III

Growth Divergences in the United States, Europe, and Japan: Trend or Cyclical?

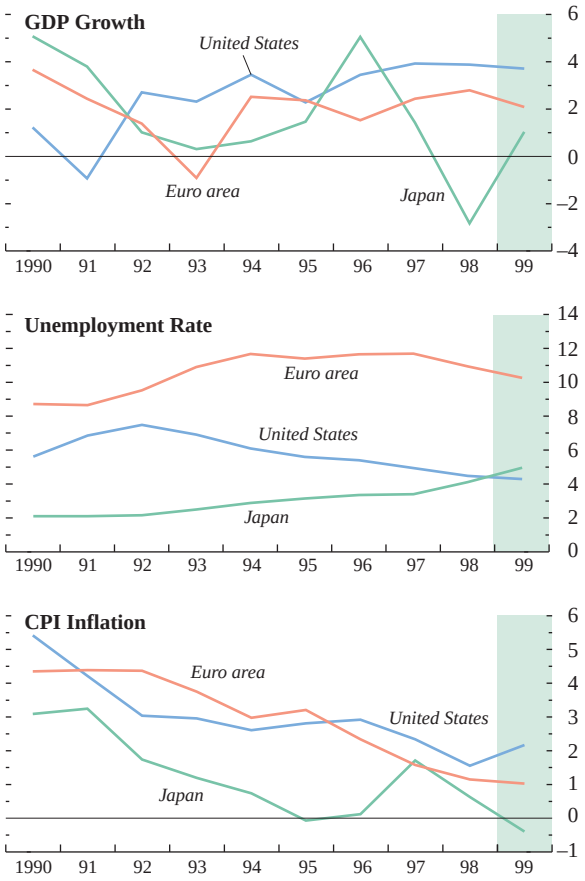
While the United States, Europe, and Japan have all experienced declines in inflation since the early 1990s to rates representing reasonable price stability, their growth and labor market performance have differed markedly (Figure 3.1). Since the 1990–91 recession, the U.S. economy has expanded at a 3 percent average annual rate, generating a rise in private sector employment sufficient to reduce the unemployment rate to near 4 percent while the labor force has been rising quite rapidly. In Japan, a period of strong growth faltered in the early 1990s as the "bubble economy" burst. Since then, the economy's performance has generally been lackluster, leaving average growth for the 1991–98 period at about 1 percent and resulting in a rise in unemployment to 4¾ percent recently, the highest rate in the country's postwar history. In Europe, growth performance has also been disappointing, 2 percent on average for the decade, but has varied across countries—from under 1 percent a year on average in Switzerland to nearly 7 percent in Ireland. Unemployment in Europe increased further in the 1990s, rising to 12½ percent of the labor force in 1997, with a modest decline since then.

These divergences in economic performance reflect differences in both demand and supply developments across the three regions. In the short run, demand conditions are usually the more important determinant of observed variations in output, with supply accommodating demand through temporary changes in domestic resource utilization (often measured as the difference between actual and estimated potential output or the output gap). Over longer periods, however, although there may be prolonged periods of underutilization of resources, supply conditions tend to be the more important determinant of output growth, with capital, labor, and productivity growth as the driving forces.

Unlike aggregate demand and output, which are measured on a regular basis in national accounts statistics, an economy's potential output is an unobserved concept that can only be approximated using a variety of analytic approaches. These approaches all involve data for actual output and they can therefore provide changing estimates of the economy's current potential output or cyclical position as new data become available. For example, most analysts' estimates of potential output growth in the United States have been increased recently as the recovery has endured and

Figure 3.1. United States, the Euro Area, and Japan: Economic Performance Indicators[1]
(Percent)

The U.S. economy has performed better than Japan and the euro area in terms of output growth and unemployment. Inflation has declined in all three cases.



[1]Shaded areas indicate IMF staff projections.

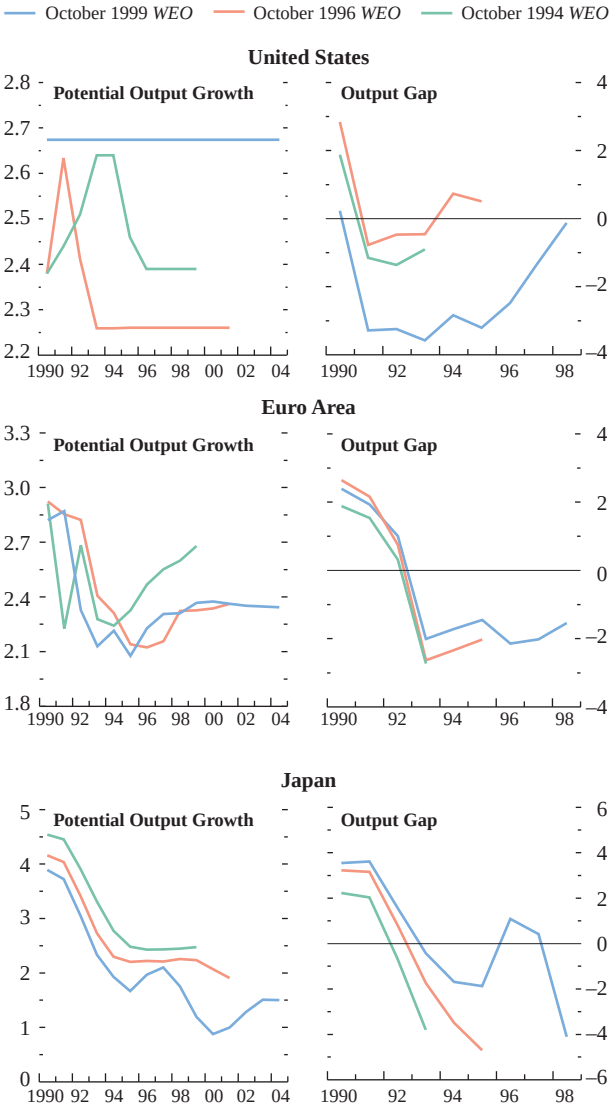
strengthened unexpectedly; and this is true of IMF staff estimates (Figure 3.2). The opposite has happened to estimates of potential output growth in Japan and to a lesser extent in Europe: as output growth in these economies has weakened, estimates of their potential growth have been lowered. For the United States, the apparent rise in potential growth has been attributed partly to a rise in productivity growth related to new information technologies. In Japan, the apparent decline in potential growth has been attributed to the precipitous drop in investment and excess capacity problems that originated in the bubble period. While such phenomena may correctly explain changes in potential output growth—and may eventually justify further revisions in estimated potential growth rates—it is also possible that the estimates of potential growth are unduly influenced by recent temporary, cyclical factors and therefore underestimate the degree of excess demand in the United States and the margins of slack in Japan in particular, but perhaps also in Europe.

The following analysis suggests that both longer-run structural factors and short-term cyclical or other temporary influences have contributed to the differences in performance among the United States, Europe, and Japan. For the United States, although the rate of potential growth is probably higher than previously believed, the extent to which it has been raised permanently by new technologies and other elements of the "new economy" cannot yet be quantified with confidence. The available evidence suggests that the impact of a series of fortuitous, but temporary events may explain a significant part of the low inflation–high growth performance in 1996–98. Therefore, while the analysis does not allow firm conclusions to be drawn at this time about the relative importance of temporary and longer-term factors, it does suggest that caution is called for when assessing the policy implications of the U.S. economy's recent performance. For Japan, the analysis suggests that the low rate of growth in 1991–98 and associated declines in estimated rates of potential output growth in part reflect temporary adverse economic conditions, whether cyclical or not. This suggests a need for caution in assuming that the protracted weakness will persist into the medium term; but in view of the severity of the 1997–98 recession and the recent problems in the banking sector, both macroeconomic and structural policies have roles to play in restoring more satisfactory economic performance. The high rates of growth of the past, however, are not likely to be seen on a sustained basis in the foreseeable future. For many countries in Europe, a series of temporary, cyclical factors has clearly reduced rates of growth, especially recently. But to raise potential output in the medium term, the emphasis in these countries needs to be on labor market policies. In both Europe and Japan the aging of the populations will hold down potential output growth in the future.

Figure 3.2. United States, the Euro Area, and Japan: Vintages of Potential Output Growth and Output Gaps[1]

(Percent)

IMF staff estimates of potential output growth have been raised for the United States during the recent prolonged expansion but have been lowered for Europe and Japan as growth has faltered. This has resulted in revisions to output gap estimates.



Source: IMF staff estimates.

[1]Data are from the indicated issues of the *World Economic Outlook (WEO)*. Each vintage of potential output growth includes five years of projections.

Assessing the Sustainable Level of Output

Estimates of potential output and its rate of growth can serve several related purposes. As mentioned above, they provide an indication of an economy's trend rate of growth and can help to explain its long-run performance, while output gaps—the difference between actual and estimated potential output—are often used as indicators of inflationary pressure. Potential output estimates also enter into structural fiscal balance calculations that are used to assess a country's underlying fiscal policy stance and the macroeconomic impact of policy initiatives.[1]

The quantity of goods and services that can be produced on a sustainable basis—potential output—depends on the inputs of capital and labor and on their productivity. But data limitations—in particular difficulties in the measurement of factor inputs and their contributions to output, and uncertainty about the speed of technological improvements—have led to a variety of complementary methods to explain an economy's potential output (see Table 3.1).[2]

- *The production function* is a conceptual relationship describing how capital, labor, and technology are combined to produce output or GDP.[3] An advantage of the production function is that it can be used to explain why potential output growth varies over time or across countries by examining changes in capital and labor inputs. A limitation of this approach is the difficulty in quantifying the role of technological progress (or the growth of total factor productivity, TFP) which by its nature cannot be measured directly. Indirect methods used to estimate TFP are heavily influenced by changes in cyclical conditions. The production function estimates in Table 3.1 assume that TFP growth is unchanged from the last full cycle and therefore does not capture the impact of productivity-enhancing technologies developed in the 1990s.[4]

Table 3.1. United States, the Euro Area, and Japan: Estimates of Potential Output Growth[1]
(Percent)

	1980–89	1990–98
United States		
Actual output growth	2.7	2.5
Estimates of potential output growth		
IMF staff estimate	2.8	2.7
Structural VAR model	3.3	2.9
Time trend	2.8	2.6
Production function	2.9	2.6
Estimated contributions of:		
Labor force	1.1	0.9
Capital stock	0.9	0.8
Total factor productivity	0.9	0.9
Euro area		
Actual output growth	2.3	2.0
Estimates of potential output growth		
IMF staff estimate	2.4	2.4
Structural VAR model	2.4	2.1
Time trend	2.3	2.1
Production function	2.2	2.0
Estimated contributions of:		
Labor force	0.3	0.2
Capital stock	0.9	0.8
Total factor productivity	1.0	1.0
Japan[2]		
Actual output growth	3.8	1.0
Estimates of potential output growth		
IMF staff estimate	3.6	2.1
Structural VAR model	3.4	0.8
Time trend	3.9	1.5
Production function	3.6	2.6
Estimated contributions of:		
Labor force	0.7	0.3
Capital stock	1.8	1.2
Total factor productivity	1.1	1.1

Source: IMF, *World Economic Outlook* database and staff calculations.

[1]IMF staff estimates are those used throughout the *World Economic Outlook*. For Japan and many countries in the euro area, the estimates are based on production functions. For the United States, a combination of a production function and a split time trend is used. The structural VAR model is estimated using output growth and inflation as endogenous variables. The time trend estimates are derived from a Hodrick-Prescott filter. The production function is based on the growth rates of official labor force and capital stock data; the labor force is adjusted for the NAIRU. TFP is described in the text.

[2]For Japan, the second column refers to the period 1992–98.

[1]Structural and actual fiscal balances differ because the ratio of actual expenditures to output tends to fall, while the revenue ratio rises, when an economy is operating above its trend path. Similar adjustments are made to imports and exports (using output gap estimates for partner countries) to construct structural external balances.

[2]For other methods see Charles Adams and David T. Coe, "A Systems Approach to Estimating the Natural Rate of Unemployment and Potential Output for the United States," *IMF Staff Papers* (June 1990), pp. 232–93. Stefan Gerlach and Frank Smets, "Output Gaps and Monetary Policy in the EMU Area," *European Economic Review*, No. 43 (1999), pp. 801–12, utilize an unobserved components model that provides an estimate of the uncertainty attached to the output gap estimate itself.

[3]The production function, or growth accounting framework, is based on Robert Solow, "Technical Change and the Aggregate Production Function," *The Review of Economics and Statistics*, Vol. 39, No. 3 (August 1957), pp. 312–20. Robert E. Hall and Charles I. Jones, "Why Do Some Countries Produce So Much More Output Per Worker Than Others?" NBER Working Paper 6564 (Cambridge, Massachusetts: National Bureau of Economic Research, May 1998) use a similar model to explain cross-country differences in productivity levels. See also Michael T. Kiley, "Computers and Growth with Costs of Adjustment: Will the Future Look Like the Past?" (unpublished; Washington: Federal Reserve Board of Governors, July 1999) for a discussion of growth accounting with adjustment costs.

[4]This limitation follows from the fact that TFP growth is calculated as the residual after deducting from actual output growth the sum of the estimated contributions to growth of the factor inputs over some time period, in this case between the two most recent years in which demand was assumed to be close to potential output. Estimates of the contributions to output growth of the factor inputs are based on the assumption that factor payments are proportional to marginal products, which would be true under competitive conditions with constant returns to scale. Peak to peak or trough to trough comparisons or regressions of yearly TFP residuals can also be used to estimate TFP growth.

- "*Structural" vector autoregressive models* (VAR) explain changes in output in terms of long-term supply and short-term deviations from it.[5] They identify potential output growth as increases in output that do not result in an increase in inflation; increases in output that cause inflation are assumed to be related to cyclical demand pressures. They do not explain trend or cycles in terms of the underlying factor inputs.
- *Trend analysis* is used to estimate potential output using observed output data only, and is based on the assumption that the growth rate of potential is constant or varies systematically over time. Examples include time trends, split time trends, and moving averages such as the Hodrick-Prescott filter, which is used for the time trend estimates in Table 3.1. Trend methods are generally easy to apply and have minimal data requirements. However, they cannot attribute changes in potential output to observed economic developments. In addition, these methods are not well suited to distinguishing between trend and cycle in the recent past because the estimates are highly sensitive to the end-point of the last observations in the data set.

Table 3.1 provides estimates of potential output growth for the United States, the euro area, and Japan based on the three methods outlined above. They should be viewed as illustrative and are provided to demonstrate the range of potential growth estimates that tend to be derived using different techniques. IMF staff estimates are also provided; these incorporate necessary judgments regarding the methodology and data for each country or region. Production functions are used for IMF staff estimates for Japan and countries in the euro area; a combination of a split time trend and a production function approach is used for the United States.[6] For Japan, the staff estimate of potential growth for the period 1992–98 is lower than that of the illustrative production function mainly due to a correction of labor input for the decline in average hours worked over the period. For the euro area, the IMF staff estimate is a weighted average of estimated potential growth in each euro area country, mainly based on production functions. (The illustrative alternative calculations are based on aggregations of the underlying data.)

The differences in estimates of potential growth across countries can be explained by the production function in terms of differences in the growth rates of labor and capital inputs (weighted by their respective shares in total factor payments) and in TFP growth.[7] Focusing on the 1990–98 period, the stronger contribution of labor force growth in the United States (0.9 percentage point compared with 0.2 and 0.3 percentage points in the euro area and Japan respectively) offsets the smaller contributions of capital accumulation and TFP growth in the United States relative to Japan. The larger contribution of labor force growth in the United States is accounted for in turn partly by faster growth in the U.S. working age population and partly by an apparent decline in the NAIRU in the United States over this period, contrasting with increases in the estimated NAIRU in Europe and Japan.[8] The rise in the NAIRU in Europe over the 1990s and its high level have combined to reduce the level of potential output in Europe relative to what it otherwise would have obtained.[9]

The contributions to potential output growth of increases in the capital stock are similar in Europe and the United States in the 1980s and 1990s. The slight decline in capital's contribution in the United States is explained by the 1990–91 recession which reduced the average growth of the capital stock in that period. The U.S. capital contribution increased, however, in the second half of the period as investment growth picked up. The decline in the contribution of the growth of the capital stock in Japan reflects the drop in investment in the 1990s; it accounts for one-half of the decline in potential growth from 3½ percent in the 1980s to 2½ percent in the 1990s, as estimated on the production function basis. TFP growth accounts for very little of the differences in estimated potential output growth across the three cases. One possible explanation for this result is that, because average TFP growth is assumed to

[5]The "structural VAR" models referred to are based on vector auto regression (VAR) and rely on a key identifying assumption, namely that temporary (or cyclical) factors do not affect long-run output or inflation. See Oliver Blanchard and Danny Quah, "The Dynamic Effects of Supply and Demand Disturbances," *American Economic Review*, Vol. 79 (September 1989), pp. 655–73. The estimates in Table 3.1 are based on VARs with output growth and inflation as the endogenous variables.

[6]For Japan, see Tamim Bayoumi, "Where Are We Now and Where Are We Going? Estimating the Output Gap and Growth of Potential Output in Japan," in *Japan—Selected Issues*, IMF Staff Country Report (Washington: IMF, forthcoming). For the United States, see Paula R. De Masi, Jorge Chan-Lau, and Alex Keenan, "Measures of Potential Output, NAIRU, and Capacity Utilization," in *United States—Selected Issues*, IMF Staff Country Report (Washington: IMF, 1999, forthcoming).

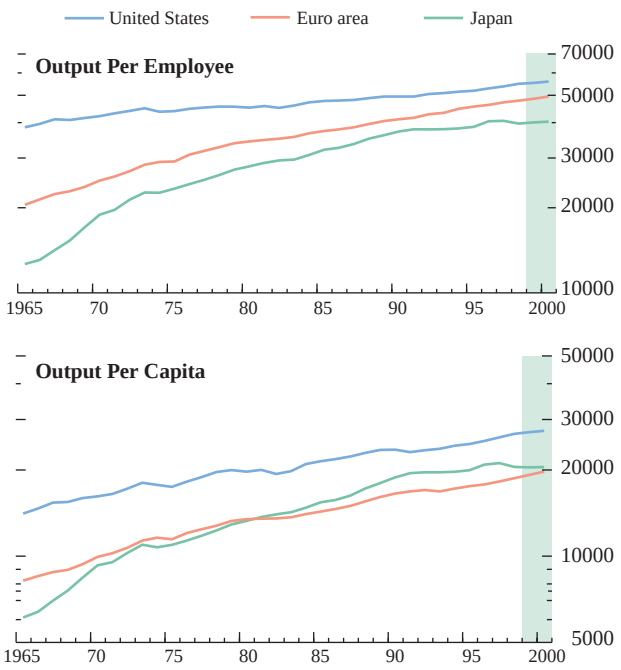
[7]In principle, capital and labor inputs to the production process are the *flows* of capital and labor services, but these are difficult to measure, especially at the macroeconomic level. For example, the true flow of labor services should include the number of hours worked (which are generally available) and a measure of worker skill (which is not). Measuring capital services is equally tricky and depends on utilization, the vintage of the capital asset, and its rate of economic depreciation.

[8]Estimates of the NAIRU (the non-accelerating-inflation rate of unemployment) are used in the potential labor force time series to provide a measure of sustainable employment—that is, the labor force that can be fully employed without generating inflationary pressures. A decline in the NAIRU raises the level of the potential labor force.

[9]See Chapter IV of the May 1999 *World Economic Outlook*, which provides an extensive survey of labor market issues in Europe.

Figure 3.3. United States, the Euro Area, and Japan: Output Per Employee and Per Capita[1]
(U.S. dollars at 1992 prices; logarithmic scale)

Productivity levels have been converging, and productivity growth slowing.



[1]Converted into U.S. dollars using purchasing-power-parity exchange rates. Shaded areas indicate IMF staff projections.

be unchanged in each case from period to period, the benefits of recent advances in information technology in the United States, or the other countries, are not captured.[10] Another possible explanation is that the impact of new technologies will not be seen in changes in TFP growth, but in changes in the capital-labor ratio.[11]

An alternative measure of productivity is output per employed person, or labor productivity,[12] an indicator which is observed directly and in contrast to TFP, which can only be inferred from reported data. From a longer-run perspective, productivity growth is related to the economy's stage of development; it tends to rise as production shifts from agriculture to manufacturing, and to slow as services become more important.[13] Between the 1960s and the 1980s, labor productivity rose more quickly in Japan and Europe as these economies "caught up" with the United States (Figure 3.3). In the 1980s, however, the catch-up rate began to decline as productivity levels converged. This pattern and the increasing importance of service sectors in these economies suggest that productivity growth and therefore potential output growth may well slow in the future as the catch-up process comes to an end.

From a shorter-term perspective, however, there are two reasons to expect a pickup in labor productivity growth. One possibility, or even likelihood, is that the observed slowdown in labor productivity growth in Japan and to a lesser extent in Europe during the 1990s represents a cyclical phenomenon that will be reversed with a recovery in demand. A second possibility is that productivity growth could rise in Japan and Europe as it has recently in the United States, to the extent that it is technology-based and assuming that these technologies will be successfully transferred to these countries. Explanations for this rise in U.S. productivity growth are discussed in the next section.

The rate of catch-up has been slower in Europe than in Japan, and by the early 1980s, Japan had overtaken the euro area in terms of income per head of population, though not in terms of output per employee

[10]The U.S. Bureau of Labor Statistics, *Multifactor Productivity Trends, 1997*, estimates multifactor (or total factor) productivity for the United States on an annual basis. For 1997, nonfarm private business TFP growth was 0.4 percent, unchanged from the 1990–97 average.

[11]See Dale W. Jorgenson and Kevin J. Stiroh, "Information Technology and Growth," *The American Review Papers and Proceedings* (May 1999), pp. 109–15, for this distinction between substitution of capital for labor (as relative prices change) and technological change which occurs only when more output is produced from the same inputs.

[12]Labor productivity growth can be derived from the production function as the growth rate of TFP plus the growth rate of the capital to labor ratio multiplied by the capital's factor payment share in total income.

[13]See Robert Rowthorn and Ramana Ramaswamy, "Deindustrialization: Causes and Implications," in *Staff Studies for the World Economic Outlook* (December 1997), pp. 61–77, for a discussion of this topic.

(Figure 3.3, lower panel). The difference can be explained by the rise in unemployment and the lower labor force participation rates in Europe, which together lower the ratio of employed persons to the total population so that even if the levels of output per employee were the same across countries, output per head of population would be lower. Participation rates rose in the United States and Japan between the 1970s and the 1990s to about 80 percent, but remained roughly stable at 65 percent in the euro area. Labor market institutions, high tax rates, and generous welfare and early retirement provisions probably play an important role in explaining Europe's lower participation rates.

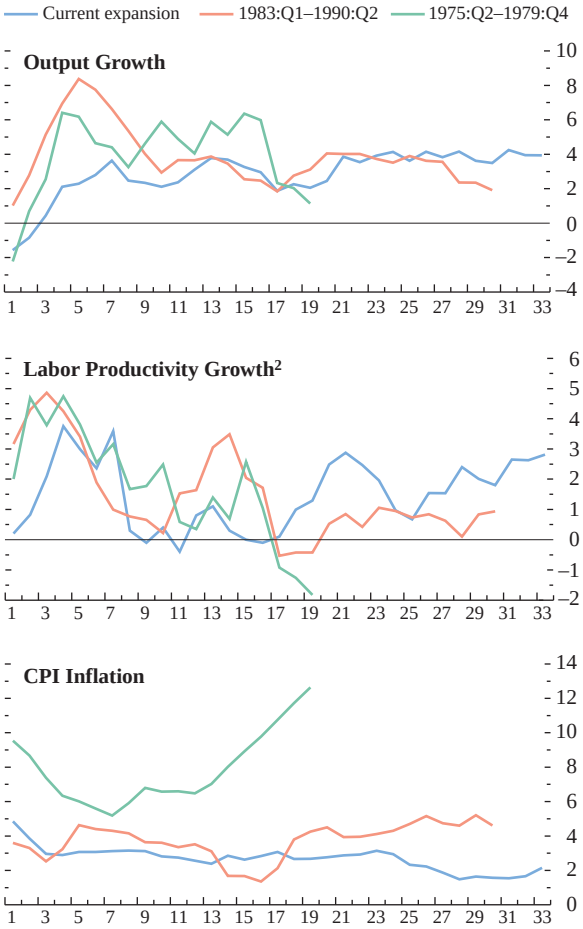
The United States: Will the Good Times Endure?

Economic performance in the United States has been impressive in the 1990s. The current expansion will become the longest on record if it continues into early next year (Figure 3.4).[14] It has been unique in other respects as well. For example, the unemployment rate has fallen to 4¼ percent, which is at the lower end of current NAIRU estimates and also below NAIRU estimates at the start of the decade, while inflation has declined; it typically begins to rise as recoveries lengthen.[15] Unlike in other recent expansions, output and labor productivity picked up slowly in the early phase of the recovery, but began to accelerate after five years, by which stage most upswings have begun to lose momentum. These unusual developments, in particular the recent rise in productivity growth, have been interpreted by some analysts as an indication of a "new economy" in which sustainable output growth is faster than previously thought possible. However, even though the latest data do indicate higher trend growth rates of productivity and potential output in the 1990s than previously estimated, it is unclear whether the rise in labor productivity growth in the past three years represents an acceleration that may be expected to be sustained.[16]

Domestic demand has been buoyant through most of the expansion. The strength of its recent growth, given the stage of the business cycle and the financial crises in emerging markets, has surprised many ana-

Figure 3.4. United States: Output, Labor Productivity, and Inflation in Recent Expansions[1]
(Percent change from a year earlier)

Output and productivity growth in the current U.S. expansion were initially slower than in earlier recoveries but have recently strengthened. Inflation in the current expansion declined and then remained steady for six years, before declining recently.



[1]The horizontal axis indicates quarters from the start of each expansion. The current expansion began in the second quarter of 1991.

[2]Nonfarm business sector.

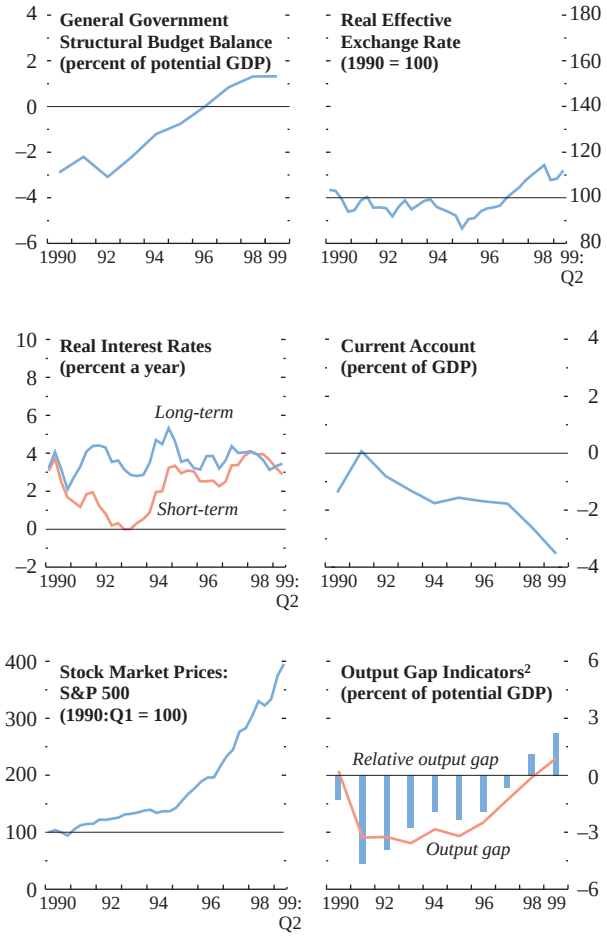
[14]For a detailed analysis of the current expansion see Victor Zarnowitz, "Theory and History Behind Business Cycles: Are the 1990s the Onset of a Golden Age?" *Journal of Economic Perspectives*, Vol. 13 (Spring 1999), pp. 69–90.

[15]De Masi, Chan-Lau, and Keenan, "Measures of Potential Output, NAIRU, and Capacity Utilization," provide various estimates of the NAIRU in the United States. They range from 4¼ to 6½ percent.

[16]See Mark E. Schweitzer, "Productivity Gains During Business Cycles: What's Normal," *Economic Commentary*, Federal Reserve Bank of Cleveland (July 1998).

Figure 3.5. United States: Policy and Demand Indicators[1]

The strong performance of the U.S. economy in the 1990s is reflected in the relative output gap. It has been supported by robust private sector expenditure, based partly on the rising stock market, which together with the strong dollar led to the widening current account deficit. A significant improvement in the structural fiscal balance may have helped to moderate rises in interest rates.



[1]1999 data for structural budget balance, current account, and output gaps reflect IMF staff projections.

[2]The estimated relative output gap is the output gap in the United States less a weighted average of output gaps in the other major industrial countries.

lysts. Buoyant demand has also been maintained during a period of fiscal consolidation when the primary structural deficit was being reduced (by 1½ percent of potential output from 1995 to 1998, Figure 3.5). The strength of consumer demand reflects sustained employment growth and rising real income, but also a decline in the household saving rate—from 6 percent at the start of the expansion in 1993, to zero and below during 1998—that has been attributed to rising equity prices and access to consumer credit by an increasing number of households. The crises in emerging markets and weak demand in Japan and Europe have contributed to buoyant bond and equity markets, providing business with lower-cost financing. The weak international environment has further helped to contain inflation, thereby forestalling a monetary tightening. These fortuitous effects appear to have offset the negative impact on U.S. exports (Figure 3.6). From 1997, a large share of the rapid growth of domestic demand was met by an increasing external deficit as the dollar appreciated in real effective terms and growth lagged in partner countries.

How the rise in demand has been met without a rise in inflation is a subject of considerable debate: a rise in net imports (and an associated increase in capital inflows) is part of the explanation, but there also may have been developments in the economy that have lifted potential output or potential output growth.[17] Several hypotheses have been advanced, including the possibility that a series of fortuitous developments have temporarily suppressed inflation.

Potential output growth may have risen. The "new economics" or "new paradigm" hypothesis argues that the higher rates of labor productivity growth observed in 1996–98 are likely to be permanent and will make possible a sustained increase in potential output growth, maybe to 3 percent a year or more. The main reasons given for this rise are new information technologies, new cost-cutting management practices that foster continuous productivity improvements, and related efforts by firms to seek greater efficiencies in response to labor shortages and increased competition. While there is a certain appeal to the claim that these new technologies and practices are bringing considerable benefits, for example with just-in-time inventory control, the link to the observed productivity pickup has yet to be proved.

Potential output growth did not slow in the early 1990s as previously estimated, nor has it increased recently. At least until recently, many economists believed that potential growth slowed around 1990, but new data suggest otherwise. Rather, the slowdown in productivity growth observed in the early and mid-

[17]De Masi, Chan-Lau, and Keenan, "Measures of Potential Output," present estimates of potential output in the United States based on their own calculations and those of other organizations.

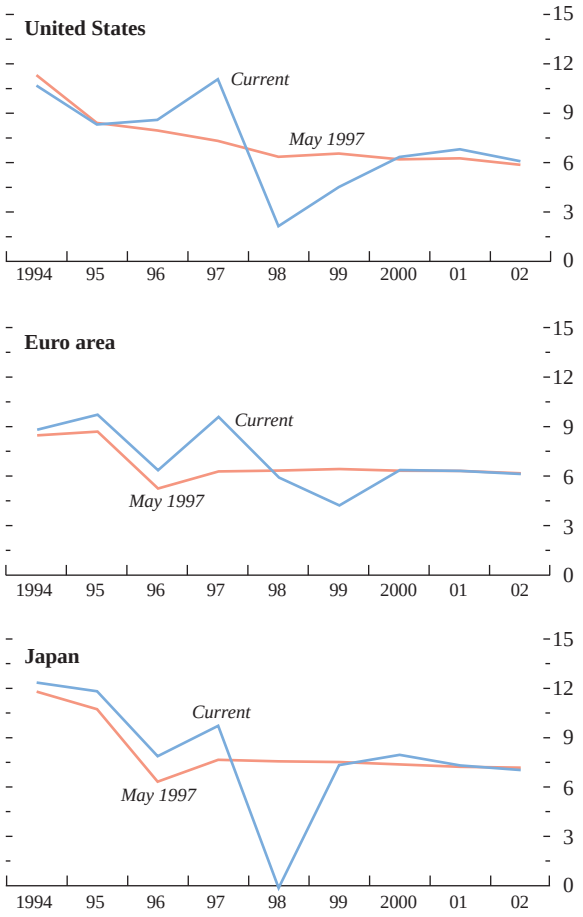
1990s now seems transitory or cyclical, perhaps reflecting the relative weakness of the initial phase of expansion following the 1990–91 recession. This may have given the false impression that there had been a permanent slowdown in productivity and potential output growth. In 1996–98, however, the pace of productivity increases picked up, so that the declines in long-term potential growth estimated earlier are no longer evident in the data.[18] Such considerations have led to a revision this year in the IMF staff's estimate of potential growth to about 2¾ percent a year from 2¼ percent previously. It is enough of an increase in potential growth to imply that the U.S. economy was operating with spare capacity through much of the 1990s and only closed the output gap in 1998 (see Figure 3.2). The revised assumption can explain the recent combination of high growth with low inflation.

Demographic shifts have lowered unemployment and generated a one-time shift in potential supply. The argument here is that the decline in the unemployment rate to 4¼ percent in 1998–99 has not caused a pickup in inflation because the NAIRU has fallen. A recent study has raised the possibility that as the postwar baby-boom generation has aged, the overall unemployment rate at a given level of labor market tightness has declined as the numerous members of this group have moved into older age cohorts, which typically have experienced lower rates of unemployment.[19] This may help to explain how the unemployment rate has fallen to a 30-year low and suggests that the level of potential output has increased accordingly even though the underlying growth rate of potential may not have increased.

Wage and price behavior has changed. In 1996, Federal Reserve Chairman Greenspan cited evidence that workers were worried about job security and for this reason were willing to accept smaller wage increases at given levels of labor market tightness, but in February 1999, he noted that job security concerns no longer seemed able to explain favorable wage developments.[20] Recent work by IMF staff concludes that wage behavior, as measured by Phillips curve estimates, has not changed in the past few years, and attributes the low rates of consumer price inflation in

Figure 3.6. United States, the Euro Area, and Japan: Changes in *WEO* Export Market Growth Assumptions[1]
(Percent)

Export market growth was generally underestimated for the year 1997 in the assumptions used in the May 1997 *WEO*. The subsequent sharp slowdown in market growth in 1998 owed much to the Asian and Russian crises.



[1]Export market growth is calculated as a trade-weighted average of import growth in partner countries. Projections begin in 1997 for the May 1997 export market demand assumptions and in 1999 for the current assumptions.

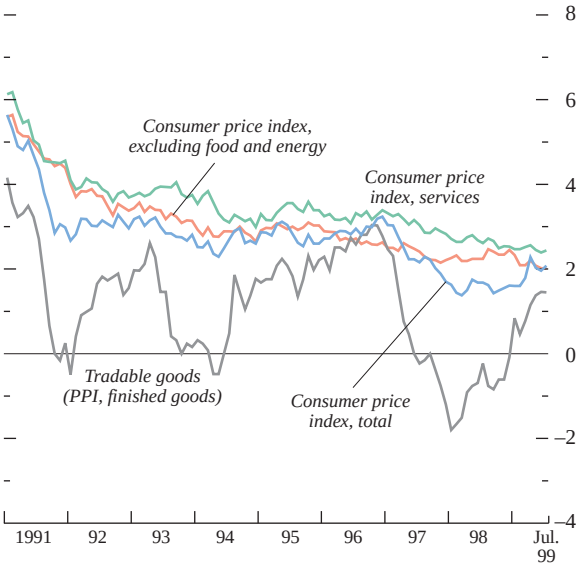
[18]See De Masi, Chan-Lau, and Keenan, "Measures of Potential Output."

[19]Robert Shimer, "Why Is the U.S. Unemployment Rate So Much Lower?" *NBER Macroeconomics Annual, 1998* (Cambridge, Massachusetts: MIT Press, 1998), pp. 11–61. Other factors that have helped to lower unemployment include developments in the temporary help industry, the growth of the incarcerated population, increased competition, and a decline in unionization. See Lawrence F. Katz and Alan B. Krueger, "The High-Pressure U.S. Labor Markets of the 1990s" (unpublished, May 1999).

[20]Alan Greenspan, Testimony Before the Committee on Banking, Housing, and Urban Affairs, U.S. Senate (July 18, 1996 and February 23, 1999). In his February 1999 testimony, Chairman Greenspan said that wages were now being held down by a decline in firms' pricing power and increases in productivity.

Figure 3.7. United States: Selected Price Indices
(Percent change from a year earlier)

Prices of tradable goods fell in 1997–98.



Source: Haver Analytics database.

1995–98 to productivity gains, to the slower growth of nonwage labor compensation since 1995, and to declines in import prices (see below).[21]

Changes in price index methodology have increased measured output and productivity growth, mainly since 1995. A recent study suggests that improvements in the measurement of inflation, in terms of the GDP deflator, in part linked to efforts to reduce measurement bias in the consumer price index, have increased measured average productivity growth in the nonfarm business sector in 1996–98, by about ½ of 1 percentage point compared to the 1972–95 period.[22] The reason that measured real output growth (and therefore measured growth of output per worker) has increased is because the price indices used to deflate nominal output data now show lower inflation, relative to price indices based on earlier methods. Thus, comparisons of productivity growth before and after 1995 (when the bulk of the changes took place) have to be interpreted carefully because of this possible break in the data.

Special, one-time factors are masking signs of overheating. Declines in global commodity prices and the strong dollar have lowered import prices and exerted downward pressure on domestic prices, thus masking signs of overheating. Recent estimates indicate that falling import prices reduced consumer price inflation by an average of 0.8 percentage points a year during 1996–98, mainly through the impact on the prices of tradable goods (Figure 3.7).[23] Another special factor that has masked possible consequences of overheating can be seen in the favorable financing of the U.S. current account deficit. As the deficit widened in 1997–98, interest rates declined and the effective exchange rate appreciated, bolstering U.S. domestic demand, in part because of the emerging market financial crisis and the underutilization of resources in Asia, Europe, and Latin America. As growth picks up in these regions, it may become harder to finance the current account deficit at prevailing interest rates and exchange rates.

[21]Stephen Tokarick, Jorge Chan-Lau, and Gustavo Ramirez, "Wage and Price Determination," in *United States—Selected Issues*, IMF Staff Country Report (Washington: IMF, 1999, forthcoming).

[22]See Robert J. Gordon, "Has the New Economy Rendered the Productivity Slowdown Obsolete?" (unpublished; June 1999). The paper also estimates that the more than 40 percent a year productivity increase in computer manufacturing in 1995:Q4–1999:Q1 accounts for all of the rise in manufacturing productivity growth over this period.

[23]The estimate is based on the model in Tokarick, Chan-Lau, and Ramirez, "Wage and Price Determination," and includes the dynamic feedback effects through lagged inflation. Roger E. Brinner, "Is Inflation Dead?" *New England Economic Review* (Federal Reserve Bank of Boston, January/February 1999), finds a similar effect. The 0.8 percent estimated impact of falling import prices on domestic inflation should be seen as partly temporary and partly due to the trend decline in U.S. import prices which began around 1980.

While each of these hypotheses could explain the "high growth but declining inflation" experience of the past few years, the implications for the future, and for policy, are quite different. The "new paradigm," and other explanations relying on sustained higher rates of productivity growth, suggest that the U.S. economy can continue to expand at rates previously thought to be unsustainable. Other explanations point to a level shift in potential output or transitory changes in the economy, which suggest that as these one-time influences diminish, signs of overheating could quickly emerge. These include a temporary pickup in productivity in 1996–98 reflecting a delayed cyclical productivity catch-up, a one-time demographic shift in unemployment, temporary factors holding down inflation, and larger than normal capital inflows owing to the economic slowdown in other economies.

A definitive answer to the question of whether the U.S. economy has entered a new golden age of sustainable, faster potential growth or whether it has been benefiting from temporary or cyclical influences is not possible at this stage. The evidence and historical experience, however, suggest a cautious approach. First, temporary effects—for example, falling import prices—are indisputable and may well disappear or be reversed over time. Second, studies supporting the "new economy" hypothesis do not, as of now, seem to outweigh contradictory evidence and studies reaching opposite conclusions. As noted above, it is possible that the rise in U.S. productivity growth in 1996–98 represents an unusual cyclical boost and not a change in the long-run trend. One recent study that does not support the "new economy" hypothesis fails to find a rise in TFP growth over the period 1988–96 when computer-related gains could be expected.[24] A second recent study finds a modest, 0.15 percentage point, impact of recent technological advances on potential output growth, while a third finds that the investment boom in computer equipment raised potential growth by 0.35 percentage point in 1996–98.[25] This study, however, concludes that it is too early to label this rise as a permanent increase in potential growth or the result of a transitory response to falling computer prices. Third, in view of the tendency for estimates of potential output growth to be raised during cyclical upswings, and lowered during periods of low growth, it would seem prudent to leave open the possibility that potential output growth has risen somewhat, but design policies on the assumption that temporary or one-time changes in the economic environment have played an important role. Fourth, a cautious approach is indicated by the adverse consequences of the overheated economies that went unrecognized in the late 1980s and early 1990s in Japan, the United Kingdom, and the Nordic countries. Finally, the high rates of growth in the United States in the 1920s and again in the 1960s were considered by some at the time to augur new golden ages of prosperity. This of course did not prove to be the case, and there are many compelling reasons to think that the recent expansion will be no different.[26]

Japan: Why the Decade of Lost Growth May Be an Aberration

Japan's lackluster economic performance in the 1990s is rooted in the asset price bubble that emerged in the 1980s, and that burst at a relatively late stage in 1990. The subsequent collapse of land and equity prices triggered a protracted period of weak economic growth, characterized by overcapacity and a pervasive lack of confidence, associated in part with accumulating worries and uncertainties regarding future employment growth and restructuring, and mounting public debt. The economic effects of the asset price collapse were compounded by the precipitous fall in business investment that has slowed potential growth and by its effects on the banking system, although regulatory forbearance delayed the main impact until 1996/97. In response to these problems, the authorities have acted forcefully, if somewhat belatedly, by adopting a series of large fiscal stimulus packages, and by easing monetary policy to the extent that policy interest rates have been effectively zero since early this year. In 1996, fiscal stimulus helped to jump-start a recovery, but the reversal of the fiscal expansion the next year, together with financial system instability and the onset of the Asian crisis, contributed to a 5½ percent contraction in output between the beginning of 1997 and the end of 1998, a decline unprecedented among the major industrial countries in the postwar period. Consumer price inflation has been close to zero since 1995, reflecting the large degree of slack in the economy and the impact of falling import prices; although there has been some downward drift in the price level, deflationary pressures have been moderate.

[24]Robert J. Gordon, "U.S. Economic Growth Since 1870: One Big Wave?" *American Economic Review*, Vol. 89 (May 1999), pp. 123–28.

[25]Jorgenson and Stiroh, "Information Technology and Growth," estimate that information technology has added about 0.15 percentage points to total factor productivity growth. Daniel E. Sichel, "Computers and Aggregate Economic Growth," *Business Economics* (April 1999), pp. 18–24, estimates that computer hardware investment added 0.35 percentage point a year to private nonfarm business output growth in 1996–98.

[26]Victor Zarnowitz, "Theory and History Behind Business Cycles," lists seven reasons why the U.S. economy has not become more stable. For example, while the inventory to sales ratio has followed a gradual downward trend in the 1990s, inventory investment was about as volatile and cyclical in the period as in the past. The volatility remains large enough to play a role in propagating a recession.

Cyclical Factors Affecting Economic Activity in Japan

In terms of the expenditure components, the recession in Japan is accounted for largely by a pronounced weakening of business and residential investment. Business investment has fallen by about 20 percent from its peak in the early 1990s, while the decline in residential investment is even more pronounced, with a drop of more than 30 percent between 1990 and 1998. An important factor contributing to weak investment has been the stock adjustment following the rapid capital accumulation during the asset price bubble period. After the bubble burst in 1990 and as the economy subsequently slowed, many firms were confronted with substantial excess capacity. Estimates suggest that even though investment has declined significantly in the 1990s, the ratio of net business capital to potential output is still above its trend prior to the bubble years.[27]

Investment spending has also been depressed by high levels of corporate debt, particularly in the real estate and construction sectors, and other non-manufacturing sectors. Firms in these sectors had borrowed heavily on the basis of expectations about economic growth that were not fulfilled. Their financial situation worsened markedly and their ability to obtain funds for new investment or working capital became seriously limited. On the other hand, balance sheets of large manufacturers have improved since 1991–92, and in addition, many of these companies have access to international capital markets where they can raise funds directly.

Recent problems in the banking system have contributed to tight funding conditions, especially for small and medium-sized enterprises that rely on banks for finance. This appears to have constrained the supply of credit even to many creditworthy firms. In addition to holding back fixed capital projects, it may also have contributed to limits on firms' access to working capital, thereby hindering production and the ability of some firms to take advantage of new business opportunities.[28]

The drop in private consumption by about 1 percent in 1998 also contributed to the downturn. Important causes of this decline appear to include a decline in labor earnings and concerns about future employment prospects related partly to concerns that corporate restructuring would reduce job opportunities in the future. Further, albeit mild, declines in asset prices may also have dampened consumer demand. The pickup in private consumption in the first two quarters of 1999 is a welcome development, but it is not clear yet whether this signals the beginning of a self-sustained recovery of private demand, given the weakness in the labor market.

Diminishing support from the external sector has worsened the recession. For most of the second half of the 1990s, net exports made a small positive contribution to growth, reflecting the strength of demand in some partner countries, especially the United States, and the effects of the yen's real effective depreciation from its peak in 1995. However, export volumes declined during 1998 owing to falling import demand in the Asian crisis countries, and again in the first quarter of 1999 as the impact of the earlier yen depreciation waned.

The authorities have used both macroeconomic and structural policies to address the protracted weakness of the Japanese economy. They have implemented numerous economic stimulus packages, which have resulted in a swing in Japan's structural government balance from a surplus of 2 percent of potential output in 1991 to a projected deficit of about 6 percent of GDP in 1999 (Figure 3.8).[29] Gross public debt rose from about 70 to 120 percent of GDP between 1990 and 1998. The fiscal stimulus packages helped initiate a recovery in 1996, when private demand rose vigorously and output growth increased to 5 percent, but the subsequent fiscal tightening in early 1997, in conjunction with financial turbulence and the onset of the Asian crisis, led to a weakening of economic activity again. The latest packages, implemented in 1998, contributed to a pickup in private demand in the first two quarters of 1999, but it is still too early to know whether this will lead to a self-sustaining recovery. With regard to monetary policy, the authorities have kept the overnight interest rate close to zero since March, but disintermediation problems in the financial sector and the very low rates of inflation that have put a floor under real interest rates have rendered monetary policy less effective.[30] Since late 1998, however, a comprehensive framework has been put in place to deal with banking sector weaknesses.

The explanations for the slowdown in private demand may help to explain why fiscal and monetary stimulus in the 1990s appears so far to have had only limited success in rekindling demand (Figure 3.8). Many firms still have excess capacity, while those with weak balance sheets may have difficulty in securing finance. A decline in financial intermediation

[27]See Ramana Ramaswamy, "The Slump in Business Investment in Japan in the 1990s," in *Japan—Selected Issues*, IMF Staff Country Report (Washington: IMF, forthcoming).

[28]Bayoumi, "Where Are We Now and Where Are We Going?" explains potential growth in Japan using several models. All show a drop in potential growth, but with a wide range.

[29]A more detailed description of the fiscal stimulus packages was presented in Chapter IV of the October 1998 *World Economic Outlook*. See also Martin Mühleisen, "Implementation and Effectiveness of Fiscal Stimulus," in *Japan—Selected Issues*, IMF Staff Country Report (Washington: IMF, 1999, forthcoming).

[30]See Tamim Bayoumi and James Morsink, "A Peek Inside the Black Box: The Monetary Policy Transmission Mechanism in Japan," in *Japan—Selected Issues*, IMF Staff Country Report (Washington: IMF, 1999, forthcoming).

may be holding back viable firms from investing. Neither a reduction in interest rates nor fiscal stimulus may therefore do much to spur private investment. The response of household demand to expansionary policies may also be muted, because of the use of temporary tax cuts and because policies may not be perceived as addressing the underlying uncertainties about future employment. With the government deficit near 10 percent of GDP, there is clearly a risk that households may respond to fiscal easing by discounting future fiscal policy tightening, and raise their saving rates accordingly.

Has Japan's Long-Run Potential Output Growth Slowed?

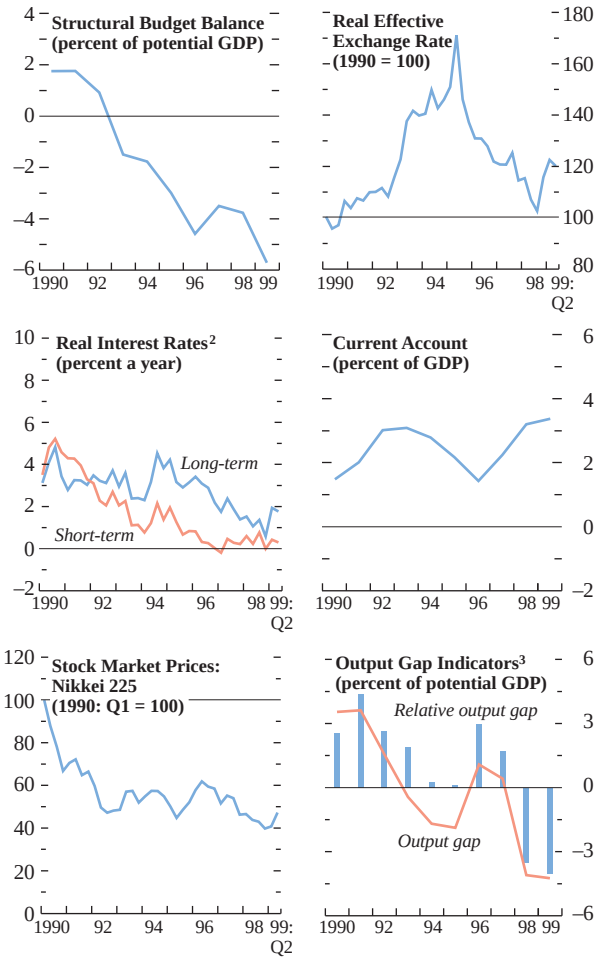
Estimates of potential growth in Japan show a decline from about 3½–4 percent in the 1980s to about 1–2½ percent in the 1990s (see Table 3.1). The wide range of estimates, especially in the later period, is indicative of the uncertainties involved in estimating potential growth when an economy's actual growth rate falls well below the previous long-term trend over an extended period. One outcome of this uncertainty is that any point estimate of potential growth in Japan at the lower end of the range may be biased and may understate the true potential growth rate. Nevertheless, in terms of the production function-based estimates, about ½ of 1 percentage point of the decline in potential growth from about 3½ percent to about 2½ percent can be explained by lower labor force growth in the 1990s compared to the 1980s, the remaining ½ of 1 percentage point of the decline being accounted for by slower growth of the capital stock (see Table 3.1).[31]

Looking ahead, the baseline projection incorporates a decline in the growth rate of potential output, to just over 1 percent a year in 1999–2002, from 2¼ percent in 1992–98. The projected slowdowns in labor force growth and growth in the capital stock account about equally for the lower rate of potential growth. Over the longer term, however, it may be argued that Japan's potential growth rate is likely to increase from its currently estimated low rate. First, it is clear that estimates of potential growth in the 1990s—particularly the most pessimistic ones based on time trends and structural VAR models—have been biased downward by the unusually weak demand conditions in 1991–98. Second, despite the aging of the population, available labor services (and their quality) could increase if the average retirement age is increased and if the practice of lifetime employment diminishes and workers are able to change jobs more easily. This would help to raise the rate of growth of potential output during the

[31]See Bayoumi, "Where Are We Now and Where Are We Going?" for a detailed discussion of potential output in Japan and uncertainties in estimating it.

Figure 3.8. Japan: Policy and Demand Indicators[1]

The weakness of the Japanese economy in the 1990s is reflected in the relative output gap. Despite the sharp deterioration in the structural budget balance, the external balance has remained in surplus owing to weak private demand and the weaker yen. Monetary easing has driven interest rates effectively to zero.



[1]1999 data for structural budget balance, current account, and output gaps reflect IMF staff projections.

[2]The real interest rates exclude the effect of the April 1997 value-added tax (VAT) increase.

[3]The estimated relative output gap is the output gap in Japan less a weighted average of output gaps in the other major industrial countries.

transition period. Third, as the detrimental effects of past overinvestment and the recent banking sector problems are resolved, firms will again begin to invest and build up the capital stock. However, rates of capital accumulation are unlikely to return to those experienced in the 1980s when capital spending was widely viewed as unsustainable. In addition, capital accumulation is likely to slow as labor force growth slows. Finally, the extent to which capital accumulation will contribute to potential growth will also depend critically on incentives for new activities and for allocating resources more efficiently.

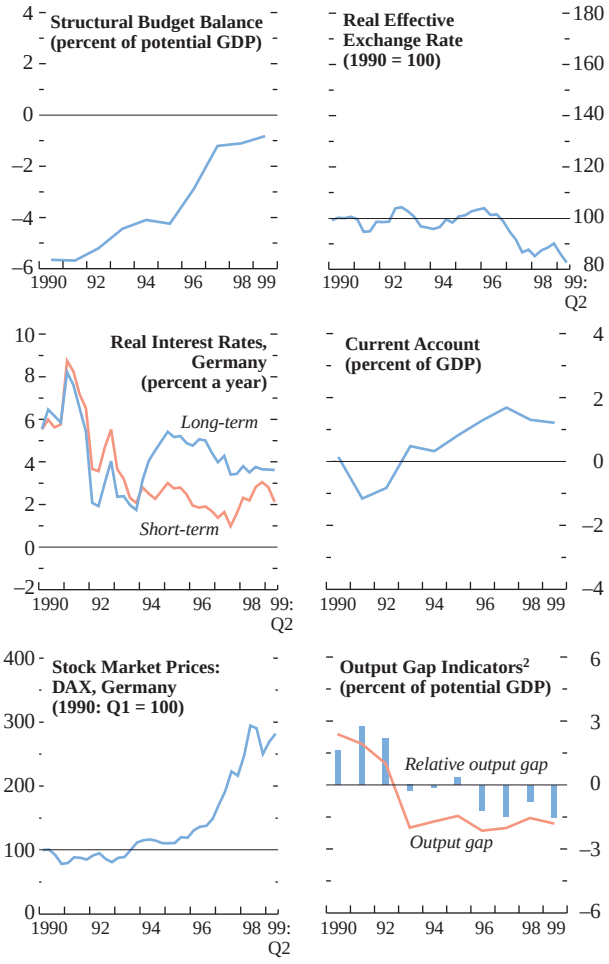
A key to higher potential growth lies in structural policies that address the underlying reasons for the misallocation of resources in the past that led to the deterioration in Japan's economic performance.[32] For example, Japan's high saving rate, together with capital market inefficiencies, has provided Japanese businesses with cheap funding and reduced incentives for employing such funds efficiently, while labor market practices such as lifetime employment have limited the response of businesses to productivity-increasing innovations. Financial market reforms, supported by improved corporate governance and a safety net for unemployed workers, would foster labor mobility and a more efficient allocation of resources that should raise productivity and better enable the economy to adjust to adverse shocks. Easing regulations and other constraints will also enhance efficiency particularly in the nontradables sectors.

Can Europe Grow Faster?

Europe's growth performance in the 1990s, especially in the major continental countries in the second half of the decade, has been weak in comparison to the United States, and has been somewhat weaker than average growth in the 1980s, as is illustrated by data for the euro area (Figure 3.1 and Figure 3.9). Unemployment has continued the trend rise that started in the 1970s, and the cyclical recovery in 1997–98 has only made a small dent in joblessness. Weak demand growth appears to explain why output growth slowed in the 1990s, as staff estimates of potential growth are unchanged from the 1980s to the 1990s (Table 3.1). However, longer-run supply factors are important in explaining slower growth in Europe compared to the United States.

Figure 3.9. Euro Area: Policy and Demand Indicators[1]

Fiscal consolidation in the run-up to EMU led to a considerable improvement of the structural budget balance and to a decline in real interest rates, which in turn contributed to the strong performance of the stock market in the second half of the 1990s. The weak cyclical position of the euro-area economy is reflected in the decline in the relative output gap.



[1]1999 data for structural budget balance, current account, and output gaps reflect IMF staff projections.

[2]The estimated relative output gap is the output gap in euro area less a weighted average of output gaps in the other major industrial countries.

[32]For a detailed analysis of these issues, as well as the full range of estimated benefits of deregulation see Ichiro Oishi and Christopher Towe, "Governance, Deregulation, and Economic Performance," in *Japan—Selected Issues*, IMF Staff Country Report No. 98/113 (Washington: IMF, 1998), pp. 146–63. This paper also presents estimates of the possible output gains from structural reform. These vary widely, from 2½ percent to almost 19 percent, depending on the study and assumptions made.

As discussed in earlier issues of the *World Economic Outlook*, the origins of this lackluster performance can be traced to a number of negative influences including the effects of labor market rigidities, the tensions and financial market turbulence in the countries participating in the European exchange rate mechanism following German unification, the need for fiscal consolidation, a monetary stance that has sometimes been slow in reacting to weakness in demand in the absence of inflationary pressures, and more recently, the negative trade effects of the financial crises in emerging markets (see Figure 3.6). In some of the smaller euro area countries, growth has been significantly above average owing to a variety of factors including the convergence of per capita incomes, lower real interest rates associated with the convergence of nominal rates and relatively high inflation, and the positive effects of labor and product market reforms. Outside the euro area, growth in the United Kingdom in the 1990s as a whole has been little different from the euro area average. But in each of the years 1993–97, U.K. growth exceeded euro area growth. This above-average performance may have benefited from an early start to structural reforms in the early 1980s, as well as prudent macroeconomic policies.

The Slower-Growing Countries

The recovery in Germany that began in 1993 has been slow, with average annual output growth rate of less than 2 percent. The need for fiscal consolidation after the heavy costs of unification has played a major role. In addition, the high cost of labor contributed to a 5 percent decline in employment in 1992–98. This long period of declining employment can be attributed partly to labor market institutions that have failed to match wage developments with productivity growth, but also to the after-effects of unification when across-the-board wage increases and the need to finance unification through hikes in social contribution rates added to labor costs. The decline in employment has been greatest in eastern Germany where the rise in labor costs was most pronounced and where productivity has yet to catch up with wage levels. In much of 1997 and early 1998, Germany's recovery appeared to be gaining strength, after the successful achievement of the Maastricht fiscal objective. It was temporarily derailed, however, by the decline in export demand in 1998 associated with the emerging market crises; in addition to cutting exports, this adversely affected business confidence and investment. Why the German economy appears to have been affected more by the emerging market crisis than some of its neighbors is discussed below.

Economic growth in Italy has been the weakest among Europe's major economies in the 1990s, in part reflecting the particularly tight fiscal policies that have been needed: fiscal adjustment over the decade improved the primary structural balance by about 9 percent of GDP. In addition, restrictive monetary policies were necessary at the beginning of the decade to reduce inflation and again in 1994–95 to gain early reentry into the ERM. Structural impediments to faster growth, including rising tax rates, an inefficient welfare system, and labor market rigidities have also contributed to Italy's below average performance in the 1990s. The causes of Italy's slowdown in the second half of 1998 and early 1999 remain somewhat unclear, especially given the large declines in interest rates associated with the convergence of monetary conditions and inflation rates with the lower rates prevailing in Germany and France. As in Germany, the shock to external demand stemming from the crises in emerging markets was an important contributor to the slowdown (see below). In addition, the slowdown in domestic demand, especially business investment, may have reflected a tendency for firms to delay investment projects until the full effects of monetary union and interest rate convergence could be assessed. The lagged effects of the earlier fiscal tightening, as well as uncertainties about future fiscal and structural policies, may also have weakened demand.

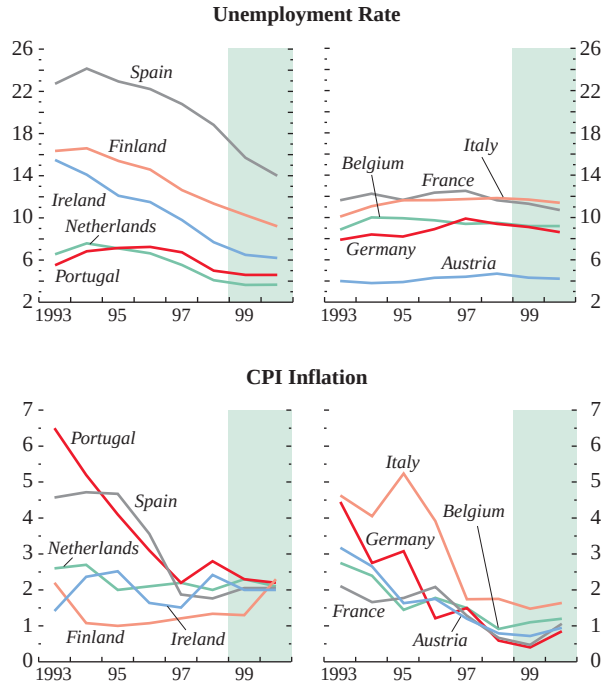
In France, growth performance was weak in the early 1990s, but it improved in the second half of the decade, to an average annual rate of 2½ percent, and was stronger than in Germany or Italy over this period. While the recovery in France is far from complete, it nevertheless has been somewhat more vigorous than in Germany or Italy for several reasons. First, the degree of fiscal consolidation in France in the 1990s was less than in the other countries—on the order of 2¼ percent of GDP, compared to 3¾ percent in Germany and 9 percent in Italy. Second, wage moderation over much of the 1990s has boosted France's competitiveness within the euro area (Statistical Appendix Table 10). Third, construction has been picking up in France, while Germany has experienced an unwinding of the high levels of building activity that followed unification. Finally, consumer confidence and hence demand has been more robust in France than Germany, in part due to somewhat more effective labor market policies in France that has added jobs in the second half of the 1990s while employment has declined in Germany. While the cut in working hours now being implemented in France may help to raise productivity, it will also act as a constraint on the level of potential output and therefore the sustainable level of output in the medium term.

The 1998–99 growth slowdown in Germany and Italy also appears to have been steeper than in France, perhaps because the composition of these countries' exports left Germany and Italy more vulnerable to the financial crises in Asia and Russia. About 20 percent of German exports in 1997 went to emerging markets in east Asia and eastern Europe, compared to about 12 percent in France. And the impact of these crises on

Germany was magnified because about 80 percent of German exports consist of cyclically sensitive capital and intermediate goods, compared to 50 percent in France. Italy suffered a loss of net exports equivalent to almost 1 percent of GDP in 1998, in part owing to the composition of its exports, which are more heavily weighted toward textiles, garments, and leather products. Italy appears to have lost market share for these goods to the Asian crisis countries. Exports of Italy's high-quality consumer goods also suffered with the downturn in global demand in 1997–98.

Figure 3.10. Euro Area: Economic Performance Indicators[1]
(Percent)

Strong economic performance in the countries shown in the left-hand side of the figure is reflected in significant declines in unemployment. Inflation has come down in all countries. Unemployment rates are expected to fall by small amounts in the countries shown in the right-hand side.



[1]Shaded areas indicate IMF staff projections.

The Faster-Growing Countries

In contrast to the disappointing growth performance of Germany, France, and Italy, several other European countries including Finland, Ireland, the Netherlands, Portugal, and Spain within the euro area, and the United Kingdom, Denmark, and Norway have experienced periods of rapid expansion in the 1990s. Although most were affected by the recession in the early years of the decade, they subsequently enjoyed recoveries that reduced unemployment to levels not seen since the early 1970s in some cases. Among these countries Ireland stands out with output growth averaging a remarkable 9 percent in 1994–98. Strong productivity gains (helped by foreign direct investment attracted by advantageous tax arrangements) and moderate wage increases (helped by a tri-partite agreement) led to considerable and sustained increases in competitiveness and, with the fiscal position brought under control, contributed to a virtuous circle of real income gains, strong employment growth, and a buoyant domestic economy. Recently there have been growing concerns about overheating, signs of which are seen particularly in rapidly rising property prices.

Denmark, the Netherlands, Spain, and the United Kingdom have made significant progress in addressing labor market rigidities, and this has led to reductions in structural unemployment, whereas in some other European economies both actual and structural unemployment have stabilized or continued to rise (Figure 3.10). The success of these countries in bringing down structural unemployment can be attributed to a range of labor market reforms that have differed across countries. One common ingredient, though, is reforms of unemployment benefit systems that have reduced the negative incentives that were present in the old systems. Also, wage moderation has been an important ingredient, which has been achieved either through decentralization of wage bargaining, as in the United Kingdom and to some extent in Denmark, or through a tripartite consensus approach, as in the Netherlands and Austria.[33]

[33]For more details on labor market reforms in European economies see Chapter IV of the May 1999 *World Economic Outlook*. A discussion of how centralized wage bargaining has

Table 3.2. Selected European Economies: General Government Structural Balances and Long-Term Interest Rates

	Fiscal Balance in Percent of Potential Output				Long-Term Interest Rate			
	Structural balance		Primary structural balance		Nominal		Real	
	1998	Change, 1995–98	1998	Change, 1995–98	1998	Change, 1995–98	1998	Change, 1995–98
Germany	–0.7	2.2	2.2	2.0	4.6	–2.3	4.0	0.2
France	–1.3	2.3	1.6	1.9	4.8	–2.8	4.1	–1.7
Italy	–1.5	5.6	6.0	2.1	4.9	–7.3	3.1	–3.9
United Kingdom	–0.3	4.3	2.6	4.4	5.5	–2.7	2.9	–2.5
Austria	–1.8	3.1	1.2	2.7	4.7	–2.4	3.9	–1.6
Belgium	0.1	2.8	7.3	1.3	4.7	–2.6	3.8	–2.1
Denmark	–0.1	1.6	2.3	1.0	4.9	–3.4	3.2	–3.0
Finland	1.5	2.6	3.4	3.7	4.8	–4.0	3.4	–4.3
Greece	–2.5	7.7	6.6	4.0	7.8	–7.7	3.3	–3.3
Ireland	0.8	2.0	3.4	0.5	4.7	–3.5	2.3	–3.4
Netherlands	–1.4	1.9	2.6	1.1	4.8	–2.4	2.8	–2.4
Portugal	–2.4	2.2	1.0	–0.6	4.1	–5.9	1.3	–4.6
Spain	–1.3	4.0	2.4	2.7	4.8	–6.4	3.1	–3.5
Sweden	4.1	10.0	7.1	10.4	5.0	–5.2	5.2	–2.6

Source: IMF *World Economic Outlook* database.

In the run-up to monetary union, all countries in the EU, including those that were not planning to join the monetary union in the first round, implemented substantial deficit-reduction measures (Table 3.2). The contractionary impulse of these has largely passed. More recently, as the start of monetary union approached, both inflation rates and interest rates converged to the lower levels prevailing in the core countries. In Spain, Greece, and Portugal, real long-term interest rates fell by 3½–4½ percentage points from 1995 levels, which in turn contributed to significant reductions in fiscal deficits (Table 3.2), increased investor and consumer confidence, and the pickup in private sector demand.

Catching Up and Convergence Within Europe

Part of the divergences in output growth across Europe can be understood in terms of the convergence hypothesis of the economic growth literature, which states that countries with low initial levels of output per worker tend to experience higher rates of labor productivity growth and thus tend to grow faster than countries with higher initial levels of output per worker. Among euro area countries there does appear to be some negative correlation between the initial level and subsequent growth of output per worker (Figure 3.11). Hence, the fact that some countries in the euro area are growing faster than others is not a sign of divergence, but rather a sign of catching up and convergence. This process may have been accelerated as the European economies have become more integrated.

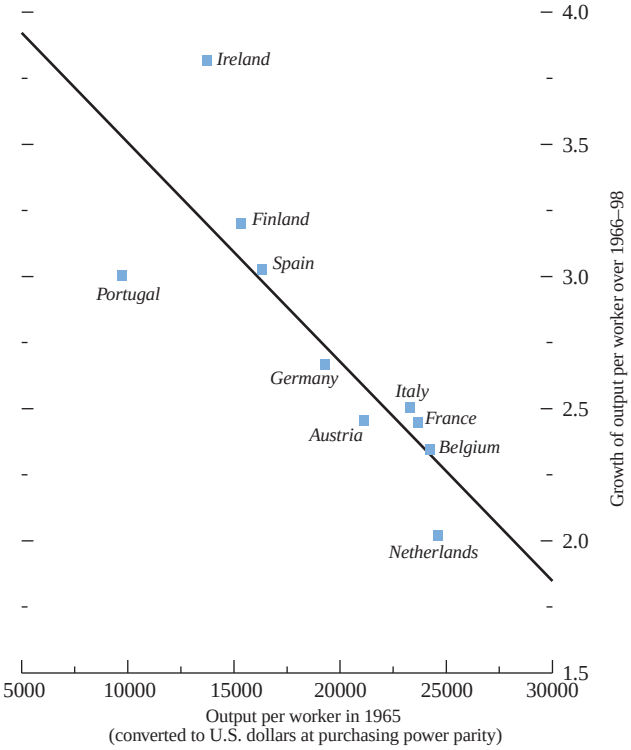
Looking forward, can output growth in Europe, especially that in the economies where growth has been weakest, eventually match that of the U.S. economy in the second half of the 1990s? Some improvement in economic growth is projected in the near future, as indicated in Chapter I, but improvements beyond what is projected are possible as well if labor market reforms gain momentum throughout Europe, and if further progress is made with the liberalization of product markets. Most important, labor market policies that help reduce structural unemployment would raise potential output. This would be reinforced to the extent that labor force participation increases as well. Furthermore, the continuing process of economic integration, which has already contributed to convergence to higher income levels in the initially poorer European economies, may further promote competition and the efficiency of the European economy, and thereby support a higher long-run growth rate of output.[34] Finally, it is possible that output growth in Europe will benefit

contributed to the high rates of unemployment in Italy and Spain can be found in Paulo Mauro, Eswar Prasad, and Antonio Spilimbergo, *Perspectives on Regional Unemployment in Europe*, Occasional Paper 177 (Washington: IMF, 1999). Also see C. Max Watson, Bas B. Bakker, Jan Kees Martijn, and Ioannis Halikias, *The Netherlands: Transforming a Market Economy*, Occasional Paper 181 (Washington: IMF, 1999).

[34]For more detailed discussion of European unemployment and the rise in Europe's NAIRU, see Chapter IV of the May 1999 *World Economic Outlook*. It notes that in some countries labor market reforms have helped to reduce structural unemployment. However, these reforms usually take a considerable time to materialize, as evidenced by the experiences of the Netherlands and the United Kingdom. Reforms in these countries were initiated in the 1980s.

Figure 3.11. Euro Area: Convergence of Output Per Worker

Countries with comparatively low output per worker in 1965 tended to have higher growth rates of output per worker over 1966–98.



from new information technologies, as may be happening in the United States currently.

Alternative Scenarios: Harder Landing or Higher World Growth?

The *World Economic Outlook* baseline scenario assumes a smooth adjustment of the imbalances in output growth and external current accounts that developed in the 1990s. In particular, growth in Europe and Japan is expected to rise sufficiently to close current output gaps over the five-year period to 2004, while U.S. economic growth is expected to slow to a sustainable pace. Associated with these developments, the household saving rate would rise in the United States, continue to decline in Japan, and remain roughly unchanged in the euro area (Figure 3.12). Developing and transition countries would see gradual improvements in their external environment. Prospects for this slow unwinding of macroeconomic imbalances improved through mid-1999 as recoveries in the emerging market countries recently in crisis gained momentum, economic indicators pointed up in Europe, some initial signs of recovery emerged in Japan, and the Federal Reserve raised interest rates to slow the momentum of the U.S. economy. Nevertheless, there remains a possibility that the imbalances now present will unwind in other ways.

In one alternative scenario, a *harder landing* could be triggered in several ways, for example, by a pickup in inflation in the United States and the monetary tightening that would be likely to follow, or by a change in financial markets' assessment of the sustainability of the U.S. current account deficit causing a dollar depreciation (Table 3.3). This scenario, which is described in more detail in the May 1999 *World Economic Outlook*, could well lead to a decline in equity prices that would contribute to depress U.S. domestic demand and output growth. These disturbances would be transmitted to partner economies through reductions in world trade growth, higher interest rates, and through spillovers to equity markets outside of the United States. In consequence, world output would fall by about 1 percent relative to the baseline scenario in the short term.

The largest impact on growth would occur in the United States where the alternative assumptions result in lower domestic demand (relative to the baseline) and a consequent correction in the net private sector saving-investment balance. The impact of the scenario assumptions is offset in part by countercyclical fiscal and monetary policies. Room for fiscal policy flexibility is greater in the United States than in other industrial countries because of the successful efforts to eliminate the U.S. federal budget deficit. The euro area and Japan would be negatively affected by the drop in import demand in the United States and a rise in U.S.

exports that are made more competitive as the U.S. dollar depreciates against the euro and the yen. Output in the euro area and Japan initially falls relative to the baseline owing to reduced external surpluses, but it recovers later as lower interest rates boost investment. The near-term drop in output is somewhat greater in the euro area than in Japan because rigidities in European labor and product markets tend to hamper adjustment to economic disturbances of this kind.

Output in the developing countries is about 1 percent lower than in the baseline scenario, mainly because of effects operating through trade links and lower demand from the industrial countries. In addition, the slower recovery in world output delays the pickup in global commodity prices that is assumed in the medium-term baseline, putting further pressure on commodity exporters. These negative effects on developing countries are offset to some degree by lower interest rates in the advanced economies that act to reduce debt-service costs in the indebted developing countries.

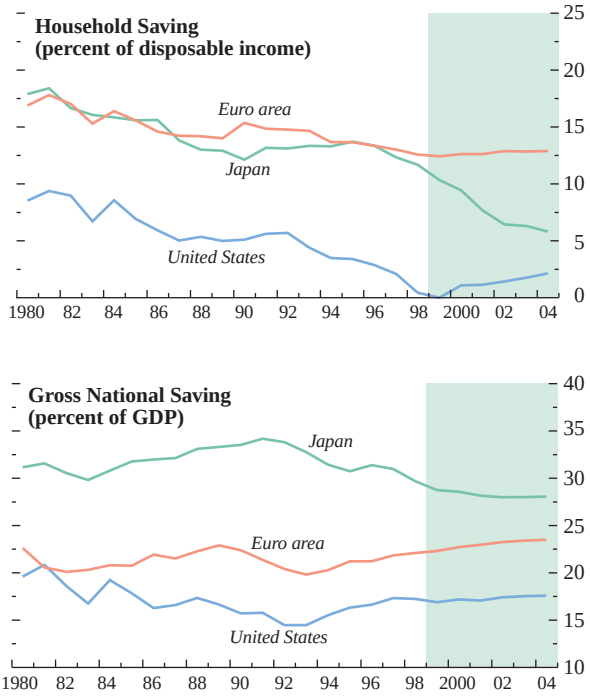
Alternatively, the adjustment process could unfold through higher growth outside the United States as illustrated by an *accelerated adjustment scenario* (Table 3.4). The scenario assumes a pickup in demand in Europe through an improvement in business confidence and some additional monetary easing made possible by further declines in inflation, and in Japan through some additional monetary stimulus and an easing of the credit crunch.[35] The initial rise in demand in Japan is somewhat stronger than in Europe, reflecting Japan's recent deep cyclical downturn and slow recovery in the baseline and the implied potential for a strong cyclical rebound. The scenario also incorporates reforms that enhance both the level and growth of potential output in Europe and Japan, the impact of which is phased in slowly. Absent this assumption, economic growth in Europe and Japan would slow after the initial demand stimulus as capacity limits are reached.

Stronger growth in Europe and Japan has implications for capital and current account balances, and ultimately the U.S. economy. With increases in growth and growth prospects in Europe and Japan, demand for capital would rise and investors, seeing opportunities for higher returns in these areas, would rebalance their portfolios toward yen and euro-denominated assets (at the expense of dollar assets) causing the U.S. currency to depreciate. These flows, which would be channeled through the capital account, would lead to reductions in current account surpluses in Europe and Japan, initially as imports rise with the pickup in domestic demand and currency appreciation, and later as reform

[35]The monetary stimulus involves a higher rate of monetary growth, relative to the baseline. This tends to raise inflation expectations and thus reduce real interest rates.

Figure 3.12. United States, the Euro Area, and Japan: Household and National Saving Rates[1]

The U.S. household saving rate fell to zero in late 1998 but is projected to recover somewhat. Japan's national saving rate is higher than those of the United States and the euro area, although it has declined following the bubble period.



[1]Shaded areas indicate IMF staff projections.

Table 3.3. Harder Landing Scenario[1]

(Percent deviation from baseline unless otherwise noted)

	First Year	Second Year	Third Year	Fourth Year	Fifth Year
World					
Real GDP	–1.2	–0.8	–0.6	–0.3	–0.2
Industrial economies					
United States					
Real GDP	–1.9	–1.5	–0.8	–0.3	–0.5
Domestic demand	–3.3	–3.5	–3.1	–2.5	–2.3
Net private saving (percent of GDP)	1.8	2.3	2.3	2.1	2.1
Current account					
(in billions of U.S. dollars)	79.0	173.0	235.0	280.0	282.0
(percent of GDP)	0.9	1.8	2.3	2.7	2.6
CPI inflation	0.1	–0.8	–0.4	0.1	0.5
Short-term real interest rate	0.4	–0.6	–1.7	–2.4	–2.4
Effective exchange rate	–10.3	–6.8	–3.1	0.9	5.5
Euro area					
Real GDP	–1.2	–0.6	–0.4	–0.2	0.1
Domestic demand	0.7	1.3	1.4	1.4	1.3
Net private saving (percent of GDP)	–0.1	–0.9	–1.4	–1.8	–1.9
Current account					
(in billions of U.S. dollars)	–8.0	–40.0	–72.0	–100.0	–111.0
(percent of GDP)	–0.4	–0.7	–1.0	–1.2	–1.3
CPI inflation	–0.8	–0.6	–0.7	–0.7	–0.7
Short-term real interest rate	–0.4	–0.8	–1.2	–1.3	–1.5
Effective exchange rate	10.8	8.8	6.5	4.2	2.2
Japan					
Real GDP	–1.1	–0.8	–0.5	0.1	0.7
Domestic demand	0.4	1.1	1.6	2.0	2.2
Net private saving (percent of GDP)	–0.4	–1.2	–1.8	–2.3	–2.4
Current account					
(in billions of U.S. dollars)	–3.0	–44.0	–74.0	–92.0	–90.0
(percent of GDP)	–0.7	–1.3	–1.7	–1.9	–1.8
CPI inflation	–1.2	–0.7	–0.7	–0.6	–0.3
Short-term real interest rate	0.4	—	–0.6	–1.0	–1.8
Effective exchange rate	15.8	12.1	8.2	4.5	0.8
Developing countries					
Real GDP	–0.8	–1.0	–1.2	–1.3	–1.2

[1]Baseline is taken from the World Economic Outlook database, with shocks starting in 2000. The scenario models an increase in U.S. consumers' preference for saving and declines in equity prices, especially in the United States.

measures in Japan increase the propensity to import. At the same time, Japan's export growth would slow with currency appreciation and lower demand in the United States.

The current account deficit in the United States would decline correspondingly. Rising demand for imports in Europe, Japan, and emerging economies would provide stimulus for U.S. exports, as would the dollar's lower value. But because the U.S. economy is already operating at high rates of resource utilization in the baseline scenario, U.S. domestic demand growth would still need to slow significantly relative to the base case. This is accomplished in the scenario through higher costs for investment projects and consumer financing as external funding sources become more scarce: interest rates would rise and the dollar depreciate. The scenario also assumes that the Federal Reserve would tighten policies to meet its price stability objective if domestic demand did not slow on its own.

As a result, Europe and Japan would take over for a while as the engines of growth for the world economy. The smooth redistribution of demand from the United States toward Europe and Japan would raise output growth in the industrial countries as a group as well as in the developing countries. This latter group would benefit from stronger export markets in Europe and Japan, and a more robust rebound in commodity prices that would offset negative consequences of higher U.S. interest rates. Assuming that output in the United States can be maintained close to potential through a switch from domestic to foreign demand, world GDP would rise by about ¾ of 1 percent in the medium term. Output in developing countries would increase by less, about ½ of 1 percent, although regions more dependent on U.S. markets may be negatively af-

Table 3.4. Accelerated Adjustment Scenario[1]

(Percent deviation from baseline unless otherwise noted)

	First Year	Second Year	Third Year	Fourth Year	Fifth Year
World					
Real GDP	0.3	0.7	0.8	0.8	0.8
Industrial economies					
United States					
Real GDP	—	0.2	0.2	0.2	—
Domestic demand	–1.0	–1.1	–1.0	–1.1	–1.1
Net private saving (percent of GDP)	0.3	0.6	0.8	0.9	1.0
Current account					
(in billions of U.S. dollars)	17.0	46.0	62.0	76.0	89.0
(percent of GDP)	0.2	0.5	0.6	0.7	0.8
CPI inflation	0.8	0.1	0.2	0.3	0.4
Short-term real interest rate	0.3	0.2	0.1	0.1	0.2
Effective exchange rate	–10.0	–8.0	–6.5	–5.3	–4.1
Euro area					
Real GDP	0.6	1.4	1.3	1.1	0.9
Domestic demand	1.1	2.0	2.1	2.0	1.9
Net private saving (percent of GDP)	–0.3	–1.3	–1.6	–1.6	–1.5
Current account					
(in billions of U.S. dollars)	15.0	–3.0	–5.0	–13.0	–24.0
(percent of GDP)	–0.1	–0.2	–0.2	–0.3	–0.4
CPI inflation	–0.8	–0.3	–0.2	–0.2	–0.2
Short-term real interest rates	–1.4	–2.0	–2.0	–1.7	–1.6
Effective exchange rate	3.8	3.5	3.8	4.0	4.1
Japan					
Real GDP	0.8	1.4	1.7	2.1	2.5
Domestic demand	1.5	2.3	2.7	3.0	3.3
Net private saving (percent of GDP)	–0.8	–1.2	–11.5	–1.8	–1.9
Current account					
(in billions of U.S. dollars)	–14.0	–31.0	–44.0	–51.0	–57.0
(percent of GDP)	–0.6	–0.9	–1.0	–1.1	–1.1
CPI inflation	–0.1	0.1	—	–0.1	–0.2
Short-term real interest rates	–0.4	–0.4	–0.4	–1.0	–1.0
Effective exchange rate	3.4	1.1	–1.3	–3.0	–4.3
Developing countries					
Real GDP	0.1	0.4	0.5	0.6	0.6

[1]Baseline is taken from the World Economic Outlook database, with shocks starting in 2000. The scenario models a shift in investor preference away from U.S. dollar assets; an increase in money supply growth in Europe and Japan; and higher productivity growth in Japan and Europe.

fected. This longer-run result is predicated on structural measures in Europe and Japan that would raise productivity and thus potential output.

Even in the more favorable accelerated adjustment scenario the adjustment process that assumes that U.S. exports pick up and domestic demand slows in tandem need not be smooth as outlined above. It is possible, for example, that investors, fearing a pickup in inflation or a drop in output growth, would shift funds out of the United States quickly, causing a sharp drop in equity markets and a loss of confidence. Demand could fall sharply and inflation rise with the higher import prices. The implications for domestic output, price stability, and policies could be made even more stark if the remarkable period of high growth and low inflation in the United States turns out, in hindsight, to have reflected not (primarily) a higher level of potential output, but temporary factors. In this case there would be a greater risk of an increase in inflationary pressures, especially if a rebound in demand outside of the United States were to result in a pickup in commodity and other tradable goods prices that would raise U.S. import prices sharply. The situation could be made worse if investors withdrew funds even more quickly in response to diminished prospects for high expected future rates of return on U.S. assets.