

## Agricultural Trade

Relatively strong growth in the volume of global trade in bulk agricultural commodities is projected for 1998-2007. Trade in grains, led by coarse grains, is expected to show the fastest growth among bulk commodities, particularly during 2000-2007. Despite prospects for slowed demand in Southeast Asia over the next several years, projected trade gains are driven by relatively strong economic growth in most developing regions, including China, South and Southeast Asia, Latin America, North Africa, and the Middle East. Increasingly market-oriented domestic and trade policies in many countries, stemming from both multilateral and unilateral reforms, are also expected to contribute expanding bulk commodity trade.

Higher incomes in developing countries are projected to lead to further diet diversification, rising meat demand, expanding livestock sectors, and higher demand for feed grains. Wheat trade is also projected to expand in response to higher developing country incomes. Combined trade in soybeans and meal is expected to be relatively strong, due to 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 remain faster than in the 1980s, but 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 is projected to strengthen for most bulk commodities. U.S. exports of wheat and coarse grains are projected to expand the fastest. 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 stays nearly flat as domestic demand captures nearly all of the gains in U.S. production. Exports of U.S. soybeans and products are projected to rise faster than in the 1980s, aided by improving U.S. yields. However, foreign competition and slowing U.S. acreage gains are likely to constrain export growth relative to that of competitors after 2000. U.S. raw cotton exports are projected to strengthen through most of the 1998-2007 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 1998-2000, with the U.S. share then stabilizing because of anticipated unsubsidized EU competition. For other crops, projected U.S. market shares will generally follow historical trends. Reduced competition will lead to a continued rise in the U.S. share of world coarse grain trade, although the emergence of competitors such as Eastern Europe will limit U.S. gains in coarse grains trade after 2000. U.S. rice market share is projected to decline because of minimal domestic rice production gains and strong domestic use. U.S. market share for soybeans and products is projected to continue to decline gradually because of South American competition, 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.

Despite a near-term slowdown in growth in Asia, generally favorable global economic growth is expected to spur growth in meat demand and trade over the longer term. Already negotiated

reductions in trade barriers, primarily in East Asia, will help spur trade growth. Rising meat demand is projected in several countries in the Pacific Rim and Latin America, with the Pacific Rim providing the most growth in both consumption and import demand. The United States is well positioned to provide a variety of meat products to these markets.

Growth in meat import demand in the Former Soviet Union (FSU) is projected to slow. Although declines in meat consumption will slow and demand will turn upward after 2000, 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 is expected to continue to supply 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 1998 to 2007, somewhat slower than the rapid ascent of the past several years. Although export volume will rise, the increasing share of low-valued meat products may slow the growth in total value.

Table 33. International trade summary, by decade or indicated period 1/

Years	Wheat	Rice	Coarse grains	Soybeans	Soybean meal	Soybean oil	Cotton
World trade growth, annual percent 2/							
1960 to 1970 3/	1.1	2.2	4.9	11.4	14.4	11.3	0.8
1970 to 1980	4.7	4.9	8.7	8.2	11.7	12.8	1.2
1980 to 1990	-0.3	0.6	-1.0	-0.4	2.9	0.5	2.5
1990 to 2000	-0.3	4.8	1.0	5.2	3.6	5.9	-0.2
2000 to 2007	2.8	2.7	3.3	1.4	2.2	1.4	1.7
U.S. export growth, annual percent							
1960 to 1970 3/	-0.8	6.3	3.8	12.6	13.0	5.3	-5.4
1970 to 1980	6.4	6.8	12.7	7.2	5.8	5.4	6.1
1980 to 1990	-3.3	-0.5	-0.7	-3.7	-1.8	-5.5	2.3
1990 to 2000	0.5	2.0	3.1	5.9	3.2	10.6	0.3
2000 to 2007	2.0	0.3	3.3	1.4	0.2	0.5	1.7
U.S. share of world trade, average percent 2/							
1960 to 1970 3/	37.6	19.0	50.0	90.6	65.6	66.6	18.3
1970 to 1980	43.0	22.1	59.4	82.6	43.5	37.5	19.8
1980 to 1990	37.3	20.2	59.4	72.6	23.7	19.3	21.5
1990 to 2000	32.2	15.0	59.6	67.0	18.8	15.9	25.9
2000 to 2007	33.5	12.3	66.7	67.8	16.7	19.4	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.

## U.S. Agricultural Trade Value

The total value of U.S. agricultural exports is projected to rise from \$57.3 billion in fiscal 1997 to \$62.6 billion (current dollars) in fiscal 2000, and approach \$85 billion by 2007 (see box, page 17, for impacts of the Asia crisis). U.S. imports are projected to rise from \$35.8 billion in fiscal 1997 to \$50.4 billion in 2007, resulting in the agricultural trade surplus rising from \$21.5 billion in 1997 to \$33.9 billion in 2007.

Table 34. U.S. agricultural trade values, baseline projections, fiscal years

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	1997-2007 growth rate
	<i>Billion dollars</i>												<i>Percent</i>
<b>Agricultural exports:</b>													
Animals and products	11.7	11.7	12.2	12.5	13.2	13.5	14.0	14.7	15.4	16.1	16.8	17.5	4.2
Grains, feeds, and products	21.6	16.5	16.7	17.5	18.6	20.2	21.3	22.3	23.5	24.8	24.2	24.9	4.2
Oilseeds and products	9.7	11.4	11.0	10.3	10.4	11.1	11.8	12.3	12.9	13.5	14.0	14.4	2.3
Horticultural products	10.0	10.6	11.2	11.8	12.5	13.3	14.1	14.9	15.7	16.5	17.4	18.3	5.6
Tobacco, unmanufactured	1.4	1.6	1.6	1.4	1.4	1.4	1.4	1.4	1.2	1.2	1.2	1.2	-3.1
Cotton and linters	3.0	2.7	2.7	2.8	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	2.4
Other exports	2.4	2.7	3.1	3.4	3.6	3.7	3.9	4.0	4.1	4.3	4.4	4.6	5.2
<b>Total agricultural exports</b>	<b>59.8</b>	<b>57.3</b>	<b>58.5</b>	<b>59.7</b>	<b>62.6</b>	<b>66.2</b>	<b>69.4</b>	<b>72.6</b>	<b>76.0</b>	<b>79.8</b>	<b>81.4</b>	<b>84.3</b>	<b>3.9</b>
Bulk commodities exports	28.0	23.3	22.8	22.9	23.8	25.6	27.0	28.0	29.3	30.9	30.3	31.0	2.9
High-value product exports	31.8	34.0	35.7	36.8	38.8	40.6	42.5	44.6	46.7	48.9	51.1	53.3	4.6
High-value product share	53%	59%	61%	62%	62%	61%	61%	61%	61%	61%	63%	63%	
<b>Agricultural imports:</b>													
Animals and products	6.0	6.4	6.9	7.5	7.6	7.8	8.1	8.3	8.8	9.2	9.4	9.5	4.0
Grains, feeds, and products	2.5	2.9	3.0	3.1	3.2	3.4	3.4	3.5	3.6	3.6	3.7	3.7	2.5
Oilseeds and products	2.1	2.2	2.1	2.3	2.8	2.8	2.9	3.2	3.4	3.5	3.5	3.6	5.0
Horticultural products	11.7	12.7	14.4	14.5	15.1	15.7	16.4	17.0	17.7	18.4	19.2	19.9	4.6
Tobacco, unmanufactured	0.8	1.2	1.4	1.4	1.3	1.3	1.4	1.5	1.5	1.7	1.9	2.0	5.2
Sugar and related products	1.8	1.9	1.7	1.9	2.0	2.0	2.2	2.3	2.4	2.5	2.5	2.6	3.2
Coffee, cocoa, and rubber	5.6	6.4	6.4	6.3	6.2	6.3	6.4	6.6	6.6	6.6	6.7	6.7	0.5
Other imports	2.1	2.1	2.1	2.3	2.2	2.3	2.1	2.2	2.3	2.3	2.4	2.4	1.3
<b>Total agricultural imports</b>	<b>32.6</b>	<b>35.8</b>	<b>38.0</b>	<b>39.3</b>	<b>40.4</b>	<b>41.6</b>	<b>42.9</b>	<b>44.6</b>	<b>46.3</b>	<b>47.8</b>	<b>49.3</b>	<b>50.4</b>	<b>3.5</b>
<b>Net agricultural trade balance</b>	<b>27.2</b>	<b>21.5</b>	<b>20.5</b>	<b>20.4</b>	<b>22.2</b>	<b>24.6</b>	<b>26.5</b>	<b>28.0</b>	<b>29.7</b>	<b>32.0</b>	<b>32.1</b>	<b>33.9</b>	<b>4.7</b>

Note: Other exports consists of seeds, sugar and tropical products, and beverages and preparations. Essential oils are included in horticultural products. Bulk commodities include wheat, rice, feed grains, soybeans, cotton, and tobacco. High-value products (HVP's) is total exports less the bulk commodities. HVP's 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. The projections were completed in November 1997 based on policy decisions and other information known at that time. For updates of the nearby year forecasts, see USDA's "Outlook for U.S. Agricultural Exports" published in February, May, August, and December.

Export value declined in fiscal 1997, primarily reflecting lower grain prices. However, continued strong growth in high-value product (HVP) exports kept 1997 export value second only to the 1996 record. During 1997-2007, the expectation is for continued rapid HVP export growth of about 4.6 percent annually. Although bulk exports are projected to continue to grow more slowly than HVP exports, faster growth in bulk exports compared with the 1980s is expected to be a key source of export strength during 2000-2007. Total exports are projected to grow 3.9 percent annually from fiscal 1997 to 2007, with bulk exports expanding at about 2.9 percent annually.

Because of the more rapid increase in HVP exports, HVPs are projected to increase in share from about 61 percent to more than 63 percent. Much of the HVP gain is in horticultural products, which are projected to rise 5.6 percent annually from 1997 to 2007. Animal product exports, led by beef, pork, and poultry, grow about 4.2 percent each year over this period.

U.S. imports are projected to rise about 3.5 percent annually from 1997 to 2007. Horticultural imports, the largest import category, grow about 4.6 percent annually. Growth in animal product imports slows from 5.9 percent between fiscal 1997 and 2000, to 3.2 percent during 2000-2007.

### **Foreign Country and Regional Highlights**

Policy assumptions underlying both U.S. and foreign projections are based on full compliance with all bilateral and multilateral agreements affecting agriculture and agricultural trade as of January 1998. Bilateral agreements affecting agricultural trade between the United States and Canada, the United States and Mexico, the United States and Japan, and the United States and Korea are examples of recent agreements for which full compliance is assumed. In contrast, no compliance is assumed for any agreements under discussion or not formally ratified by November 1997.

In terms of multilateral agreements, the projections assume full compliance with the internal support, market access, and export subsidy provisions of the Uruguay Round Agreement on Agriculture by all parties to the agreement. Several potential multilateral agreements that could have a significant impact on agricultural trade are now under consideration, but are assumed *not* to occur in these projections. Specific agreements assumed not to occur include: accession to the World Trade Organization (WTO) by the FSU, China, or Taiwan; enlargement of the EU-15 to add one or more Central or East European country; implementation of more liberalized trade among the Asia-Pacific Economic Cooperation (APEC) countries, and; expansion of NAFTA to include additional countries.

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

#### **European Union**

The baseline projections for the European Union (EU) incorporate policy changes adopted as part of the 1992-93 reform of the Common Agricultural Policy (CAP), as well as EU commitments under the Uruguay Round agreement that limit subsidized exports and improve market access. The final price cuts under the 1992 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 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.

There is significant uncertainty about the measures the EU will use to meet its subsidized export and minimum import commitments under the Uruguay Round agreement. 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 intervention purchases and on-farm 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 from 1997/98 to 1999/00 and then increase to 10 percent for the remainder of the baseline. Under baseline market conditions, maintaining a 5 percent set-aside would likely lead to the accumulation of surplus grain stocks, while raising the set-aside toward the EU statutory level of 17.5 percent would result in forgoing opportunities to produce and export wheat without subsidy. 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 and that more than half of all EU exports are unsubsidized.

There is also uncertainty regarding 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 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.

## Potential Agricultural Trade Impacts of EU Enlargement

Ten Central and East European (CEE) countries<sup>1</sup> have applied for membership in the European Union (EU-15). The *Agenda 2000* communication, presented by the European Commission in July 1997, recommends that accession negotiations begin in 1998 to define the terms and conditions of accession for Hungary, Poland, Estonia, the Czech Republic, and Slovenia. The actual timetable for accession will depend on each country's progress in meeting EU policy targets. It is doubtful that any country would join before 2002. If the five remaining countries can meet the necessary conditions to enter into negotiations, the European Commission will recommend that they too begin accession negotiations.

The baseline projections do not incorporate impacts of EU enlargement because of uncertainty over which countries will accede, and the timing and terms of accession. USDA's Economic Research Service has, however, conducted preliminary analysis on the potential impacts of accession. Two scenarios were analyzed: one where the current CAP is applied to

<sup>1</sup>The ten countries are Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia.

Table 35. net surpluses under alternative EU enlargement scenarios

	Baseline	Enlargement scenario 1/	
	(2002-05 average)	CAP	New CAP
Million tons			
EU-15			
Grains	24.9	24.9	30.4
Wheat	18.5	18.5	37.4
Meats	2.0	2.0	-2.0
Visegrad-four 2/			
Grains	1.2	-13.4	-12.5
Meats	0.4	4.7	4.7
EU-19			
Grains	26.0	11.5	17.9
Meats	2.4	6.6	2.6

1/ CAP scenario assumes enlargement under prices and acreage controls of current Common Agricultural Policy. The "New CAP" scenario assumes movement to world prices and elimination of acreage controls, but not other changes proposed in "Agenda 2000."

2/ Visegrad-four refers to the Czech Republic, Hungary, Poland, and Slovakia.

Source: ERS estimates.

**--Continued**

## Potential Agricultural Trade Impacts of EU Enlargement -- Continued

the acceding CEE countries, and another (referred to here as "New CAP") where agriculture in the enlarged EU faces world prices and the acreage set-aside program of the current CAP is abolished. Other potential reforms included in *Agenda 2000* were not analyzed here. The analysis assumed the accession of the Visegrad-four countries (Czech Republic, Hungary, Poland, and Slovakia), to form the EU-19.

In both scenarios, the agricultural economies of both the EU-15 and the acceding CEE countries would experience major adjustments. Agricultural commodity prices in the EU are typically above world prices, while most CEE prices are below world prices. Thus, adopting EU prices would stimulate CEE farm output and reduce consumption. If the EU-19 adopted world prices, the increase in CEE production would be smaller, while EU-15 production would decrease and EU-15 consumption would increase. The impacts would be greatest for those commodities with the largest price differences.

Under both scenarios, CEE meat prices increase significantly, spurring production and discouraging consumption. Meat production shifts somewhat from the EU-15 to the CEE countries. The new EU-19 would continue to have exportable surpluses of meat, with the surpluses much larger if accession occurred at CAP prices. CEE and EU-15 grain production increases in response to higher prices under both scenarios. Under the terms of the current CAP, grain exports of the EU-19 would likely fall, with higher CEE feed use more than offsetting increased CEE production. If the EU-19 adopted world prices and abolished the set-aside, the estimates suggest that the EU-19 could be a larger exporter of wheat but, due to lower production and higher consumption of coarse grains, a smaller overall grain exporter. These estimated impacts do not include world price effects which, in the case of the "New CAP" scenario, would likely reduce estimated exports of wheat and meat, as well as coarse grain imports.

The baseline assumes that there is no enlargement of the EU-15 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. Similarly, the baseline does not incorporate implementation of the proposed "Agenda 2000" policy reforms which will be considered by EU policy makers during 1998. Implementation of these reforms could also have significant impacts on the projections.

### China

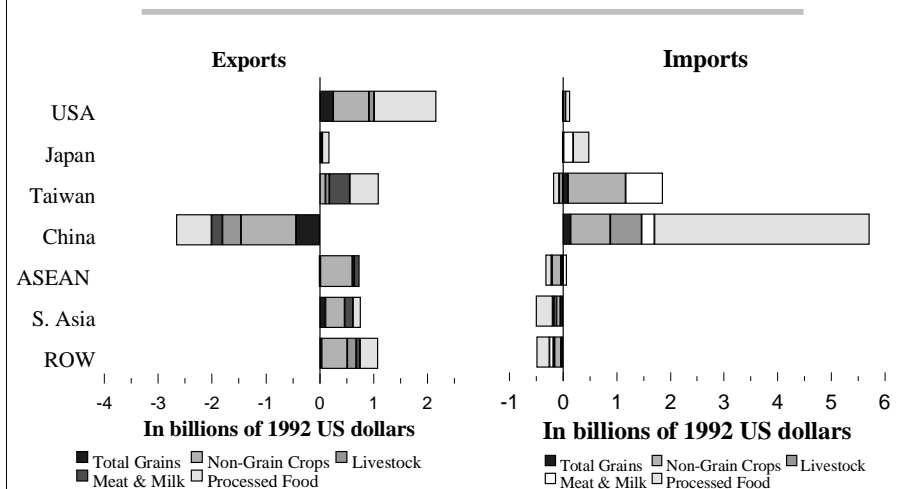
China's economy is assumed to continue to grow at a rapid but gradually declining rate over the projection period. Average annual real GDP growth is forecast to fall from 8.9 percent in 1998 to 7.8 in 2007. This assumes China will continue to gradually reform its economy, with reform efforts focusing on restructuring and improving the performance of state-owned enterprises. Also, domestic and foreign direct investment are assumed to continue to grow, although at a

### Potential Agricultural Trade Impacts of WTO Accession by China and Taiwan

China and Taiwan are each negotiating terms of accession to the World Trade Organization (WTO). There is still significant uncertainty about both the timing of accession, and the extent of policy reform that will be required. Both economies are undertaking changes to bring their policy regimes into conformity with WTO standards. China is taking steps to reduce tariffs, make its currency convertible, and reform its state-owned enterprises. However, there are still specific disagreements regarding access to China's agriculture, automobile, and services markets. For Taiwan, a number of significant problems remain in agriculture, including reforms to policies affecting rice, chicken, and pork. Taiwan's admission to the WTO will be contingent on China's entry.

Because of uncertainty regarding the timing and terms of accession, the impacts of accession are not accounted for in the baseline projections. The Economic Research Service has, however, estimated the impacts on the world economy of China and Taiwan joining the WTO versus their continued exclusion.<sup>1</sup> The results indicate that WTO accession by China and Taiwan would have a modest impact on the overall world economy, representing a modest acceleration of current trends toward increasing integration with world markets, and the freer play of comparative advantage in world markets. Policy reforms by China in the late 1970s and early 1980s were far more fundamental changes than those assumed in the study's accession scenario. China and Taiwan themselves would be, by far, the biggest gainers from aligning their policies with other WTO members and capturing the benefits of increased access to apparel, textile, and other markets. The key benefit to other WTO members may be from the greater predictability of the two Chinese economies playing by internationally accepted trading rules.

**Figure 3. China and Taiwan WTO Accession: Estimated Impacts on Agricultural Trade**



--Continued

<sup>1</sup>Zhi Wang, *The Impact of China and Taiwan Joining the World Trade Organization on U.S. and World Agricultural Trade*. ERS Technical Bulletin No. 1858, May 1997.

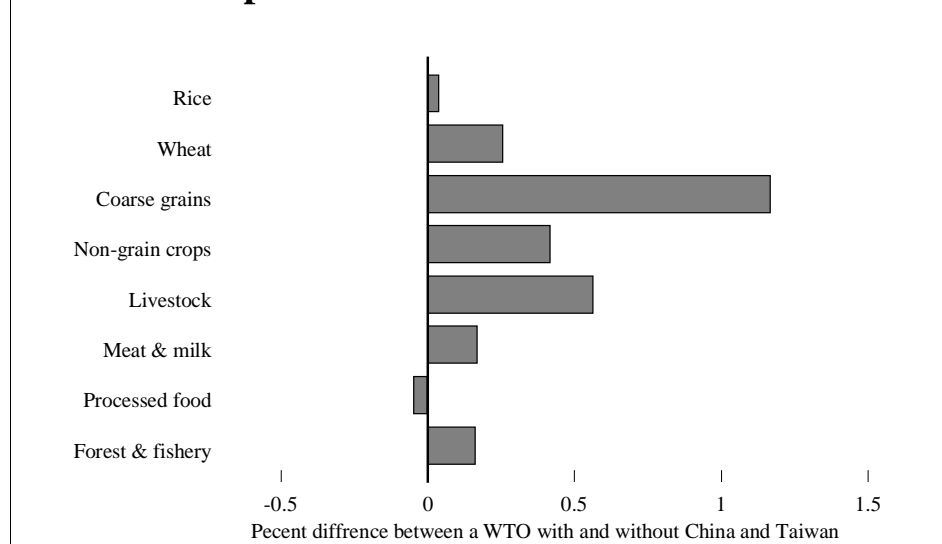


### Potential Agricultural Trade Impacts of WTO Accession by China and Taiwan--Continued

Under the WTO accession scenario, total world agriculture trade would increase 3 percent. The key change would be a \$9 billion increase in China's annual net agricultural imports (figure 3), as production factors are bid away from agriculture by an expanding, labor-intensive, light manufacturing sector. Net food and agricultural imports would also increase in Taiwan, Japan, and Korea, as these economies shift resources from agriculture to manufacturing in order to meet China's stepped-up demand for imported capital inputs. On the other hand, labor-intensive manufacturing sectors in South and Southeast Asia shrink due to increased competition from China, leading to increased production and exports of agricultural products.

WTO accession would raise world agricultural product prices modestly, led by a 1 percent increase in coarse grains (figure 4). Changes in world grain trade would parallel changes in total agricultural trade, with increased exports for North America, Southeast Asia, and South Asia and declines for China. Grain imports increase in Taiwan and China and decline in Southeast Asia and South Asia. U.S. agriculture would benefit modestly from rising exports (\$2.2 billion), farm income, and export prices. In addition to farmers, U.S. consumers, food processing firms, and capital- and technology-intensive manufacturers would gain. But U.S. textile and apparel production would decline by 10 percent.

**Figure 4. China and Taiwan WTO Accession:  
Estimated Impacts on World Prices**



declining rate. Investment in port, rail, road, and power generation infrastructure is, in general, expected to be sufficient to support the projected future increases in agricultural output and trade flows.

Agricultural policy is assumed to continue to gradually and incrementally liberalize, increasing the role of market forces in all aspects of China's agricultural sector. Government planning gradually

diminishes for most crops, with a rising (but less than 100 percent) share of farm gate, wholesale, and retail transactions occurring at market rather than government-set prices. Intermittent state intervention to stabilize markets will still occur, but with declining frequency.

China's agricultural trade system is assumed to continue to be slowly reformed. Although central government control over trade in key commodities (food grains and cotton) is not eliminated, the share handled by private and joint private-public trade companies expands. The baseline assumes China will not become a member of the WTO. China has applied for WTO membership, but negotiations are ongoing and the ultimate provisions and timing of a final agreement are very uncertain.

Production of most major crops is expected to increase as rising domestic prices boost yields by stimulating more use of improved varieties, fertilizer, and better management. Reduced agricultural investment during the 1980s induces a modest slowdown in the rate of yield growth over the projection period. Total cultivated land continues its current decline under pressure from non-agricultural uses, but the rate of decline slows in response to more effective government policies.

Assumptions regarding future meat production and the expansion of commercial feeding remain key to the China projections. The projections incorporate the expectation that capital and infrastructure constraints will affect growth in China's meat production. Reflecting recent trends, however, the projections also incorporate relatively fast growth in commercial feeding of corn and soybean meal. As a result, commercial feeding and imports of corn, soybeans, and soybean meal are projected to show strong growth.

Rapid income growth, and its expected impact on meat, feed, and edible oil demand, is the key factor in China's future agricultural trade patterns. However, there is a great deal of uncertainty in the agricultural trade projections for China. Unanticipated shifts in government agricultural or trade policy would likely result in significantly altered trade patterns. Likewise, small changes in China's income growth, technical parameters (e.g., feed-meat conversion rate), or supply trend assumptions result in dramatic 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 assumed to be very sluggish, and currencies appreciate slightly 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 markets and restructuring of agricultural enterprises in the FSU will continue at their 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. Some increase in tariffs is anticipated, but more drastic changes that could affect meat imports are assumed to be avoided, in part because of some limited foreign direct investment in the Russian livestock industry.

Crop productivity gains in the FSU are expected to be small. Progress in land reform that could lead to significant 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. Also, state grain imports are minimal in the baseline because slow growth in livestock production will limit feed demand. The Central Asian countries of the FSU are expected to meet their grain needs primarily from Kazakhstan and Ukraine, rather than from imports from non-FSU countries.

### **Central and Eastern Europe**

The economic outlook for the region calls for continued positive income growth and falling inflation. As the economic transition proceeds, it is assumed that most of the rigidities inherited from the Communist period will be removed, leading to fuller transmission of world market prices to internal markets. The projections are based on the assumption that most world agricultural commodity prices will be fully transmitted to domestic markets and that import tariffs in most cases will not exceed 30 percent. In the short term, the impact of protectionist policies in the Visegrad countries (Poland, Hungary, the Czech Republic, and Slovakia) mainly has 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. As a result, it is assumed that domestic producer prices will not differ greatly from world market prices. Pressure to keep state budgets in balance is expected to remain the principal constraint on agricultural policy. Of the Visegrad Four countries, only Hungary seeks to be a major grain exporter. Others aim for self-sufficiency.

The projections also incorporate the assumption of a steady increase in efficiency in the agricultural sector, reflected in rising yields and greater feeding efficiency in the livestock sector. These productivity increases are expected to come about as a result of continuing progress toward market reform in all the CEEs. 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.

The baseline assumes that none of the CEE countries will join the EU during the projections period. Although some CEE countries may join the EU by 2007, the timing of accession is

uncertain. When CEE countries do accede to the EU, significant changes in domestic and trade policies from those assumed here are likely.

## **East Asia**

South Korea and Japan continue to open their livestock sectors to foreign competition as dictated by the Uruguay Round agreement, 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 are expected to retain bans on beef and pork imports from areas with foot-and-mouth disease. The outbreak of foot-and-mouth disease in Taiwan in March 1997, however, has completely shut down Taiwan's pork exports. It is assumed that Taiwan's exports of pork will not resume until 2003, and that they will recover by the end of the baseline to only about a third their average level of 1990-96.

All three East Asian economies are assumed to maintain tight state control over trade in rice. Rice production in South Korea will continue to be insufficient to meet domestic needs and maintain adequate stocks, but Korea's aversion to imports is so strong that it is assumed to take the risk of low stock levels through much of the projection period. 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 quota for corn for new industrial uses introduced during the Uruguay Round should expand Japan's nonfeed imports of corn.

The projections were made before the financial crisis of 1997 hit East Asia, and assume that 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**

The region's financial crisis is expected to result in continued exchange rate instability and slowed economic growth during 1997-2000. The economic assumptions underlying the projections call for the slowdown to be a temporary phenomenon, with a recovery to near previous levels of economic growth by 2000 (see Asia Crisis box, page 17, for further discussion). With the region's rapidly expanding consumption of farm commodities predicated on rising incomes,

urbanization, and population growth, agricultural import demand is expected to slow during 1997-2000. Higher local consumer and producer prices stemming from currency devaluations across the region will also play a key role in slowing imports by reducing consumer demand and raising domestic producer incentives.

With recovery to near previous growth rates by about 2000, demand is expected to resume outpacing production, as it did during the early 1990s. Rice importers in the region are expected to continue to increase their imports as production remains handicapped by slow increases in yields, expanding use of rice land for producing vegetables and fruits, and conversion for urban and industrial development. Thailand and Vietnam are expected to remain very competitive rice exporters with their devalued currencies.

Although slower income growth and higher local currency prices should slow wheat import growth in the near term, longer term prospects are for strong import growth as wheat continues to account for a growing share of diets in the region. Recent rapid growth in the region's production and consumption of livestock products, and in consumption and imports of feed grains and proteins, also are expected to slow in response to income and price shocks associated with the current crisis. Because consumer demand for meats is relatively more responsive to changes in incomes and prices than is demand for other food items, derived demand for imports of corn, soybeans, and soybean meal may be relatively more affected by the crisis in the near term. In the longer term, however, the expected economic recovery in the region, combined with limited capacity for efficient production of corn and soybeans, should lead to sustained high growth in meat demand and feed imports.

Agricultural exports from the region, including rice (mostly Thailand and Vietnam), palm oil (Malaysia and Indonesia), and poultry (Thailand) will be more competitive following the devaluation of local currencies.

## **South Asia**

India's farm sector is expected to continue to benefit from improving terms of trade as agricultural price incentives are maintained and liberalizing reforms steadily reduce protection in nonfarm sectors. A strong policy emphasis on improving producer price incentives is, however, unlikely during the baseline because relatively fragile coalition governments are likely to give priority to assuring consumer price stability. Food grain production is expected to receive a boost from reduced protection of oilseeds resulting from the recent shift from state trading to tariffication of vegetable oil imports. India's exports of soymeal are expected to continue to grow, as soybean producer incentives are less affected than other oilseeds by lower internal oil prices and domestic feed demand remains limited. 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 will grow rapidly. Price incentives and productivity gains will 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 will continue to support gains in cotton area, leading to stagnation of wheat yields due to late planting on double-cropped land. Trade policy permits rising dependence on imported wheat. Cotton yields are expected to 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 will permit continued growth in vegetable oil imports. Growing livestock product demand is expected to lead to growing soybean meal imports and the emergence of feed corn imports during the baseline.

### **Africa and Middle East**

In Sub-Saharan Africa, per capita food grain consumption is projected to continue to decline because of little or no growth in per capita incomes, strong population growth, slow growth in production, and constrained import capacity. Capacity to import food commercially is expected to grow only slowly, consistent with sluggish gains in total export earnings and slower declines in real 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 is expected to constrain 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 annual real GDP growth of 4 to 5 percent along with recent policy reforms are projected to generate more growth in wheat, corn, soybean meal, and vegetable oil 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 and phase out grain, oilseed, and sugar subsidies, should also spark 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 is expected to generate expanding imports of wheat, rice, soybean oil, and livestock products.

Many Middle Eastern economies are also projected to experience stronger economic growth during 1998-2007, in part due to the outlook for stronger petroleum 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 wheat, rice, corn, and barley imports. The situation in Iraq, both economic and political, is extremely uncertain. Under the assumption of 3 to 4 percent annual real GDP growth and the continued recovery in petroleum export revenues, food consumption is projected to gradually recover from the sharp drop following the 1991 Persian Gulf War, driving moderate growth in imports of food and feed

grains. If, however, Iraq's imports remain constrained by the terms of the current UN Security Council Resolution, imports would be significantly lower.

The Saudi Arabian economy also is expected to benefit from stronger oil prices. Saudi grain output is expected to continue to decline due to cuts in government subsidies and continuing concern about the depletion of water resources. Rising imports of rice and wheat are projected, and ambitious plans to expand the livestock and poultry sectors will also boost feed imports. Turkey's agricultural trade outlook will be shaped by its expanding and urbanizing population, large external debt, and lack of commitment to privatization and restructuring in the farm sector. Steady growth in rice imports is likely, and reduced producer subsidies will raise wheat imports. Continued strong expansion of the poultry sector and livestock development is expected to result in increased imports of feed grains and oil meals.

## **Mexico**

The Mexican economy continues to recover from the economic crisis of 1995, triggered by the December 1994 peso devaluation, and has bounced back relatively quickly. Annual real GDP growth will be near 6 percent in 1997 and is expected to average near 5 percent through 2007. Fundamentally, the long-term outlook for Mexican agriculture remains unchanged with its productive capacity limited by scarce water, land, and low levels of technology. Mexico is a progressively larger importer of grains, oilseed products, and meats over the next decade. 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 *Alianza para el Campo*, of which the PROCAMPO program is a major component, and NAFTA. Under PROCAMPO, the government continues to reduce its role in supporting grain prices. With lower import duties on corn, sorghum, and wheat, there will be more price transmission between the world and the Mexican 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. Because 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 tariff-rate quota quantities. Mexico continues to reduce consumer subsidies; 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 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. In 1996 Argentine producers harvested almost 22 million hectares of grains, oilseeds, and cotton. This was almost 3 million hectares above the previous year's total, which itself had been an all-time high. The baseline assumes that cropped area can continue to expand when market conditions provide adequate incentives. Crop yield response in recent years also has 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, Argentina has begun the process of attaining foot-and-mouth-free status. It is assumed that market access in foot-and-mouth free areas, and consumer acceptance of Argentine beef, will increase gradually during the baseline.

In Brazil, the economic stabilization program begun in mid-1994 continues to hold inflation down to low levels. Controlling inflation through tight monetary and fiscal policy remains the primary goal of the government, along with attempts to manage a gradual devaluation in the real exchange rate in an effort to get the growing trade deficit under control. Recent government efforts to reign in the trade deficit include restrictions on the use of short-term import financing while simultaneously increasing the availability of credit for exports. With policies such as these and a continued gradual real depreciation of the exchange rate, Brazilian producers should continue to face stronger price incentives in local currency terms, thus encouraging growth in Brazilian exports. In the case of soybeans, expansion will be accommodated by a continued northward and westward movement of Brazil's agricultural frontier, aided by low land costs and improvements in infrastructure which have reduced the transportation costs of soybeans destined for export.

## **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, has been below 12.3 million hectares every year since 1993 after remaining well above 13 million hectares over the 1984-92 period. Rotational constraints on canola plantings are, however, assumed to limit canola acreage.

Canada's 1996/97 budget 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 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, estimated at about C\$17 per metric ton at the time of the subsidy elimination. 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 are favored in the later years of the baseline.

## **Australia**

Australia has returned to more normal output after last year when there was record wheat production and prices. Fears that El Nino would devastate the crop have not materialized, although parts of Australia did experience much drier than usual conditions. Producer returns are up for beef but down for crops with the drop in grain prices. The number of cattle in feedlots is expanding as feed prices are down. As producers attempt to maximize returns, some switching will occur in the baseline between types of crops produced, as well as between crops and livestock.

Production for export dominates Australian agriculture and is expected to continue to do so in the future. With increasing populations and incomes forecast globally, exports and production of the major commodities are forecast to continue to expand. Key issues in the outlook for production are the response of Australian producers to uncertainties regarding price variability and the availability of water. Until more irrigated area is available, area expansion will be low for some

crops. Crops are to again be planted in the Ord River project in Western Australia, and several new dams are in the planning stage.

While little growth in wheat area is expected, growth in wheat yields is projected to support increases in both exports and domestic feeding of wheat. Further growth in rice exports, however, will be very limited due to constraints on increasing either area or yield. Increases in barley output will also be dependent primarily on yield gains, with the share of barley area and exports devoted to malting barley continuing to rise. Cotton yield, production, and export growth remain heavily dependent on the availability of irrigation water and are projected to show moderate gains. Cotton production and exports could, however, show stronger gains if production resumes in the Ord River region, or in newly developed irrigated areas. Although low prices and more favorable returns for other enterprises may limit growth of the cattle herd in the short run, beef production and exports are projected to increase in the medium term.

### **Commodity Trade Highlights**

Growth in global and U.S. trade in most bulk commodities is projected to be relatively strong during 1998-2007 compared with the 1980s or early 1990s. The impacts of the Asian financial crisis, which are assumed to affect the Southeast Asian economies during 1997-1999, contribute to somewhat slower near-term growth in bulk commodity trade, but strong growth is projected for 2000-2007 (see Asia Crisis box, page 17, for further discussion). Growth in meat trade also remains strong, although somewhat slower than recent performance. With the Southeast Asia crisis assumed in the baseline to be resolved over two to three years, projected world and U.S. trade gains are expected to be driven by favorable global economic prospects, particularly in developing countries, along with freer trade resulting from multilateral and unilateral policy reforms. Income growth, particularly in developing countries, is expected to boost food demand, including the derived demand for livestock feeds stemming from rising meat consumption. Developing regions, including China, South and Southeast Asia, North Africa, the Middle East, and Latin America are all expected to show relatively strong economic growth, and be key sources of agricultural import demand.

Coarse grains are projected to show the fastest trade growth among bulk commodities; the result of rising meat consumption and feed demand in Asia, Latin America, North Africa, and the Middle East. Wheat trade will also benefit from rising incomes and urbanization in developing regions. Trade in soybeans and meal, while projected to be slower than grains, will also be driven higher by expanding feed-livestock sectors in developing countries. Increased market access in East Asia is the key source of sustained growth in beef, pork, and poultry trade.

### **Wheat**

World wheat production is expected to increase by an average of almost 10 million tons per year between 1998 and 2007. Above trend yields in China, the United States, the FSU, and Eastern Europe produced a dramatic record global yield in 1997, and a return to trend means lower yields for several years in these key wheat producing countries. World area is projected to gradually expand after 1998, as wheat prices strengthen relative to most other crops. However, world area

does not exceed the 1997 level until 2001 and, at the end of the baseline, remains 6 million hectares below the 1981 record. Land availability is constrained in most countries by climate and increased urbanization. Wheat area declined in the 1980s and 1990s in the FSU and Eastern Europe, as unprofitable area went out of production when the role of centralized planning was reduced. Much of that area is expected to remain out of production through the baseline.

Foreign consumption growth for wheat is projected to average almost 10 million tons per year between 1997 and 2007, twice the rate posted during the previous 10 years. Food demand is expected to account for most foreign consumption growth, but feed and industrial use also expand slowly. Wheat feed use falls in many regions as wheat prices rise relative to 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 more than 3 million tons annually during 1997-2007. Projected growth is well above that of the 1980s, but less than during the 1970s. Wheat trade rebounds from the unusually low levels in 1997, with increased imports by China, and then returns to trend growth, with some acceleration towards the end of the baseline.

Most world import growth is expected to occur in lower income 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 is expected to continue to increase relative to rice in China and Southeast Asia. In North Africa, rising incomes and market-oriented farm reforms, including privatization of trade, are expected to boost imports.

China's wheat imports are projected to rebound from a 1997 low of 2 million tons, as yields return to trend and limited area reduces production, and then to increase gradually through the baseline as demand growth outstrips production. China is a key source of uncertainty in global wheat import prospects because of the uncertain impacts of potential water constraints, yield improvements, dietary shifts toward meats, and policies toward grain imports.

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. However, budgeted EEP funds are assumed to be spent, starting in 1998/99, so targeted countries receive larger exporter subsidies than in recent years. Some countries will 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.

### Details of EU Wheat Export Projections

The EU is projected to begin exporting wheat without the aid of export subsidies by about 2000. Unsubsidized EU wheat exports are expected to occur as projected real world prices and internal EU market prices converge, allowing the EU to export beyond the limits set for subsidized exports during the Uruguay Round. In the early years of the projections, EU market prices of wheat are expected to remain above world prices, with EU wheat exports projected at or below the UR limits. By 2000, firm world prices and declining internal prices are expected to permit the EU to export wheat without subsidy, with exports exceeding the UR limits by about 45 percent, or 7.6 million tons by 2007.

It is important to note that the projections do not account for annual or seasonal variability in market conditions that, as has occurred in the last 3 years, may result in periods of relatively high world prices and unsubsidized wheat exports prior to 2000, as well as periods of tight EU supplies that lead to export taxes on wheat.

Several key factors and assumptions affect the projections. First, with the assumption that no significant reforms will be made to the CAP, the EU is expected to maintain a 5-percent land set aside until 1999/2000, then increase to 10 percent for the duration of the projection period. A lower set-aside rate could allow the EU to produce and export more wheat. However, because the set-aside is not crop specific, a smaller set-aside would also likely lead to excess supplies of coarse grains, primarily barley, that would exceed the EU's UR limits on coarse grain exports and that could not be exported without subsidy. Revision of the CAP to alter the set-aside mechanism or to reduce internal coarse grain prices closer to world prices would appear to be needed to push EU wheat exports significantly higher than the current projections.

Finally, the projections incorporate the assumption that the ECU will strengthen relative to the dollar during 1998-2007, reflecting tighter fiscal and monetary policies in EU member states as they prepare for the European Monetary Union. A strong ECU means that EU farmers will face prices that decline more (or increase less) than prices denominated in U.S. dollars. The strengthening ECU tends to reduce producer and export incentives, particularly toward the end of the projection period.

Table 36. EU-15: Details of wheat export projections

Variable	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
	<i>1990 ECU/ton</i>										
Wheat											
Market (consumer) price	92.35	85.95	81.80	79.99	77.28	76.53	74.89	72.63	70.50	67.87	65.01
World price	86.99	77.28	78.99	83.38	82.65	80.70	78.87	77.89	76.06	72.52	69.99
Intervention price	92.35	89.82	87.32	84.79	82.29	79.85	77.50	75.18	72.92	70.73	68.61
	<i>Million tons</i>										
Wheat exports	16.2	18.3	17.8	16.7	17.8	18.9	19.8	21.0	21.9	23.2	24.3
UR subsidized limit	20.2	19.0	17.8	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6
Real exchange rate (\$/ECU)	1.34	1.35	1.35	1.36	1.38	1.39	1.41	1.43	1.44	1.46	1.48
Set-aside rate (percent)	5	5	5	10	10	10	10	10	10	10	10

U.S. wheat exports are projected to grow fairly rapidly in the early years of the baseline, but flatten when prices get high enough for the EU to export without subsidy in 2001. U.S. export growth recovers late in the baseline, reaching 42.2 million tons in 2007, still lower than wheat exports in 1981 and 1987. The U.S. share of world trade increases until 2000 and then declines slowly to less than 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. As time progresses, however, 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 1998-2000, because of internal policy reforms and Uruguay Round constraints on subsidized exports. After 2001, although the EU is expected to be able to consistently export some wheat without subsidy, the EU land set-aside is expected to remain at about 10 percent in order to avoid building excess grain stocks.

Initially, land constraints and competitive prices for other crops are expected to limit wheat exports by Argentina, Australia, and Canada. But later, Argentina and Australia are projected to find it increasingly profitable to increase wheat production and exports. Canada's exports stay relatively flat, largely because of expected slow yield growth. In the early years of the baseline, Canada maintains wheat exports by reducing stocks, but then wheat area increases in response to strengthening prices. Minor exporters, like Eastern Europe, become more important in the latter part of the baseline.

## **Rice**

Rice trade is projected to grow about 2 percent annually from 1997 (marketing year 1997/98) through 2007, with growth strengthening after 2000. Anticipated growth is about the same as in the 1980s and the early 1990s, but slower than in the 1970s. World trade is projected at 21.1 million tons by 2001 and 24.6 million tons by 2007. Trade is expected to continue to consist predominantly of long grain varieties, despite anticipated gains in medium-grain (japonica) rice imports by Japan and South Korea under the Uruguay Round agreement. Nominal prices are expected to rise throughout the projection period, while real prices continue to fall, although less rapidly than in the past. Global medium-grain prices are expected to rise relative to long-grain prices due to limited world export supplies of high-quality japonica rice and greater import demand.

Foreign production is forecast to rise gradually, growing a little less than 1.2 percent per year. Projected growth is slower than in the 1970s and 1980s, when irrigation expanded more rapidly in Asia and Green Revolution technology was widely adopted. Slower production growth stems primarily from a projected slowdown in yield increases. Global acreage growth is expected to remain extremely small, as it has since 1975.

Foreign consumption is projected to rise about 1.2 percent per year, markedly slower than during the 1980s and virtually matching the expansion rate for production. Consumption in higher income Asian countries has been declining, and is expected to continue to decline, as larger

portions of the population achieve middle class incomes and consumption of rice declines in favor of other foods, such as wheat products and meat. Per capita rice use in other countries, including China and India, 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 away from rice in response to higher incomes. These developments are expected to offset consumption gains in other regions, primarily lower income rice-producing countries and higher income nonproducing countries, where per capita rice use is still rising.

The rice export market share for the United States between 1991 and 1995 varied from 15 to 18 percent, and averaged about 13.5 percent in 1996 and 1997. It is projected to average 13.6 percent during 1997-2000 and then decline gradually to just over 11 percent by 2007. Small U.S. production gains, strong domestic use, and high prices relative to competitors are expected to limit the volume of U.S. rice exports. Total U.S. exports are projected at 2.8 million tons, while total imports rise to 0.5 million tons, leaving the U.S. a net exporter of 2.3 million tons of rice in 2007.

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, total U.S. rice export volume expands only slightly in the baseline. The extent of U.S. gains in medium-grain markets depends on U.S. capacity to expand production and exports on a sustainable basis. California, the primary U.S. producer of high-quality japonica rice, faces increasing environmental restrictions on expanding acreage and yields. Other U.S. growing regions have yet to develop suitable japonica type varieties for cultivation. The outlook for a widening long-grain export price premium compared with top-quality Asian exports implies that the United States will lose some of its long-grain exports in the more price-sensitive markets such as the Middle East. Further, under fixed budget levels, higher domestic prices imply lower program-assisted exports.

Historically, rice trade and prices have exhibited greater volatility than those of other cereals. This volatility stems from the dependence of many large producers and traders, including Burma, India, Indonesia, Thailand, the Philippines, and Vietnam, on rainfall during the Asian monsoon season, and from the fact that only a small share (about 5 percent) of world rice production is traded. These factors will continue to affect the world rice market during the next 10 years, with the potential to create dramatic annual swings in trade and prices that could deviate significantly from the trends projected in this baseline.

## **Coarse Grains**

Reversing a decline that began in the early 1980s, world import demand for coarse grains is projected to strengthen, with annual growth averaging 3.4 percent from 1998 to 2007. Global coarse grain trade is projected to exceed the 1980/81 record of 108 million tons in 2001 and reach over 132 million tons by 2007. Strong economic growth is expected to fuel higher coarse grain imports by China, North Africa, and Latin America. East Asia's imports remain steady despite macroeconomic problems, as these countries tend to maintain domestic livestock and poultry production, while slowing meat imports. Taiwan's feed imports are expected to begin recovering

by 2000, as hog numbers start to rebound and poultry production continues to expand. Southeast Asian feed grain imports are expected to be slowed by the effects of the financial crisis, but show strong longer term growth. The FSU, one of the world's largest importers during the 1980s, is expected to be a small net importer of coarse grains late in the baseline, as animal numbers increase with an improving economy. High wheat prices are expected to reduce feed wheat trade in favor of coarse grains, especially to South Korea.

Significant growth in both corn and barley trade is expected. Sorghum trade is projected to increase gradually through the baseline as prices are attractive for Mexico and Japan. Trade in other coarse grains is projected to grow from 1997 levels, but remain below 1995 levels throughout the baseline as EU rye shipments to Korea are limited by transport costs.

World corn trade is expected to expand rapidly, passing the 1989 record of 80 million tons in 2002, and reaching 97 million tons by 2007. The largest gains in corn imports are expected to occur in China, Southeast Asia, and North Africa/Middle East, where demand for feed for livestock is expected to continue expanding rapidly. Although Argentina's corn exports are projected to rise, wheat and oilseed prices are likely to limit Argentine corn area expansion, leaving the United States the major beneficiary of robust import demand for corn.

For barley, much of the demand growth will occur in China and other malting barley markets. Feed barley imports by Saudi Arabia are expected to expand but, in most other markets, growth in feed barley imports is expected to be slowed by constrained supplies and substitution of other feeds. Canada and Australia are expected to expand area of wheat, canola, and malting barley at the expense of feed barley. The Uruguay Round agreement limits on subsidized EU coarse grain exports will constrain combined exports of barley, rye, and other coarse grains through 2007. Future responses by other barley exporters to expected higher relative prices for competing crops (wheat and canola), and by barley importers to tight barley supplies, are important uncertainties in the outlook for coarse grain trade.

U.S. exports of coarse grains are projected to rise in the near term, as China returns to being a net corn importer and competition from Eastern Europe declines. U.S. exports grow an average of 2.8 million tons per year, reaching 86.5 million by 2007. By 2001, U.S. coarse grain exports are expected to reach the 1979/80 record of 71 million tons, with corn accounting for 64 million. The U.S. share of world coarse grain trade is projected to grow to 66.4 percent in 2004, but fall slightly in the last few years of the baseline. Growth in U.S. market share is expected to slow towards the end of the projection period, as stronger prices boost foreign production and U.S. area expansion is increasingly limited by the CRP and crop competition.

Competitor coarse grain exports are expected to drop in the near term, as gains in demand outpace production in China and South Africa. In the longer term, foreign coarse grain exports are projected to rise, particularly when import demand and prices strengthen after 2000, but remain below the highs of the early 1990s.

Foreign coarse grain production is projected to rise through 2007, as gains in both area and yields reverse the downward trend of the 1980s and early 1990s. Past coarse grain yield growth is

expected to continue. Area growth is anticipated to be slow, 0.5 percent per year, but any growth is a big change from the generally declining coarse grain area since 1980. Foreign corn and barley production, in particular, are expected to respond to higher prices after 2000. Annual growth in foreign coarse grain consumption is projected at 2 percent through 2007, stronger than during the 1980s, but below the 3-percent rate of the 1970s. Corn is expected to account for the growth, especially in China, Southeast Asia, and Latin America where livestock output and feed demand are expanding rapidly as incomes rise.

## **Soybeans and Products**

World soybean production is projected to climb 1.5 percent annually through 2007. Foreign output growth, at 2.4 percent per year, is expected to be faster than U.S. output growth of 0.7 percent. Foreign output growth will, however, 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. World soybean area is projected to expand 0.5 percent per year, with most of that growth occurring in South America. Production increases for the United States will come mainly through improvements in soybean yields, which are expected to rise 1.2 percent annually.

World soybean trade is projected to increase faster during 1997-2007 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. During 1997-2007, global exports of soybeans and meal rise at annual rates of 1.2 and 2.2 percent, reaching 44.3 and 44.1 million tons, respectively, by 2007. Combined exports of soybeans and meal, on a soybean-equivalent basis, are projected at 100.1 million tons by 2007.

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 2.1 percent annually during 1997-2007, about the same as in the 1980s, but well below the strong 5.1-percent rate of growth achieved during 1990-96. Projected 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 2.5 percent annually and reach 18.4 million tons by 2007. Growth in soybean processing in Mexico, Brazil, Argentina, India, and China accounts for most of the projected gains in foreign soybean oil production. Both world and U.S. exports of soybean oil and soybean meal are projected to grow faster than exports of soybeans during 1997-2007. With the outlook for continued growth in trade in oil relative to meal, incentives to produce high-oil content oilseeds and palm oil are expected to strengthen.

World vegetable oil trade is projected to grow 2.7 percent annually during 1997-2007, 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 1.8 percent during



1997-2007, 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 1997-2007, 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.

### *Soybeans and Meal*

Developing economies likely will account for all soybean and soybean meal import growth during 1997-2007, as imports by developed nations decline. Feed demand is projected to expand most rapidly in China. Economic difficulties slow Southeast Asian imports during 1998 and 1999, but growth is then expected to resume. 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 stagnate, with their share of world soybean and meal imports, on a soybean equivalent basis, dropping from 42 percent to 36 percent by 2007.

Brazil's elimination of differential export taxes reduces incentives to export soybean meal instead of soybeans. Strong internal feed consumption will also slow Brazilian soybean meal exports. Argentina's small consumption base and rapidly expanding crush capacity assure long term growth in exports of soybean meal. 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 29.9 and 7.0 million tons, respectively, in 2007. The U.S. soybean market share is projected to remain about 68 percent through 2007, while the U.S. share of the soybean meal market contracts from 19 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. Limited potential for expanding U.S. acreage and rising livestock numbers, especially poultry, constricts U.S. exportable supplies of soybeans and soybean meal. A thriving meat export trade also keeps more feed supplies within U.S. borders.

### *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 1997-2007. Despite significant tariffs and/or import controls in these countries, consumption of vegetable oils is projected to expand considerably. Per capita consumption of oils in these countries is still well below those of developed nations.

Soybean oil, however, is expected to have a diminishing role in global vegetable oil trade because of higher market prices relative to palm oil, reflecting insufficient global soybean oil supplies. Palm oil exports by Malaysia and Indonesia are expected to continue to meet the largest share of consumption and trade growth. Palm oil is expected to account for most of the increase in imports by China, India, and Pakistan because of favorable relative prices and transport costs.

Since the projected growth in vegetable oil demand during 1997-2007 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 tariffication of vegetable oil imports, while no changes in current access policies are anticipated in China and Pakistan.

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 2.8 percent per year from nearly 18 percent during the 1980s. More gradual growth in Brazil's crush, together with rising internal consumption, will restrain future exportable soybean oil supplies. In the EU, CAP reform and the U.S.-EU Oilseed Agreement are expected to restrain expansion of EU oilseed production and exports.

The U.S. share of the global soybean oil market is projected to rise through 2002, but then slip somewhat through 2007. 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 1.4 million tons by 2007.

## **Cotton**

Growth in foreign consumption and production both slowed to negligible rates during the last 10 years and, while both have begun to rebound, they are not expected to return to their long-term average growth of 2.2 percent per year during the forecast period. World cotton consumption is projected to expand approximately 1.7 percent annually during 1998-2007, underpinning the outlook for a relatively strong rate of import growth. However, a key uncertainty in the projection is the extent to which earlier gains in cotton consumption, associated with a shift in consumer fiber preference toward cotton, and away from synthetics, can be sustained.

Foreign production stagnated between 1985 and 1995, as smaller harvests in China and the FSU offset gains elsewhere. High levels of input use and poor water management have rendered useless much of the area abandoned in Central Asia during the 1990s and this area is expected to remain out of production during the projection period. Pesticide resistance and competition from other crops has hampered production in China. Further losses in these regions are not expected, and Central Asia's production is expected to resume growing, although not as quickly as elsewhere.

World cotton trade is expected to average 1.7 percent annual growth during 1998-2007, reversing much of the decline suffered during the previous 10 years. World cotton trade fell from a peak of 33.4 million bales in 1988 to as low as 25.6 million in 1992, in large part due to declining Russian imports. Import growth is foreseen in Russia and elsewhere after 1997 and, by 2007, world exports are projected at 31.6 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. Neither factor is expected to be as important in the future. Russia's cotton consumption fell more than 80 percent between 1989 and 1996 during the restructuring of Russia's political, economic, and foreign trade systems. Elsewhere, other traditional cotton-importing countries found it less expensive to purchase cotton yarn and fabric for their textile industries as inexpensive textile imports flooded their markets, particularly from Pakistan, through the early 1990s. These imports took the place of imported raw cotton.

With Russian and Central and East European consumption beginning to rebound, world cotton trade is likely to grow during the next 10 years. Also, pest and disease control problems have constrained Pakistan's ability to maintain its earlier growth rates in cotton production, cotton consumption, and textile exports. This strengthens prospects for raw cotton demand by some cotton-importing textile exporters who will face less competition. Finally, several countries that were sources of cotton exports during the 1980s are have become importers instead. In past years, increasing consumption in Mexico, Brazil, and China in part represented shifts in consumption from importing countries to non-importing producers. As consumption gains have consistently outpaced production in all three countries, they have begun to steadily import, driving world trade higher.

Foreign export growth is expected to recover during 1998-2007, but remain below the long-term trend. By 2007, foreign exports are expected to total 23.6 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 are also expected to trend up during 1998-2007, growing to 8 million bales by 2007. The U.S. share of world trade is likely to average a little more than 25 percent, just below its average share during 1990-1997. U.S. exports are expected to rise 1.6 percent annually during 1998-2007, about the same as world trade.

The rapid consumption growth of the 1980s, spurred by prolonged economic expansion and sharp share gains versus other fibers in some markets, is not expected to resume. In the short term, consumption growth by several cotton importers is likely to be constrained by relatively sluggish economic performance and economic restructuring. In the long term, the liberalization of textile trade under the Uruguay Round 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 is expected to continue in major cotton-producing countries. However, the pace of this structural shift will depend on the implementation of the Multi-Fiber Arrangement's phaseout. While it is anticipated that the most significant changes will probably be delayed until the end of the implementation period in 2005, large uncertainties remain about the timing of liberalization and shifts in garment production both to and among developing countries.

## **Beef**

World beef production is projected to rise about 1.4 percent per year through 2007. China has the fastest projected rate of production growth as demand for beef encourages expansion by producers. Increased incomes and initially low inventories in the former Soviet Union and Brazil also helps stimulate production. U.S. beef production is still recovering from the impacts of the poor grain crop in 1995/96. As a result of herd liquidation and the relative length of the biological cycle, U.S. beef production will decline through 2000 before increasing at a moderate rate through the end of the forecast period. Production in the EU is expected to decline gradually through the forecast period as beef consumption falls and stocks remain high.

Global per capita consumption of beef is projected to increase gradually as meat demand rises in response to income growth. However, in some important Pacific Rim markets, such as South Korea and Japan, there may be limited potential to further expand beef's role in the diet. Other Asian markets, such as China and the Philippines, may have more potential for increasing per capita beef demand. In Latin America, significant gains in per capita consumption are expected in Mexico and Brazil, but little growth is expected in Argentina. Increases in per capita beef consumption are expected in a number of Central and Eastern European countries but, for countries that have delayed liberalizing their economies, a longer period will be needed before income growth stimulates beef demand. In Russia, only gradual increases in beef demand are expected because of the availability of relatively cheaper pork and poultry. Per capita consumption in the United States is expected to increase slightly in the early 2000s as a result of the cattle cycle, but then decline as relative prices favor consumption of other meats. As a result of continuing concerns over BSE, demand for beef in the EU is projected to decline.

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 have become an extremely important share of consumption. 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.

Much of the growth in beef and veal import demand is projected in the Pacific Rim countries, where increasing incomes and lower trade barriers will raise consumption beyond that which can be satisfied by their production base. While economic problems associated with the Asian currency crisis may slow Asian imports in the near term, significant growth is expected in the longer term. Larger imports are expected by Mexico and Russia, where income growth is expected to increase beef demand more rapidly than domestic production can respond. The proximity of Mexico and Russia to sources of relatively low priced imported product from the United States and Central and Eastern Europe is likely to stimulate increased trade.

Growth in global beef exports is projected to slow as subsidized exports by the EU fall, in keeping with Uruguay Round commitments. The EU, however, is the only major exporter projected to

show a decline in beef exports, as the United States, Australia, and Argentina are all projected to continue to increase export volumes through 2007. Australia and the United States will likely vie for the role of leading exporter of beef and veal. U.S. exports are expected to expand, although weakness in Pacific Rim imports may keep U.S. export growth more moderate in the near term than previously projected. U.S. exports to Mexico will continue to expand. With increased production and the potential to expand into formerly restricted markets, Argentina is projected to gradually 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. Global production is projected to increase at an annual rate of nearly 2.4 percent during 1998-2007. Asia and the United States are the primary growth areas for pork production. More modest production increases are projected for Canada, Mexico, the FSU, Central and Eastern Europe, and the EU-15, while production in Japan declines.

Pork consumption is projected to grow about 2.3 percent per year between 1998 and 2007, 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-15 are in this category.

Stronger demand growth in Asia and Mexico partially offsets the moderate consumption growth in the United States, Canada, and the EU-15. Consumption in China and Korea is projected to rise 3 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 are expected to be significant, although somewhat variable, influences on the world market.

The United States is projected to assume a dominant export role in global pork trade in the baseline, increasing exports by almost 70 percent between 1998 and 2007. Robust U.S. export growth reflects a re-structured U.S. pork industry with greater export orientation and internationally competitive costs. The United States is expected to gain market share from Taiwan, whose exports of pork are assumed to cease until 2003 in the aftermath of the foot and mouth disease outbreak in 1997. By the end of the baseline in 2007, Taiwan's exports are expected to recover only about a third of their average level during 1990-96, as domestic

### **Effects of Taiwan's Hog Sector Foot-and-Mouth Disease Outbreak**

The sudden and devastating outbreak of foot-and-mouth disease (FMD) on Taiwan's hog farms in March 1997 has had major impacts on Taiwan's pork sector and on global pork trade. Taiwan was the leading supplier of Japan's pork imports prior to the FMD outbreak. Taiwanese pork production is projected to recover gradually from the FMD shock. For this baseline, it is assumed that Taiwan will withdraw from the international pork market through the end of 2002. Pork exports will then gradually be resumed starting at relatively low levels in 2003.

Although the FMD epidemic is now basically under control, the outbreak of FMD has substantially depopulated Taiwan's 10.7 million hogs (as of November 1997). The Taiwan Government's objective is to become "FMD-free with immunization" by June 2000 and "FMD-free without immunization" by June 2001. It is likely that the Taiwanese pork industry will restructure during these intervening years. Taiwanese pork exports in 2003 and beyond, will be the product of an industry characterized by fewer, but larger operations. Long-run Taiwanese pork exports, however, are projected to be much smaller than pre-FMD levels.

In the baseline projections, the share of Japan's pork import market ceded by Taiwan because of the FMD outbreak is assumed to be divided largely between the United States and Europe, with lower levels of product being accounted for by Canada and Korea.

environmental concerns and source diversification by importers limit the recovery of the Taiwanese pork industry.

EU-15 pork exports are expected to increase by 6 percent during the baseline, as the EU-15 continues to be able to export unsubsidized pork over and above the Uruguay Round imposed limits on subsidized exports. EU exports are primarily of Danish origin. Export competitiveness is expected to be enhanced by the use of technical innovations to manage costs and improve product quality.

### **Poultry**

World consumption of poultry meat is expected to continue to expand throughout the baseline period. Poultry's low cost relative to most other meats, coupled with projected economic growth in most areas, is expected to increase demand. In particular, rising disposable incomes in developing countries and health concerns in developed countries strengthen the demand outlook for poultry meat. The United States, as the world's largest poultry exporter, is expected to benefit from growth in world poultry consumption and trade by maintaining its share of world poultry meat exports.

Increases in poultry meat consumption, while well above the rates for beef and pork, are projected to be lower than during the 1980s. Consumption is expected to continue to expand rapidly in countries such as Mexico and China, where current levels of use are relatively low. Per capita poultry consumption remains relatively low in many countries, including Japan, Egypt, the FSU, and Eastern Europe, regardless of stage of development. Poultry consumption in Japan is expected to increase slowly, with gains coming from higher imports as domestic production declines. In Egypt, higher consumption is expected to be driven by stronger economic growth and less restrictive policies toward imports of poultry and feeds. In the FSU and CEE, domestic poultry production is expected to gradually increase during the forecast period, but these countries are likely to continue to be large poultry importers for some time. Low incomes continue to hold down poultry demand in many countries but, as incomes increase, poultry's low price relative to other proteins often make it a first choice to upgrade diets.

The United States is the world's largest poultry meat producer, accounting for nearly one-quarter of world production in 1997. Other large producers are the EU, China, and Brazil. Production in these countries is expected to continue to expand as domestic and global demand increase. The greatest gains are likely to occur in China where production is projected to expand sharply in response to growing domestic and export demand and government policies encouraging poultry production.

Global trade in poultry meat is projected to trend upwards to over 9 million tons by 2007. Imports are anticipated to rise in all the largest import markets, including the FSU, China, Japan, Hong Kong, Mexico, Canada, and the Middle East. Most of the growth in world trade is expected to come from expanded shipments of relatively low-priced poultry parts. This will especially be true in emerging markets in middle- and lower income countries, such as those in the Pacific Rim, the FSU, and CEE. In many cases, the preferred products in these countries are less-preferred and lower-valued products in the United States. As poultry trade expands many major exporters will attempt to use preferred products in their domestic market and export lower valued products. Exports of further processed products are expected to grow, but remain a relatively small percentage of total trade.

World trade in poultry products is expected to become less restricted over the baseline period. However, some countries, under pressure from domestic producers, are likely to use higher tariffs or other methods to restrict imports and favor local production, often based on imported feeds.

Table 37. Coarse grains trade baseline projections

	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
	<i>Million metric tons</i>											
<b>Importers</b>												
FSU 1/	1.9	1.8	1.8	2.3	2.7	2.8	3.0	3.2	3.5	3.8	3.9	4.1
Eastern Europe	1.6	0.9	1.3	1.1	1.1	1.1	1.3	1.4	1.5	1.6	1.5	1.6
Japan	20.6	20.8	20.7	20.7	20.8	20.8	20.6	20.5	20.3	20.2	20.0	19.8
South Korea	8.9	7.8	10.1	10.4	10.7	11.0	11.2	11.4	11.6	11.8	11.9	12.1
Taiwan	5.9	5.2	4.5	5.1	5.3	5.6	5.9	6.1	6.3	6.4	6.6	6.7
China	2.1	2.6	4.0	4.9	6.3	7.1	8.1	9.4	10.9	12.6	14.4	16.8
Mexico	5.4	6.6	7.9	8.4	8.8	9.3	9.9	10.3	10.7	11.1	11.5	11.8
European Union 2/	3.2	2.8	2.6	2.5	2.5	2.6	2.5	2.6	2.5	2.6	2.6	2.6
Latin America 3/	8.0	9.3	9.6	10.0	10.3	10.5	10.7	11.0	11.2	11.3	11.4	11.5
N. Africa & Middle East	20.4	20.4	20.0	20.5	21.0	21.6	22.4	23.2	24.0	24.7	25.4	26.3
Other Asia & Oceania	5.0	5.3	5.0	5.4	5.8	6.4	6.7	7.1	7.5	7.9	8.2	8.5
Sub-Saharan Africa 4/	2.2	2.1	1.6	1.5	1.4	1.3	1.3	1.4	1.3	1.3	1.2	1.1
Other foreign 5/	6.5	5.8	5.9	5.7	5.8	5.8	6.0	6.2	6.3	6.5	6.4	6.4
United States	2.9	3.0	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
<b>Total trade</b>	<b>94.7</b>	<b>94.2</b>	<b>98.2</b>	<b>101.6</b>	<b>105.8</b>	<b>109.0</b>	<b>112.8</b>	<b>116.7</b>	<b>120.7</b>	<b>124.7</b>	<b>128.1</b>	<b>132.4</b>
<b>Exporters</b>												
European Union 2/	6.4	8.2	10.0	9.5	9.0	8.5	8.5	9.0	9.0	10.2	10.1	10.4
China	4.0	4.0	1.4	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.1	1.1
Argentina	11.5	8.5	9.2	9.7	10.0	10.3	10.8	11.1	11.7	12.3	12.7	13.6
Australia	4.4	2.9	2.8	2.8	2.9	3.0	3.2	3.3	3.4	3.4	3.5	3.7
Canada	5.4	5.2	3.9	4.4	4.7	4.8	5.0	5.2	5.4	5.3	5.6	5.7
Rep. of South Africa	1.4	1.0	0.6	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Eastern Europe	1.5	2.7	2.7	3.2	3.0	3.0	3.0	3.0	3.0	3.0	3.5	4.2
FSU 1/	1.3	2.1	2.9	2.7	2.6	2.9	2.9	2.8	2.9	2.9	3.0	2.9
Other foreign	2.2	2.4	2.0	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.3
United States	51.5	53.4	61.3	64.7	68.9	71.7	74.6	77.4	80.2	82.3	84.5	86.5
	<i>Percent</i>											
<b>U.S. trade share</b>	<b>54.4</b>	<b>56.8</b>	<b>62.4</b>	<b>63.6</b>	<b>65.1</b>	<b>65.8</b>	<b>66.1</b>	<b>66.3</b>	<b>66.4</b>	<b>66.0</b>	<b>66.0</b>	<b>65.4</b>

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 1997 based on policy decisions and other information known at that time.



Table 38. Corn trade baseline projections

	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
<i>Million metric tons</i>												
Importers												
FSU 1/	0.6	0.5	0.5	0.6	0.8	1.0	1.2	1.3	1.5	1.6	1.7	1.8
Japan	15.9	15.9	15.8	15.9	15.9	15.9	15.8	15.7	15.6	15.5	15.3	15.2
South Korea	8.5	7.5	9.4	9.9	10.4	10.7	10.9	11.1	11.3	11.5	11.7	11.8
Taiwan	5.7	5.0	4.2	4.8	5.0	5.3	5.6	5.7	5.9	6.0	6.2	6.3
China	0.1	0.3	2.1	2.9	4.3	5.1	6.0	7.3	8.6	10.2	11.9	14.2
Mexico	3.1	4.2	4.8	5.0	5.2	5.4	5.6	5.8	6.0	6.1	6.3	6.4
European Union 2/	2.6	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Latin America 3/	7.3	8.6	9.0	9.3	9.6	9.8	9.9	10.2	10.4	10.5	10.6	10.7
N. Africa & Middle East	11.1	10.7	11.0	11.4	11.9	12.3	12.8	13.3	13.7	14.1	14.5	15.0
Other Asia & Oceania	5.0	5.2	4.9	5.3	5.8	6.3	6.7	7.0	7.4	7.8	8.1	8.4
Sub-Saharan Africa 4/	2.1	2.0	1.5	1.3	1.3	1.2	1.2	1.3	1.2	1.2	1.1	1.0
Other 5/	3.7	3.8	3.5	3.5	3.6	3.7	3.9	3.9	4.1	4.0	4.0	4.0
Total trade	65.7	65.9	68.7	72.2	75.9	78.7	81.7	84.7	87.8	90.6	93.4	96.9
Exporters												
European Union 2/	0.2	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
China	3.9	4.0	1.3	1.2	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1
Argentina	10.5	7.7	8.5	8.9	9.2	9.5	9.9	10.3	10.9	11.6	11.9	12.8
Republic of South Africa	1.4	1.0	0.6	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Eastern Europe	1.4	2.2	2.0	2.4	2.1	2.0	2.0	2.0	2.0	2.2	2.7	3.4
FSU 1/	0.3	0.5	0.9	0.7	0.7	0.7	0.7	0.8	0.8	0.9	1.0	1.0
Other foreign	1.1	1.2	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
United States	45.6	46.4	54.0	57.1	61.0	63.5	66.0	68.6	71.1	73.0	74.9	76.8
<i>Percent</i>												
U.S. trade share	69.4	70.3	78.6	79.2	80.3	80.7	80.8	81.0	81.0	80.6	80.2	79.3

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 1997 based on policy decisions and other information known at that time.

Table 39. Sorghum trade baseline projections

	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
<i>Million metric tons</i>												
Importers												
Japan	2.6	2.7	2.6	2.7	2.7	2.6	2.6	2.6	2.6	2.5	2.5	2.5
Mexico	2.1	2.2	3.0	3.2	3.5	3.8	4.1	4.3	4.5	4.7	5.0	5.1
Other N. Africa/M. East	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5
Other S. America	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saudi Arabia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
South Korea	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sub-Saharan Africa 1/	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Taiwan	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6
Total trade	6.3	6.4	6.9	7.2	7.5	7.8	8.1	8.3	8.5	8.7	8.9	9.1
Exporters												
Argentina	0.8	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5
Australia	0.1	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1
Sub-Saharan Africa 1/	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other foreign	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
United States	5.2	5.1	5.7	6.0	6.3	6.6	7.0	7.2	7.5	7.7	8.0	8.1
<i>Percent</i>												
U.S. trade share	82.4	79.1	82.4	82.9	84.1	84.8	86.1	87.0	88.0	89.1	89.4	89.8

1/ Includes South Africa.

The projections were completed in November 1997 based on policy decisions and other information known at that time.

Table 40. Barley trade baseline projections

	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
<i>Million metric tons</i>												
Importers												
FSU 1/	0.9	1.0	0.8	1.0	1.2	1.1	1.1	1.1	1.1	1.3	1.2	1.3
Japan	1.6	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.7
South Korea	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Taiwan	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
China	2.0	2.3	1.9	1.9	1.9	1.9	2.0	2.1	2.1	2.3	2.3	2.5
European Union 2/	0.1	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.3	0.3	0.3
Latin America 3/	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Algeria	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Saudi Arabia	5.8	6.0	5.1	5.4	5.4	5.5	5.7	5.8	6.1	6.4	6.6	6.9
Morocco	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Tunisia	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Iran	0.5	0.6	0.5	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.4	0.4
Iraq	0.0	0.0	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
Turkey	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.2
Other N. Africa/M. East	2.1	2.0	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.2	2.2
Other foreign 4/	1.6	0.9	1.5	1.2	1.2	1.2	1.2	1.3	1.3	1.6	1.5	1.5
United States	0.8	0.9	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Total trade	16.5	17.1	16.8	16.8	16.9	17.1	17.4	18.0	18.3	19.2	19.4	20.0
Exporters												
European Union 2/	4.0	6.0	8.1	7.7	7.3	7.0	6.9	7.4	7.4	8.6	8.5	8.7
Australia	4.0	2.4	2.4	2.4	2.6	2.7	2.9	3.0	3.2	3.2	3.2	3.5
Canada	3.4	3.3	2.1	2.3	2.5	2.5	2.6	2.7	2.8	2.7	2.9	3.1
FSU 1/	0.7	1.5	1.0	1.0	1.1	1.2	1.3	1.2	1.2	1.1	1.1	1.0
Eastern Europe	0.1	0.5	0.7	0.8	0.8	0.9	0.9	0.9	0.9	0.8	0.8	0.8
Turkey	0.5	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.6
Other foreign	0.8	0.6	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8
United States	0.7	2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
<i>Percent</i>												
U.S. trade share	4.1	11.5	9.1	9.1	9.0	8.9	8.8	8.5	8.3	7.9	7.9	7.6

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 1997 based on policy decisions and other information known at that time.

Table 41. Wheat trade baseline projections

	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
	<i>Million metric tons</i>											
<b>Importers</b>												
FSU 1/	6.3	4.9	6.3	6.3	6.1	7.0	7.7	8.0	8.4	8.4	8.4	8.1
China	2.8	2.0	4.8	5.7	6.2	6.8	7.4	7.9	8.8	9.6	10.3	11.2
Egypt	7.0	7.2	7.2	7.3	7.4	7.5	7.7	8.0	8.2	8.4	8.6	8.8
Iran	7.0	5.8	4.4	5.1	5.3	5.5	5.7	5.9	6.1	6.3	6.5	6.7
Other N. Africa/M. East	15.7	19.2	18.6	19.4	20.2	20.9	21.6	22.4	23.3	24.1	24.8	25.6
Sub-Saharan Africa 2/	5.2	5.0	5.4	5.0	5.0	4.9	4.9	5.0	5.0	5.0	5.0	5.1
Japan	6.3	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.1	6.1	6.1	6.1
South Korea	3.5	3.8	3.0	3.0	2.8	2.8	2.7	2.7	2.7	2.6	2.6	2.6
Brazil	5.2	5.4	6.2	6.3	6.3	6.3	6.4	6.5	6.6	6.7	6.8	6.9
Indonesia	4.2	4.5	4.7	5.0	5.3	5.6	5.9	6.2	6.6	6.9	7.3	7.7
Pakistan	3.0	3.5	3.5	3.7	3.8	4.1	4.3	4.5	4.8	5.1	5.4	5.8
Mexico	1.9	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.2	2.3	2.4
Other	30.8	29.0	28.5	28.9	28.9	28.8	29.0	29.3	29.6	30.0	30.4	30.9
<b>Total trade</b>	<b>98.8</b>	<b>97.9</b>	<b>100.5</b>	<b>103.4</b>	<b>105.4</b>	<b>108.4</b>	<b>111.5</b>	<b>114.5</b>	<b>118.4</b>	<b>121.4</b>	<b>124.5</b>	<b>127.9</b>
<b>Exporters</b>												
United States	27.3	29.3	32.7	35.4	36.7	37.4	37.4	38.1	39.5	40.1	40.8	42.2
European Union 3/	18.7	15.5	18.3	17.8	16.7	17.8	18.9	19.8	21.0	21.9	23.2	24.3
Canada	19.5	18.0	17.5	17.9	18.0	18.1	18.1	18.1	18.2	18.2	18.2	18.2
Australia	19.0	13.0	14.2	14.3	14.6	15.0	15.3	15.6	15.8	16.0	16.3	16.4
Argentina	10.5	8.7	7.8	7.9	8.3	8.8	9.3	9.8	10.2	10.6	11.0	11.4
FSU 1/	3.5	4.6	5.7	5.6	5.9	6.1	6.4	6.7	6.9	7.1	7.4	7.7
Central/East Europe	0.7	2.9	2.5	2.6	2.8	2.8	3.3	3.6	4.0	4.5	4.6	4.8
Other	4.3	2.9	1.9	1.9	2.4	2.5	2.7	2.8	2.8	2.9	3.0	2.8
	<i>Percent</i>											
<b>U.S. trade share</b>	<b>27.6</b>	<b>29.9</b>	<b>32.5</b>	<b>34.2</b>	<b>34.8</b>	<b>34.5</b>	<b>33.5</b>	<b>33.3</b>	<b>33.3</b>	<b>33.0</b>	<b>32.8</b>	<b>33.0</b>

1/ Includes intra-FSU trade.

2/ Includes South Africa.

3/ Excludes intra-EU trade, covers EU-15.

The projections were completed in November 1997 based on policy decisions and other information known at that time.

Table 42. Rice trade baseline projections

	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
<i>Million metric tons</i>												
Importers												
Canada	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
Mexico	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4
C. America/Caribbean	0.9	1.0	0.9	1.0	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.3
Brazil	1.0	1.5	1.5	1.5	1.5	1.6	1.6	1.7	1.7	1.7	1.8	1.8
Other South America	0.6	0.6	0.5	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.9	0.9
European Union 1/	0.6	0.5	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6
FSU 2/	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
Other Europe 3/	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
China	0.6	1.0	1.0	1.1	1.2	1.2	1.3	1.3	1.4	1.4	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	0.8	0.8
South Korea	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Indonesia	0.6	1.5	1.5	0.9	0.8	0.8	1.0	1.1	1.2	1.3	1.3	1.4
Malaysia	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7
Philippines	0.7	1.1	1.0	0.9	1.0	1.0	1.1	1.2	1.3	1.3	1.4	1.5
Other Asia & Oceania	1.8	1.6	1.9	2.0	2.1	2.1	2.2	2.3	2.3	2.4	2.4	2.4
Iraq	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.9
Iran	1.0	1.3	1.2	1.3	1.3	1.4	1.4	1.5	1.6	1.7	1.8	1.9
Saudia Arabia	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.0	1.1
Turkey	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4
Other N. Afr. & M. East	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	1.0
Sub-Saharan Africa	2.5	2.7	3.2	3.0	3.0	3.0	2.9	2.8	2.7	2.7	2.6	2.5
Republic of South Africa	0.7	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.7
Total foreign	15.7	17.9	18.3	18.2	18.4	19.1	19.6	20.3	20.8	21.4	21.9	22.4
Unaccounted	2.0	1.5	1.4	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.7
United States	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5
World	18.0	19.7	20.0	20.1	20.4	21.1	21.6	22.3	22.9	23.5	24.0	24.6
Exporters												
Australia	0.7	0.7	0.8	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Argentina	0.6	0.6	0.7	0.7	0.8	0.9	0.9	1.0	1.1	1.2	1.3	1.4
Other South America	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
European Union 1/	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2
China	0.8	1.0	0.9	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.5
India	1.8	1.8	1.7	1.7	1.8	2.0	2.2	2.3	2.5	2.7	2.8	3.0
Pakistan	1.8	1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.1	2.1	2.2	2.2
Burma	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5
Thailand	4.8	5.3	5.8	6.0	6.3	6.5	6.7	6.9	7.1	7.3	7.5	7.7
Vietnam	3.3	3.5	3.8	3.6	3.4	3.5	3.5	3.7	3.8	3.9	3.9	4.0
Other foreign	0.7	0.5	0.6	0.5	0.4	0.5	0.4	0.4	0.4	0.5	0.5	0.5
Total foreign	15.6	16.4	17.4	17.4	17.6	18.3	18.9	19.5	20.1	20.8	21.2	21.9
United States	2.5	2.8	2.7	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.8
World	18.1	19.1	20.0	20.1	20.4	21.1	21.6	22.3	22.9	23.5	24.0	24.6
<i>Percent</i>												
U.S. trade share	13.8	14.1	13.4	13.5	13.4	13.0	12.7	12.3	12.1	11.7	11.5	11.3

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 1997 based on policy decisions and other information known at that time.

Table 43. All Cotton trade baseline projections

	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
	<i>Million bales</i>											
<b>Importers</b>												
European Union 1/	4.6	4.6	4.4	4.3	4.2	4.2	4.1	4.0	4.0	3.9	4.0	3.9
FSU 2/	1.6	1.7	1.6	1.8	2.0	2.0	2.0	2.0	2.3	2.3	2.3	2.5
Indonesia	2.1	2.1	2.3	2.4	2.4	2.5	2.6	2.6	2.7	2.8	2.8	2.9
Thailand	1.4	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2
Brazil	2.3	2.0	2.1	2.2	2.3	2.3	2.5	2.5	2.6	2.7	2.9	2.9
Eastern Europe	1.3	1.4	1.5	1.6	1.6	1.6	1.7	1.7	1.8	1.8	1.9	1.9
Other Asia & Oceania	4.1	3.9	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.3	4.3	4.4
Japan	1.3	1.2	1.2	1.2	1.2	1.2	1.1	1.1	1.0	1.0	0.9	0.8
South Korea	1.5	1.4	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.1	1.1
China	3.6	2.2	2.6	2.6	2.6	2.6	2.7	2.8	2.9	3.0	3.1	3.2
Mexico	0.9	1.3	1.2	1.2	1.3	1.3	1.4	1.4	1.5	1.6	1.7	1.7
Other	3.9	4.0	3.9	4.1	4.2	4.4	4.7	4.9	5.0	5.2	5.3	5.4
<b>Total imports</b>	<b>28.7</b>	<b>26.9</b>	<b>27.4</b>	<b>27.9</b>	<b>28.4</b>	<b>28.8</b>	<b>29.3</b>	<b>29.8</b>	<b>30.3</b>	<b>30.8</b>	<b>31.4</b>	<b>31.9</b>
<b>Exporters</b>												
FSU 2/	6.2	6.4	6.1	6.5	6.7	6.6	6.6	6.7	6.8	6.9	6.9	7.0
West Africa-10	3.4	3.5	3.8	3.8	3.9	3.9	4.0	4.1	4.1	4.2	4.3	4.3
Australia	2.4	2.5	2.6	2.7	2.7	2.8	2.8	2.9	2.9	2.9	2.9	3.0
Argentina	1.3	1.4	1.4	1.5	1.5	1.6	1.6	1.7	1.7	1.8	1.8	1.9
Pakistan	0.1	0.7	0.6	0.5	0.6	0.6	0.8	0.9	1.0	1.1	1.1	1.2
India	1.3	0.3	0.4	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6
China	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turkey	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
Egypt	0.2	0.5	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Other Latin America	0.8	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.9	0.9	1.0	1.0
Other S.-Saharan Africa 3/	1.0	1.0	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5
Other foreign	2.9	2.7	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
<b>Total foreign</b>	<b>19.8</b>	<b>19.9</b>	<b>20.2</b>	<b>20.6</b>	<b>21.0</b>	<b>21.3</b>	<b>21.7</b>	<b>22.1</b>	<b>22.5</b>	<b>22.8</b>	<b>23.2</b>	<b>23.6</b>
United States	6.9	7.0	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.7	7.9	8.0
<b>Total exports</b>	<b>26.7</b>	<b>26.9</b>	<b>27.1</b>	<b>27.6</b>	<b>28.1</b>	<b>28.5</b>	<b>29.0</b>	<b>29.5</b>	<b>30.0</b>	<b>30.5</b>	<b>31.1</b>	<b>31.6</b>
	<i>Percent</i>											
<b>U.S. trade share</b>	<b>25.7</b>	<b>26.0</b>	<b>25.6</b>	<b>25.4</b>	<b>25.3</b>	<b>25.3</b>	<b>25.3</b>	<b>25.2</b>	<b>25.1</b>	<b>25.2</b>	<b>25.3</b>	<b>25.3</b>

1/ Includes intra-EU trade, covers EU-15.

2/ Includes intra-FSU trade.

3/ Includes Republic of South Africa.

Note: Imports exceed exports by 300,000 bales each year due to statistical differences across countries' reported trade. The projections were completed in November 1997 based on policy decisions and other information known at that time.

Table 44. Soybean trade baseline projections

	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
<i>Million metric tons</i>												
<b>Importers</b>												
European Union 1/	15.4	15.5	16.3	16.6	15.8	15.6	15.4	15.5	15.5	15.4	15.4	15.3
Japan	5.0	4.9	4.9	4.9	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1
South Korea	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.7
Taiwan	2.4	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0
Mexico	3.1	3.1	3.5	3.6	3.8	3.9	4.1	4.2	4.3	4.5	4.6	4.8
FSU 2/	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Eastern Europe	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4
China	2.3	3.0	3.5	3.6	3.9	4.1	4.3	4.5	4.7	4.9	5.2	5.4
Malaysia	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.9	0.9	0.9
Indonesia	0.8	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.3	1.3	1.3	1.4
Other	6.4	5.1	5.1	5.0	5.4	5.4	5.4	5.5	5.7	5.9	6.0	6.4
Total imports	37.9	37.6	39.3	39.8	40.2	40.5	40.9	41.5	42.2	42.8	43.5	44.3
<b>Exporters</b>												
United States	24.0	26.7	26.9	27.1	27.4	27.4	27.8	28.2	28.6	29.0	29.4	29.9
Argentina	0.8	2.1	1.8	1.6	1.7	1.8	1.9	2.0	2.2	2.3	2.4	2.5
Brazil	8.3	7.0	7.3	7.8	7.7	7.9	7.7	7.7	7.9	8.0	8.0	8.1
China	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
Other foreign	3.0	3.5	3.2	3.2	3.3	3.3	3.4	3.4	3.4	3.5	3.5	3.6
Total exports	36.3	39.4	39.3	39.8	40.2	40.5	40.9	41.5	42.2	42.8	43.5	44.3
<i>Percent</i>												
<b>U.S. trade share</b>	<b>66.2</b>	<b>67.6</b>	<b>68.5</b>	<b>68.0</b>	<b>68.1</b>	<b>67.5</b>	<b>67.9</b>	<b>67.9</b>	<b>67.7</b>	<b>67.6</b>	<b>67.6</b>	<b>67.6</b>

1/ Includes intra-EU trade, covers EU-15.

2/ Includes intra-FSU trade.

The projections were completed in November 1997 based on policy decisions and other information known at that time.

Table 45. Soybean meal trade baseline projections

	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
<i>Million metric tons</i>												
<b>Importers</b>												
European Union 1/	14.8	15.2	15.5	15.5	15.7	15.6	15.5	15.4	15.4	15.4	15.8	16.0
FSU 2/	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.7
Eastern Europe	2.0	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.5	2.5	2.6
Canada	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Japan	0.8	0.8	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4
China	3.8	4.5	4.6	4.8	5.1	5.3	5.6	5.9	6.3	6.5	6.8	7.1
Southeast Asia	3.6	3.6	3.9	4.1	4.2	4.4	4.6	4.8	5.1	5.3	5.5	5.8
Latin America	3.0	3.1	3.1	3.1	3.1	3.1	3.2	3.2	3.3	3.4	3.4	3.5
N. Africa/Middle East	3.3	3.4	3.6	3.7	3.8	3.9	4.1	4.2	4.3	4.4	4.5	4.6
Other	2.0	2.0	2.1	2.1	2.2	2.4	2.6	2.8	2.9	3.0	2.9	2.8
Total imports	34.1	35.6	36.6	37.3	37.9	38.7	39.5	40.3	41.2	42.2	43.1	44.1
<b>Exporters</b>												
United States	6.4	6.8	6.9	7.0	6.9	6.8	6.7	6.7	6.8	6.8	6.9	7.0
Argentina	8.1	9.2	9.7	9.8	10.1	10.3	10.6	10.9	11.2	11.5	11.8	12.1
Brazil	10.1	10.9	11.0	11.3	11.6	12.0	12.3	12.7	13.1	13.4	13.8	14.3
India	2.5	3.0	3.1	3.4	3.6	3.8	4.0	4.1	4.4	4.5	4.7	4.9
China	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
European Union 1/	4.2	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Other	1.5	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.8	1.8	1.8
Total exports	32.8	35.5	36.6	37.3	37.9	38.7	39.5	40.3	41.2	42.2	43.1	44.1
<i>Percent</i>												
<b>U.S. trade share</b>	<b>19.7</b>	<b>19.0</b>	<b>19.0</b>	<b>18.9</b>	<b>18.2</b>	<b>17.6</b>	<b>17.0</b>	<b>16.7</b>	<b>16.4</b>	<b>16.1</b>	<b>16.0</b>	<b>15.8</b>

1/ Includes intra-EU trade, covers EU-15.

2/ Includes intra-FSU trade.

The projections were completed in November 1997 based on policy decisions and other information known at that time.

Table 46. Soybean oil trade baseline projections

	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
<i>Million metric tons</i>												
<b>Importers</b>												
European Union 1/	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
China	1.7	1.8	1.9	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Other Asia	1.0	1.1	1.0	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.3	1.3
Latin America	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
North Africa & Middle East	1.1	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.4	1.4	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	0.2	0.2
Other	0.4	0.4	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
<b>Total imports</b>	<b>5.9</b>	<b>6.3</b>	<b>6.4</b>	<b>6.7</b>	<b>6.7</b>	<b>6.8</b>	<b>6.9</b>	<b>7.0</b>	<b>7.0</b>	<b>7.2</b>	<b>7.3</b>	<b>7.4</b>
<b>Exporters</b>												
United States	0.9	1.1	1.2	1.2	1.3	1.4	1.4	1.3	1.3	1.4	1.4	1.4
Argentina	1.7	1.9	2.0	2.1	2.1	2.2	2.3	2.3	2.3	2.4	2.5	2.5
Brazil	1.2	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.6	1.6	1.6
European Union 1/	1.2	1.2	1.3	1.4	1.3	1.2	1.2	1.1	1.1	1.1	1.1	1.1
Other	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
<b>Total exports</b>	<b>5.7</b>	<b>6.2</b>	<b>6.4</b>	<b>6.7</b>	<b>6.7</b>	<b>6.8</b>	<b>6.9</b>	<b>7.0</b>	<b>7.0</b>	<b>7.2</b>	<b>7.3</b>	<b>7.4</b>
<i>Percent</i>												
<b>U.S. trade share</b>	<b>16.3</b>	<b>17.6</b>	<b>18.3</b>	<b>18.7</b>	<b>19.6</b>	<b>20.2</b>	<b>19.7</b>	<b>19.4</b>	<b>19.0</b>	<b>19.0</b>	<b>19.0</b>	<b>19.0</b>

1/ Includes intra-EU trade, covers EU-15.

2/ Includes intra-FSU trade.

The projections were completed in November 1997 based on policy decisions and other information known at that time.

Table 47. Beef trade baseline projections

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
<i>Thousand metric tons, carcass weight</i>												
<b>Importers</b>												
United States	940	1,083	1,216	1,107	1,105	1,107	1,106	1,104	1,099	1,094	1,085	1,077
Japan	899	872	914	956	986	1,011	1,038	1,064	1,084	1,108	1,125	1,140
South Korea	191	225	255	278	304	306	336	366	396	425	455	485
Taiwan	59	66	68	68	72	77	82	87	93	99	105	111
European Union 1/	351	332	341	350	350	350	350	350	350	350	350	350
Russia	480	500	510	586	531	558	591	613	615	625	639	649
Eastern Europe	57	74	67	46	48	51	53	59	61	68	75	84
Mexico	100	138	150	178	208	220	232	242	251	262	278	295
Canada	237	235	240	208	204	200	196	192	188	184	181	177
<b>Major importers</b>	<b>3,314</b>	<b>3,525</b>	<b>3,761</b>	<b>3,777</b>	<b>3,808</b>	<b>3,880</b>	<b>3,984</b>	<b>4,077</b>	<b>4,137</b>	<b>4,215</b>	<b>4,293</b>	<b>4,368</b>
<b>Exporters</b>												
United States	851	897	950	961	1,012	1,036	1,073	1,112	1,144	1,180	1,217	1,254
Australia	1,016	1,095	1,075	1,144	1,148	1,154	1,167	1,177	1,179	1,192	1,196	1,203
New Zealand	515	500	480	484	493	501	508	511	513	512	511	510
European Union 1/	913	876	880	877	817	817	817	817	817	817	817	817
Eastern Europe	92	86	87	73	80	78	79	85	100	112	125	139
Ukraine	200	76	70	175	178	180	185	191	200	204	207	209
Argentina	470	430	450	437	462	483	521	538	560	572	597	623
Brazil	277	240	240	225	234	234	240	252	262	275	285	296
Canada	286	360	380	373	382	384	386	390	396	399	399	396
<b>Major exporters</b>	<b>4,620</b>	<b>4,560</b>	<b>4,612</b>	<b>4,749</b>	<b>4,806</b>	<b>4,867</b>	<b>4,976</b>	<b>5,073</b>	<b>5,171</b>	<b>5,263</b>	<b>5,354</b>	<b>5,447</b>

1/ Excludes intra-EU trade, covers EU-15

The projections were completed in November 1997 based on policy decisions and other information known at that time.

Table 48. Pork trade baseline projections

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
<i>Thousand metric tons, carcass weight</i>												
Importers												
United States	280	281	279	276	272	268	264	260	256	252	248	244
Japan	933	728	822	894	919	944	968	992	1,015	1,038	1,060	1,080
Hong Kong	145	153	150	160	174	184	195	206	217	230	240	247
South Korea	49	106	213	217	231	236	245	255	265	275	283	291
Russia	450	470	470	538	515	506	510	515	519	518	514	508
Mexico	41	48	50	62	84	104	114	122	128	135	140	148
Canada	39	50	50	47	47	48	49	49	50	50	51	51
Major importers	1,937	1,836	2,034	2,194	2,242	2,290	2,345	2,399	2,450	2,498	2,536	2,569
Exporters												
United States	431	483	522	554	588	623	660	700	742	786	834	884
Canada	369	395	430	456	464	477	488	498	509	518	525	530
European Union 1/	757	801	794	811	816	824	828	832	836	840	844	848
Eastern Europe	345	377	334	436	472	474	484	480	477	484	484	480
Taiwan	388	69	50	0	0	0	0	20	40	60	80	100
China	192	150	90	245	247	251	254	258	261	264	268	271
Major exporters	2,482	2,275	2,220	2,502	2,587	2,649	2,714	2,788	2,865	2,952	3,035	3,113

1/ Excludes intra-EU trade, covers EU-15.

The projections were completed in November 1997 based on policy decisions and other information known at that time.

Table 49. Poultry trade baseline projections

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
<i>Thousand metric tons, ready to cook</i>												
Importers												
Russia	1,053	1,206	1,311	1,324	1,344	1,348	1,383	1,411	1,433	1,461	1,473	1,481
European Union 1/	284	308	323	300	300	300	300	300	300	300	300	300
Japan	559	560	562	597	629	650	678	702	725	749	772	794
Hong Kong	799	909	1,035	1,108	1,189	1,271	1,359	1,454	1,555	1,663	1,778	1,902
China	900	950	1,100	1,191	1,301	1,402	1,520	1,644	1,777	1,927	2,086	2,257
South Korea	57	58	60	63	69	72	76	81	84	89	92	96
Saudi Arabia	288	247	245	245	258	266	272	278	280	278	280	278
Egypt	2	4	20	5	6	7	5	11	13	16	21	25
Mexico	189	210	218	227	230	232	234	237	241	245	250	251
Canada	115	129	137	153	155	158	160	162	165	167	169	172
Major importers	4,246	4,581	5,011	5,213	5,481	5,706	5,987	6,280	6,573	6,895	7,221	7,556
Exporters												
United States	2,324	2,540	2,591	2,761	2,887	2,992	3,103	3,285	3,431	3,580	3,705	3,851
Brazil	582	670	720	760	789	829	864	903	945	982	1,023	1,065
European Union 1/	916	941	963	963	973	982	992	1,002	1,012	1,022	1,032	1,043
Hungary	109	112	114	133	120	124	122	126	133	139	145	150
China	450	550	650	660	682	718	757	800	845	886	930	975
Hong Kong	568	658	766	787	843	915	992	1,076	1,166	1,263	1,368	1,481
Thailand	169	187	200	211	214	223	221	221	222	221	220	220
Saudi Arabia	25	35	35	36	38	41	44	47	50	54	57	61
Major exporters	5,143	5,693	6,039	6,311	6,546	6,824	7,095	7,460	7,804	8,147	8,480	8,846

1/ Excludes intra-EU trade, covers EU-15.

The projections were completed in November 1997 based on policy decisions and other information known at that time.