8	2.9	3.0	3.1
Other exports	2.8	2.7	2.7	2.9	2.9	3.0	3.1	3.2	3.3	3.5	3.6	3.7
Total agricultural exports	43.9	54.7	59.8	55.5	56.3	59.8	62.7	66.2	69.4	72.2	76.1	79.7
Bulk commodities exports	17.2	23.5	27.9	22.0	22.0	23.4	24.6	26.2	27.5	28.3	30.0	31.4
High-value product exports	26.6	31.2	31.9	33.5	34.3	36.4	38.1	40.0	41.9	43.9	46.0	48.3
Agricultural imports:												
Animals and products	5.8	5.9	5.9	6.2	7.1	7.6	7.9	8.1	8.3	8.6	8.9	9.2
Grains, feeds, and products	2.3	2.3	2.6	2.7	2.7	3.0	3.2	3.4	3.6	3.7	3.7	3.6
Oilseeds and products	1.5	1.8	2.1	1.9	2.2	2.4	2.5	2.7	3.0	3.1	3.3	3.4
Horticultural products	9.1	9.9	11.3	12.5	12.6	12.9	13.4	14.0	14.5	15.1	15.7	16.4
Tobacco, unmanufactured	0.9	0.6	0.8	0.8	0.8	0.9	0.9	0.9	0.9	1.1	1.2	1.3
Sugar and related products	1.1	1.2	1.8	1.9	1.8	1.9	2.1	2.1	2.3	2.4	2.5	2.6
Coffee, cocoa, and rubber	4.0	6.0	5.7	5.8	5.4	5.3	5.4	5.5	5.5	5.6	5.7	5.8
Other imports	1.7	1.8	2.2	2.2	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2
Total agricultural imports	26.4	29.5	32.4	34.0	34.7	36.0	37.6	38.8	40.3	41.6	43.1	44.4
Net agricultural trade balance	17.5	25.2	27.4	21.5	21.7	23.8	25.2	27.3	29.1	30.6	33.0	35.3

Note: "Other exports" consists of seeds, sugar and tropical products, and beverages and preparations. Essential oils are now included in horticultural products. Bulk commodities include wheat, rice, feed grains, soybeans, cotton, and tobacco. High-value products is total exports less the bulk commodities. It includes 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.

Foreign Country and Regional Highlights

This section provides an overview of key baseline features for major foreign countries and regions of the world. Foreign country and regional projections are based on full compliance with all bilateral and multilateral agreements affecting agriculture and agricultural trade as of January 1997. Bilateral agreements affecting agricultural trade between the United States and Canada, the United States and Mexico, and the United States and Japan are examples of recent agreements for which full compliance is assumed. No compliance is assumed for any agreements not formally ratified by January 1997.

In the multilateral sphere, the baseline assumes full compliance with the internal support, market access, and export subsidy provisions of the GATT Uruguay Round Agreement on Agriculture (Uruguay Round) by all parties to the agreement. However, several multilateral agreements that could have significant impacts on agricultural trade are now under consideration, are assumed not to occur in these projections. Specifically, the projections assume that the there is no accession to the WTO by the FSU, China, or Taiwan, no enlargement of the EU-15, no liberalization of trade among the Asia-Pacific Economic Cooperation (APEC) countries, and no expansion of NAFTA.

Although bilateral and multilateral policies are assumed to be fixed, agricultural and trade policies in individual foreign countries are assumed to continue to evolve. In particular, the process of liberalizing economic and trade policies 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.

European Union

The baseline projections for the European Union (EU) incorporate policy changes adopted as part of the 1992-93 reform of the EU's Common Agricultural Policy (CAP), as well as EU commitments under the Uruguay Round agreement that limit subsidized exports and improve market access. The final step of planned price cuts under CAP reform took place during 1995/96. Basic support prices are assumed to remain at 1995/96 nominal levels for most commodities, but internal market prices may be driven below support levels in order to clear domestic markets. If Uruguay Round limits on subsidized exports are binding, excess supplies will have to be absorbed on the internal market, driving market prices down. The annual set-aside program instituted for grains, oilseeds, and protein crops is assumed to remain in effect, with the set-aside rate being used as a policy instrument to adjust production to market conditions.

The baseline assumes that the EU's Uruguay Round commitment on internal support is not a binding constraint, since many policies resulting from CAP reform meet the World Trade Organization (WTO) "production-limiting" criteria and are exempt from reduction commitments. Tariffication of nontariff barriers and tariff reductions are assumed to have little impact because the high tariff equivalents 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 all baseline commodities except oilseeds and products and, in the later years, wheat, rye, and oats. 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.

Major uncertainties include what measures the EU will use to meet its subsidized export and minimum import commitments within the limits of the Uruguay Round, and what measures the Commission will adopt to deal with the projected imbalance between beef production and consumption in the wake of the bovine spongiform encephalopathy (BSE) crisis. The baseline assumes that the EU will use current policy mechanisms to meet its Uruguay Round limits on subsidized exports. For grains, it is assumed that any production in excess of domestic use that cannot be exported will depress the internal market price and dampen output. The EU will use the set-aside rate to constrain surplus production. The set-aside rate is 5 percent for 1996/97, and is assumed to move up to 15 percent in 1997/98 and then remain at 12 percent for the rest of the baseline. In the longer term, the baseline assumes that the EU will not increase intervention purchases and accumulate stocks beyond the historical average level--accumulation of intervention stocks is viewed as a short-term strategy for dealing with excess grain supplies. The baseline assumes that the EU will export grain without subsidy only when the world price is equal to or greater than the average EU price. For pork and poultry, the baseline assumes that market prices adjust to clear the internal market. The effect of the herd liquidation program because of the "mad cow" crisis is included. Continued limited intervention for beef, a shrinking dairy herd, and measures to encourage less intensive production methods are also assumed to limit beef production. To prevent surpluses from accumulating in the face of lower consumption, it is assumed that revisions to the CAP will further reduce beef producer incentives.

The baseline assumes that there is no enlargement of the EU to add one or more Central or East European countries. Accession of the large agricultural-producing CEE countries could cause serious problems for the CAP in its current form and would likely require changes in that policy.

China

China's economy is assumed to continue to grow at a rapid, but declining, rate in the baseline. Average real GDP growth is forecast to slow from more than 10 percent in recent years to 8.4 percent in 2001 to 2005. This projection assumes China will continue its gradual reform of the remaining areas of the economy where there continue to be a substantial degree of government intervention and control. Major reform initiatives will focus on the industrial sector and the political, social, and economic difficulties involved in reducing and restructuring the state-owned sector. Continued rapid growth in domestic and foreign investment allows the development of port, rail, road, and power generation infrastructure to keep pace with increased trade flows and energy demand.

Agricultural policy continues to move gradually and incrementally toward greater liberalization, increasing the role of market forces in China's production, consumption, prices, and trade. Central government planning is assumed to decline for most crops, with a growing share of farm gate and retail purchases occurring at market prices rather than at government-set prices. Intermittent government intervention to stabilize markets occurs, but with declining frequency.

Agricultural trade is assumed to continue its recent course, becoming more liberalized as tariffs are gradually reduced and non-state trade companies become more important. While central government control over trade in key commodities will likely continue, the share of trade handled by private or joint private-public trade companies is assumed to grow. In the baseline, it is assumed that China will not become a member of the World Trade Organization (WTO). China has applied for WTO membership, but negotiations are ongoing, with timing of possible entry and provisions of the final agreement uncertain.

Production of all major crops (except rice) is projected to increase as rising domestic prices raise yields through increased use of improved varieties and fertilizer and better farm management practices. Reduced state investment in agriculture during the 1980s produces a slowdown in the rate of yield growth towards the end of the baseline. Total land in agriculture continues its current decline under pressure from nonagricultural uses, but the rate of decline slows in response to a continuation of the government's more effective land management policies of the 1990s.

Income growth that will drive demand for meats and edible oils will be the key factor in China's future agricultural trade patterns, although moderate changes in income growth or supply trends can result in major changes in trade projections for a country with 1.2 billion people.

Former Soviet Union

Between 1997 and 2000, real GDP growth for the countries of the FSU is very sluggish, and currencies appreciate in real terms. After 2000, real GDP growth across the region is assumed to be 3 to 4 percent per year, with the exchange value of the region's currencies remaining roughly constant in real terms. The projections assume that liberalization of the markets and restructuring of agricultural enterprises of the FSU will continue at its current slow pace. Commodity-specific trade policies remain mostly unchanged, with tariffs remaining at relatively low levels, and no quotas imposed. Price transmission between world and domestic markets for major commodities is assumed to be about 50 percent, meaning that a 1-percent change in the world price will result in about a 0.5-percent change in the domestic price.

The primary policy uncertainty in the outlook concerns the possibility of more protectionist trade measures for agricultural commodities. Higher tariffs, and/or tariff-rate quotas or quotas may be announced in Russia for livestock products. Significantly higher tariffs, or imposition of quotas, could drastically change the meat import projections. Tariffs will be raised, but more drastic changes that could affect meat imports will be avoided, in part because of some limited foreign direct investment in the Russian livestock industry.

Crop productivity gains in the FSU will be small. Progress in land reform that could lead to major productivity gains is not anticipated. FSU livestock production is assumed to recover very slowly, at least until the process of economic reform reduces production costs and increases the competitiveness of the sector. The current high cost of meat production in the FSU suggests that livestock inventory declines of recent years will not be fully recouped in the foreseeable future and some meat demand will continue to be satisfied by imports. It is also anticipated that state grain imports will be minimal in the baseline because continued livestock declines will limit demand.

The Central Asian countries of the FSU meet their grain needs primarily from Kazakhstan and Ukraine, rather than from imports from abroad.

Central and Eastern Europe

The baseline assumes that none of the countries in Central and Eastern Europe (CEE) join the EU during the projections period. Although some CEE countries expect to join the EU by 2005, the timing of accession is uncertain.

The baseline also assumes that most world prices are fully transmitted to domestic markets and that import tariffs in most cases will not exceed 30 percent. In the short term, the impact of protectionist policies in the Visegrad Four (Poland, Hungary, the Czech Republic and Slovakia) has mainly been to keep domestic producer prices at world levels. These measures have tended to counter the downward pressures on prices coming from the lingering bottlenecks in the downstream sectors. Of the Visegrad Four countries, only Hungary seeks to be a major grain exporter. Others aim for self-sufficiency. The baseline assumes that domestic producer prices will not differ greatly from world market prices. The principal constraint will be continued pressure to keep state budgets in balance.

The baseline also assumes a steady increase in the efficiency in the agricultural sector, which will be reflected in rising yields and greater feeding efficiency in the livestock sector. These productivity increases come about as a result of continuing progress towards market reform in all the CEE's. It is assumed that most of the rigidities inherited from the Communist period will be removed, allowing fuller transmission of world market prices to domestic producers. In addition, the forecast assumes continued positive income growth and falling inflation. 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. Land tenure will become more permanent, bottlenecks in issuing titles will be resolved, and true land markets will develop as capital markets improve.

East Asia

South Korea and Japan continue to open their livestock sectors to foreign competition as dictated in the Uruguay Round, using deficiency payments to assist the beef cattle sector and encouraging pork and poultry production with indirect subsidies. Japan will also make maximum use of the pork and beef safeguard mechanisms negotiated in the Uruguay Round, which raise tariffs and levies on those meats on a quarterly basis. South Korea, Japan, and Taiwan retain bans on livestock imports from areas with foot-and-mouth disease.

All three East Asian economies are assumed to maintain tight state control over the trade in rice. Rice production in South Korea will continue to be insufficient to meet domestic needs, so that country imports above Uruguay Round mandates in some years to replenish stocks. Japan will continue to meet its minimum access commitment, but does not import above those levels. Rice imports of Japan and South Korea are projected to remain at the final levels set by the Uruguay Round for the years after 2000 and 2004, respectively.

Japan's wheat, barley, and soybean production, and South Korea's barley and soybean production are maintained through border protection and the use of domestic products by processors in response to government mandates or subsidies. The new quota for corn for new industrial uses should expand Japan's nonfeed market for corn.

The East Asian governments will continue enormous expenditures designed to help domestic agriculture restructure itself. A continued steady outflow of labor from farming will help full time farmers achieve larger operations and economies of size. Despite the restructuring, production of some key commodities declines in some countries, including rice in South Korea and pork and poultry in Japan. In South Korea, declining rice consumption will mean that production declines may not lead to increased imports, but in Japan, greater pork and poultry imports will be needed to offset the production decline.

Southeast Asia

Rising incomes and the changing diets that follow are turning Southeast Asia into an expanding market for wheat and feedstuffs. This trend has been boosted as several countries have liberalized controls on imports of agricultural products. This trade liberalization trend continues.

Improved economic conditions in Vietnam and Burma help the region regain its former prominence as a net exporter of rice. Rice imports by several countries, including Indonesia, the Philippines, and Malaysia, rise as policy goals gradually shift away from full self-sufficiency. The Southeast Asian region has abundant land resources well suited to rice production. Demand for wheat-based products will be increasing, but because the region's tropical climate is not suited to wheat production, rising demand will be supplied through wheat imports.

With the region's economies continuing to boom, a key driver of agricultural import demand will be the expansion of livestock production, especially poultry. Most growth in livestock product demand is met by local production that is increasingly dependent on imported feeds. Thailand, the only significant corn exporter in the past, has recently become a net importer, with net imports projected to continue to rise. Low corn yields in the region limit corn's competitiveness with other crops, so corn production does not expand as rapidly as demand. The region's imports of soybeans and soybean meal will also show strong growth to meet feed demand, as soybeans are not generally well suited for production in the region's tropical climate.

South Asia

India's farm sector continues to benefit from improving terms of trade as agricultural price incentives are maintained and liberalizing reforms steadily reduce protection in nonfarm sectors. Food grain production is also given a boost by reduced protection of oilseeds resulting from the recent tariffication of vegetable oil imports. Domestic surpluses of rice continue in the baseline, with India's relatively low-quality rice maintaining a significant global market share. While some wheat exports are projected, India's surpluses of relatively low-quality wheat are more likely to be disposed of in the domestic market. With the reform of vegetable oil trade remaining in place,

vegetable oil imports grows rapidly. Price incentives and productivity gains sustain strong growth in cotton production, with most production consumed domestically to meet domestic and export demand for cotton-based products.

Producer incentives in Pakistan continue to support gains in cotton acreage, leading to continued stagnation of wheat yields due to late planting. Trade policy permits rising dependence on imported wheat. Cotton yields recover gradually from current pest-related problems. As with India, most cotton production is processed domestically, with strong growth in exports of cotton-based products. Continued, relatively liberal import policies permit continued growth in vegetable oil imports. Growing livestock product demand may lead to emergence of significant corn and soybean meal imports.

Africa and Middle East

In Sub-Saharan Africa, little or no growth is expected in per capita incomes and, with slow growth in production, constrained import capacity, and strong population growth, per capita food grain consumption is projected to continue to decline. Capacity to import food commercially grows slowly, consistent with gains in total export earnings and real declines in food prices. The region is projected to receive a growing share of available global food aid. However, with global food aid budgets assumed to be fixed at current levels, food aid to the region will not be sufficient to maintain per capita consumption.

Stronger growth in import demand for grains and feeds is projected in most of North Africa, based on the outlook for improved economic growth in most countries, limited production potential and, for some countries, more open trade policies. Political unrest constrains economic growth in Algeria, but wheat and corn imports are projected to rise as crop production is hampered by high input prices, input shortages, and lack of credit. In Egypt, average real GDP growth of 4 to 5 percent annually and recent policy reforms generate more growth in wheat and corn imports. Since joining the WTO in 1995, Egypt has been reducing producer and consumer subsidies in agriculture and has opened up trade to the private sector for some grains, cotton, and other commodities. Morocco's real GDP growth of about 5 percent annually, coupled with a continuation of recent steps to liberalize trade in grains, oilseeds, and sugar, sparks stronger growth in import demand. In Tunisia, which began liberalizing its domestic markets and trade in 1992, real GDP growth of 5 to 6 percent a year leads to rising import demand for wheat and livestock products.

Many Middle Eastern economies also experience stronger economic growth during 1997-2005, in large part due to the outlook for rising oil prices. Prospects for Iran are highly dependent on both oil prices and the implementation of structural reform. Moderate economic growth, together with limited success in improving yields, and an ambitious livestock/dairy development program, lead to the projected growth in rice, corn, and barley imports. The situation in Iraq, both economic and political, is extremely uncertain. Under the assumption of 3.5 to 4 percent annual real GDP growth, food consumption is projected to gradually recover from the sharp drop following the Persian Gulf War in 1991, driving moderate growth in imports of food and feed grains. In Saudi Arabia, economic growth also improves because of stronger oil prices, while agricultural output

continues to decline as budget constraints force the government to cut subsidies and there is rising concern about depleting water resources. Rising imports of rice, wheat, and feed grains are projected. Turkey faces many difficulties, including high population growth, large external debt, and no strong commitment to privatization, that affect economic performance well into the projection period. Steady growth in rice imports is likely, and reduced producer subsidies push up wheat imports.

Mexico

The economic crisis in Mexico triggered by the peso devaluation in December 1994 does not fundamentally change the long-term outlook for Mexican agriculture. The economy bounces back relatively quickly, with annual real GDP growth exceeding 4 percent in 1997 and averaging more than 5 percent through 2005. Mexico is a progressively larger importer of grains, oilseed products, and meats over the next decade. Mexico's productive capacity will be limited by scarce water, land, and low levels of technology. Growing demand for meats will spur domestic meat production and demand for imported feed ingredients. Trade liberalization provides opportunities for greater imports of meats, almost entirely from the United States.

Agricultural policy continues to be driven by the PROCAMPO program and NAFTA. Under PROCAMPO, the government will continue to reduce its role in supporting grain prices. Intervention in domestic corn and wheat prices ends and, with lower import duties on corn, sorghum, and wheat, there will be more price transmission between the world and domestic grain markets. PROCAMPO direct payments, which require planting but are otherwise decoupled, will continue to be phased out. Under NAFTA, all tariffs on baseline commodities will be eliminated by 2008. In light of the price-competitiveness and quality of U.S. corn, pork, poultry, and eggs, particularly to the border areas, it is assumed that Mexico will import at least the quantity specified by the tariff-rate quota. Mexico continues to reduce consumer subsidies, and the main subsidies that continue will be those on tortillas and milk. Feed compounders will now procure corn directly from farmers, thus eliminating CONASUPO subsidies for animal feed.

South America

Strong overall economic growth is expected in South America, led by the two largest economies in the region, Argentina and Brazil. Many countries in the region continue to benefit from their successful evolution from semi-authoritarian political systems and market managed economies to political pluralism and market oriented economies.

For Argentina, the key assumptions are on the supply side and involve the availability of land for crop production and the level of yields obtainable. Before 1996, the most area that Argentine producers had devoted to grains, oilseeds, and cotton was 18.3 million hectares in 1983. Until recently, it was considered unlikely that this record could be exceeded without significant investment in improving the marketing infrastructure. In 1996, however, planted area will surpass the record by more than 2 million hectares. As a result, the baseline assumes that cropped area can expand significantly beyond 18.3 million hectares when market conditions provide adequate incentives. Crop yield response in 1996 also indicated stronger response to prices than in the

past, with the use of inputs increasing sharply. Consequently, the baseline assumes faster growth in use of fertilizer and other inputs than has been the case historically. Finally, it is assumed that Argentina will not complete the process of attaining hoof-and-mouth-free status in the baseline, thus preventing expansion of beef exports to hoof-and-mouth free areas.

In Brazil, the economic stabilization program begun in July 1994 has brought inflation down to the lowest level in 21 years with tight monetary policies. The Central Bank will continue to manage a gradual devaluation in the real exchange rate in an effort to keep inflation and the growing trade deficit under control. With gradual real depreciation of the exchange rate, Brazilian producers face stronger price incentives in local currency terms. Finally, in November 1996, the Brazilian Government eliminated the value-added state tax on exports of raw and semi-manufactured agricultural products. This change has a significant positive impact on price incentives in the soybean sector, increasing the quantity of soybeans produced, as well as the volume of soybeans, meal, and oil that is exported.

Canada

A major factor affecting baseline production projections for Canadian crops is the shift over the past several years into the production of canola. Encouraged by development of new varieties, canola acreage rose from a range of 2.5 to 3.7 million hectares during 1984-92, to a range of 5.3 to 5.75 million hectares during 1994-95. Canola plantings significantly affect area and production of other crops, particularly wheat and barley. Wheat acreage, for example, was below 11.3 million hectares in 1994 and 1995 after remaining well above 13 million hectares over the 1984-92 period. In 1996, prices strongly favored a return to grains, but the tendency to substitute canola for wheat acreage is projected to reemerge in the near future. However, rotational constraints on canola plantings are assumed to limit canola acreage.

Canada's 1995/96 and 1996/97 budgets projected a reduction in annual domestic support programs for agriculture from C$854 million to C$600 million over three years. In redesigning agricultural support programs to meet the new budget restrictions, emphasis is being placed on providing whole-farm insurance (such as the recently developed whole-farm savings plan program--the Net Income Stabilization Account), rather than crop-specific and production-distorting subsidies. The baseline assumes that government subsidies to crop and revenue insurance programs will be "production neutral" and that Canadian grains and oilseed production will fully respond to market forces.

Canada's 1995/96 budget also eliminated the C$561 million Western Grain Transportation Act (WGTA) freight subsidy for prairie grains and oilseeds, effective August 1, 1995. The elimination of the WGTA freight subsidy meets Canada's commitment under the Uruguay Round export subsidy reduction requirements. Elimination of the subsidy means that the cost of transportation of prairie province crops (such as wheat, barley, and canola) to export positions has increased by about C$17 per metric ton. This increase in transportation costs reduces farmers' incentives to plant grains and oilseeds and reduces production. At the same time, prairie processing and livestock sectors benefit from reductions in local prices. The WGTA subsidy removal has reinforced recent trends toward more value-added processing in the Canadian prairie region.

Substantial increases in livestock feeding and canola crushing are projected to continue in the baseline.

Increases in Canada's wheat exports to the United States over the 1990-94 period led to the negotiation of a bilateral agreement to govern wheat trade with a tariff-rate quota for one year, from September 12, 1994 to September 11, 1995. The agreement also established a joint commission to study all aspects of U.S. and Canadian grain marketing systems. With expiration of the TRQ in September of 1995, USTR and USDA announced that the United States now plans to "monitor" imports of Canadian wheat using the expired TRQ as a benchmark for comparison, and to ask for consultations with the Canadian government if there is a surge in imports. The baseline assumes that these provisions will prove sufficient and that no new restrictions on U.S. grain imports from Canada will be imposed.

Several commodities which are grown in Canada have unique characteristics which are likely to guarantee certain export markets for the future. Canadian canola is preferred by Japanese importers. Canadian oats are an indispensable import for U.S. processors. Canadian and Australian barley malt are positioned to benefit from increasing demand from importers in China and Latin America. Because of these market "niches," projections for Canadian production of these three commodities is favored in the later years of the baseline.

Australia

Australia exports the majority of its crop and livestock output; this continues in the future. The Australian Wheat Board (AWB) is being reorganized so that it will be more along the lines of a commercial business with grower ownership and control. The AWB will retain single-desk status for exports, at least for the next 5 years. Australia is periodically subjected to drought, so adequate water availability is crucial to attaining the output levels projected. Crops are once again being planted in the Ord River project in Western Australia and several new dams are being planned, but it is still too early to factor in the full extent of the additional area for irrigated crops such as cotton and sugar.

With the return of better weather after several years of drought, cattle herds are being rebuilt. Any dependence on imported feed during periods of shortages has been ruled out for the time being, which is dampening growth expectations for fed beef. More favorable returns for other enterprises and low export prices are also limiting fed beef growth. Continued growth in exports of live cattle is projected, reducing the availability of suitable cattle for feedlots.

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Commodity Trade Highlights

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This section provides an overview of baseline trade projection highlights for major commodities. Growth in global and U.S. trade in most bulk commodities is projected to be faster during 1995-2005 than during the 1980s or early 1990s. Growth in meat trade also remains strong, although somewhat slower than recent performance. Projected world and U.S. trade gains are driven by favorable global economic prospects and freer trade resulting from multilateral and unilateral reforms. Income growth, particularly in developing countries, will boost demand for agricultural

products, both through increases in domestic food use and through derived demand for livestock feeds stemming from rising meat demand. Developing regions, including China, Asia, North Africa, and the Middle East are key sources of growth in agricultural export demand.

Projected trade growth in coarse grains is the fastest of the bulk commodities, driven largely by expanding meat consumption and feed demand in developing countries in Asia, South America, North Africa, and the Middle East. Growth in wheat trade is generated by increases in per capita food use of wheat in these same developing regions. Trade in soybeans and meal, while slower than coarse grains and wheat, will also benefit from expanding feed-livestock sectors in developing countries. East Asian markets account for much of the sustained growth in beef, pork, and poultry trade, the result of more liberal import regimes and increasingly uncompetitive domestic feed-livestock sectors.

Wheat

World wheat area is projected to expand between 1995 and 2005, reversing the trend of the early 1990s when foreign area dropped, particularly in the FSU. Higher prices encourage this area expansion, although land availability is constrained in many countries. Growth in area combined with moderate gains in yields push global wheat production up at an average annual rate of 1.7 percent per year.

Foreign consumption growth for wheat is projected at 1.6 percent annually, with food demand accounting for virtually all consumption growth. Wheat feed use falls in most regions as wheat prices rise relative to other feed grains, but wheat feeding increases in the FSU and the EU. In the FSU, increased livestock production will boost wheat feeding, while in the EU, wheat that fails to meet milling standards will not be eligible for price supports, moving it into feed channels. Per capita food use of wheat is projected to rise in regions with modest but growing incomes.

World wheat trade (including the wheat equivalent of wheat flour) is projected to grow an average of 2.7 percent annually during 1995-2005. Projected growth is well above that of the 1980s, but less than during the 1970s. Wheat trade rebounds from the unusually low levels in 1996, and then return to trend growth, with some acceleration towards the end of the baseline.

Most world import growth occurs in lower and middle income countries that have prospects for strong macroeconomic growth over the next 10 years, including much of Asia, Latin America, North Africa, and the Middle East. Gains in incomes and urbanization will continue to shift consumer preferences away from rice, coarse grains (for food use), and tubers, and toward wheat-based foods and meat. Per capita wheat consumption continues to increase relative to rice in China and Southeast Asia. Private, rather than state, importing boosts imports in Egypt and Tunisia.

China's wheat imports are projected to more than double in response to rising demand and limited area. But China also is a key source of uncertainty in global wheat import prospects because of the uncertain impacts of potential water constraints, yield improvements, foreign exchange earnings, dietary shifts toward meats, and market liberalization.

In the past, many importers benefited from exporter subsidies, credit, or food aid. Under the Uruguay Round agreement, subsidized exports fall from about 40 percent of world trade in 1994 to about 25 percent by 2000. Some countries will face significantly higher wheat prices as subsidies decline, and some will also be affected by the outlook for no increase in the nominal value of credit and food aid. Wheat imports by the least developed countries, particularly the Sub-Saharan Africa region, are likely to decline relative to imports by the higher income developing countries.

U.S. wheat exports rebound from depressed levels in 1996, surpassing the 1995 level in 1998 and reaching 40.8 million tons in 2005. Although larger than most recent years, the 2005 U.S. export projection is lower than wheat exports in 4 of the 10 years in the 1980s. The U.S. share of world trade is fairly flat at just over one-third. In the early years of the baseline, U.S. exports benefit from rebounding U.S. production, the use of EEP, and Uruguay Round limits on EU wheat exports. However, as time progresses, slow U.S. yield growth and large acreage in the CRP limit the U.S. ability to expand production relative to competitors.

Compared with the 1980s and early 1990s, the EU is a less significant competitor in world wheat trade, particularly during 1996-2000, because of internal policy reforms and the Uruguay Round constraints. As nominal world prices rise after 2001, however, the EU begins exporting wheat without subsidy. Even after beginning to export without subsidy, the EU maintains its land set aside to avoid building grain stocks.

Initially, land constraints and competitive prices for other crops limit wheat exports by Argentina, Australia, and Canada. But later, Argentina and Australia find it increasingly profitable to increase wheat production and exports. Australia and Argentina gain market share as a result of reduced EU exports; but exports from Canada stay relatively flat. In the early years of the baseline, Canada maintains wheat exports by reducing stocks, but then wheat area increases in response to rising nominal prices. Minor exporters, like Eastern Europe, become more important in the latter part of the baseline.

Rice

World rice production is projected to rise gradually, growing about 1.0 percent per year between 1995 and 2005. Growth in the 1990s is slower than in the 1970s and 1980s, when irrigated area and use of Green Revolution technology was expanding in Asia. Slower production growth stems primarily from a projected slowdown in yield increases. World acreage gains remain small, as they have been since 1975, with total growth only 3 percent from 1995 to 2005.

Global consumption also is projected to rise about 1.0 percent per year, markedly slower than during the 1980s. Per capita consumption in higher income Asian countries has been declining and continues to decline. As larger portions of the population earn middle class incomes, per capita consumption of rice will continue to decline in favor of other foods, such as wheat products and meat. Per capita rice use in other countries, including China, India, and Indonesia, is projected to reach the stage where it flattens or declines during the coming decade as consumers

primarily shift from lower-quality to higher-quality rice varieties, and some begin to diversify their diets in response to rising incomes. These developments offset consumption gains in other regions, primarily the lower income rice-producing countries and high income nonproducing countries, where per capita rice consumption is still rising.

Rice trade is projected to grow 1.4 percent annually during 1995/96 to 2005/06. Growth strengthens beyond 2000/01 after contracting slightly between 1995/96 and 2000/01. Anticipated growth is faster than in the 1980s, but slower than in the 1970s and 1990s. World rice trade is projected at 18.6 million tons by 2000/01 and 21.1 million tons by 2005/06.

Trade continues to consist predominantly of long grain--or indica--varieties, despite anticipated gains in medium-grain (japonica) rice imports by Japan and South Korea under the Uruguay Round agreement. Only Australia, China, and the United States are viable long-run sources of japonica rice for Japan's and South Korea's gradually expanding Uruguay Round import access.

Nominal prices rise throughout the baseline, while real prices continue to fall, although less rapidly than in the past. Global medium-grain prices rise relative to long-grain prices due to limited world exportable supplies of high-quality japonica rice and growing import demand.

Global import growth will be fueled by the needs of China, Indonesia, the Middle East, and Central America and the Caribbean. Indonesia is a steady net rice importer, but its imports are projected to decrease sharply and remain low as consumption growth slows and yields continue to rise. But the outlook for Indonesia is heavily dependent on government trade and production policies and the progress of developing irrigated rice areas on islands other than Java.

China also is projected to be a net importer of rice as area is pressured by competing uses and inexpensive imports from Vietnam and Thailand look increasingly attractive. Population growth and strong per capita income growth push demand up in the Middle East, Brazil, and Central America and the Caribbean. But relatively high prices dampen growth of commercial rice sales to countries with limited resources, preventing conversion of all the potential demand growth in Sub-Saharan Africa and the Central Asian Republics of the FSU into actual imports.

Exports from many of the major rice producers are projected to increase as world demand for rice rises and nominal prices strengthen. Thailand is projected to remain the world's largest rice exporter as yield growth, resulting from improved technology and additional input use, pushes production higher. Thailand's export growth, projected around 2 percent a year, slows from the pace in the 1980s, however.

For most of the baseline, India ranks third in rice exports after Thailand and Vietnam. India's ability to supply the projected level of exports is dependent on government policy consistently supporting an export orientation by maintaining producer incentives and promoting improved quality standards and grading. Despite projected production gains, Vietnam's exportable supplies are limited by rising domestic consumption and a government imposed export quota.

The U.S. share of the world rice export market varied from 14 to 18 percent between 1990/91 and 1995/96. It is projected to decline gradually to less than 10 percent by 2005/06. Minimal U.S. production gains, strong domestic use, and high export prices relative to international competitors limit the volume of U.S. rice exports. Total U.S. exports are projected at 2 million tons in 2005/06, while total imports rise to 0.4 million tons, leaving net U.S. exports of 1.6 million tons.

As a major exporter of medium-grain rice, the United States will benefit significantly from the Uruguay Round agreement. But, despite significant market access gains in East Asian medium-grain markets under the Uruguay Round agreement, total U.S. rice exports do not expand in the baseline. The extent of U.S. gains in the international medium-grain market depends on U.S. capacity to expand production and exports on a sustainable basis. California, the most efficient U.S. producer of japonica rice, faces environmental and resource--especially water--restrictions on expanding acreage and yields. The outlook for a widening long-grain export price premium implies that the United States will lose some of its long-grain exports in the more "price-sensitive" markets. Further, under fixed funding levels for U.S. credit assistance and food aid programs, higher domestic prices imply lower program-assisted exports.

Historically, rice trade and prices have exhibited greater volatility than those of other grains. This volatility stems from the dependence of many large producers and traders, including Burma, India, Thailand, and Vietnam, on rainfall during the Asian monsoon season, and from the relatively small share (less than 5 percent) of world rice production that is traded each year. These factors will continue to affect the world rice market, with the potential to create dramatic annual swings in trade and prices that could deviate significantly from the trends projected in the baseline.

Coarse Grains

World coarse grain production is projected to rise through 2005, as gains in both area and yields reverse the flat to declining trend of the 1980s and early 1990s. Projected annual coarse grain yield growth of 1.5 percent is slightly slower than the growth achieved during the previous decade. Area growth, at one-half percent per year, is anticipated to be lower than yield growth, but this is a significant change from the generally declining coarse grain area since 1980. Corn and barley production, in particular, respond to higher prices after 2000. Corn production is projected up 2.4 percent per year during the baseline, about the same as growth expected for corn consumption.

Annual growth in foreign coarse grain consumption is projected at near 2 percent through 2005, stronger than during the 1980s, but below the 2.5 percent rate of the 1970s. Corn accounts for the growth, with foreign consumption projected to grow 2.4 percent annually. Most consumption growth is in China, other countries in Asia, Latin America, North Africa, and the Middle East, where livestock output and feed demand are expanding rapidly as incomes rise.

Reversing a decline that began in the early 1980s, world import demand for coarse grains is projected to strengthen in the baseline, with annual growth averaging 3.6 percent from 1995 to 2005. Global coarse grain trade is projected to grow to nearly 124 million tons (excluding intra-

EU trade) by the year 2005, exceeding the record of 107.9 million tons reached in 1980/81. Strong economic growth fuels higher coarse grain imports by China and other countries in Asia, North Africa, and Latin America. The FSU, one of the world's largest importers during the 1980s, is a small net exporter of coarse grains by 2005.

Significant growth in both corn and barley trade is expected. Sorghum trade increases rapidly through 1998 as prices are attractive for Mexico and Japan, then growth slows again until after 2000. Other coarse grain trade remains below 1995 levels throughout the baseline.

Corn trade expands to 90.7 million tons by 2005. The largest gains in corn imports occur in China, other countries in Asia, North Africa, and the Middle East, where demand for feed for livestock continues expanding rapidly. Although Argentina's corn exports will rise, competition from wheat and oilseeds will limit corn area expansion, leaving the United States the major beneficiary of robust import demand for corn.

World demand for malting barley grows rapidly. Much of this demand growth will occur in China, where only malting barley is imported. Growth in imports of feed barley, mainly in Saudi Arabia and the rest of the North Africa/Middle East region, is slowed by constrained supplies and substitution of other feeds. The Uruguay Round agreement limits on EU coarse grain exports will limit exportable supplies of feed barley. Future responses by non-EU, feed barley exporters to expected higher relative prices for competing crops (wheat and canola), and by barley importers to tight barley supplies, will be major factors in the outlook for coarse grain trade.

Growth in per capita incomes boost meat demand and drive projected gains in coarse grain use and trade. Most coarse grain traded is used as feed. Imports of coarse grains for livestock feeding are projected to strengthen dramatically, fueled by strong per capita income growth in China, other countries in Asia, Mexico, South America, the Middle East, and North Africa.

The emergence of China as a large and growing net importer of coarse grains, especially corn and malting barley, is a key development. However, the size and pace of China's future imports are very uncertain because of dependence on policy developments.

Korea and Taiwan remain important coarse grain importers, but import growth is projected to slow. Japan's imports are likely to wane as increasing meat imports reduce domestic demand for feed grains. Nonetheless, Japan remains the largest single importer of coarse grains, mainly corn. Saudi Arabia remains the world's largest barley importer. Uruguay Round limits on EU barley exports, however, will help boost corn imports by Saudi Arabia, as well as in other North African and Middle Eastern countries.

The United States, Argentina, and Eastern Europe expand corn exports, with the United States retaining the largest market share. Argentina becomes the largest U.S. corn export competitor, as exports by China and South Africa decline. But Argentina's export growth is restricted by only slight gains in corn area due to prospects for increasing returns for soybeans, sunflower seed, and wheat. The slow growth in domestic feed demand in Eastern Europe promote corn exports from the region as long as prices remain above the relatively high domestic support prices. EU barley

exports are capped by Uruguay Round limits on subsidized coarse grain exports. With the rapid expansion of Asian beer consumption, Australia's malting barley exports expand. Canadian barley exports slip slightly in the near term, but then rise gradually reflecting gains in malting barley exports.

U.S. exports of coarse grains are projected to grow an average of 6.0 percent annually from 1995 to 2000, slowing to 2.5 percent from 2000 to 2005 as increased nominal prices boost foreign production and high prices for competing crops and the CRP limit U.S. area expansion. By 2000, U.S. coarse grain exports reach 74 million tons with corn exports accounting for 65 million tons. By 2005, U.S. coarse grain exports are projected to increase to 84 million tons, well above the record 71 million tons of 1979/80, with corn accounting for 74 million tons.

The U.S. share of the world coarse grain market is projected to be high, at 67 percent to 70 percent throughout the baseline. Projected market share is only slightly below the 1979/80 record of 72 percent and well above the 58 percent average of 1990-95. The U.S. share of the world corn market in 2005 is projected at 82 percent, compared with the 1990-1995 average of 72 percent.

Competitor coarse grain exports have dropped sharply since the early 1990s, as lower foreign production and sharply lower Chinese exports pulled down foreign market share from a recent high of 53 percent in 1993 to only 40 percent in 1995. Foreign coarse grain exports are projected to rise, particularly after 2000 when import demand and prices strengthen, but still remain below the highs of the early 1990s.

Soybeans and Products

World soybean production is projected to climb 2.1 percent annually to 2005, with faster growth in foreign output, at 2.8 percent per year. But foreign output growth will be sharply slower than during the 1970s (9 percent annually) and 1980s (6 percent), when Brazil and Argentina added large amounts of land to soybean production. Nevertheless, much of the foreign growth in production reflects increases in area. Soybean yields are projected to rise at a modest 1.2 percent annually, slightly below the 1980s, because no major technological breakthroughs that would support rapid yield increases are assumed.

Gains in world soybean meal consumption also are projected to be smaller than in the 1980s, primarily because of weaker demand growth in the FSU, Japan, and the EU. However, strong economic growth in developing economies is projected to partially compensate for those declines and support global consumption growth of about 2 percent annually.

World use of soybean oil is projected to expand at a rate of 2.2 percent annually during 1995-2005, about the same at growth in the 1980s, but much less than the strong 5.3 percent rate of growth achieved during 1990-94. Consumption gains are concentrated in Asia and South America, with little growth anticipated in the Middle East, North Africa, Central America, and the Caribbean. Foreign soybean oil production is projected to rise 2.7 percent annually and reach

17.0 million tons by 2005. Growth in soybean processing in Mexico, Brazil, Argentina, India, and China accounts for most of the projected gains in foreign soybean oil production.

World soybean trade is projected to increase faster during 1995-2005 than during the 1980s, but much more slowly than in the early 1990s. Soybean meal trade growth is projected to be slower than both the 1980s and the early 1990s. Global exports of soybeans and meal rise at annual rates of 1.7 and 1.5 percent during 1995-2005, reaching 37.7 and 37.0 million tons by 2005. Combined exports of soybeans and meal, on a soybean-equivalent basis, are projected at 75.5 million tons by 2000 and 84.0 million tons in 2005.

World vegetable oil trade is projected to grow 2.6 percent annually during 1995-2005, less than the rates achieved in the 1980s and the early 1990s. Soybean oil trade is projected to slow even more than total vegetable oil trade, with projected annual growth of 2.1 percent during 1995-2005, compared with growth of about 9 percent in the early 1990s when trade responded to U.S. and EU subsidies and sharp import gains in developing countries. During 1995-2005, growth in soybean oil trade will be curbed by reduced U.S. export subsidies, negligible oilseed expansion in the EU, and higher relative prices that shift demand toward competing oils.

Both world and U.S. exports of soybean oil are projected to grow faster than exports of soybeans and soybean meal during 1995-2005. With the outlook for continued growth in trade in oil relative to meal, incentives to produce high-oil content oilseeds and palm oil strengthen, particularly after 2000.

Soybeans and Meal

Developing economies likely will account for more than 60 percent of soybean and soybean meal import growth during 1995-2005. Feed demand expands most rapidly in China and the Southeast Asian countries, including the Philippines, Indonesia, Malaysia, and Thailand. Per capita income growth also supports robust gains in the livestock sectors in South America, the Middle East, and North Africa. EU imports are projected to continue to grow, but their share of world soybean and meal imports, on a soybean equivalent basis, drops from 47 percent to 36 percent by 2005.

Continued strong export growth for soybeans and meal is expected from both Brazil and Argentina. India's soybean meal exports likely will rise as production increases faster than domestic consumption, although at a slower rate than in the past.

U.S. exports of soybeans and soybean meal are projected at 25.9 and 6.0 million tons, respectively, in 2005. The U.S. soybean market share is projected to drop from 72 percent to about 68 percent by 2005, while the U.S. share of the soybean meal market shows a little less contraction from 18 percent to 16 percent. These projected U.S. shares contrast with significantly higher shares for soybeans (73 percent) and soybean meal (24 percent) achieved in the 1980s. Rising U.S. livestock numbers, especially poultry, limits U.S. exportable supplies of soybeans and soybean meal.

Soybean Oil

Income growth in China, India, and Pakistan, which together account for more than a third of total world population, is a significant determinant of global vegetable oil trade growth during 1995-2005. Despite high internal prices and import controls in these countries, consumption of vegetable oils expands considerably.

However, soybean oil has a smaller role in global vegetable oil trade because of higher relative market prices compared to other oils, particularly palm oil, reflecting insufficient global soybean oil supplies. Palm oil meets the largest share of consumption growth. Indonesia, a major producer, will consume much of its own palm oil, while China, India, and Pakistan import palm oil because of favorable relative prices and proximity to producers.

Since the projected growth in vegetable oil demand during 1995-2005 is highly dependent on expected economic growth in developing countries, the projections are sensitive to the macroeconomic outlook for these countries. The import projections are also sensitive to assumptions on changes in market access for vegetable oils. India is assumed to maintain its recent tariffication of vegetable oil imports, while no changes in current access policies are anticipated in China and Pakistan. Unanticipated unilateral reforms could have a significant impact on the trade outlook.

The United States, Argentina, Brazil, and the EU continue to account for more than 90 percent of world soybean oil exports. Argentina will remain the largest exporter of soybean oil because of its small domestic market, even though its trade growth slips to only 3 percent per year from nearly 18 percent during the 1980s. Brazil's exportable supplies likely will increase because of continued gains in production. But CAP reform and the U.S.-EU Oilseed Agreement restrain expansion of EU oilseed production and exports.

The U.S. share of the global soybean oil market shows some recovery through 2000, but then slips somewhat through 2005 even though remaining above the 1996 share. The U.S. soybean oil share of world vegetable oil trade is projected to decline. Reduced export subsidies, output gains in other vegetable oils, especially palm oil, and limited growth in domestic soybean oil production restrain the growth in U.S. market share. U.S. soybean oil exports rise to 1.0 million tons by 2005.

Cotton

Both foreign consumption and production growth have slowed to negligible rates during the last 10 years, and while both rebound before 2000, they do not return to their long-term average growth of 2.3 percent per year. The projection for world cotton consumption to expand at an annual rate of approximately 2 percent during 1995-2005 underpins the outlook for a relatively strong rate of import growth. However, a key uncertainty in the projection of global use 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.

Foreign production has stagnated in recent years, as smaller harvests in China and the FSU have 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 remains out of production in the baseline. Pesticide resistance has hampered production in China. Further losses in these regions are not expected, and China's and Central Asia's production resumes growth, although not as quickly as elsewhere.

World cotton trade averages 1.2 percent annual growth during 1995-2005, reversing much of the decline suffered earlier in the 1990s. World cotton trade fell from a peak of 33.4 million bales in 1986 to as low as 25.6 million bales in 1992, in large part due to declining Russian imports. Import growth is foreseen in Russia and elsewhere after 1996 and, by 2005, world exports are projected at about 29.9 million bales.

World trade contracted for two reasons beginning in the late 1980s--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. Restructuring dropped Russia's cotton consumption more than 80 percent between 1989 and 1996. Also through the early 1990s, 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. These imports took the place of imported raw cotton.

With Russian and East European consumption projected to partly rebound, world cotton trade is likely to grow during the next 10 years. Also, pest and disease control problems have severely constrained Pakistan's ability to maintain its earlier growth rates in cotton consumption and textile exports, thus strengthening prospects for raw cotton demand by some cotton-importing textile exporters who will face less competition. Finally, several countries, including Mexico, Brazil, and China, that were sources of cotton exports during the 1980s are growing importers instead. As consumption gains have steadily outpaced production in all three countries, they have begun to drive world trade higher rather than lower as in the past.

Foreign export growth recovers during the baseline, but still remain below the long-term trend. By 2005, foreign exports totals 22.4 million bales. Foreign export growth will be supported by some resumption of trade relations between countries of the FSU, and by growing import demand from China, Latin America, and Southeast Asia.

U.S. exports also trend up during the late 1990s and beyond, growing to 7.5 million bales by 2005. U.S. exports rise 1.1 percent annually during 1995-2005, about the same as world trade. The U.S. share of world trade is likely to average a little more than 25 percent, as many foreign producers reduce raw cotton exports by channeling production toward consumption and value-added textile products.

The rapid world consumption growth of the early 1980s, spurred by prolonged economic expansion and sharp share gains versus other fibers in some markets, does not resume. In the short term, consumption growth in the traditional developed cotton importers is likely to be constrained by relatively sluggish economic performance, and in Russia and elsewhere in the FSU

by economic restructuring. In the long term, the liberalization of textile trade under the Uruguay Round Agreement 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 continues in major cotton producing countries. However, the pace of this structural shift will depend on the implementation of the phaseout of the Multifiber Arrangement. While it is anticipated that the most significant changes will probably be delayed until the end of the implementation period, large uncertainties remain about the timing of liberalization and shifts in garment production both to and among developing countries.

Beef

World beef production increases about 1.5 percent per year through 2005. China has the fastest rate of growth, as demand for beef encourages expansion by producers. Increased demand in the former Soviet Union and Brazil also helps stimulate production. Although U.S. production is remains below 1996 levels through 2005, production in the United States increases in 2000 to 2005. However declining production in the EU, as beef consumption falls and stocks remain high, will dampen the global rate of expansion.

Global per capita consumption of beef is projected to increase through 2005 as meat demand rises in response to income growth, particularly in countries with transition economies or with rapidly industrializing economies. Gains in per capita consumption are expected in most Asian countries. China, South Korea, and Japan will experience consumption gains in excess of population growth, but consumption in other countries in the region will be about equal to population growth. Some growth is expected in Latin America but gains in per capita consumption in Mexico and Brazil will be offset by declines in Argentina's per capita beef consumption. Although per capita beef consumption increases in a number of Central and Eastern European countries, those counties which have delayed liberalizing their economies face a longer period of decline before income growth stimulates beef demand. Russia sees gradual increases in demand for beef, but because of the availability of relatively cheaper pork and poultry, demand for those meats increases more rapidly. Per capita demand in the United States will decline as relative prices favor consumption of other meats. As a result of continuing concerns over BSE, demand for beef in the EU declines in the baseline.

Traded beef, although growing in importance, remains a relatively small portion of global consumption. However, for a number of countries, especially those with increasing incomes and limited agricultural resources, imports' share of consumption has become extremely important. Increasing import demand in areas like the Pacific Rim and in countries such as Russia where production has been adjusting to market forces will mean growth opportunities for exporters. The major exporters will continue to increase production for export, while domestic production in the major importing countries is projected to stagnate, mainly because of the relatively lower cost of imported beef.

Most of the growth in beef and veal imports will come from the Pacific Rim countries where increasing incomes and lower trade barriers will raise consumption beyond that which can be satisfied by their production base. Increases are also expected in Mexico and Russia where

income growth later in the baseline increases demand for beef more rapidly than their domestic production sectors can respond. The proximity of those countries to sources of lower priced imported product (Mexico, to the United States; Russia, to other FSU countries and to Central and Eastern Europe) stimulates increased trade. However, as domestic production catches up with demand later in the period, import growth slows.

Growth in beef exports is projected to slow as subsidized exports by the EU fall, in keeping with commitments under the Uruguay Round. The EU, however, is the only major exporter that shows a decline in beef exports. The United States, Australia, and Argentina are projected to continue to increase export volume through 2005.

Australia and the United States will likely vie for the role of leading exporter of beef and veal. U.S. exports grows the most rapidly because the countries that are projected to have the greatest import growth are markets such as Japan, South Korea, and Mexico which tend to demand grain-fed beef. With increased production and the potential to expand into the growing Pacific Rim markets, Argentina is poised to expand exports and become the fourth largest exporter of beef. Concurrently, cutbacks in subsidized EU exports and a reduction in beef production in New Zealand will limit the expansion of these countries in the growing world beef market.

Pork

World pork production is projected to increase at a slower rate than in previous decades as environmental constraints limit expansion in many areas and large supplies of relatively lower cost poultry provide competition. World pork production increases at an annual rate near 2.8 percent during 1997-2005. Asia and Mexico are the primary growth areas for pork production. More modest production increases are projected in the United States, Canada, the FSU, and Central and Eastern Europe, while production in Japan declines.

Pork consumption is projected to grow about 2.8 percent per year between 1997 and 2005, somewhat slower than during the 1980s. Slower consumption growth is the result of moderate income gains in the developed economies, as well as declining relative prices for meats that easily substitute for pork, particularly poultry. The United States, Canada, and the EU fall into this category.

Stronger demand growth in Asia and Mexico partially offsets the moderate consumption growth in the United States, Canada, the EU, and Japan. Consumption in China increases by more than 3.5 percent annually, while Korean consumption will grow nearly 4 percent annually. Pork demand also grows moderately in Central and Eastern Europe and in the FSU, aided by modest economic growth, lower inflation, and higher disposable incomes.

World pork trade is projected to continue to expand, driven by rising demand in several of the major pork importers, including Mexico, Japan, and Hong Kong. The FSU and Central and Eastern Europe will be a significant, although somewhat variable influence in the world market.

The United States is projected to assume a dominant export role in global pork trade in the baseline, increasing exports by over 30 percent between 1997 and 2005. Factors contributing to robust U.S. growth include competitive exchange rates and an increasingly export-oriented pork production industry. The United States gains market share from Taiwan, whose exportable supplies will be adversely affected by environmental concerns and rising domestic demand. Also, although pork exports from the EU generally rise through the baseline, they remain below levels of the past 10 years and are constrained by limits on export subsidies under the Uruguay Round agreement toward the end of the baseline.

Poultry

World consumption of poultry meat continues to expand. The combination of poultry's low production costs compared with most other meats and projected economic growth in most areas of the world increases the demand for this relatively low cost product. In many developed countries, dietary concerns and health issues such as BSE in the EU, also add to the demand for poultry meat. The United States, the world's largest exporter, benefits from this growth in consumption and trade and maintain or expand its share of world poultry meat exports.

Poultry meat consumption increases about 3.5 percent per year, below the rate of the 1980s, but well above the rate for pork and, particularly for beef. Consumption continues to grow rapidly in Brazil, Mexico, and China, where current levels of use are relatively low. Consumption growth has remained relatively low in many countries, including Japan, Egypt, the FSU, and Central and Eastern Europe (CEE). Poultry consumption in Japan increases slowly while production declines. In Egypt, relatively low incomes and trade policies restricting poultry imports have kept consumption low. In the FSU and CEE, domestic poultry production increases are projected to be small in the near term and gains in consumption will come from imports. Limited buying power continues to restrict poultry imports in many countries. However, as incomes rise, poultry's low relative cost makes it the first choice for protein imports. Countries with relatively high per capita use include Hong Kong, the United States, Canada, and selected countries in the Middle East.

The United States is the largest poultry meat producer, accounting for nearly one quarter of world production in 1996. The next largest exporters are the EU, China, and Brazil. Production in these countries is projected to continue rising as demand expands. The greatest gains are likely to occur in China where production increases sharply in response to growing domestic and export demand.

Global trade in poultry meat is projected to trend upwards at 4 percent per year to over 7 million tons by 2005. This represents a slowing from the high growth rates of the 1980s. Increases in imports are anticipated in all the largest import markets, including China, Japan, Hong Kong, the FSU, Mexico, Canada, and the Middle East.

Much of the growth in world trade will continue to come from larger shipments of low-price poultry parts. This will especially be true in developing markets in what are now middle and lower income countries, such as those in Pacific Rim, the FSU, and CEE. In many cases the

preferred products in these countries are ones with lower values in the United States. Exports of further processed poultry products grow, but are projected to remain a relatively small percentage of total poultry trade.

World trade in poultry products becomes less restricted in the baseline. However, some countries, under pressure from domestic poultry producers, are likely to raise tariffs or use other methods to restrict imports. There is resistance to low-priced leg parts, especially from the United States, as these parts are often priced below the cost of production in the importing country.

Table 33. Coarse Grains Trade Baseline Projections

	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
	Million metric tons									
Importers										
FSU 1/	1.8	1.8	1.9	2.5	3.0	3.2	3.2	3.3	3.4	3.6
Eastern Europe	0.6	0.7	1.1	1.2	1.2	1.3	1.4	1.6	1.8	1.9
Japan	21.0	21.4	21.1	21.1	21.1	21.0	20.8	20.6	20.5	20.3
South Korea	7.9	9.7	10.7	11.3	11.8	12.3	12.7	13.1	13.5	13.8
Taiwan	6.3	6.3	6.7	6.8	6.8	6.9	7.0	7.1	7.2	7.3
China	2.4	4.0	5.3	5.7	6.3	6.9	7.8	8.7	10.0	11.4
Mexico	6.9	7.2	7.9	8.2	8.4	8.8	9.3	10.2	10.9	11.4
European Union 2/	2.9	3.4	2.9	2.9	2.8	2.9	2.8	2.9	2.8	2.9
Latin America 3/	8.6	7.8	8.3	8.4	8.7	8.8	8.9	9.0	9.3	9.5
Other Asia	5.4	6.2	7.0	7.7	8.4	8.9	9.3	9.8	10.3	10.9
N. Africa/M.E.	15.5	17.0	18.3	19.2	20.0	20.5	21.1	21.7	22.4	23.1
Sub-Saharan Africa 4/	1.3	2.2	2.2	2.0	1.9	1.9	1.9	1.9	1.8	1.8
Other foreign 5/	3.5	2.2	2.5	2.5	2.5	2.6	2.6	2.7	2.7	2.8
United States	3.1	2.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Total trade	87.0	92.7	98.7	102.3	105.9	108.7	111.8	115.5	119.6	123.6
Exporters										
European Union 2/	6.6	7.5	9.1	9.2	9.3	9.2	9.2	9.5	10.0	10.2
China	0.6	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3
Argentina	7.4	8.7	7.9	7.9	8.3	8.6	9.2	9.5	10.1	10.3
Australia	3.7	3.2	3.1	2.9	3.1	3.3	3.5	3.7	3.8	4.0
Canada	5.6	4.9	4.4	4.5	4.7	4.8	4.9	5.0	5.0	5.2
South Africa	2.0	1.6	0.8	0.6	0.5	0.4	0.4	0.4	0.4	0.4
Eastern Europe	2.0	0.9	0.9	1.0	1.3	2.0	2.7	3.0	3.5	3.9
FSU 1/	1.2	1.4	1.9	2.2	2.6	3.0	3.2	3.5	3.7	3.9
Other foreign	2.1	1.8	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.5
United States	56.0	62.3	68.6	72.0	74.2	75.5	76.9	79.0	81.2	83.8
	Percent									
U.S. trade share	64.4	67.2	69.5	70.4	70.1	69.4	68.7	68.4	67.9	67.8

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 November 1996 based on policy decisions and other information known at that time.

Table 34. Corn Trade Baseline Projections

	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
	Million metric tons									
Importers										
FSU 1/	0.5	0.8	0.4	0.9	1.1	1.3	1.3	1.2	1.3	1.3
Japan	16.0	16.3	16.0	16.0	16.0	16.0	15.8	15.7	15.6	15.4
South Korea	6.8	9.0	10.3	11.0	11.6	12.0	12.5	12.9	13.2	13.5
Taiwan	6.0	6.0	6.3	6.5	6.5	6.6	6.7	6.8	6.9	6.9
China	0.5	2.0	3.1	3.5	4.1	4.7	5.5	6.4	7.6	8.9
Mexico	4.0	4.2	4.2	4.4	4.4	4.6	4.8	5.4	5.8	6.2
European Union 2/	2.3	2.8	2.3	2.4	2.3	2.3	2.3	2.3	2.3	2.3
Latin America 3/	8.1	7.3	7.7	7.9	8.1	8.2	8.4	8.5	8.7	8.9
N. Africa/M.E.	8.8	9.5	9.9	10.3	10.6	10.8	11.2	11.6	12.0	12.4
Other Asia	5.3	6.2	7.0	7.7	8.3	8.8	9.2	9.7	10.2	10.8
Sub-Saharan Africa 4/	1.2	2.1	2.0	1.8	1.7	1.7	1.7	1.6	1.5	1.5
Other 5/	2.9	1.6	1.9	2.1	2.2	2.2	2.3	2.3	2.4	2.5
Total trade	62.3	67.7	71.3	74.4	76.9	79.2	81.7	84.4	87.4	90.7
Exporters										
European Union 2/	0.4	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
China	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3
Argentina	6.8	8.0	7.4	7.6	8.0	8.3	8.7	9.1	9.6	9.9
South Africa	2.0	1.6	0.8	0.6	0.5	0.4	0.4	0.4	0.4	0.4
Eastern Europe	1.9	0.7	0.6	0.5	0.7	1.4	2.1	2.5	3.0	3.4
FSU 1/	0.1	0.3	0.4	0.5	0.6	0.8	0.9	1.0	1.1	1.1
Other foreign	1.1	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
United States	49.5	55.2	60.3	63.5	65.4	66.7	67.9	69.9	71.8	74.3
	Percent									
U.S. trade share	79.5	81.6	84.6	85.4	85.1	84.2	83.2	82.8	82.1	82.0

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 November 1996 based on policy decisions and other information known at that time.

Table 35. Barley Trade Baseline Projections

	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
					Million metric tons					
Importers										
FSU 1/	0.9	0.6	1.0	1.0	1.0	1.1	1.0	1.1	1.1	1.1
Japan	1.8	1.9	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
South Korea	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Taiwan	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
China	1.5	1.6	1.8	1.8	1.8	1.9	1.9	2.0	2.2	2.3
European Union 2/	0.1	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.3
Latin America 3/	0.8	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5
Algeria	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Saudi Arabia	4.0	4.0	4.4	4.7	5.3	5.5	5.6	5.6	5.7	5.8
Morocco	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Tunisia	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Iran	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3
Iraq	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Turkey	0.1	0.1	0.5	0.6	0.6	0.6	0.7	0.9	1.0	1.1
Other N. Africa/M.E.	1.8	1.8	1.8	1.9	1.9	1.9	2.0	2.0	2.1	2.1
Other foreign 4/	0.7	0.8	1.0	1.1	1.1	1.2	1.2	1.4	1.6	1.7
United States	1.2	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Total trade	13.7	14.2	15.8	16.2	16.9	17.3	17.7	18.3	18.9	19.4
Exporters										
European Union 2/	4.0	5.5	7.2	7.3	7.3	7.3	7.3	7.8	8.1	8.1
Australia	3.3	2.7	2.8	2.7	2.9	3.1	3.3	3.4	3.5	3.7
Canada	3.6	3.1	2.5	2.6	2.8	2.8	2.9	2.9	2.9	3.0
FSU 1/	0.6	0.8	0.8	1.0	1.3	1.4	1.5	1.5	1.7	2.0
Eastern Europe	0.1	0.1	0.2	0.4	0.5	0.5	0.5	0.5	0.4	0.4
Turkey	0.8	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Other foreign	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
United States	0.8	1.3	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
					Percent					
U.S. trade share	5.5	9.2	9.6	9.4	9.0	8.8	8.6	8.3	8.1	7.9

1/ Includes intra-FSU trade.
2/ Excludes intra-EU trade, covers EU-15.
3/ Includes Mexico.
4/ Includes unaccounted.
The projections were completed in November 1996 based on policy decisions and other information known at that time.

Table 36. Wheat Trade Baseline Projections

	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
					Million metric tons					
Importers										
FSU 1/	7.1	7.8	9.0	8.7	8.7	9.0	9.4	9.5	9.1	8.5
China	7.0	9.4	10.7	11.3	11.7	12.2	12.7	13.2	13.9	14.7
Egypt	6.0	6.2	6.7	6.8	6.9	7.0	7.1	7.4	7.8	8.0
Other North Africa 2/	5.0	6.9	7.7	7.7	7.8	8.0	8.2	8.5	8.8	9.1
Sub-Saharan Africa 3/	4.4	5.4	5.5	5.4	5.4	5.3	5.2	5.3	5.3	5.3
Japan	6.3	6.4	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
South Korea	5.0	3.2	3.7	3.3	3.1	2.9	2.8	2.7	2.6	2.6
Iran	3.5	3.6	3.9	3.9	4.1	4.3	4.6	4.8	5.1	5.4
Brazil	5.2	5.9	6.2	6.2	6.3	6.3	6.3	6.3	6.4	6.5
Indonesia	4.0	4.2	4.5	4.7	5.0	5.3	5.6	6.0	6.4	6.8
Pakistan	2.2	2.5	2.7	2.7	2.8	3.0	3.0	3.1	3.3	3.5
Mexico	1.8	1.6	1.7	1.8	1.8	1.8	1.9	2.0	2.0	2.1
Other	32.6	33.6	34.6	35.8	36.7	37.3	38.0	39.0	39.9	41.0
Total trade	90.1	96.8	103.1	104.8	106.6	108.7	111.3	114.1	117.0	119.7
Exporters										
United States	25.5	29.9	34.7	35.4	36.7	37.4	38.1	39.5	40.1	40.8
European Union 4/	14.0	18.2	18.1	17.1	16.2	16.6	17.7	18.6	19.9	21.4
Canada	19.0	18.3	18.1	18.2	18.3	18.4	18.4	18.4	18.6	18.6
Australia	14.5	13.9	14.8	14.9	14.9	15.2	15.4	15.6	15.9	16.0
Argentina	9.5	8.3	8.1	9.0	9.4	9.7	10.0	10.1	10.5	10.6
FSU 1/	4.0	4.8	5.4	5.5	5.5	5.5	5.5	5.8	5.8	5.8
Central/East Europe	0.8	1.4	2.1	2.8	3.1	3.6	3.8	3.7	3.9	4.0
Other	2.8	1.9	1.8	2.0	2.4	2.3	2.3	2.4	2.4	2.4
					Percent					
U.S. trade share	28.3	30.9	33.7	33.8	34.5	34.4	34.2	34.6	34.3	34.1

1/ Includes intra-FSU trade.
2/ Excludes Libya.
3/ Includes South Africa.
4/ Excludes intra-EU trade, covers EU-15.
The projections were completed in November 1996 based on policy decisions and other information known at that time.

Table 37. Rice Trade Baseline Projections

	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
					Million metric tons					
Importers										
Canada	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Mexico	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
C America/Caribbean	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.3	1.3
Brazil	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5
Other South America	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.8	0.8	0.9
European Union 1/	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6
FSU 2/	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Other Europe 3/	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
China	1.0	1.1	1.3	1.3	1.3	1.4	1.4	1.5	1.5	1.5
Japan	0.6	0.6	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8
South Korea	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Indonesia	1.5	1.2	1.1	0.9	0.9	0.8	0.8	0.8	0.8	0.8
Malaysia	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Philippines	0.3	0.7	0.7	0.7	0.7	0.8	0.8	0.9	0.9	1.0
Other Asia	1.7	1.9	1.9	2.1	2.1	2.3	2.4	2.4	2.5	2.5
Iraq	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6
Iran	1.0	1.0	1.1	1.1	1.1	1.2	1.3	1.4	1.4	1.5
Saudi Arabia	0.8	0.7	0.7	0.8	0.8	0.8	0.8	0.9	0.9	0.9
Turkey	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4
Other N Afr & M East	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.0	1.0
Sub-Saharan Africa	3.0	3.1	3.0	2.9	2.9	2.8	2.8	2.8	2.8	2.8
Rep South Africa	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6
Total foreign	16.6	17.4	17.8	17.9	18.3	18.7	19.3	19.8	20.2	20.7
Unaccounted	1.5									
United States	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4
World	18.4	17.7	18.0	18.2	18.6	19.1	19.6	20.1	20.6	21.1
Exporters										
Australia	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Argentina	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6
Other South America	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
European Union 1/	0.6	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
China	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4
India	3.0	2.6	2.6	2.6	2.6	2.7	2.8	3.0	3.1	3.2
Pakistan	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6
Burma	0.5	0.6	0.8	0.8	0.8	0.9	1.1	1.2	1.3	1.5
Thailand	5.5	5.7	5.9	6.0	6.2	6.3	6.4	6.5	6.6	6.8
Vietnam	2.8	2.7	2.7	2.8	2.9	3.0	3.0	3.0	3.0	3.0
Total foreign	16.1	15.6	16.0	16.2	16.5	17.1	17.5	18.1	18.5	19.1
United States	2.3	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
World	18.4	17.7	18.0	18.2	18.6	19.1	19.6	20.1	20.6	21.1
					Percent					
U.S. trade share	12.5	11.7	11.3	11.2	10.9	10.6	10.4	10.1	9.9	9.6

1/ Excludes intra-EU trade, covers EU-15.
2/ Includes intra-FSU trade.
3/ Other Western Europe and Eastern Europe.
The projections were completed in November 1996 based on policy decisions and other information known at that time.

Table 38. All Cotton Trade Baseline Projections

	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
					Million 480-lb. bales					
Importers										
European Union 1/	4.4	4.3	4.4	4.2	4.1	4.1	3.9	3.9	3.8	3.8
FSU 2/	1.7	2.0	2.1	2.4	2.6	2.8	3.0	3.1	3.3	3.4
Indonesia	2.2	2.3	2.3	2.4	2.5	2.5	2.6	2.7	2.8	2.8
Thailand	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.6
Brazil	2.3	2.7	2.7	2.8	2.7	2.6	2.7	2.8	2.9	3.0
East Europe	1.5	1.5	1.6	1.6	1.7	1.7	1.8	1.8	1.9	1.9
Other Asia	1.3	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.7
Japan	1.4	1.3	1.3	1.2	1.1	1.1	1.0	0.9	0.9	0.8
South Korea	1.5	1.4	1.4	1.4	1.4	1.3	1.3	1.2	1.2	1.2
China	1.7	1.6	1.6	1.6	1.8	2.0	2.1	2.2	2.3	2.3
Mexico	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8
Others	6.0	6.5	6.5	6.6	6.7	6.7	6.8	6.7	6.7	6.8
Total imports	26.5	27.0	27.4	27.8	28.2	28.6	29.0	29.4	29.8	30.2
Exporters										
FSU 2/	6.9	7.1	7.2	7.2	7.2	7.1	7.1	7.0	7.2	7.1
West Africa-10	3.1	3.1	3.2	3.2	3.3	3.4	3.4	3.5	3.5	3.6
Australia	2.2	2.3	2.3	2.4	2.4	2.5	2.5	2.5	2.5	2.5
Argentina	1.5	1.4	1.3	1.2	1.2	1.3	1.3	1.3	1.4	1.4
Pakistan	0.6	0.8	1.1	1.2	1.0	1.1	1.2	1.4	1.4	1.5
India	0.9	0.3	0.2	0.0	0.1	0.1	0.2	0.3	0.3	0.4
China	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Turkey	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4
Egypt	0.4	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Other Latin America	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Other Sub-Saharan Africa	1.1	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.1	1.1
Others	2.6	2.4	2.1	2.4	2.5	2.7	2.7	2.7	2.6	2.6
Total foreign	20.5	19.9	20.1	20.4	20.8	21.2	21.5	21.8	22.1	22.4
United States	5.8	6.8	7.0	7.1	7.1	7.1	7.2	7.3	7.4	7.5
Total exports	26.3	26.7	27.1	27.5	27.9	28.3	28.7	29.1	29.5	29.9
					Percent					
U.S. trade share	22.0	25.5	25.8	25.8	25.5	25.2	25.2	25.2	25.2	25.2

1/ Includes intra-EU trade, covers EU-15.
2/ Includes intra-FSU trade.
Note: Imports exceed exports by 300,000 bales each year due to differences in countries' reported statistics. The projections were completed in November 1996 based on policy decisions and other information known at that time.

Table 39. Soybean Trade Baseline Projections

	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
					Million metric tons					
Importers										
European Union 1/	13.9	13.8	13.7	13.7	13.6	13.6	13.6	13.6	13.6	13.5
Japan	4.9	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.6
South Korea	1.4	1.4	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4
Taiwan	2.5	2.6	2.6	2.7	2.8	2.8	2.9	2.9	2.9	3.0
Mexico	2.6	2.7	3.0	3.1	3.2	3.4	3.5	3.7	3.8	4.0
FSU 2/	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
Eastern Europe	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4
China	1.0	1.2	1.2	1.4	1.7	2.1	2.5	2.9	3.2	3.5
Malaysia	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.9	1.0	1.0
Indonesia	0.6	0.5	0.4	0.5	0.6	0.6	0.6	0.7	0.7	0.7
Other	4.5	4.5	4.7	5.0	5.1	5.2	5.3	5.4	5.5	5.6
Total trade	32.4	32.5	32.8	33.5	34.1	34.9	35.7	36.4	37.1	37.7
Exporters										
United States	23.7	23.4	23.7	24.2	24.5	24.8	25.0	25.3	25.6	25.9
Argentina	2.3	2.7	2.7	2.7	2.8	3.0	3.2	3.3	3.4	3.5
Brazil	3.5	3.6	3.7	3.8	4.0	4.2	4.4	4.7	4.9	5.1
China	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Other	2.9	2.6	2.6	2.6	2.7	2.8	2.9	3.0	3.1	3.2
Total trade	32.7	32.5	32.8	33.5	34.1	34.9	35.7	36.4	37.1	37.7
					Percent					
U.S. trade share	72.5	72.0	72.1	72.2	71.8	71.0	70.2	69.6	69.0	68.5

1/ Includes intra-EU trade, covers EU-15.
2/ Includes intra-FSU trade.
The projections were completed in November 1996 based on policy decisions and other information known at that time.

Table 40. Soybean Meal Trade Baseline Projections

	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
					Million metric tons					
Importers										
European Union 1/	16.1	14.0	14.0	13.9	13.8	13.7	13.6	13.6	13.5	13.5
FSU 2/	0.4	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8
Eastern Europe	1.9	2.1	2.1	2.1	2.2	2.3	2.4	2.5	2.6	2.7
Canada	0.7	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Japan	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
China	1.6	1.5	1.7	1.8	1.9	2.1	2.3	2.5	2.7	2.9
Southeast Asia	3.5	3.7	4.0	4.1	4.3	4.5	4.8	5.0	5.3	5.5
Latin America	2.6	2.7	2.8	3.0	3.0	3.1	3.2	3.3	3.4	3.5
M. East & N. Africa	3.2	3.4	3.5	3.7	3.7	3.8	3.9	4.0	4.1	4.3
Other	1.7	1.6	1.6	1.9	2.0	2.2	2.3	2.4	2.4	2.5
Total trade	32.4	31.0	31.8	32.5	33.1	33.9	34.6	35.3	36.2	37.0
Exporters										
United States	5.7	5.7	5.8	5.8	5.8	5.8	5.9	5.9	5.9	6.0
Argentina	8.2	8.4	8.5	8.7	8.9	9.1	9.3	9.5	9.7	9.9
Brazil	11.4	11.8	12.3	12.7	13.0	13.4	13.7	14.0	14.4	14.8
India	2.3	2.7	2.8	2.9	3.0	3.1	3.3	3.5	3.6	3.8
China	0.1	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
European Union 1/	3.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Other	1.5	1.6	1.6	1.7	1.7	1.8	1.8	1.8	1.9	1.9
Total trade	32.6	31.0	31.8	32.5	33.1	33.9	34.6	35.3	36.2	37.0
					Percent					
U.S. trade share	17.5	18.4	18.1	17.8	17.5	17.2	16.9	16.7	16.4	16.2

1/ Includes intra-EU trade, covers EU-15.
2/ Includes intra-FSU trade.
The projections were completed in November 1996 based on policy decisions and other information known at that time.

Table 41. Soybean Oil Trade Baseline Projections

	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
				Million metric tons						
Importers										
European Union 1/	0.6	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
China	1.5	1.6	1.6	1.6	1.7	1.7	1.8	1.9	1.9	1.9
Other Asia	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.3	1.3
Latin America	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.1
M. East & N. Africa	1.1	1.3	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.5
FSU & Eastern Europe 2/	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Other	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3
Total trade	5.5	5.2	5.4	5.6	5.7	5.9	6.0	6.2	6.3	6.5
Exporters										
United States	0.8	0.9	1.0	1.0	1.1	1.1	1.1	1.0	1.0	1.0
Argentina	1.7	1.7	1.7	1.8	1.9	1.9	2.0	2.1	2.1	2.2
Brazil	1.5	1.6	1.7	1.7	1.8	1.8	1.9	1.9	2.0	2.0
European Union 1/	1.1	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.6
Other	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7
Total trade	5.7	5.2	5.4	5.6	5.7	5.9	6.0	6.2	6.3	6.5
				Percent						
U.S. trade share	13.9	16.9	18.0	18.6	18.6	18.1	17.5	16.8	16.3	15.7

1/ Includes intra-EU trade, covers EU-15.
2/ Includes intra-FSU trade.
The projections were completed in November 1996 based on policy decisions and other information known at that time.

Table 42. Beef Trade Baseline Projections

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
				Thousand metric tons, carcass weight						
Importers										
United States	968	930	1,090	1,131	1,154	1,177	1,196	1,214	1,235	1,255
Japan	957	985	1,031	1,075	1,093	1,118	1,141	1,166	1,188	1,211
South Korea	218	240	299	333	362	394	423	454	483	512
Taiwan	67	69	76	83	87	92	97	103	109	115
European Union 1/	375	364	350	350	350	350	350	350	350	350
Russia	610	625	590	495	507	553	610	642	653	660
Eastern Europe	65	93	108	108	112	118	120	124	128	132
Mexico	75	110	150	185	215	220	228	237	244	267
Canada	235	200	181	177	174	170	167	163	160	157
Major Importers	3,570	3,616	3,875	3,937	4,054	4,192	4,332	4,453	4,550	4,659
Exporters										
United States	871	1,010	971	1,054	1,106	1,148	1,190	1,237	1,280	1,339
Australia	1,097	1,155	1,197	1,220	1,256	1,276	1,284	1,287	1,302	1,316
New Zealand	505	490	500	499	494	490	490	490	490	489
European Union 1/	578	677	938	877	817	817	817	817	817	817
Eastern Europe	122	118	121	152	155	155	166	181	199	219
Ukraine	170	160	160	167	180	195	209	222	234	247
Argentina	450	480	465	475	473	482	490	506	516	527
Brazil	315	360	340	347	363	370	376	382	393	403
Canada	260	310	287	308	317	322	327	330	333	336
Major Exporters	4,368	4,760	4,979	5,099	5,161	5,255	5,349	5,452	5,564	5,693

1/ Excludes intra-EU trade, covers EU-15.
The projections were completed in November 1996 based on policy decisions and other information known at that time.

Table 43. Pork Trade Baseline Projections

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	Thousand metric tons, carcass weight									
Importers										
United States	279	274	274	272	271	270	267	262	258	254
Japan	822	857	906	950	993	1,034	1,058	1,081	1,104	1,126
Hong Kong	175	189	227	232	236	239	242	245	248	250
South Korea	45	75	72	74	75	75	76	77	78	78
Russia	545	565	550	551	539	538	531	526	515	502
Mexico	30	55	72	78	80	91	92	86	111	124
Canada	50	50	61	62	63	64	65	66	67	67
Major Importers	1,946	2,065	2,162	2,219	2,257	2,311	2,331	2,343	2,381	2,401
Exporters										
United States	412	483	490	495	508	533	558	583	608	633
Canada	340	360	409	420	426	429	432	436	440	443
European Union 1/	611	561	572	575	583	591	599	603	603	603
Eastern Europe	197	238	248	256	266	273	242	224	220	216
Taiwan	362	360	353	346	339	332	325	319	313	306
China	250	250	250	250	250	250	250	252	253	256
Major Exporters	2,172	2,252	2,322	2,342	2,372	2,408	2,406	2,417	2,437	2,457

1/ Excludes intra-EU trade, covers EU-15.
The projections were completed in November 1996 based on policy decisions and other information known at that time.

Table 44. Poultry Trade Baseline Projections

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
				Thousand metric tons, ready to cook						
Importers										
Russia	950	975	980	981	1,009	1,027	1,031	1,037	1,040	1,043
European Union 1/	207	214	214	208	194	150	150	150	150	150
Japan	534	534	587	609	639	667	689	711	733	755
Hong Kong	800	920	948	976	1,005	1,035	1,067	1,099	1,131	1,165
China	750	900	961	1,026	1,169	1,248	1,248	1,332	1,422	1,518
South Korea	42	44	40	43	48	52	55	59	61	65
Saudi Arabia	297	247	228	215	209	225	238	250	260	270
Egypt	2	5	0	0	6	14	24	32	42	49
Mexico	172	190	200	208	211	213	214	218	221	225
Canada	72	75	81	83	84	85	87	88	89	90
Major Importers	3,826	4,104	4,239	4,349	4,574	4,716	4,803	4,976	5,149	5,330
Exporters										
United States	2,399	2,641	2,719	2,838	3,013	3,202	3,309	3,416	3,525	3,640
Brazil	530	580	655	681	697	723	763	805	854	901
European Union 1/	888	908	650	650	650	650	650	650	650	650
Hungary	100	110	104	96	74	63	77	92	99	106
China	450	600	625	642	670	702	740	779	823	869
Hong Kong	550	660	690	720	750	780	810	845	876	910
Thailand	169	167	180	168	165	163	164	168	168	168
Saudi Arabia	20	35	34	38	42	46	50	55	61	67
Major Exporters	5,106	5,701	5,657	5,833	6,061	6,329	6,563	6,810	7,056	7,311

1/ Excludes intra-EU trade, covers EU-15.
The projections were completed in November 1996 based on policy decisions and other information known at that time.

Farm Income and Farm Financial Conditions

Net cash income is projected to fall through 1998, and then begin increasing annually through the rest of the baseline. Net cash income climbs at an average rate of 2.6 percent rate from 1998 to 2005. Although net cash income increases, it averages $52.2 billion for 1998 to 2005, below the average of $53.1 billion per year for the previous 8 years. By 2005, net cash income climbs to $57.2 billion, just under the 1996 level of $57.4 billion. In real dollars, net cash income stabilizes after 1998.

Net farm income follows the same pattern as net cash income. Net farm income reaches a trough in 1998 and then rises through the rest of the baseline. Net farm income averages $41.1 billion for 1998 to 2005, below the average of $43.8 billion for 1990 to 1997. Real net farm income is relatively constant after 1998.

Gross cash income rises annually from 1998 through 2005, with larger gains beyond 2000. Changes in commodity production and prices are the principal generators of changes in gross cash income since cash receipts from farm marketings are the dominant component of gross cash income.

From 1998 to 2005 both crop and livestock receipts grow steadily. Crop receipts increase an average of $3.8 billion per year and livestock receipts increase $1.9 billion annually. The faster rate of increase in crop receipts is due to a rise in the number of planted acres, and rising crop prices that result from tighter stock-to-use ratios.

Government payments generally decline through 2002 under the new farm law and then stay

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Timing of Government Payments Under the 1996 Farm Act

Under the 1996 Farm Act, production flexibility contract payments are paid to farmers on a fiscal year basis. A fiscal year starts on October 1 and runs through the following September 30. For example, fiscal 1997 started on October 1, 1996 and will end on September 30, 1997. The production flexibility contract payments range from over $6 billion in fiscal 1997 to $4 billion in fiscal 2002. However, because of options given to farmers regarding when they receive part of these payments within each fiscal year, there is uncertainty in projecting the timing of those payments for calendar year farm income.

Under the 1996 Farm Act, farmers can choose to receive half of each fiscal year production flexibility contract payment in either December or January, thus spanning 2 calendar years. In these baseline projections, it is assumed that 50 percent of each fiscal year's initial payments is in December and 50 percent is in January. In some years, however, farmers may choose to alter the timing of these payments in order to lower their taxable incomes and tax bills. For example, since many grain farmers had strong receipts in 1996, they may decide to defer their first fiscal 1997 payments until January 1997 in order to lower their 1996 tax bills. This shift of Government payments from 1996 to 1997 would lower farm income for calendar year 1996 while raising 1997 farm income.

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nearly constant. Almost all Government payments are production flexibility contract payments or Conservation Reserve Program (CRP) payments. The 1996 Farm Act replaces deficiency payments that were linked to plantings and prices of eligible commodities with production flexibility contract payments that are preset through 2002. The baseline assumes that production flexibility contracts payments continue at their 2002 levels beyond the expiration of the 1996 Farm Act. CRP enrollment is nearly flat after 2000, so CRP payments are relatively constant in those years. Beyond 2000, direct Government payments account for less than 3 percent of gross cash income, the lowest share since 1982. Thus, the farm sector increasingly relies on the marketplace for its income.

Total cash expenses grow moderately to 2000, resulting from reductions in purchased feed expenditures in 1998 and 1999 and only a small increase in 2000, as well as a reduction in purchased livestock expenditures in 1999. Falling prices of feed and feeder livestock cause the reduction in these expenditures. These decreases are partly offset by expenses related to the establishment of permanent vegetative cover on new CRP land.

After 2000, growth in cash expenses remains between 2.6 percent and 2.8 percent per year. Expenditures for net rent to nonoperator landlords, manufactured inputs, and labor are projected to increase at the fastest rates. The rise in net rent to nonoperator landlords primarily results from increasing crop prices. Manufactured expenses rise primarily as a result of price rises for petroleum based inputs. Labor costs escalate due to wage increases near the inflation rate as well as increased labor use as the sector expands. Interest expenses are projected to increase at the slowest rate, 0.5 percent annually, as the prime interest rate edges downward.

Farm business asset values rise slowly in the baseline, mostly reflecting increases in the value of nonreal estate assets. Gains in the value of farm real estate are small as the price of farmland responds to income reductions from the record 1996 levels followed by moderate growth in net cash income for the rest of the baseline. Farm debt grows at a very modest rate, reducing debt-to-asset ratios to below 15 percent, levels not seen since 1962. Thus, farm operators' use of credit is not likely to place excessive demands on their ability to service debt. With larger increases in farm asset than farm debt, farm equity generally rises in the baseline.

Table 45. Farm receipts, expenses, and incomes in nominal dollars

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
						Billion dollars					
Cash receipts:											
Crops	98.9	108.3	101.5	101.8	104.0	107.7	112.3	116.3	120.3	124.9	128.7
Livestock & products	86.8	92.0	92.1	92.7	92.8	95.0	97.2	99.0	101.3	103.6	105.8
All commodities	185.8	200.4	193.7	194.5	196.8	202.7	209.5	215.3	221.7	228.5	234.5
Farm-related income	10.9	11.2	11.4	11.7	11.9	12.2	12.5	12.8	13.1	13.3	13.7
Government payments	7.3	7.8	7.6	7.7	7.7	7.1	6.3	6.1	6.1	6.1	6.1
Gross cash income	203.9	219.4	212.7	213.9	216.4	222.0	228.3	234.2	240.9	247.9	254.3
Cash expenses	155.1	162.0	161.9	166.1	168.3	172.2	176.9	181.7	186.4	191.7	197.1
Net cash income	48.8	57.4	50.8	47.8	48.1	49.8	51.4	52.6	54.4	56.2	57.2
Value of inventory change	-3.4	4.9	0.5	-1.4	0.2	0.7	0.9	0.7	0.3	0.4	0.5
Non-money income	9.9	10.5	11.1	11.1	11.3	11.5	11.6	11.8	12.0	12.0	12.1
Gross farm income	210.4	234.8	224.2	223.6	227.9	234.1	240.8	246.7	253.2	260.4	266.9
Noncash expenses	15.7	16.2	16.9	16.8	17.2	17.6	17.9	18.2	18.6	18.6	18.7
Operator dwelling expenses	4.8	4.9	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.2	5.2
Total production expenses	175.6	183.1	183.8	187.9	190.6	194.9	199.9	205.0	210.2	215.5	221.0
Net farm income	34.8	51.8	40.4	35.7	37.4	39.3	40.9	41.7	43.0	44.9	45.9
Farm assets	978.0	1,035.3	1,094.1	1,110.9	1,111.1	1,115.7	1,121.4	1,128.7	1,135.7	1,143.0	1,148.7
Farm debt	150.8	155.3	159.0	162.6	163.3	163.9	164.6	166.1	166.7	167.6	169.3
Farm equity	827.2	880.0	935.1	948.3	947.8	951.8	956.7	962.6	969.0	975.4	979.5
						Percent					
Debt/equity ratio	18.2	17.6	17.0	17.1	17.2	17.2	17.2	17.3	17.2	17.2	17.3
Debt/assets ratio	15.4	15.0	14.5	14.6	14.7	14.7	14.7	14.7	14.7	14.7	14.7

Table 46. Farm receipts, expenses, and incomes in 1987 dollars

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
						Billion 1987 dollars					
Cash receipts:											
Crops	76.4	81.8	74.7	72.8	72.2	72.6	73.4	73.8	74.1	74.6	74.6
Livestock & products	67.1	69.5	67.7	66.3	64.5	64.0	63.5	62.8	62.4	61.9	61.3
All commodities	143.4	151.3	142.4	139.0	136.7	136.6	137.0	136.5	136.5	136.5	135.9
Farm-related income	8.4	8.5	8.4	8.4	8.3	8.2	8.2	8.1	8.0	8.0	7.9
Government payments	5.6	5.9	5.6	5.5	5.3	4.8	4.1	3.9	3.8	3.7	3.5
Gross cash income	157.4	165.7	156.4	152.9	150.3	149.6	149.2	148.5	148.3	148.1	147.3
Cash expenses	119.8	122.3	119.0	118.7	116.9	116.1	115.6	115.2	114.8	114.5	114.2
Net cash income	37.6	43.4	37.3	34.2	33.4	33.6	33.6	33.3	33.5	33.6	33.1
Value of inventory change	-2.6	3.7	0.4	-1.0	0.2	0.5	0.6	0.4	0.2	0.3	0.3
Non-money income	7.6	7.9	8.2	7.9	7.8	7.7	7.6	7.5	7.4	7.2	7.0
Gross farm income	162.4	177.4	164.9	159.8	158.3	157.8	157.4	156.4	155.9	155.6	154.6
Noncash expenses	12.1	12.2	12.4	12.0	11.9	11.9	11.7	11.5	11.4	11.1	10.8
Operator dwelling expenses	3.7	3.7	3.7	3.6	3.5	3.4	3.3	3.3	3.2	3.1	3.0
Total expenses	135.6	138.3	135.2	134.3	132.3	131.4	130.7	130.0	129.4	128.7	128.0
Net farm income	26.9	39.1	29.7	25.5	26.0	26.5	26.7	26.4	26.5	26.8	26.6
Farm assets	755.1	781.9	804.6	794.1	771.6	752.0	733.1	715.8	699.4	682.9	665.5
Farm debt	116.4	117.3	116.9	116.2	113.4	110.5	107.6	105.4	102.7	100.1	98.1
Farm equity	638.7	664.6	687.6	677.8	658.2	641.6	625.5	610.4	596.7	582.7	567.5

Nominal dollar values divided by the GDP deflator.

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 2.4 percent from 1995 to 2005. This compares to a 3.1-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 for prices for food away from home, which contain a large service component, are being held down by competition in the food industry. A slowdown in away-from-home sales holds the increase to a 2.4 percent average rise from 1995 to 2005. Prices for food at home also rise about 2.4 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 and other prepared foods. 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 close 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 almost half of total food expenditures by 2005. Growth in expenditures for food eaten away from home will average 4.1 percent a year while expenditures for food at home will rise 3.6 percent annually.

Biases in the CPI and Implications for Food at Home

The Advisory Commission to Study the Consumer Price Index presented its Final Report to the Senate Finance Committee in December 1996. The report asserted that the CPI overstated changes in the cost of living, that persistent and large overstatements had existed since the 1970s, and that the best estimate of the historic overstatement is 1.1 percentage points per year, adjusted for changes already made in the index. The Commission found four sources of bias:

- **Substitution bias**--lags in adjusting to changes in consumer expenditure patterns, particularly in response to changes in relative prices;

- **New product/quality improvement bias**--failure to account for quality improvements associated with new products;

- **Outlet bias**--failure to account for the price effects of changes in retailing as the CPI only includes price changes within outlets, but does not include price differences across outlets; and

- **Formula bias**--inappropriate aggregation of price changes at the lowest level of the index, observations of actual items at outlets.

The Commission ascribed somewhat more than one-half of the overall bias in the total CPI to new product bias, a problem that is very difficult and time-consuming to deal with. However, the bias in the food at home CPI is somewhat higher than for all items, probably closer to 1.9 percentage points per year, and is primarily due to the other three sources of bias. The Bureau of Labor Statistics (BLS), which publishes the CPI and has produced much of the research identifying the sources of bias, is introducing changes which will have a noticeable effect on the food at home CPI.

In January 1995, BLS introduced a technical change in the way new price observations are introduced to the index--about 20 percent of surveyed outlets are changed each year. The change removes a subtle bias that attached too much importance to items whose prices were rising and not enough importance to items whose prices were falling. The likely effect on the food at home CPI is to reduce its growth by 0.40 percentage points per year, starting in 1996.

BLS also began publishing experimental versions of the index, aimed at better handling other formula bias issues. The experimental indexes appear to reduce growth in the overall CPI by 0.25 percentage points per year, growth in the food at home CPI by 0.7 percentage points per year, and growth in the fresh fruit and vegetable index by 4.5 percentage points per year. The agency will begin publishing the experimental series in early 1997, and there is a good chance the new approach will be included in the official CPI by 1998.

Additional steps could be taken to handle substitution bias in the CPI, but that would require additional funding to substantially expand annual household consumption surveys. Further, the adjusted index would be published with a lag of up to 1 year compared to the present index. Because of the expense and the publication time lag, such steps are less likely.

Outlet bias has been estimated to have added 0.25 percentage points to the food at home CPI over the last decade. However, this estimate may not hold for the future if structural change toward larger and lower priced food stores, an important trend of the last 10 years, does not continue.

In sum, this year's food at home CPI is likely to grow 0.40 percentage points less than the unadjusted index would have. The experimental version of the at home index, which also includes the 1995 adjustment, is likely to grow 1.10 percentage points more slowly than an unadjusted index.

Table 47. Consumer food price indexes and food expenditures baseline

CPI category	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Consumer price indexes:						*1982-84=100*						
All food	144.3	148.4	153.3	156.5	159.2	163.7	167.6	171.8	175.9	180.1	184.5	188.9
Food away from home	145.7	149.0	152.7	156.6	160.2	164.0	168.2	172.4	176.8	181.0	185.3	189.8
Food at home	144.1	148.8	154.3	157.1	159.2	164.2	167.9	172.1	176.1	180.2	184.7	189.2
Meats	135.4	135.5	140.2	141.7	139.9	145.3	144.9	146.6	147.4	148.8	151.1	153.0
Beef and veal	136.0	134.9	134.5	136.0	136.5	144.9	145.0	147.0	147.5	148.7	151.2	153.4
Pork	133.9	134.8	148.2	150.0	142.8	140.4	139.0	139.9	141.4	143.2	144.7	146.1
Other meats	137.0	139.0	144.0	145.0	145.5	154.4	154.5	156.6	157.1	158.5	161.1	163.4
Poultry	141.5	143.5	152.4	151.0	145.2	155.3	155.8	158.2	158.6	159.9	162.4	164.8
Fish and seafood	163.7	171.6	173.1	179.5	186.0	192.5	199.2	206.2	213.4	220.9	228.6	236.6
Eggs	114.3	120.5	142.1	137.0	138.6	141.4	144.5	146.9	149.4	151.6	153.9	156.3
Dairy products	131.7	132.8	142.1	144.5	143.9	145.9	149.0	152.6	155.1	158.3	161.5	164.5
Fats and oils	133.5	137.3	140.5	143.6	146.1	149.5	153.5	157.7	162.7	168.5	174.7	181.1
Fruits and vegetables	165.0	177.7	183.9	186.4	193.2	199.4	206.5	212.7	219.7	226.1	233.0	239.4
Sugar and sweets	135.2	137.5	143.7	147.0	149.7	153.0	156.6	160.2	164.0	167.6	171.3	175.2
Cereals and bakery products	163.0	167.5	174.0	180.0	184.1	189.6	195.7	201.9	208.4	214.7	221.3	227.8
Nonalcoholic beverages	123.2	131.7	128.6	131.8	135.1	138.5	142.0	145.6	149.2	152.9	156.7	160.6
Other prepared foods	147.5	151.1	156.2	161.0	165.5	170.3	175.6	180.9	186.5	191.9	197.4	203.2
Food expenditures:						*Billion dollars*						
All food	641.2	665.4	680.1	708.0	731.5	762.0	793.5	826.0	859.6	893.8	929.8	966.8
Food at home	348.4	358.5	371.4	385.2	394.8	410.6	426.1	442.1	458.2	474.8	492.5	510.1
Food away from home	292.8	306.9	308.7	322.8	336.7	351.4	367.4	383.9	401.4	419.0	437.3	456.7

Table 48. Changes in consumer food prices, baseline

CPI category	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
						Percent						
All food	2.4	2.8	3.3	2.1	1.7	2.8	2.4	2.5	2.4	2.4	2.4	2.4
Food away from home	1.7	2.3	2.5	2.6	2.3	2.4	2.6	2.5	2.6	2.4	2.4	2.4
Food at home	2.9	3.3	3.7	1.8	1.3	3.1	2.3	2.5	2.3	2.3	2.5	2.4
Meats	0.6	0.1	3.5	1.1	-1.3	3.9	-0.3	1.2	0.5	0.9	1.5	1.3
Beef and veal	-0.8	-0.8	-0.3	1.1	0.4	6.2	0.1	1.4	0.3	0.8	1.7	1.5
Pork	1.7	0.7	9.9	1.2	-4.8	-1.7	-1.0	0.6	1.1	1.3	1.0	1.0
Other meats	2.4	1.5	3.6	0.7	0.3	6.1	0.1	1.4	0.3	0.9	1.6	1.4
Poultry	3.4	1.4	6.2	-0.9	-3.8	7.0	0.3	1.5	0.3	0.8	1.6	1.5
Fish and seafood	4.5	4.8	0.9	3.7	3.6	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Eggs	-2.4	5.4	17.9	-3.6	1.2	2.0	2.2	1.7	1.7	1.5	1.5	1.6
Dairy products	1.8	0.8	7.0	1.7	-0.4	1.4	2.1	2.4	1.6	2.1	2.0	1.9
Fats and oils	2.7	2.8	2.3	2.2	1.7	2.3	2.7	2.7	3.2	3.6	3.7	3.7
Fruits and vegetables	3.8	7.7	3.5	1.4	3.6	3.2	3.6	3.0	3.3	2.9	3.1	2.7
Sugar and sweets	1.3	1.7	4.5	2.3	1.8	2.2	2.4	2.3	2.4	2.2	2.2	2.3
Cereals and bakery products	4.1	2.8	3.9	3.4	2.3	3.0	3.2	3.2	3.2	3.0	3.1	2.9
Nonalcoholic beverages	7.5	6.9	-2.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Other prepared foods	2.6	2.4	3.4	3.1	2.8	2.9	3.1	3.0	3.1	2.9	2.9	2.9

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