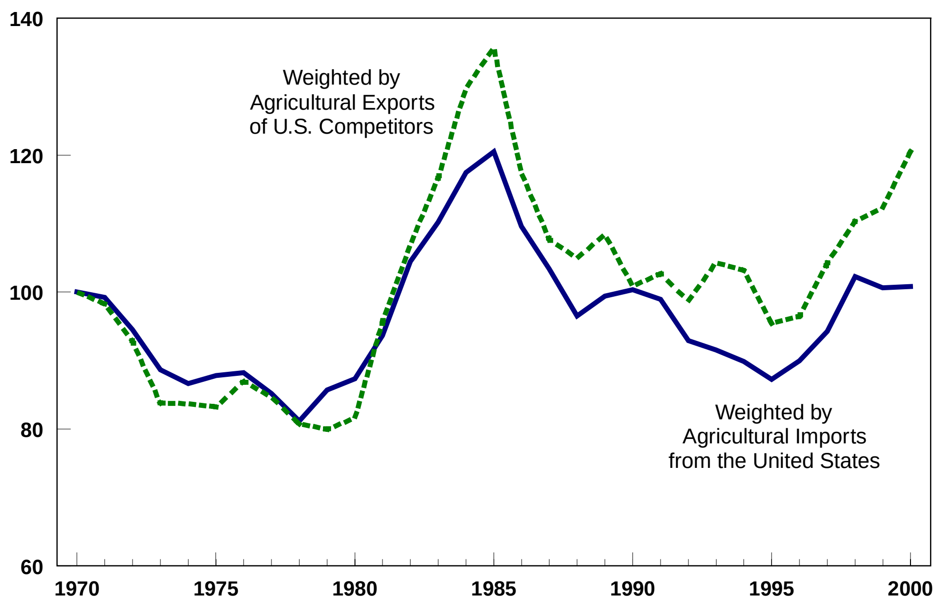
Macroeconomic Assumptions

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

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

Figure 1
Real Agricultural Trade-Weighted Exchange Rates
Index of foreign currency per U.S. dollar, 1970=100



2000 estimated based on available data through July.

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

Domestic Macroeconomic Projections

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

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

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

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

Near-term U.S. Macroeconomic Outlook

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

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

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

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

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

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

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

Underlying Policy and Aggregate Supply Assumptions for 2003-2010

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

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

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

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

- Employment growth is expected to average 1.1 to 1.2 percent a year through 2010, which is broadly consistent with Bureau of Labor Statistics projections. This projection is consistent with the tightened welfare and disability qualifications now in place and expected immigration, as well as the age structure of the working population and the continuing pattern of retirement prior to social security eligibility.

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

Domestic Macroeconomic Projection Highlights

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

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

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

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

Major Issues Shaping the U.S. Macroeconomic Assumptions

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

- How is trend GDP growth justified?

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

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

These issues are discussed in the following three boxes.

U.S. Long-term GDP Growth Prospects

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

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

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

Table 1. Historical and projected GDP growth accounting

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

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

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

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

Was the 1990s Decade Really New?

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

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

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

U.S. GDP Growth Revisions

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

Highlights of the revisions include:

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

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

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

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

Implications for the Baseline

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

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U.S. GDP Growth Revisions -- continued

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

International Macroeconomic Assumptions[2]

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

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

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

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

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

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

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

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

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

Developed Economies

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

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

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

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

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

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

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

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

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

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

Transition Economies

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

Central and Eastern Europe

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

Former Soviet Union

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

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

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

Developing Countries

Overall, the developing countries will maintain close to 5.5 percent average growth over the next decade, compared to 4.8 percent during 1991-2000. Emerging markets in Latin America will continue to attract investment funds as long as they maintain well managed macroeconomic policies resulting in relatively low inflation rates. The currency devaluations in Southeast Asia have encouraged more flexible exchange rates, which prevent overvalued currencies and act to discourage inflows of speculative funds or excessive borrowing of foreign money. The structural adjustments should lead to stronger financial systems and stricter banking regulations. This will eventually be reinforced by the development of timely and transparent statistics. The risks of excessive lending will be reduced resulting in more stable growth paths in the longer run.

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

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

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

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

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

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

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

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

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

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

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

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

World Population Growth

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

Rates of growth in population have been declining consistently over the past few decades. This pattern is projected to continue into the next decade. Overall world population growth is projected to increase at only 1.3 percent a year over the projections period, a slight decline from the previous decade. Almost all population growth is occurring in developing countries. Growth in developed countries is less than 0.4 percent per year. The highest growth rates are occurring in Sub-Saharan Africa at 2.5 percent per year. These are also the countries with the lowest per capita incomes and, historically, the lowest growth in per capita income. The Middle East also has high population growth rates, which slow from 1.9 percent a year in the 1990s to 1.7 percent a year in the last half of the projections period.

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

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

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

Table 2. Domestic macroeconomic baseline assumptions

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

Macroeconomic assumptions were completed in August 2000.

Table 3. Foreign real GDP baseline growth assumptions

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

Table 4. Baseline population growth assumptions

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

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