International Agricultural Baseline Projections to 2007

Introduction

This publication of long-term projections for international agriculture is a companion to *USDA Agricultural Baseline Projections to 2007* (WAOB-98-1) released in February 1998. It is intended to provide users of USDA projections with the detailed foreign supply, use, and trade projections that support the baseline outlook for U.S. agriculture and trade. Accordingly, this report includes a review of macroeconomic and major country policy assumptions, along with tables and analysis of the supply, demand, and trade projections for major countries for wheat, rice, coarse grains, soybeans and products, cotton, beef, pork, and poultry. These commodities accounted for about 58 percent of U.S. agricultural export value in 1996 and 52 percent in 1997.

As is the case with the domestic component of USDA's baseline projections, the non-U.S. projections presented in this report should not be interpreted as forecasts of future events. Rather, they indicate the expected outcomes, given specific assumptions on future macroeconomic, climatic, and policy assumptions. All assumptions are designed to provide a neutral backdrop to the projections, making them useful for the analysis of the impacts of shocks or alternate assumptions.

Macroeconomic assumptions represent expected future trends in key variables, but exclude any variations due to business cycles. Supply projections assume average weather conditions in each year. Foreign country economic and agricultural policies are assumed to continue to evolve along recent trends, based on analyst judgment. U.S. domestic farm policy assumptions are based on the 1996 Farm Act, continued through 2007. Assumptions on bilateral and multilateral policies affecting agriculture and trade are based on formal agreements as of November 1997.

The non-U.S. supply, use, and trade projections in this report are the product of model output and analyst judgment. The principal model used in the foreign projections is the multi-region, multi-commodity, Country-Link System maintained and used by regional and commodity trade analysts in the Market and Trade Economics Division of the Economic Research Service. Analyst judgment is provided by ERS regional and commodity analysts, as well as by analysts from the World Agricultural Outlook Board and the Foreign Agricultural Service.

Summary of Trade Projections

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 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 is not expected to 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 will stay 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

Table 1--Summary of U.S. and global export growth 1/

Years	Wheat	Rice	Coarse grains	Soybeans	Soybean meal	Soybean oil	Cotton
				Pecent per year			
World Trade Growth 2/							
1960 to 1970 3/	1.1	2.2	4.9	11.4	14.4	11.3	0.8
1970 to 1980	4.7	4.9	8.7	8.2	11.7	12.8	1.2
1980 to 1990	-0.3	0.6	-1.0	-0.4	2.9	0.5	2.5
1990 to 2000	-0.3	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							
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
				Percent			
U.S. Share of World Trade, Average 2/							
1960 to 1970 3/	37.6	19.0	50.0	90.6	65.6	66.6	18.3
1970 to 1980	43.0	22.1	59.4	82.6	43.5	37.5	19.8
1980 to 1990	37.3	20.2	59.4	72.6	23.7	19.3	21.5
1990 to 2000	32.2	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.

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 may 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.

Agricultural Price Projections

Along with relatively strong growth in trade, the baseline projections indicate tightening markets for the major bulk commodities. Projected prices for the major commodities will continue to decline in real terms through 2007, but at a slower rate than long-term trends. Strengthening U.S. and global crop prices stem from the projected growth in demand, combined with the outlook for somewhat slower growth in yields. Although crop area is expected to rise along with price incentives, yield gains tended to slow for major crops in a number of regions during 1985-96. Although yields are expected to show some response

Figure 1
Real international crop reference prices

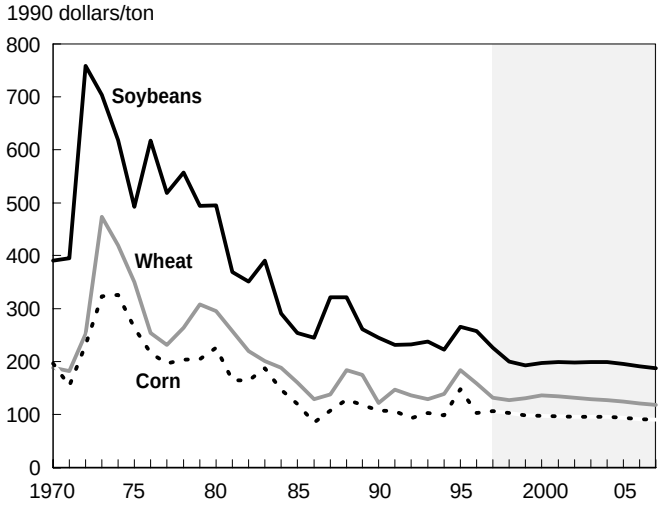


Figure 2
Real international meat reference prices

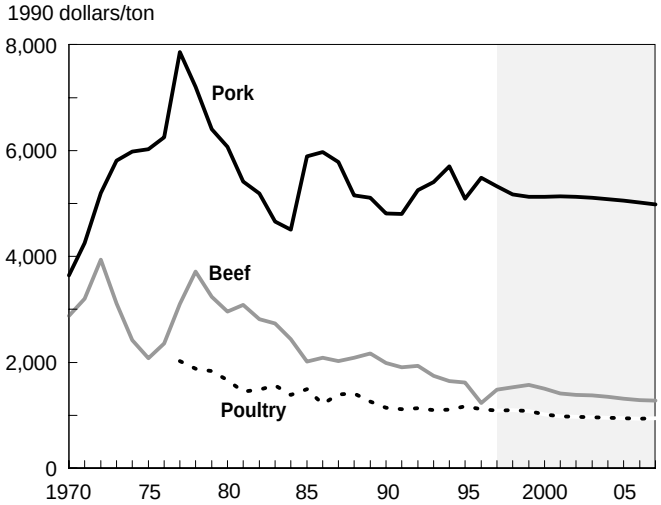


Table 2--Summary of U.S. and international reference price projections (marketing years)

Commodity	Description	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
								Nominal $/ton							
U.S. internal prices															
Beef	Canner & cutter; whlsl	1,514	1,283	1,450	1,791	1,888	1,994	1,967	1,910	1,929	1,974	1,997	2,017	2,035	2,077
Pork	Cut-out, 175lb carcass #2	1,322	1,596	1,583	1,437	1,297	1,292	1,348	1,410	1,467	1,502	1,523	1,540	1,551	1,559
Broilers	12 city	1,243	1,349	1,312	1,312	1,352	1,363	1,333	1,319	1,351	1,383	1,415	1,442	1,473	1,532
Wheat	U.S. farm	127	167	158	130	129	138	149	152	154	156	160	162	162	164
Rice	U.S. farm, rough	149	202	218	215	224	228	233	237	242	247	252	257	262	267
Corn	U.S. farm	89	128	106	104	102	100	104	108	110	114	118	120	120	122
Sorghum	U.S. farm	84	126	92	93	91	89	93	96	100	106	110	112	112	114
Barley	U.S. farm	93	133	126	110	108	106	110	115	117	119	124	126	126	129
Soybeans	U.S. farm	201	247	271	235	209	208	220	231	239	248	257	261	263	266
Soymeal	48% protein, Decatur	179	260	299	234	201	201	217	233	239	245	254	257	258	261
Soyoil	Crude, Decatur	608	546	496	551	546	540	535	535	551	568	579	584	590	595
								Nominal $/ton							
International reference prices															
Beef	NY	1,852	1,870	1,884	1,791	1,888	1,994	1,967	1,910	1,929	1,974	1,997	2,017	2,035	2,077
Pork	Japan, cif	6,403	5,860	6,456	6,401	6,369	6,498	6,704	6,930	7,148	7,347	7,537	7,729	7,919	8,108
Broilers	12 city	1,243	1,349	1,312	1,312	1,352	1,363	1,333	1,319	1,351	1,383	1,415	1,442	1,473	1,532
Wheat	U.S. Gulf, fob	154	209	184	156	154	164	175	178	180	182	186	187	187	189
Rice	Houston, fob	314	414	450	436	452	453	461	466	473	481	488	496	507	512
Rice	Bangkok, 5% brokens	282	352	327	310	325	324	331	334	339	343	348	352	357	362
Corn	U.S. Gulf, fob	109	169	121	127	125	123	126	129	132	136	140	143	143	146
Sorghum	U.S. Gulf, fob	108	162	116	118	117	115	118	121	125	132	136	138	139	142
Barley	Duluth	93	123	107	107	106	104	106	109	111	115	118	120	120	123
Soybeans	Rotterdam	248	304	301	270	244	243	255	266	274	283	292	296	298	301
Soymeal	Rotterdam	185	256	283	232	198	198	215	230	236	242	251	255	256	259
Soyoil	Dutch fob, ex-mill	642	575	536	551	536	525	528	535	561	583	599	606	614	621
								Constant 1990 $/ton							
U.S. internal prices															
Beef	Canner & cutter; whlsl	1,349	1,115	1,231	1,490	1,533	1,573	1,504	1,414	1,384	1,373	1,347	1,319	1,290	1,277
Pork	Cut-out,175lb carcass #2	1,178	1,387	1,345	1,195	1,053	1,019	1,031	1,043	1,052	1,045	1,027	1,007	983	958
Broilers	12 city	1,108	1,172	1,114	1,091	1,098	1,075	1,019	977	969	962	954	943	933	942
Wheat	U.S. farm	115	147	136	110	106	111	116	115	113	111	110	108	104	102
Rice	U.S. farm, rough	134	177	187	180	183	182	180	178	176	174	172	170	168	166
Corn	U.S. farm	80	112	91	87	84	80	81	81	80	80	80	79	77	76
Sorghum	U.S. farm	75	110	79	77	74	71	71	72	73	75	75	74	72	71
Barley	U.S. farm	84	117	108	93	89	85	86	87	86	85	85	84	82	80
Soybeans	U.S. farm	181	216	232	197	171	165	170	173	173	174	175	172	168	165
Soymeal	48% protein, Decatur	161	227	255	196	164	160	167	174	173	172	172	169	165	161
Soyoil	Crude, Decatur	545	477	424	461	446	429	412	399	399	398	393	385	377	369
								Constant 1990 $/ton							
International reference prices															
Beef	NY	1,650	1,625	1,231	1,490	1,533	1,573	1,504	1,414	1,384	1,373	1,347	1,319	1,290	1,277
Pork	Japan, cif	5,705	5,092	5,483	5,323	5,171	5,127	5,128	5,130	5,129	5,112	5,084	5,053	5,020	4,984
Broilers	12 city	1,108	1,172	1,114	1,091	1,098	1,075	1,019	977	969	962	954	943	933	942
Wheat	U.S. Gulf, fob	139	184	159	131	127	131	136	134	132	129	127	125	121	118
Rice	Houston, fob	283	363	386	365	370	361	357	350	344	339	334	329	326	319
Rice	Bangkok, 5% brokens	254	309	280	260	266	259	256	251	246	242	238	233	229	225
Corn	U.S. Gulf, fob	98	148	103	106	103	98	97	97	95	96	96	94	91	91
Sorghum	U.S. Gulf, fob	97	142	99	99	96	91	91	90	91	93	93	91	89	88
Barley	Duluth	84	108	92	90	87	83	83	82	81	81	81	80	78	77
Soybeans	Rotterdam	222	266	257	226	200	193	197	199	199	199	199	195	191	187
Soymeal	Rotterdam	165	224	242	194	162	157	166	172	170	170	170	168	163	160
Soyoil	Dutch fob, ex-mill	575	503	457	461	437	417	407	399	406	408	407	399	392	385

Source: U.S. internal prices are USDA baseline projections; international reference prices are ERS projections.

Notes: Beef, pork, and broiler prices are for calendar years; calendar year 1997 data assigned to marketing year 1996, etc. Constant 1990 prices are deflated by the U.S. GDP deflator. The GDP deflator varies by marketing year. USDA is prohibited from publishing cotton price projections.

to price incentives, the extent to which global supplies will respond in an environment of firmer prices is a key uncertainty in the outlook.

While firmer real crop prices are projected, meat prices are expected to continue to decline roughly consistent with their long-term trend. Particularly in the United States, the impacts of firmer feed prices are expected to be offset by continued efficiency gains associated with improved feeding practices and vertical coordination in the meat industry.

U.S. Agricultural Trade Projections

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. 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.

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, will 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, will grow about 4.6 percent annually. Growth in animal product imports will slow

Table 3--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
						Billion dollars							Percent/ year
Agricultural exports:													
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
Total agricultural exports	59.8	57.3	58.5	59.7	62.6	66.2	69.4	72.6	76.0	79.8	81.4	84.3	3.9
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	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
Agricultural imports:													
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
Total agricultural imports	32.6	35.8	38.0	39.3	40.4	41.6	42.9	44.6	46.3	47.8	49.3	50.4	3.5
Net agricultural trade balance	27.2	21.5	20.5	20.4	22.2	24.6	26.5	28.0	29.7	32.0	32.1	33.9	4.7

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

from 5.9 percent between fiscal 1997 and 2000, to 3.2 percent during 2000-2007.

Major Uncertainties

The trade projections are sensitive to the assumptions for continued strong economic growth in developing Asian countries, as well as improved growth in developing countries in Latin America, North Africa, and the Middle East. The baseline macroeconomic assumptions account only for the impacts of the 1997 Asian financial crisis that could be anticipated as of early November 1997. Estimated impacts of economic developments in Asia, and in some other developing countries, since November 1997 are not accounted for in the baseline. For analysis of the potential trade impacts of the Asia crisis, including results of a more recent scenario, see the Asia Crisis box (page 12).

The price and trade projections are closely linked to projected gains in crop productivity. The responsiveness of yields to an environment of firmer prices and increasingly market-oriented policies, as well as improved investment conditions in many developing countries, is uncertain.

More specifically, the projections are sensitive to the uncertain outlook for supply, demand, and policy developments in China, the EU, and the transition economies of the FSU and Central and Eastern Europe (CEE). Prospects for the huge China market are uncertain because rapid growth, structural change, and policy reform have greatly complicated assessment of future policies and technical supply and demand coefficients. The EU trade projections depend on assumptions regarding the nature of policy adjustments that may be undertaken to comply with the Uruguay Round Agreement, and on future supply response. And, although the FSU is projected to have a reduced role in world grain trade, it is inherently difficult to assess accurately future policies and economic relationships in the transition economies of the FSU and CEE.

Estimates for macroeconomic variables through 1998 were the most likely short-term forecasts of economic growth, inflation, and financial market behavior at the time the macroeconomic assumptions were prepared in November 1997. The forecast for 1999 is a transition between the short-term forecast and the long-term projections. The long-term projections for the macroeconomy for 1999-2007 reflect trend assumptions for some indicators combined with standard relationships between major macroeconomic variables. The absence of business cycles beyond the second year of the forecast reflects a conviction that business cycles, as well as shocks to the macroeconomy like large oil price increases, cannot be accurately forecast. This macroeconomic setting avoids distorting the long-term baseline for agriculture by introducing unpredictable swings in macroeconomic variables.

U.S. Macroeconomic Assumptions

The U.S. economy is in the mature phase of the economic recovery that began in 1991. In 1997, GDP expanded about 3.5 percent, with unemployment averaging 5.0 percent, down 0.4 percent from the 1996 rate. The rise in GDP in 1997 was led by very strong growth in business investment in computers, strong growth in consumer durable spending for furniture and appliances, and good growth in consumer spending on services. Low unemployment rates at this stage of the business cycle ordinarily mean tightening labor markets and rising wage-induced inflation. However, consumer prices in 1997 rose only 2.5 percent, less than in 1996, as strong labor productivity growth and only modest increases in total compensation contained labor costs.

In 1998, GDP and employment growth will slow from the rapid pace of 1997, largely because of slowing investment growth, particularly in computer equipment, and moderating growth in consumer durable spending. Since labor markets will remain tight, wages and compensation will rise relative to profits. Slowed profit growth in 1998, with modest increases in interest rates and tighter credit conditions, will curtail the rapid growth in business equipment spending. The dollar is expected to be relatively stable in 1998, so price cuts for computer equipment will not be as sharp as in 1997.

Despite improved economic prospects in Europe in 1998, the strong dollar is expected to restrain U.S. export growth. Slowing growth in consumer and investment spending, a bigger trade deficit, and sluggish Government spending is projected to result in GDP growth of about 2.3 percent for the year. Moderating GDP growth will prevent severe labor market and production bottlenecks and thus limit inflation in 1998. Consumer prices are forecast to rise by 2.9 percent, somewhat faster than in 1997. Given moderating growth and low inflation, U.S. interest rates are expected to be relatively stable through 1998, although slightly higher than in 1997.

In the longer term, the baseline macroeconomic projections show recovery from the below-trend growth of the late 1980s and early 1990s. From 1998 to 2007, the economy is projected to grow by 2.5 percent annually. Real compensation will lag productivity growth, mainly because of a more open economy. Business and dividend income will increase relative to wages, which supports personal income growth. Disposable income will grow as fast as GDP.

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

- Fiscal policy will be tight, consistent with a balanced federal budget in 2002. Even with higher local government spending picking up some of the Federal spending slowdown, overall government spending growth will average only 0.3 percent per year from 1999 through 2002. It is likely that 2002 will see a modest Federal budget surplus for the first time since 1969. In 2003 to 2007, Government spending will grow at the rate of population growth.
- The Federal Reserve will remain committed to containing inflation even as the government deficits shrink. Money supply will expand 5.3 percent annually between 1998 and 2007, reflecting moderately tight monetary policy and trend GDP growth of 2.5 percent.
- Real crude oil prices will rise 1.1 percent per year from 1999 to 2007, consistent with medium-term Department of Energy projections made in January 1997.

- Labor productivity growth will be in the 1.1-1.2 percent range from 1998 to 2007. This is modestly faster than growth in the previous 15 years. Productivity improvement will come primarily from a rising investment share in GDP, low real oil and material price increases, and real interest rates lower than they would have been without deficit reduction. Trade liberalization from the NAFTA and GATT agreements will also aid productivity growth throughout this period.
- Employment will grow 1.3-1.4 percent per year until 2005, which is broadly consistent with Bureau of Labor Statistics projections, the tightened welfare and disability qualifications now in place, and expected immigration. For 2006 and 2007, growth in employment will slow as the first wave of baby boomers retires in significant numbers.
- Real GDP in OECD countries, minus the United States, will grow about 2.4 percent through 2001 and will average 2.2 percent from 2002 to 2007.
- Federal deficit reduction and lower inflation expectations mean smaller interest rate differentials relative to U.S. trading partners. U.S. inflation will remain higher than in Canada and Japan, but close to that of Germany, France, Italy, and the United Kingdom. The inflation differential drives the modest decline in the value of the dollar from 2000 to 2007.

Without commodity price shocks or abrupt changes in macroeconomic policy, stable growth generally implies stable inflation. Consumer price inflation is projected to average 3 percent over the next decade. This moderate inflation outlook assumes that monetary policy focuses on containing inflation. Real short-term Treasury-bill rates will average slightly less than 3 percent, reflecting relatively tight Federal Reserve policy as well as the beneficial effects of fiscal deficit reduction. Real long-term Treasury-bond rates of about 4 percent reflect lower Government demand for credit as Federal deficits are eliminated.

The stable domestic financial environment, global trade liberalization induced by the Uruguay Round and NAFTA accords, low oil prices, and moderate growth in OECD countries mean that U.S. exports will grow faster than imports. Thus, the real U.S. trade deficit will fall to about half the current level by 2007.

Strong export growth, combined with gains in domestic consumer demand, will provide impetus for strong growth in capital investment, similar to that seen in the 1960s. A high depreciation rate will further enhance gross investment as more capital spending is devoted to short-lived equipment and less to long-lived plant construction. Low real interest rates and less competition from the Federal Government in credit markets will provide major support for strong investment growth.

Eliminating the budget deficit and reducing the real trade deficit will lead to only small adjustments in private domestic consumption. Thus, consumer spending will grow about as fast as GDP and the consumption share of GDP will be about the same in 2007 as in 1997. However, because of slow Government spending growth, the investment and export shares of GDP will increase.

International Macroeconomic Assumptions

The international macroeconomic assumptions used in the baseline were completed in October 1997. The outlook for the world economy over the next 10 years shows stronger growth than during 1990-96. Real GDP is projected to grow by 3.2 percent annually through 2007, compared with 2.3 percent during 1990-96. The developing Asian economies are expected to remain growth leaders, despite 1997's currency devaluations and related slowdowns in Southeast Asia (see Asia Crisis box, p. 12). Asia's output will grow at a more sustainable 6.6 percent pace over the next decade, down from 7.8 percent during 1990-96. Significantly stronger growth than during 1990-96 is expected in Latin America, North Africa, Eastern Europe, and the former Soviet Union. The developed economies, including the United States, will grow at potential GDP expansion rates of 2.4 to 2.5 percent. Inflation is expected to be low in the developed economies and moderate in the developing countries. The real price of oil is expected to increase 1.1 percent annually.

Developed Economies. In the coming decade, the developed economies will improve GDP growth from the low rates of the first half of the 1990s. Low inflation and, thus, low interest rates will help countries produce output close to potential levels. Government budgets, except in Japan, will be largely balanced. However, external imbalances may persist, particularly the large U.S. trade deficits with Japan and China. Among the major economies, only the United States will continue to carry a large current account deficit,

which means comparatively higher U.S. interest rates to finance the deficit.

European Union. The coming monetary union between qualified EU members and introduction of a single currency will enhance the efficiency of cross-border trade and investment within Western Europe. More uniform fiscal policies, as well as disciplined monetary policy guided by the German-based central bank, should lead to more stable growth prospects early in the next century. The European economy is projected to expand by 2.2 percent on average from 2002 to 2007, while population growth reaches record lows.

Unemployment will remain high relative to the U.S., but should gradually fall as less regulated labor markets and more flexible wages are adopted. Inflation should be well controlled as a strong unified currency—the Euro—acts as an anchor for price stability. Fiscal consolidation by member countries will reduce inflationary expectations and lower long-term interest rates. The Euro is projected to appreciate in real terms as the currency becomes widely used for world trade and for international reserves. Because of monetary union, national differences in real interest rates will disappear—financial markets will encompass the whole region, and thus investment opportunities will depend less on the relative availability of capital in each country.

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

Japan. The Japanese economy should eventually climb out of the anemic growth that prevailed during most of the 1990s. Domestic demand will revive as Japanese banks slowly strengthen their capital base after writing off remaining bad loans and as the property and stock markets rebound. Manufacturing production should lead the way toward more vigorous economic activity, led prominently by exports of high-value products. In the longer run, recovery of Southeast Asian economies will provide additional demand for Japan's capital exports and manufactured goods.

The yen is expected to appreciate as the Japanese economy revives and as interest rates finally rise, but the current account surplus will remain large. The deregulation of Japan's financial market is also likely to boost the yen as foreign capital funds are attracted. Opening Japan's retail and insurance markets to foreign competition will lower prices of goods and services.

A structural problem of Japan's economy is the excess of savings over investment, as manifested in its sizable current account surplus. This fundamental imbalance, together with non-tariff barriers that restrict imports and foreign investment, keeps the domestic economy isolated from global competition. High internal costs in the non-manufacturing industries such as farming, house construction, and power generation, have held back investors as well as consumers. More deregulation, not unlike that in the financial sector, will help sustain domestic demand, specifically private consumption and investment, as well as boost imports.

Canada. Canada's growth pattern in the 1990s has roughly tracked the U.S. GDP path because of the close integration of trade and investment between the neighbors. Each country is the other's largest trading partner, and NAFTA has reinforced that relationship. Canada has consistently had a trade surplus with the United States in the 1990s, the destination for 82 percent of its exports. A competitive Canadian dollar significantly influenced this pattern. A steady depreciation against the U.S. dollar since 1990, plus a lower inflation rate relative to the United States, has helped boost the Canadian currency's real exchange rate competitiveness.

The future growth path for Canada depends to a large extent on the pace of U.S. economic activity, augmented by growing trade with Asia and Mexico. Already considerable, Canadian trade with Asia should further expand as APEC relationships become closer. Trade with Mexico is already on the rise as stimulated by NAFTA. The country's trade surplus is projected to continue growing beyond 2000.

The overhaul of Canada's welfare structure from large deficit to surplus is principally responsible for the country's bright growth prospects. Less government spending and more funds available for private invest-

ment and consumption allowed market forces to revive previously anemic growth as interest rates significantly fell. Low inflation and interest rates are expected to carry healthy GDP expansion through the next decade. Also, foreign debt (as a percentage of GDP) will fall by 35 percent over the next 10 years. Domestic demand in the short and long-term is to be led by fixed capital formation. National savings (as a share of GDP) will increase to around 22 percent compared with only 13.5 percent for the United States.

Transition Economies. Countries that are ahead in the transformation to market economies are experiencing higher growth than those that have only recently carried out reforms. The first group includes Poland, the Baltic countries, the Czech Republic, Hungary, the Slovak Republic, Croatia, and Slovenia. The second group includes Bulgaria, Romania, and the former Soviet Union. The principal measure of the success of reform, which also coincides with higher GDP growth, is the degree of integration into the global economy—trade flows, investment flows, and currency convertibility. More liberalized trade arrangements with other countries, and the amount of foreign direct investment and portfolio inflows, are indicators of the extent of links to the world economy, and of relative competitiveness.

Central and Eastern Europe. Transition economies in this region, except Bulgaria, posted relatively fast growth between 1994 and 1996 after severe contractions in the early 1990s associated with the switch from central planning. Poland, Hungary, and the Czech Republic are expected to register near 5 percent growth on average in the second half of the 1990s after undertaking market reforms and increasing openness to trade and competition. A reorientation of trade from the former Soviet Union to the West has contributed to their strong performance. But in some countries, like Bulgaria, reforms have only recently begun. Romania, which recently shed heavy state intervention in the economy, should soon expand in pace with its more advanced neighbors. The growth outlook for this region is relatively optimistic at over 4 percent in the next 10 years. A crucial advantage over the former Soviet Union is proximity and closer integration with the European Union. Foreign direct investment, particularly from high-cost countries like Germany, will increase the region's capacity to export. As the crossroads between the East and the West, the region should benefit as trade increasingly flows through its countries.

The Former Soviet Union. After almost a decade of economic retrenchments and setbacks, the countries of the former Soviet Union are poised for positive but slow growth over the next decade. In Russia, annual GDP growth is projected at 1.5 percent in 1999, rising to 3 percent by 2001. The smaller countries of the region have been growing since 1996, with growth projected to be 3 percent in 1998. Overall GDP growth for the region is anticipated to average between 3 and 3.5 percent from 2002 to 2007. The fruits of privatization and market-based pricing are finally contributing to production gains and more widespread consumption. Foreign direct investment appears to be gathering speed now that inflation is increasingly contained and the ruble is stabilizing. Capital flight is also less of a problem. Monetary policy by Russia's central bank, if not yet in full supervision of the banking system, has at least controlled credit creation and largely demonetized government spending.

Prospects for mid-term growth in Ukraine are modest but should also improve after its longer period of restructuring and weaning from government subsidies. Significantly increased trade with Russia and the other former Soviet republics is critical in the Ukraine's transition to a higher income country. The smaller countries of the FSU are expected to average higher growth rates because of increasing trade and production of agricultural products and natural resources, particularly crude oil and natural gas. Nevertheless, only large inflows of foreign investments can lift their relatively slow growth prospects.

Developing Countries. Overall, the developing countries will maintain close to 5.5 percent average growth over the next decade, compared with around 5 percent during 1990-96. Emerging markets in Latin America will continue to attract investment funds as long as the developed economies maintain their healthy growth or recovery, and if real interest rates in the United States, Europe, or Japan do not rise significantly. The currency devaluations in Southeast Asia will encourage more flexible exchange rates, which prevent overvalued currencies and act to discourage inflows of speculative funds or excessive borrowing of foreign money. Stronger financial systems and stricter banking regulation, reinforced by timely and transparent statistics, will reduce the risks of excessive lending and promote more stable growth paths in the longer run.

Mexico. The Mexican economy has almost fully recovered from its deep recession in 1995 that was

precipitated by the peso's devaluation in late 1994. While the domestic sector has not fully bounced back in terms of real wages and former consumption levels, business investment and export growth are healthy again. Mid-term growth prospects are in line with potential GDP of 5.5 percent. The inflow of foreign capital and expanded trade with the United States because of NAFTA have boosted Mexico's production and export capacity. The devaluation of the peso by about 50 percent in 1994-95 made Mexican exports more price competitive.

Starting in 1996, however, the peso has appreciated in real terms against the U.S. dollar, largely because of Mexico's success in attracting foreign investment funds. That is, despite a floating exchange rate and inflation higher than in the United States, confidence in holding pesos, and in the Mexican economy in general, is strong. But these gains in purchasing power have fueled Mexican imports, generating a trade deficit and a higher current account deficit. The long-term growth outlook falls slightly to 4.6 percent because Mexico needs to continue modernizing its infrastructure and build up competitive export industries. These entail imports of capital and intermediate inputs that would raise the current account deficit beyond 2000.

South America. Strong growth is projected for the area, led by the MERCOSUR core countries of Brazil and Argentina. Freer trade will further integrate these countries' economies as they gear up for eventual hemispheric free trade with NAFTA countries. Behind the strong growth is reduced debt, less government intervention in the private sector, growing intra-regional trade, and heavier foreign direct investment. The past environment of overvalued currencies, large trade deficits, fiscal deficits, and low internal investment due to low savings are not expected to return. New economic policies now generate less inflation and more competitive industries as import barriers fall. Still, double-digit inflation in many countries (except Argentina and Chile) will carry through the next decade. Savings as a share of GDP is projected to rise only slowly and remain substantially lower than in East and Southeast Asia. Because of this, the region's general dependence on foreign capital introduces the risk of capital flight in response to external shocks such as higher U.S. interest rates or another Mexican-type financial crisis.

China. While China's growth has been consistently the strongest in Asia for some time, it is expected to level off from double digits in the early 1990s to a more sustainable pace of around 8 percent in the next decade. With population growth of less than 1 percent per year, per capita GDP gains will remain impressive at above 7 percent annually. These gains will penetrate China's poor inner provinces and likely improve productivity in the agricultural sector as more capital-intensive farming and food processing are undertaken. Inflation has now subsided to single digits, but real output gains are expected to be slowed by adjustment problems of unemployment, as privatization of state-owned enterprises accelerates, and by competition from foreign firms. Credit supply will be directed less by the government and more by independent banks, and thus access to credit will increasingly be market-based. The eventual convertibility of the yuan in the capital account, which should attract more foreign equity funds, will also permit the outflow of domestic funds for foreign investments. Real wages will rise as worker productivity grows. The country's high savings rate will keep interest rates relatively low in spite of increasing demand for capital, especially to finance infrastructure projects. Competition for lower-value export markets should intensify as other developing countries, including Vietnam and India, increasingly enter those markets.

East and Southeast Asia. Output growth in East and Southeast Asia is projected in the baseline to remain strong over the next 10 years, despite 1997's currency devaluations and related slowdowns in the region. Average growth is projected at 6.8 percent over the next decade, down from 8.6 percent during 1990-96. In the near term, growth is expected to be slowed by currency devaluation and deflation of asset prices, especially in Thailand, Indonesia, and Malaysia. Economic growth in these countries is assumed to slow through 2000 from rates of recent years, but is then expected to recover. Exports, buoyed by increased exchange rate competitiveness and domestic demand, and high domestic savings, are expected to lead the recovery. For the baseline this near-term slowdown in economic growth is assumed to be largely confined to Southeast Asia, with no measurable impact on East Asia, South Asia, or China.

While the baseline assumption is that policy reforms and international financial support will allow the Southeast Asian economies to recover relatively quickly from the current crisis, several factors may

The Asia Crisis: Baseline Assumptions and Impacts

The wave of exchange rate devaluations, stock market declines, and severe credit shortages in many East and Southeast Asian economies had just begun as the macroeconomic assumptions for this baseline were developed in November 1997. At that time, the number of countries affected, as well as the depth and duration of impacts on the region's economies, was uncertain. Based on information available in November 1997, the baseline assumed relatively moderate impacts on economic growth and real exchange rates in Thailand, Indonesia, Malaysia, and the Philippines, but not on other countries, either in East Asia or outside Asia.

For the four Southeast Asian countries, a significant slowdown in economic growth, along with continued exchange rate instability, is assumed in the baseline for 1998-2000. By 2001, however, economic growth rates are assumed to return to previously projected growth paths, and exchange rates to either stop depreciating or show a significantly slower loss of purchasing power. No impacts on long-term growth were forecast because of basically sound underlying economic fundamentals in the region, and the increased export competitiveness resulting from the currency devaluations. Reforms of banking practices, including opening of financial sectors to foreign investment and competition and liberalization of capital controls, as well as maintenance of more flexible exchange rates, will be needed to return to historic growth paths. If these reforms are not made, growth prospects in Southeast Asia, as well as in other parts of Asia, could be reduced over a longer period.

Agricultural Trade Impacts. The surge in Southeast Asian imports of feed grains, feed protein, and wheat during the 1990s has been driven largely by rising incomes and import capacity, increasing urbanization, and population growth. The financial crisis affects agricultural imports by slowing income growth and, due to devaluation, by sharply increasing local currency prices faced by domestic consumers and producers. Declines in import demand will be most significant where consumption is most sensitive to changes in income or prices, or where domestic production can respond to higher prices and substitute for imports.

Based on these factors, Southeast Asian imports of feeds, particularly corn, are likely to be most affected by the crisis. Rising meat consumption in the region has been met almost entirely by domestic production that is increasingly dependent on imported corn and soy protein. Slowed growth in meat demand and production and, particularly in the case of Thailand, higher local feed production, will slow demand for feed imports. Wheat import demand is expected to be less significantly affected because of its important role in urban diets and the lack of local production capacity. Rice imports by Indonesia and, to a lesser extent, the Philippines, are projected to be lower due to the crisis, primarily because of supply response to higher local currency prices. Cotton import demand is expected to be down slightly, as lower domestic textile demand is largely offset by the increased competitiveness of the region's textile-based exports.

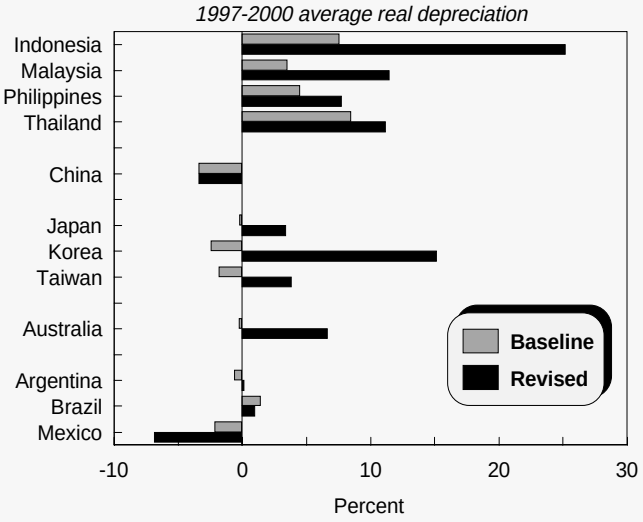
The region's farm exports are expected to be more competitive following devaluation. Gains are expected in Thailand's exports of rice and poultry. And, although palm oil production should not respond to higher prices in the near term, higher domestic consumer prices are expected to eventually release more supplies of Malaysian and Indonesian palm oil into world markets.

Other Scenarios. Following completion of the baseline, ERS conducted an update assessment of the crisis, revising macroeconomic assumptions based on information available as of late December 1997. The revised assumptions call for deeper income and exchange rate impacts in Southeast Asia, as well as significant impacts in East Asia and several other developing countries. Economic impacts were still assumed to be confined to the 1997-2000 period, and assumed impacts on China's growth and exchange rate remained negligible. With the revised assumptions, projected world prices of wheat, corn, and soybeans average 2-3 percent below the baseline for 1997-2000, and meat prices average 3-5 percent lower. Somewhat smaller impacts on global trade

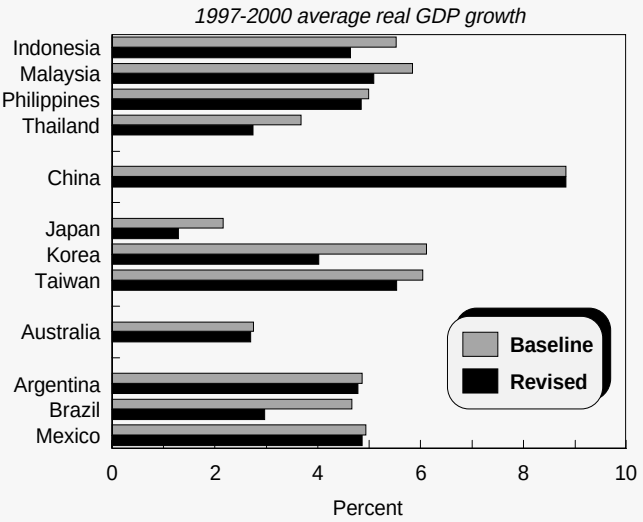
reflect increased quantities demanded elsewhere in response to lower prices. Wheat, corn, soybean, and cotton trade average about 1 percent below the baseline for 1997-2000. Potential meat trade impacts are more varied, with relatively large impacts on pork trade led by declining Korean demand, negligible overall impacts on poultry trade, and price-responsive beef import demand in non-Asian markets offsetting losses in Asia.

Other scenarios, involving deeper or longer term disruption of the Asian economies would have more significant impacts than those included in the baseline or the alternative scenario. Also, China's imports appear to be both income- and price-responsive. Significantly slower economic growth in China, or devaluation of the yuan, would have larger impacts on prospects for global trade in wheat, corn, and soybeans and products.

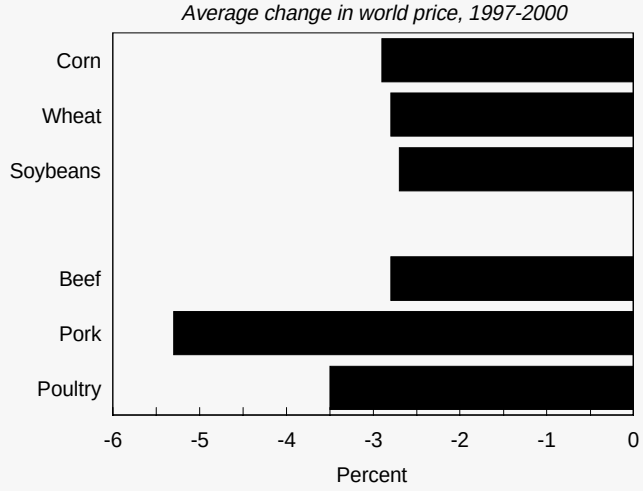
Asia crisis: Revised real exchange rate assumptions



Asia crisis: Revised real GDP growth assumptions



Asia crisis: Estimated price impacts of revised assumptions



Asia crisis: Estimated trade impacts of revised assumptions

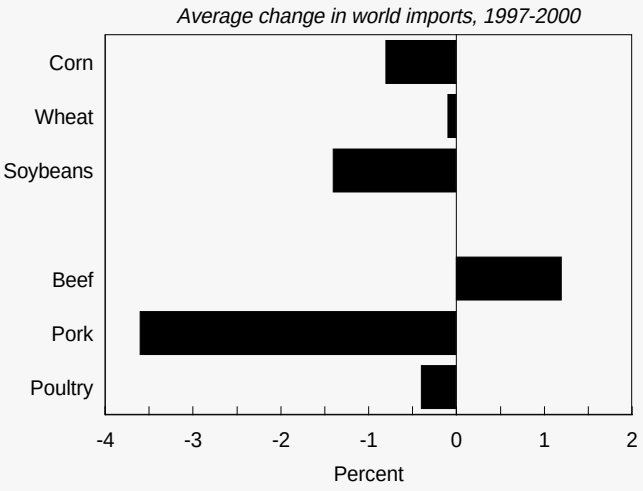


Table 4--Foreign real GDP baseline growth assumptions

Region/country	1995	1996	1997	1998	1999	2000	2001	Average 1990-1996	Average 1997-2001	Average 2002-2007
	Percent change									
World	2.4	3.0	3.2	3.0	3.0	3.3	3.3	2.3	3.2	3.2
less U.S.	2.5	3.0	3.1	3.4	3.4	3.6	3.6	2.4	3.4	3.6
Developed economies	2.0	2.4	2.7	2.5	2.4	2.6	2.5	2.0	2.5	2.4
United States	2.0	2.8	3.5	2.3	2.3	2.6	2.6	1.9	2.7	2.4
Canada	2.2	2.2	2.5	3.0	3.1	3.1	3.1	1.4	3.0	2.9
Japan	0.9	3.4	1.4	2.6	2.3	2.4	2.5	2.1	2.2	2.3
Australia	3.3	4.3	3.0	2.9	2.6	2.6	2.5	2.8	2.7	2.5
European Union-15	2.5	1.3	2.5	2.5	2.4	2.6	2.4	1.9	2.5	2.2
Transition economies	-3.1	-3.7	0.2	1.2	2.1	2.8	3.3	-6.9	1.9	3.5
Eastern Europe	5.2	4.6	4.9	5.1	4.0	4.2	4.2	-0.4	4.5	4.2
Czech Republic	5.0	4.2	4.9	5.1	3.6	3.6	3.6	-1.6	4.1	3.6
Hungary	1.5	1.4	3.9	5.1	4.1	4.1	4.1	-1.0	4.3	4.1
Poland	6.6	6.1	5.3	5.1	4.0	4.5	4.5	0.8	4.7	4.5
Former Soviet Union	-5.2	-6.1	-1.3	-0.1	1.4	2.3	2.9	-8.4	1.0	3.2
Russia	-4.0	-6.0	-1.0	0.0	1.5	2.5	3.0	-7.8	1.2	3.2
Ukraine	-11.8	-10.0	-5.0	-2.0	0.0	1.0	2.0	-11.6	-0.8	3.2
Other	-3.6	1.8	2.5	3.0	3.0	3.2	3.7	-7.4	3.1	3.4
Developing countries	4.4	5.6	5.4	5.0	5.2	5.5	5.6	5.1	5.3	5.5
Asia	8.2	7.3	6.5	6.5	6.4	6.6	6.7	7.8	6.5	6.6
East & Southeast Asia	8.8	7.7	6.9	6.7	6.6	6.9	7.0	8.6	6.8	6.8
China	10.7	10.0	9.0	8.9	8.8	8.7	8.6	10.8	8.8	8.2
Hong Kong	4.6	4.2	4.8	5.0	4.9	4.9	4.8	5.0	4.9	4.7
Korea	9.0	6.8	6.4	6.1	6.0	6.0	5.9	7.7	6.1	5.6
Taiwan	6.1	5.5	6.4	6.1	6.1	5.8	5.6	8.6	6.0	5.6
Indonesia	8.1	6.8	5.5	5.2	4.8	6.0	6.3	7.8	5.6	6.2
Malaysia	9.4	8.2	5.5	5.4	5.0	6.0	7.0	8.8	5.8	7.0
Philippines	4.8	5.5	5.0	5.0	5.0	5.0	5.0	2.8	5.0	5.0
Thailand	8.7	6.7	2.7	2.0	1.0	4.0	6.0	8.6	3.1	6.0
Vietnam	9.5	9.7	9.7	9.7	9.5	9.5	9.5	7.9	9.6	9.2
South Asia	5.8	5.5	4.9	5.5	5.6	5.5	5.5	4.7	5.4	5.4
India	6.1	5.7	5.0	5.7	5.7	5.6	5.6	4.8	5.5	5.5
Pakistan	4.4	4.4	4.4	4.8	5.3	5.3	5.3	4.6	5.0	5.3
Bangladesh	4.4	5.0	5.0	4.3	4.3	4.3	4.3	4.6	4.4	4.3
Latin America	-1.3	3.7	4.5	4.4	5.1	5.0	5.1	2.1	4.8	4.7
Caribbean & Central America	3.1	3.0	3.0	3.4	3.6	3.7	3.7	2.9	3.5	3.4
Mexico	-7.2	5.1	4.9	4.1	5.4	5.4	5.5	1.9	5.0	4.6
South America	1.0	3.3	4.3	4.6	5.1	4.9	4.9	2.2	4.8	4.8
Argentina	-4.6	4.4	5.2	4.9	4.8	4.6	4.9	4.4	4.9	4.9
Brazil	3.0	2.9	4.0	4.4	5.2	5.0	5.0	1.5	4.7	4.8
Other	4.1	1.4	3.8	4.3	4.7	4.8	4.8	3.5	4.5	4.4
Middle East	2.9	4.7	4.7	3.3	3.6	4.1	4.4	4.4	4.0	4.3
Iran	2.7	4.9	4.6	2.6	3.2	4.3	4.8	5.5	3.9	4.6
Iraq	1.5	42.0	16.7	4.3	4.4	4.4	4.4	-2.7	6.8	4.4
Saudi Arabia	-2.4	-0.1	4.6	3.8	3.5	3.2	3.2	2.6	3.7	3.2
Turkey	6.8	3.0	3.8	4.8	4.8	4.5	4.5	4.1	4.5	4.4
Other	3.7	3.7	3.7	3.7	3.7	3.7	3.7	6.4	3.7	3.7
Africa	3.0	3.5	3.2	3.3	3.6	3.6	3.6	1.9	3.5	3.6
North Africa	2.2	5.0	4.1	4.2	4.2	4.2	4.2	2.0	4.2	4.1
Algeria	4.3	4.6	2.8	2.8	2.8	2.8	2.8	0.9	2.8	2.8
Egypt	4.2	5.2	5.0	5.3	5.0	5.1	4.9	2.6	5.1	4.4
Morocco	-5.0	5.0	4.8	5.0	5.1	5.1	5.1	2.3	5.0	5.1
Tunisia	3.2	6.1	5.6	5.6	5.6	5.6	5.6	5.1	5.6	5.6
Sub-Saharan Africa	3.5	2.0	2.9	2.7	3.0	3.0	3.0	2.9	2.9	3.0
South Africa	3.4	3.2	2.3	2.8	3.5	3.5	3.5	0.8	3.1	3.5

Sources: DRI; Project LINK; Economic Research Service, U.S. Department of Agriculture.

The macroeconomic assumptions were completed in October 1997.

prevent as rapid a recovery as occurred in Mexico following the December 1994 devaluation of the peso. First, Japan provides a market for about 13 percent of developing Asia's imports, and Japan's economy is expected to show only sluggish near-term growth. Thus, there is no large neighboring market to drive a rapid recovery of the region's exports, as the United States did for Mexico. Second, about 40 percent of developing Asia's exports are typically destined for Asian markets other than Japan. Thus, the region-wide slowdown will be a significant drag on recovery. Recovery will also be affected by the fact that intra-regional investment, particularly from Japan, accounts for a large share of trans-border investment in the region. As a result, domestic savings performance and expansion of extra-regional trade will be important factors in the pace of recovery.

Growth in East Asia (Korea and Taiwan) is projected to continue to be strong, but will gradually decline to more sustainable rates over the long term as these economies mature. As in Southeast Asia, East Asian growth depends largely on strong import demand from inside and outside Asia. Healthy expansion in North America and Europe over the mid-term will help buoy growth in East Asia. China's continued growth of over 8 percent will remain a source of strong import demand for other East Asian exports.

A box on the Asia crisis (page 12) provides more details on the impacts accounted for in the baseline, as well as estimated impacts of more severe macroeconomic shocks.

South Asia. While growth rates in South Asia are not expected to match East and Southeast Asia's, even over the long term, per capita gains of about 3.6 percent per year are expected nonetheless. India, which produces 82 percent of the area's output, will grow on average by 5.5 percent annually, followed closely by Pakistan. Like China, India's large and increasingly liberalized domestic market will provide the bulk of the impetus for growth. India should also be capable of producing a more diversified set of export products, both manufactured and agricultural. Investment policy is increasingly liberalized and the inflow of foreign capital will boost the region's production capacity.

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

Africa and the Middle East. The plentiful supply of fossil fuel, particularly oil, that will be produced in Central Asia after the turn of the century is projected to hold world energy prices to only modest growth over the long run. This expectation, as well as the region's continued fast population growth, will hamper the real per capita output gains especially in the oil-exporting countries of the Middle East. Despite uncertainty in Iraq and Iran, future growth is assumed at over 4 percent. Combined with similar GDP expansion in Turkey, growth in the Middle East region is projected at a steady rate near 4 percent.

In Africa, potential growth hinges on the performance of Egypt, Nigeria, and South Africa, the continent's largest countries. Whereas GDP growth in Egypt is projected to be relatively strong, Nigeria and South Africa are not expected to grow as fast. Nigeria, because of continued political instability, corruption, and largely unskilled labor, will be unable to attract enough foreign investment and take advantage of its abundant oil resources. In South Africa, a large labor force of unskilled workers, high interest rates because of budget problems, and general social discontent will pose risks for investors and limit growth. The politically troubled countries of Algeria, Sudan, and Congo will drag overall growth down in North Africa and in Sub-Saharan Africa. Nevertheless, increased North African trade with Europe and market reforms in some East and West African countries are generating relatively faster growth. The multilateral proposal by developed countries to partially forgive foreign debts of the poorest countries that have initiated reforms should help sustain early gains and may encourage further reforms.

Population Growth Assumptions

Population assumptions for the United States and most foreign countries are based on projections by the U.S. Department of Commerce, Bureau of the Census. For

Table 5--Baseline population growth assumptions

Region/country	1995	1996	1997	1998	1999	2000	2001	Average 1990-1996	Average 1997-2001	Average 2002-2007
	Percent change									
World	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.5	1.4	1.2
less U.S.	1.5	1.4	1.4	1.4	1.4	1.4	1.3	1.5	1.4	1.3
Developed economies	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.5
United States	1.0	0.9	0.8	0.9	0.9	0.9	0.9	1.0	0.9	0.8
Canada	1.2	1.1	1.0	1.0	1.0	0.9	0.9	1.3	1.0	0.8
Japan	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.1
Australia	1.0	1.0	1.0	0.9	0.9	0.9	0.9	1.2	0.9	0.8
European Union-15	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.2
Transition economies	-0.0	-0.0	0.0	0.1	0.2	0.3	0.3	0.1	0.2	0.3
Eastern Europe	-0.2	-0.2	-0.1	-0.0	0.1	0.2	0.3	-0.2	0.1	0.2
Czech Republic	-0.0	-0.0	-0.0	0.0	0.1	0.2	0.2	0.0	0.1	0.1
Hungary	-0.7	-0.7	-0.7	-0.6	-0.5	-0.4	-0.3	-0.6	-0.5	-0.3
Poland	0.2	0.1	0.1	0.2	0.3	0.3	0.4	0.3	0.3	0.4
Former Soviet Union	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.3	0.2	0.4
Russia	-0.0	-0.1	-0.1	-0.1	0.0	0.1	0.1	0.1	0.0	0.1
Ukraine	-0.5	-0.4	-0.4	-0.3	-0.2	-0.1	-0.1	-0.2	-0.2	-0.1
Other	0.5	0.5	0.6	0.7	0.8	0.9	1.0	0.9	0.8	1.0
Developing countries	1.7	1.7	1.7	1.6	1.6	1.6	1.5	1.8	1.6	1.5
Asia	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.6	1.4	1.2
East & Southeast Asia	1.2	1.2	1.1	1.1	1.1	1.0	1.0	1.3	1.1	0.9
China	1.0	1.0	1.0	0.9	0.9	0.8	0.8	1.1	0.9	0.7
Hong Kong	2.1	1.9	1.7	1.5	1.4	1.2	1.2	1.6	1.4	1.0
Korea	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	1.0	0.8
Taiwan	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.9	0.9	0.8
Indonesia	1.6	1.5	1.5	1.5	1.5	1.5	1.4	1.6	1.5	1.3
Malaysia	2.2	2.1	2.1	2.0	2.0	1.9	1.9	2.2	2.0	1.8
Philippines	2.3	2.2	2.2	2.1	2.1	2.0	2.0	2.3	2.1	1.9
Thailand	1.1	1.0	1.0	1.0	1.0	0.9	0.9	1.2	1.0	0.8
Vietnam	1.7	1.6	1.6	1.5	1.4	1.3	1.3	1.9	1.4	1.2
South Asia	1.8	1.8	1.8	1.7	1.7	1.7	1.6	1.9	1.7	1.5
India	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.8	1.5	1.4
Pakistan	2.7	2.7	2.8	2.8	2.8	2.7	2.7	2.8	2.7	2.6
Bangladesh	1.9	1.9	1.9	1.8	1.8	1.7	1.7	1.9	1.8	1.5
Latin America	1.6	1.5	1.5	1.5	1.4	1.4	1.3	1.7	1.4	1.2
Caribbean & Central America	1.7	1.7	1.6	1.6	1.6	1.5	1.5	1.8	1.6	1.5
Mexico	1.9	1.9	1.9	1.8	1.8	1.8	1.7	2.0	1.8	1.6
South America	1.5	1.4	1.4	1.3	1.3	1.2	1.2	1.6	1.3	1.1
Argentina	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.1	1.0
Brazil	1.3	1.2	1.1	1.1	1.0	0.9	0.9	1.4	1.0	0.8
Other	1.9	1.8	1.8	1.7	1.7	1.6	1.6	2.0	1.7	1.5
Middle East	2.4	2.5	2.5	2.5	2.4	2.4	2.4	2.6	2.4	2.3
Iran	2.4	2.3	2.2	2.1	2.0	2.2	2.3	2.7	2.2	2.1
Iraq	2.3	2.5	2.8	2.9	3.0	3.0	2.9	2.3	2.9	2.8
Saudi Arabia	2.8	3.2	3.5	3.7	3.6	3.5	3.3	2.9	3.5	3.1
Turkey	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.7	1.5	1.3
Other	3.5	3.4	3.3	3.3	3.2	3.2	3.1	3.7	3.2	2.9
Africa	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.7	2.6	2.5
North Africa	2.1	2.0	2.0	2.0	1.9	1.9	1.9	2.2	1.9	1.8
Algeria	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.4	2.1	2.0
Egypt	2.0	1.9	1.9	1.9	1.8	1.8	1.8	2.2	1.8	1.7
Morocco	2.1	2.1	2.1	2.0	2.0	1.9	1.9	2.2	2.0	1.8
Tunisia	1.9	1.8	1.8	1.8	1.7	1.7	1.7	1.9	1.7	1.6
Sub-Saharan Africa	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.9	2.8	2.8
South Africa	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.1

Sources: U.S. Department of Commerce, Bureau of the Census; United Nations.

The population assumptions were completed in August 1997.

selected countries, primarily in the Africa and Middle East region, population assumptions are based on projections by the United Nations. For both sources, the projections used for this report are based on updates available in August 1997.

The projections show slowing population growth rates in virtually all countries and regions over the 1996-2007 projection period. Africa and the Middle East will continue to have the fastest growing population over the next decade, averaging 2.4 to 2.5 percent per year. The next fastest growing regions are Asia and Latin America, each averaging 1.3 percent per year. These assumptions indicate that per capita GDP gains in Asia and Latin America will outpace those of Africa and the Middle East by a bigger margin than their GDP growth differentials.

The populations in the developed and transition economies are projected to grow by only 0.5 percent per year or less, with the slowest rates in Russia, Eastern Europe, Japan, and the European Union. Overall, the number of people in the world will increase at a declining rate, and per capita GDP will rise by an average 2 percent per year. By 2007, when the world's population will total 6.5 billion, and with 80 percent living in developing countries, GDP per person will average $4,900 (in 1990 dollars), up from $4,100 in 1997.

The baseline projections assume a continuation of agricultural legislation and policy decisions as of November 1997. The baseline reflects provisions of the Federal Agriculture Improvement and Reform Act of 1996 (1996 Farm Act), which was signed into law on April 4, 1996. The 1996 Farm Act fundamentally redesigned income support programs and discontinued supply management programs for producers of major field crops. The new law replaced a system of deficiency payments for wheat, corn, grain sorghum, barley, oats, rice, and upland cotton, with a system of fixed production flexibility contract payments that are largely decoupled from population, since there is virtually no link between payments and current plantings. The 1996 Farm Act expanded planting flexibility and let authority expire for Acreage Reduction Programs (ARPs) and 0,50/85-92 provisions. It also reauthorized the Conservation Reserve Program and reduced Export Enhancement Program (EEP) funding.

The 1996 Act encompasses a wide range of issues related to agriculture, including commodities, trade, conservation, nutrition assistance, agricultural promotion, credit, rural development, research, extension, and education. Major changes and assumptions affecting the trade projections are summarized below. For more detail on the U.S. policy assumptions, see *USDA Agricultural Baseline Projections to 2007 (WAOB-98-1)*.

Planting Flexibility and Contract Payments

The 1996 Farm Act fundamentally changed U.S. agricultural programs by eliminating supply management, increasing planting flexibility, and changing income supports for "contract crops" (wheat, corn, grain sorghum, barley, oats, rice, and upland cotton). Planting flexibility increased under the 1996 Farm Act. Participating producers are permitted to plant 100 percent of their contract acreage plus any other cropland acreage on the farm to any crop (with limitations on fruits and vegetables) with no loss in payments, as long as the producer does not violate conservation and wetland provisions.

The 1996 Farm Act changed income supports by replacing the annual target price/deficiency payment program with a 7-year program of decoupled payments that are not related to most farm-level production decisions or market prices. To receive payments and be eligible for loans on contract commodities, a producer had to enter into a production flexibility contract (PFC) for 1996-2002 during the one-time enrollment period held in 1996. The production flexibility contract requires the participating producer to comply with conservation, wetland, and planting flexibility provisions, as well as to keep the land in agricultural or related uses. Farmers receive production flexibility contract payments for 7 years, 1996-2002. Cumulative outlays for contract payments for fiscal 1996-2002 are capped at slightly over $36 billion. Production flexibility contracts are assumed to continue beyond 2002 in the baseline. Annual funding for production flexibility contracts for 2003-2007 is assumed to remain fixed at the 2002 level of $4.008 billion.

Conservation Programs

The 1996 Farm Act addressed a wide range of environmental and conservation programs. The Environmental Conservation Acreage Reserve Program (ECARP) was established to include the Conservation Reserve Program (CRP), the Wetland Reserve Program (WRP), and the Environmental Quality Incentives Program (EQIP).

The CRP was reauthorized in the 1996 Farm Act. Maximum CRP enrollment is set at 36.4 million acres. For 1998, the CRP is assumed to have more than 32 million acres enrolled. Enrollments in subsequent years are assumed in the baseline to increase the CRP to 36.4 million acres by 2001. Authority to sign up and enroll acreage in the CRP is assumed to be extended after 2002 to maintain CRP acreage at 36.4 million acres.

The EQIP is authorized at $1.33 billion during 1996-2002 to provide technical, educational, and cost-share assistance and incentive payments to crop and livestock producers in implementing structural and management practices to protect soil and water resources. The WRP will have an enrollment cap of 975,000 acres. Program changes provide more flexibility and help landowners work toward a goal of no net loss of wetlands.

Major Trade Programs

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

Total EEP funding during fiscal 1996-1999 was reduced in the 1996 Farm Act to more than $1.6 billion below the maximum levels permitted under the Uruguay Round Agreement. However, there were no EEP expenditures in FY 1997 and, since the EEP program is not currently being used, the baseline assumes that no EEP expenditures occur in fiscal 1998. Starting in FY 1999, EEP expenditures are assumed to resume in the baseline. EEP funding is assumed to total about $1.2 billion over the 5-year period from FY 1999 through FY 2003. Annual funding during those years is assumed to be determined by USDA administrative discretion, subject to a $320 million limitation in fiscal 1999. Funding not used in one year is assumed to remain available for use in a subsequent year, although annual EEP expenditures would still be limited by the maximum yearly levels permitted under the Uruguay Round Agreement. For the United States and other countries, the baseline assumes no carryover of unused, GATT-permitted export subsidies to later years.

The 1996 Farm Act mandates annual program levels of $5.5 billion for GSM-102 and GSM-103 credit guarantee programs, but allows flexibility in determining how much is available for each program. Under the 1996 Farm Act, an additional $1 billion for fiscal 1996-2002 is provided for emerging market countries, assumed in the baseline at $200 million a year over 1998-2002, bringing total available annual funding to $5.7 billion. However, fiscal 1997 obligations were $2.9 billion. New obligations for subsequent years are assumed to also be lower than available annual funding, with $5.0 billion assumed for fiscal 1998 and $4.615 billion assumed annually for fiscal 1999 and later years. These assumptions for new obligations are based on forecast economic and market conditions and the expected supply/demand conditions of the countries to which GSM credit guarantees will be made available.

The 1996 Farm Act authorizes P.L. 480, Title I agreements with private entities in addition to foreign governments. P.L. 480 program levels assumed in the baseline for fiscal 1998 are $226.9 million for Title I Credit, $17.608 million for Title I Ocean Freight Differential, $837 million for Title II, and $30 million for Title III. For fiscal 1999 and subsequent years, P.L. 480 program levels for Title I Credit and Title I Ocean Freight Differential are assumed to be constant in nominal dollars at $102.163 million and $9.395 million, respectively. Title II and Title III program levels are held constant at $837 million and $30 million, respectively, for fiscal 1999, but then are assumed to grow about 2.1 percent annually for the rest of the baseline.

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 not formally ratified by November 1997.

For 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. These include:

- No accession to the World Trade Organization (WTO) by the FSU, China, or Taiwan;
- No enlargement of the EU-15 to add one or more Central or East European countries;
- No implementation of more liberalized trade among the Asia-Pacific Economic Cooperation (APEC) countries; and
- No 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 the key 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. 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 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

Potential Trade Impacts of EU Enlargement

Ten Central and East European (CEE) countries[1] 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/ERS has, however, conducted preliminary analysis on the potential impacts of two scenarios: one where the current Common Agricultural Policy (CAP) is applied to the acceding CEE countries, and another ("New CAP") where agriculture in the enlarged EU faces world prices and the acreage set-aside program of the current CAP is abolished. The analysis assumed the accession of the Visegrad-4 countries (Czech Republic, Hungary, Poland, and Slovakia) to form the EU-19.

In both scenarios, the agricultural economies of 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 imports of coarse grain.

Net surpluses under alternative EU enlargement scenarios

	Baseline	Enlargement scenario 1/	
	(2002-05 avg)	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-4 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. "New CAP" scenario assumes movement to world prices and elimination of acreage controls.
2/ Visegrad-4 includes the Czech Republic, Hungary, Poland, and Slovakia.
Source: ERS estimates.

[1]The 10 countries are Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia.

internal market price and dampen output. The EU will use the set-aside rate to constrain surplus production. The set-aside rate is set at 5 percent from 1997/98 to 1999/00 and then increased 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.

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 policymakers during 1998. Implementation of the proposed reforms could also have significant impacts on the projections.

Asia and Oceania

Australia. Australia has returned to more normal output after last year when there was record wheat production and prices. Fears that El Niño 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 again to 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 depend 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.

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 reform its economy gradually, 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, though at a declining rate. Investment in port, rail, road, and power generation infrastructure is, in general, expected

China Food Demand Elasticities

The responsiveness of food demand in China to changes in income (income elasticities) and changes in own prices (own price elasticities) are critical variables in the projections for China. The elasticities used in the USDA projections were estimated using data from the Urban and Rural Household Consumption and Expenditure Surveys conducted by China's State Statistical Bureau. These data permit estimates that capture the difference in consumer behavior between urban and rural households for a range of food commodities, including rice, wheat, coarse grain, beef and lamb (combined), poultry meat, pork, eggs, fruit, vegetables, sugar, and edible vegetable oil. Estimates for these commodities were then used to derive estimates for commodities for which no data were available (soybeans, beef and veal, and lamb and mutton (individually), fish, and other food).

Because consumers tend to adjust food spending behavior as incomes rise, it is appropriate to adjust income elasticities over time in long-term projecions. For China, these adjustments were based on analyst judgment. For higher-income urban consumers, most income elasticities of food demand are expected to decline over time as a rising share of new income is spent on nonfood items. For generally lower income rural consumers, income elasticities for food staples are expected to decline, while those for animal products, fruits, and vegetable products are expected to remain high, or even rise.

The elasticity estimates used in the China projections are summarized in the table below. They show relatively low income and price responsiveness for food staples, but relatively high income and price-responsiveness for animal products, fish, fruits, and vegetables. It should be noted, however, that the data used for the estimation procedure were not always complete, sometimes necessitating estimation of missing values and/or instances where data observations were not sufficient to ensure robust results.

China: Estimates and assumptions of income and own-price elasticities for food demand

Commodity	Urban			Rural		
	Income		Own-price	Income		Own-price
	1998	2007		1998	2007	
Rice	-0.10	-0.20	-0.30	0.05	-0.10	-0.20
Wheat	-0.05	-0.20	-0.30	0.20	0.05	-0.12
Coarse grains	-0.14	-0.20	-0.30	-0.10	-0.20	-0.05
Soybeans	-0.10	-0.20	-0.50	0.05	-0.10	-0.45
Sugar	0.46	0.20	-1.05	0.90	0.90	-1.25
Beef & veal	1.75	1.60	-1.70	1.80	2.00	-1.40
Lamb & mutton	1.75	1.60	-1.75	1.80	1.50	-1.33
Pork	0.50	0.45	-0.96	0.80	0.70	-0.65
Poultry meat	0.99	0.80	-1.16	1.10	1.00	-0.80
Fish	0.93	0.85	-0.96	0.93	1.00	-0.75
Eggs	0.31	0.27	-0.80	0.52	0.45	-0.55
Edible vegetable oil	0.51	0.45	-0.85	0.70	0.55	-0.80
Fruits	0.76	0.80	-1.10	0.90	1.15	-0.75
Vegetables	0.45	0.40	-0.49	0.70	0.85	-0.60
Other food	0.35	0.50	-0.70	0.70	0.70	-0.39

Source: ERS estimates.

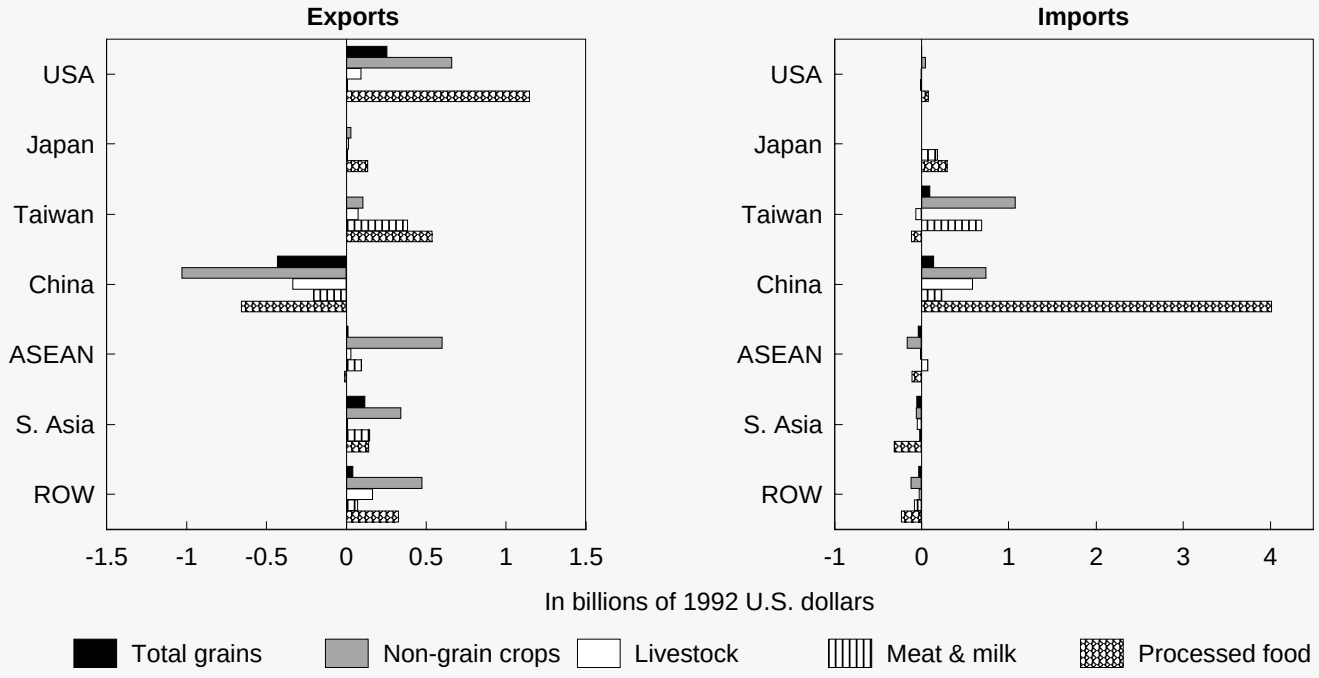
Potential Impacts on Agricultural Trade Arising from China's and Taiwan's Accession to WTO

China and Taiwan are 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 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. ERS has, however, estimated the impacts on the world economy of China's and Taiwan's joining the WTO versus their continued exclusion from membership.* 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 gain to other WTO members may be from the greater predictability of the two Chinese economies playing by internationally accepted trading rules.

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

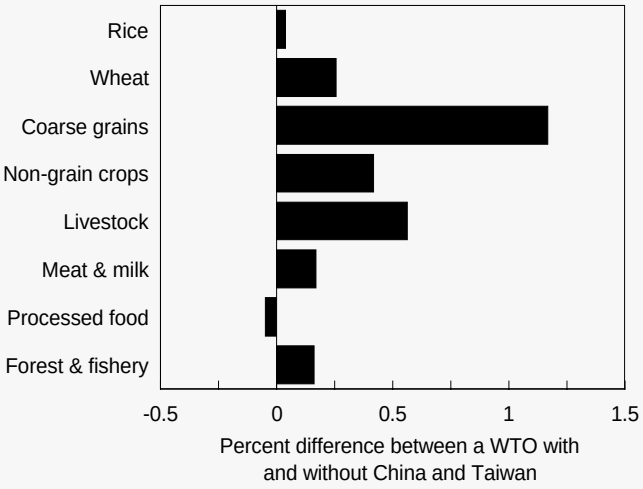
China and Taiwan WTO accession: Estimated impacts on agricultural trade



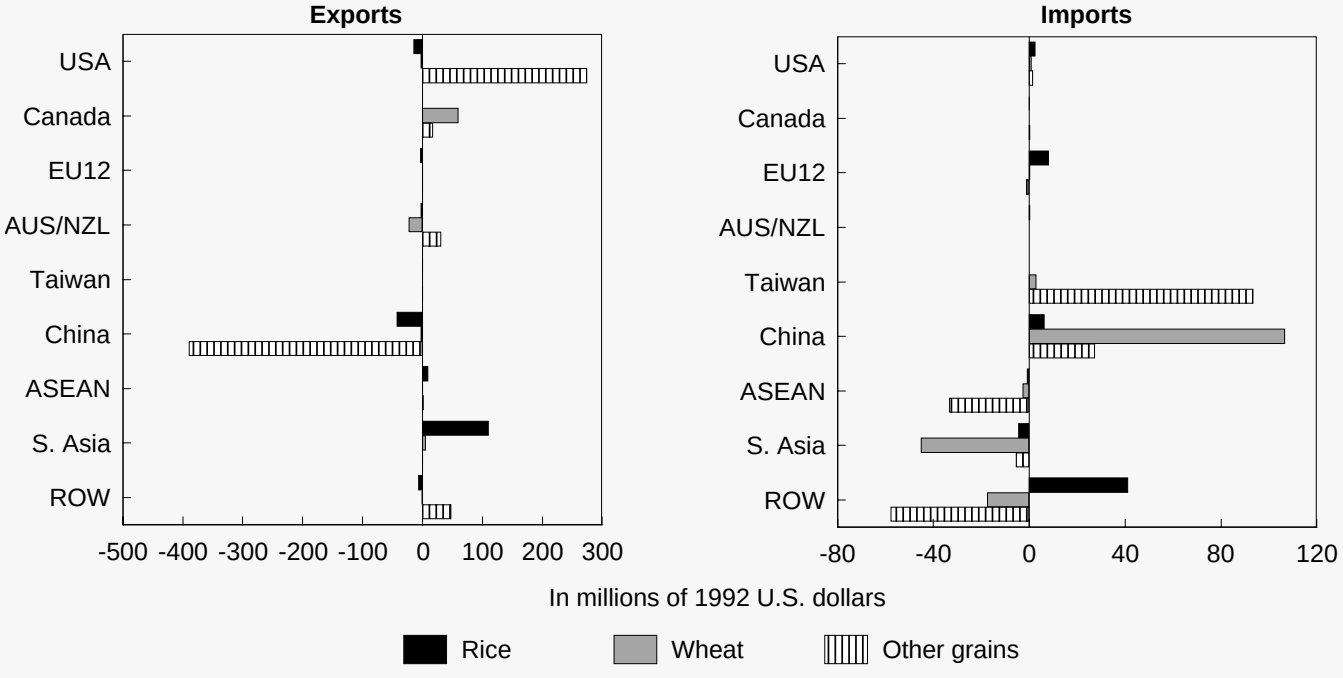
Under the WTO accession scenario, total world agricultural trade would increase 3 percent. The key change would be a $9 billion increase in China's net agricultural imports, as production factors are bid away from agriculture by an expanding, labor-intensive, light manufacturing sector. Net food and 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 will 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. Changes in world grain trade would parallel changes in total agricultural trade, with increased exports from North America, Southeast Asia, and South Asia and declines from China. Grain imports would increase in Taiwan and China and decline in Southeast Asia and South Asia. U.S. agriculture would benefit modestly from higher exports ($2.2 billion), and higher 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 about 10 percent.

China and Taiwan WTO accession: Estimated impacts on world prices



China and Taiwan WTO accession: Estimated impacts on world grain trade



to be sufficient to support the projected future increases in agricultural output and trade flows.

Agricultural policy is assumed to continue to be gradually liberalized, increasing the role of market forces in all aspects of China's agricultural sector. Government planning is assumed to diminish gradually 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 likely 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 expected to be eliminated, the share handled by private and joint private-public trade companies will likely expand. 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 is expected to induce 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 is assumed to slow 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 infrastructural 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.

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 to only about a third of their average level for 1990-1996 by the end of the baseline.

All three East Asian economies are assumed to maintain tight state control over the trade in rice. Rice production in South Korea will continue to be insufficient to meet domestic needs 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 will 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, produc-

tion of some key commodities will decline 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 rates of economic growth by 2000 (see Asia Crisis box, page 12, 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. With their devalued currencies, Thailand and Vietnam are expected to remain very competitive rice exporters.

Although slower income growth and higher local currency prices should slow wheat import growth somewhat 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 soymeal 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, any Indian 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. Relatively liberal import policies will likely permit continued growth in vegetable oil imports. Growing livestock product demand is expected to lead to growing soybean meal imports and, possibly, the emergence of feed corn imports during the baseline.

Africa and the Middle East

Sub-Saharan Africa. 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 gains in production, and constrained import capacity. Capacity to import food commercially is expected to rise 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.

North Africa. 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, is projected to generate more growth in wheat, corn, soymeal, 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.

Middle East. 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 recover gradually 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 (see box, page 29).

The Saudi Arabian economy is also 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 likely 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.

Western Hemisphere

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 3 years. In redesigning agricultural support programs to meet the new budget restrictions, emphasis is being placed on

Iraq: Baseline assumptions and alternate projections

Before the 1991 Gulf War, Iraq was among the largest and fastest growing Middle Eastern importers of agricultural commodities, including wheat, feed grains, and rice. This trade was virtually halted by the economic sanctions imposed on Iraq due to the war. The future path of Iraq's agricultural trade remains uncertain, and the impact of alternate assumptions on the trade projections is significant, both for Iraq and for the region as a whole.

Prior to the Gulf War, per capita consumption of many food items in Iraq was among the highest in the Middle East region. High consumption was driven by the relative prosperity of Iraqi consumers, and by the ability to import large quantities of food afforded by petroleum export earnings. At that time, annual food imports were $2.5-$3 billion and met approximately two-thirds of Iraq's food requirements. The imposition of UN sanctions, however, sharply curtailed the country's import capacity by restricting its ability to export oil and earn foreign exchange. Food imports plunged, and the ensuing food shortages became increasingly severe as the sanctions were maintained.

In 1996, the UN and Iraq arrived at an agreement, under Security Council Resolution (SCR) 986, permitting Iraq to export $2 billion worth of oil every 6 months. It was further agreed that 40 percent of these export earnings, approximately $1.6 billion annually, would be used for imports of food and agricultural inputs. The remaining 60 percent was to be spent on other essential imports identified in the agreement and compensation for war damages.

The current USDA baseline projections assume that Iraq's food imports will not remain bound by the terms of SCR 986 throughout the 1998-2007 projection period. Rather, the projections are based on the assumption that Iraq will be gradually reintegrated into the world economy over the projection period, involving either a removal or relaxation of the current sanctions. With this policy assumption, Iraq's economy is projected to recover, with real GDP assumed to grow 4-5 percent annually, implying 1-2 percent annual growth in real per capita incomes. Recovering consumer demand and rising oil exports lead to significant growth in imports of wheat, feed grains, rice, poultry, vegetable oils, sugar, and other commodities.

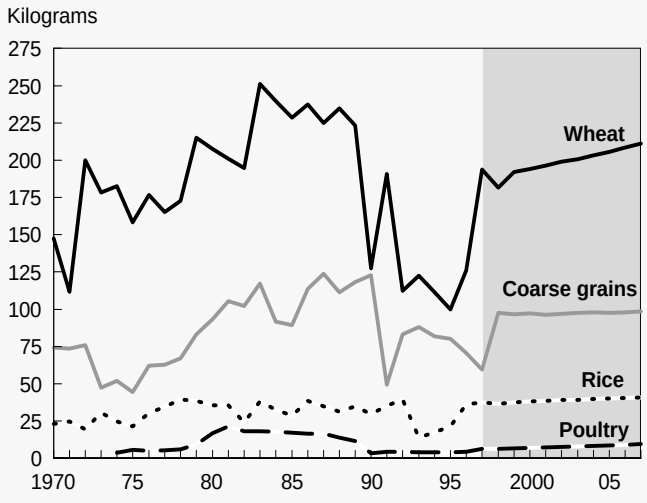
It is possible, however, that continued noncompliance with U.N. resolutions could result in Iraq's imports of food and farm inputs continuing to be constrained at or near the SCR 986 annual limit of $1.6 billion. In this event, Iraq's total food imports in 2007 would be about $1.0 billion below the $2.3 billion level implied by the current USDA projection. In volume terms, this translates into import reductions for 2007 of about 1.9 million tons of wheat and 0.3-0.4 million tons each for coarse grain and rice.

Iraq: Imports under alternate scenarios

Commodity	1989-91 avg.	1995-97 avg.	2007 projected		
			Baseline	SCR 986 limits 1/	Difference
			1,000 tons		
Corn	342	67	448	210	-238
Barley	238	1	371	259	-112
Wheat	1,959	1,570	4,270	2,406	-1,864
Rice	402	479	850	496	-353
Poultry	0	9	92	27	-65
Vegetable oil	31	3/ 114	350	207	-143
Sugar	2/ 418	3/ 230	699	432	-267

1/ Food imports limited to approximately $1.3 billion, with the remainder of the $1.6 billion for food and farm inputs under SCR 986 allocated to farm inputs. Quantities calculated based on estimated 1996-97 commodity import shares, baseline price projections, and estimated transport and handling costs.
2/ FAO estimates.
3/ FAO estimates, 1995-96 avg.

Iraq: Baseline per capita consumption projections



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

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 and land, and low levels of technology. Mexico is projected as 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 also will provide 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 by 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, and the main subsidies that continue will be those on tortillas and milk. Feed compounders will now procure corn directly from farmers, thus eliminating CONASUPO subsidies for animal feed.

South America. Strong overall economic growth is expected in South America, led by the two largest economies in the region, Argentina and Brazil. Many countries in the region continue to benefit from their successful evolution from semi-authoritarian political systems and 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 has also indicated stronger response to prices than in the past, with the use of inputs increasing sharply. Consequently, the baseline assumes faster growth in use of fertilizer and other inputs than has been the case historically. Finally, 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 foreign consumer acceptance of Argentine beef, will increase gradually during the baseline.

In Brazil, the economic stabilization program begun in mid 1994 continues to hold down inflation. 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 that have reduced the transportation costs of soybeans destined for export.

Transition Economies

Former Soviet Union. Between 1997 and 2000, real GDP growth for the countries of the FSU is assumed to be very sluggish, with currencies appreciating 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 the markets and restructuring of agricultural enterprises of 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 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 more 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. It is also anticipated that state grain imports will be 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 by importing from abroad.

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) has mainly been to

keep domestic producer prices at world levels. These measures have tended to counter the downward pressures on prices coming from the lingering bottlenecks in the downstream sectors. 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 moderate gains in crop 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. It is anticipated that land tenure will become more permanent, bottlenecks in issuing titles will be resolved, and true land markets will develop as capital markets improve.

The baseline assumes that none of the CEE countries will join the EU during the projection period. Although some CEE countries may join the EU by 2007, the timing and terms of accession are uncertain. When CEE countries do accede to the EU, significant changes in domestic and trade policies from those assumed here are likely.