

# WHAT'S NEW ABOUT THE NEW ECONOMY?

## *Some Lessons from the Current Expansion*

**T**HERE IS A hot, ongoing debate over whether the behavior of the economy has fundamentally changed. This debate has been brought on by the economy's extraordinary performance over the past seven years. Since 1991 output has grown faster than most people had thought possible—without an acceleration of inflation. The stock and residential real estate markets are booming, the federal budget is in surplus and consumer confidence is near an all-time high. Sustained good news has led increasingly to talk of a “new paradigm.” It's argued that global competition has made it difficult for firms to raise prices. Tight labor markets may cause wage increases, but these cost pressures are offset by productivity growth. If anything, it is *deflation*, not *inflation*, that is a threat. Further, some argue that output growth at recent rates can continue indefinitely, provided that monetary policy is sufficiently accommodative. They also argue that changes in the composition of economic activity and new, more flexible ways of organizing production and distribution mean that the business cycle is dead. At the very least, traditional business-cycle indicators have lost much of their usefulness.

This article sheds some light on factors that have contributed to the economy's recent extraordinary macroeconomic performance. It argues that the combination of strong output growth and low inflation we have experienced cannot be attributed to unusually strong productivity growth. Some of the other elements of the new-paradigm story, however, receive considerable empirical support. For example, there are indications of a notable shift in firms' pricing power that may be linked to increasing global competition. Also, the idea that new pro-

duction and distribution technologies have helped smooth the business cycle appears to be correct.

### Rapid Output Growth: Can It Be Sustained?

Can the economy keep on growing like this forever? Only if trend productivity growth accelerates. Since 1991 business-sector productivity has increased at a 1.3 percent annual rate, while the adult population has increased at a 1 percent annual rate. Meantime, business output has risen 3.3 percent per year. The 1-percentage-point gap between output growth and productivity-adjusted population growth has been filled by increases in the labor-force participation rate and hours worked per employee, and decreases in the unemployment rate. Physical limits on the participation rate, hours worked and unemployment rate mean that output growth derived from changes in

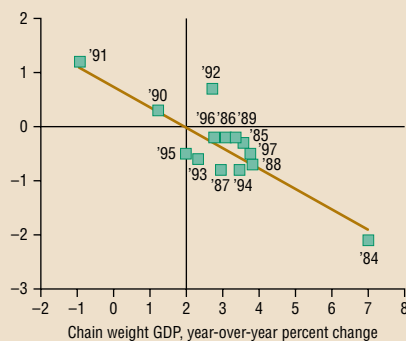
these variables cannot continue forever. As a practical matter, with the participation rate and factory hours near their post-World War II highs and the unemployment rate at its lowest level in almost 30 years, it's likely that only a pickup in trend productivity growth can keep output growing at recent rates for any significant period of time.<sup>1</sup>

To illustrate the difficulty in continuing on our current path, Chart 1 plots changes in the unemployment rate against changes in real GDP.<sup>2</sup> With a single exception (1992), GDP growth rates in excess of 2 percent have been achieved only as a result of declines in unemployment. Conversely, GDP growth rates below 2 percent have been accompanied by increases in unemployment. Since the unemployment rate cannot fall indefinitely, GDP growth cannot continue indefinitely at rates much above 2 percent without faster productivity growth.

Although the solid output gains we've observed over the past seven years cannot be attributed to rapid productivity growth, an acceleration in measured productivity growth may now be underway. A series of methodological improvements to the Consumer Price Index that will continue into 1999 is expected to add about half a percentage point to productivity growth, raising the economy's sustainable rate of GDP growth from between 2 percent and 2.25 percent to between 2.5 percent and 2.75 percent.<sup>3</sup> Output growth of 2.5 percent to 2.75 percent is substantially below the 4.1 percent growth rate we've enjoyed over the past six quarters, but fairly close to the 2.8 percent average growth rate we've seen during this expansion as a whole. Of course, to avoid higher inflation, it may not be enough for output growth to stabilize at 2.5 percent to 2.75 percent if the level of output is above potential.

**CHART 1**  
**RAPID OUTPUT GROWTH IS NOT SUSTAINABLE**

Year-over-year change in unemployment rate, percentage points



SOURCES: U.S. Department of Labor; U.S. Department of Commerce; author's calculations.

## Low Inflation: Is the Phillips Curve Dead?

*There is pretty solid evidence that the economy really has been more stable over the past decade and a half than it was in the 1970s or even the 1960s.*

A striking feature of the economy's performance over the past four years is how well behaved inflation has been, despite tight labor markets. Inflation usually rises as the unemployment rate falls—a negative relationship called the Phillips curve, after New-Zealand-born economist A. W. Phillips. As shown in Chart 2, the inflation–unemployment experience during the late 1980s and early 1990s followed the historical pattern. In the years since 1993, however, the unemployment rate has fallen by 2 percentage points without any increase in output-price inflation. Indeed, inflation has declined! This experience has led some analysts to declare the Phillips curve dead.

One response is to argue that the Phillips curve is not dead, merely shifting. Shifts in the Phillips curve are nothing new—the Phillips curve over the 10-year period from 1985 to 1994 is very different from that observed from 1974 to 1983, for example, or from that observed during the 1960s. (Again, see Chart 2.) Large, sustained shifts in the Phillips curve can generally be attributed to changes in long-run inflation expectations, which are, in turn, often an outgrowth of changes in the conduct

of monetary policy. For example, the upward shift that occurred in the early 1970s followed several years in which policymakers allowed money growth to accelerate in an (ultimately vain) attempt to keep the unemployment rate low. The downward shift in the mid-1980s occurred only after policymakers demonstrated that they were willing to tolerate high unemployment, if necessary, to move the inflation rate lower. In empirical work, expected inflation is usually assumed to be a weighted average of lagged actual inflation. Although this treatment of inflation expectations is simplistic, it has generally performed well.

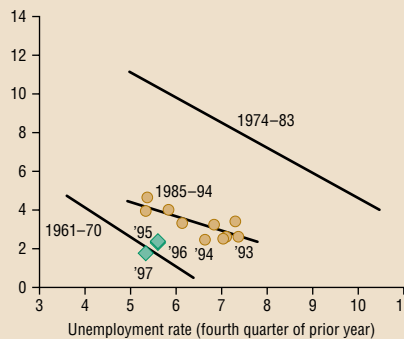
Besides shifting in response to changes in expected inflation, the Phillips curve is buffeted about by “supply-side shocks” such as changes in the relative prices of food, energy and imports. A problematic feature of supply-side shocks is that they are typically difficult to predict very far in advance. This characteristic potentially limits the usefulness of the Phillips curve to policymakers: a wide range of unemployment rates may be consistent with stable aggregate inflation, depending on the vagaries of food, energy and import prices.

Are favorable supply-side shocks and shifting inflation expectations sufficient to explain the low and falling inflation rates we have seen over the past three years? To see, I fitted a conventional Phillips curve equation to annual data through 1994, then used this equation to predict inflation over the period from 1995 to 1997.<sup>4</sup> A total of three different predictions were prepared for each year. Each set of predictions is conditioned on the actual path of the unemployment rate. The predictions differ in their treatment of inflation expectations and supply-side shocks.

The first set of predictions is based on the static Phillips curve of Chart 2: inflation expectations are held fixed and supply-side shocks are ignored. The second set of predictions models expected inflation as an average of past inflation rates and is conditioned on realized changes in food and energy prices. The third set of predictions allows inflation expectations to vary and is conditioned on realized values of food, energy and import prices. Predic-

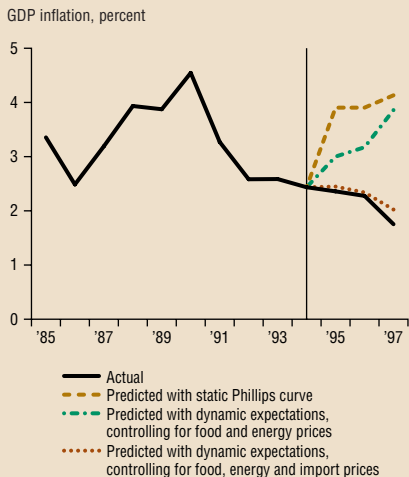
**CHART 2**  
RECENT PRICE BEHAVIOR  
SUGGESTS A SHIFT IN  
UNEMPLOYMENT–INFLATION  
TRADE-OFF

Fourth-quarter-over-fourth-quarter  
GDP price index growth, percent



SOURCES: U.S. Department of Labor; U.S. Department of Commerce; author's calculations.

**CHART 3**  
**GLOBAL COMPETITION KEY TO**  
**KEEPING INFLATION LOW**



SOURCES: U.S. Department of Commerce; author's calculations.

tions are compared with actual inflation in Chart 3.

As we knew already from Chart 2, the static Phillips curve model performs abysmally during the past three years, overpredicting inflation by an average of 1.9 percentage points from 1995 to 1997. Controlling for changes in food and energy prices and allowing inflation expectations to reflect past declines in actual inflation improve the performance of the Phillips curve model, but it still overpredicts inflation substantially over the three-year out-of-sample period. It is only when one controls for the pressure on U.S. prices coming from overseas competition that the predictions of the Phillips curve model match up well with actual inflation.

The findings summarized in Chart 3 are broadly consistent with the new-paradigm view of the economy. One lesson is that inflation predictions based solely on the unemployment rate and past inflation aren't worth much in an economy subject to large supply-side shocks. A second lesson is that overseas competition has played a major role in restraining U.S. inflation in recent years. A corollary lesson is that how sanguine one feels about current U.S. inflation prospects ought to depend very much on one's view of the outlook for foreign inflation and the strength of the dollar.

There is much less empirical support

for another inflation story that sometimes carries the new-paradigm label—the story that accelerating wage increases have failed to translate into higher output-price inflation because of a surge in productivity growth. The problem is that business-sector labor productivity growth averaged only 1.1 percent per year from 1994 through 1997 (the period over which the inflation–unemployment relationship appears to have broken down)—a rate of productivity increase identical to that recorded from 1985 through 1994. Of course, our productivity measures may be faulty—they may have failed to capture a surge of productivity growth in the service sector, for example. But an unmeasured acceleration in productivity growth will show up only in an increase in unmeasured real wage growth. (Price gains will be overstated, leading to an understatement of real wage growth.) Unmeasured productivity growth cannot explain recent increases in measured real wage growth.

Nevertheless, the view that recent wage increases will not soon place upward pressure on output prices may be correct. Supporting evidence is presented in Chart 4, which displays a plot of the ratio of output prices to unit labor costs. (Unit labor costs measure productivity-adjusted wages.) Chart 4 shows that pricing power has been on the decline since 1994. However, the

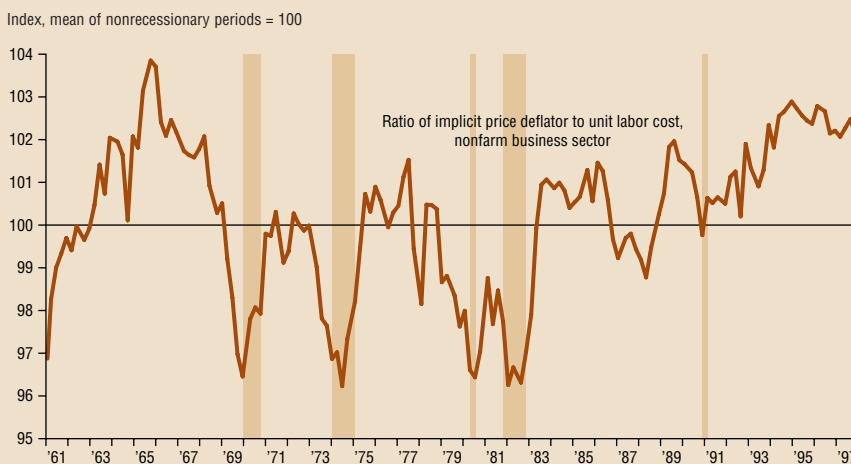
really striking feature of Chart 4 is how high the price/labor-cost ratio had previously risen—one has to go all the way back to 1965 to find comparable figures. There is considerable room for further acceleration of wage growth, relative to price growth, before mark-ups return to historically normal levels.

## A Clear Change for the Better: The Business Cycle Has Lost Some of Its Sting<sup>5</sup>

As shown in Chart 5, the current expansion is the third-longest on record and comes on the heels of the second-longest expansion on record. (Arguably, there would have been no interruption to growth in 1990–91 had Iraq not invaded Kuwait.) Do changes in the structure of the economy and new ways of organizing the production and distribution of goods mean that we have less to fear from the business cycle?

There is pretty solid evidence that the economy really has been more stable over the past decade and a half than it was in the 1970s or even the 1960s. The increased stability is evident in Chart 6, which plots annualized quarterly real GDP growth from 1959 through 1997. Vertical lines divide the plot into three subperiods of equal

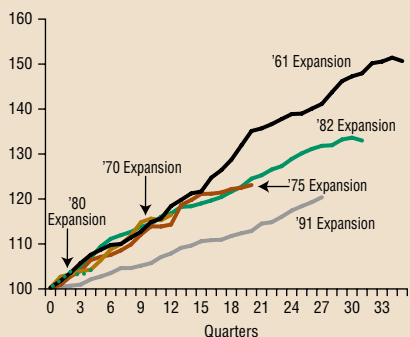
**CHART 4**  
**LABOR COSTS RISING FASTER THAN PRICES**



NOTE: Shaded bands indicate recessions.  
 SOURCE: U.S. Department of Commerce.

**CHART 5**  
**STILL GOING...**

Real chain-weighted GDP index,  
start of expansion = 100



SOURCE: U.S. Department of Commerce.

length. Column 2 of Table 1 reports the standard deviation of quarterly real GDP growth over each of these subperiods. The numbers confirm what Chart 6 suggests—that growth volatility from 1985 through the present has been roughly half that experienced in either of the earlier subperiods.

What has happened in the economy to make output growth so much less variable? Several stories have been offered. One popular explanation is that we are moving away from a goods economy and toward a service economy. Growth is steadier because the service-producing sector is less volatile than the goods-producing sector. It's a nice story, but the premise is false. Although employment has been shifting toward the production of services, the share of real GDP accounted for by goods has been rising slowly—not falling (Chart 7). Durable goods are increasing in importance relative to nondurable goods.

There is no question that international trade is playing a larger and larger role in the U.S. economy. As a percentage of GDP, real imports rose more than threefold between 1959 and 1997, from 4.8 percent to 15.4 percent. Exports rose more than fourfold, from 3.3 percent of GDP to 13.4 percent over the same period. Exports and imports might be expected to serve as buffers between domestic demand fluctuations and domestic production. It's plausible, therefore, that the globalization of the economy accounts for the reduced

volatility of U.S. output growth. Plausible, but incorrect. The trade sector does play a stabilizing role in the economy, but this stabilizing role has not been increasing in importance. It contributes almost nothing to the reduced output-growth volatility we have seen since the mid-1980s.

We can gauge the impact of international trade on the stability of U.S. output growth by comparing the volatility of gross domestic product growth with the volatility of growth in gross domestic purchases. U.S. gross domestic purchases are the total quantity of goods and services purchased in the United States, including our imports and excluding our exports. As such, gross domestic purchases approximate what gross domestic product would have been in the absence of international trade. Table 1 reports the standard deviations of purchases and product in columns 3 and 2, respectively. Note that the entries in column 3 are consistently larger than those in column 2. The implication is that net exports acted to stabilize output growth in every subperiod of our sample. However, the ratio of standard deviations (column 4) exhibits no clear trend. It follows that the amount of stabilization provided by international trade has not increased over time, despite the rapid increases in the volume of trade we have witnessed.

The lion's share of the reduction in

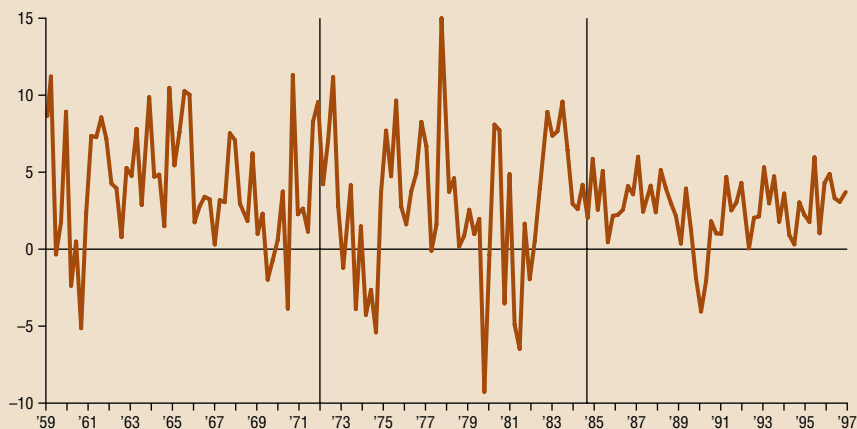
the volatility of output growth appears to have been a result of better inventory management. To see this, we can strip inventory investment from real GDP and look at the growth contribution from final sales of domestic product. The standard deviation of this growth contribution is displayed in column 6 of Table 1. The fact that this standard deviation declines very little as we move from the early to the late subperiod indicates that were it not for inventories, output growth would have been nearly as volatile from 1985 to 1997 as it was from 1959 to 1971. Hence, improved inventory management techniques have paid off in increased macroeconomic stability.<sup>6</sup>

## Summary and Implications for Monetary Policy

The U.S. economy has performed extraordinarily well over the past seven years, generating solid, uninterrupted output gains and falling inflation. This strong performance has led many people to wonder whether “the rules have changed”—whether the economy's behavior is now fundamentally different. Certainly we are seeing rapid technological advance, a freer flow of goods and services between countries and the adoption of new methods for organiz-

**CHART 6**  
**REAL GDP GROWTH HAS BECOME MORE STABLE**

Percent, annual rate



SOURCE: U.S. Department of Commerce.

**TABLE 1**

**WHY HAS OUTPUT GROWTH BECOME LESS VOLATILE?**

*(Analysis of annualized quarterly changes in various aggregate measures of real economic activity)*

Interval	Real GDP	Gross domestic purchases		Final sales of domestic product	
	Standard deviation	Standard deviation	Col. 2/Col. 3	Standard deviation	Col. 2/Col. 5
1959–71	.951	1.039	.915	.695	1.368
1972–84	1.226	1.394	.879	.961	1.276
1985–97	.501	.559	.896	.534	.938

NOTE: In general,  $X = Y - Z$  (and, hence,  $\Delta Y/Y = \Delta X/Y + \Delta Z/Y$ ), where  $Y$  is real GDP and  $X$  and  $Z$  are variously defined. In columns 3 and 4,  $X$  represents gross domestic purchases and  $Z$  is net exports; in columns 5 and 6,  $X$  is final sales of domestic product and  $Z$  is inventory investment. The table reports the standard deviations of  $\Delta Y/Y$  and  $\Delta X/Y$  and the ratios of these standard deviations.

ing the production and distribution of goods and services. These innovations have had an important impact on the types of jobs available, on income mobility and on the quality of life.<sup>7</sup> But are they important for monetary policy? Have they changed the character of the business cycle? The evidence is mixed.

It is clear that a substantial portion of the output gains we've enjoyed have been achieved not through rapid productivity growth but by utilizing the labor force more intensively. Significant further increases in labor-force utilization rates are probably not sustainable. Hence, employment growth rates are likely to taper off soon. Output growth must also decelerate, unless measured productivity growth picks up. A round of technical improvements to our price indexes may give measured productivity growth the required boost. In any event, it's not the Federal Reserve's job to try to dictate if or when a slowing in real growth will occur. Rather, it's the Fed's job to try to keep measures of *nominal* demand expanding steadily, at a pace consistent with low long-run inflation (Koenig 1995).

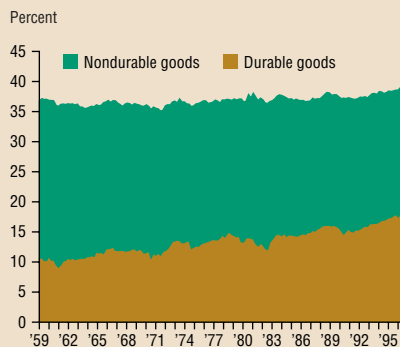
New-paradigm advocates are correct when they say that firms' pricing power has diminished recently and that this change in pricing power has been reflected in a shift in the trade-off between unemployment and output-price inflation. Here again, accelerating productivity growth is an inadequate explanation for what's gone on. However, it's clear that increasing global competition has helped hold price increases in check. The fact that the ratio of output

prices to unit labor costs remains at a high level raises hopes that low inflation can continue for a while longer, even if labor markets stay tight.

The idea that the real economy is less volatile now than in the past also seems to be correct. The explanation is neither that the economy has become less goods intensive nor that markets have become more global in scope. Most of the credit goes to more tightly controlled inventories. The undiminished importance of goods production in aggregate output suggests that traditional leading indicators—which are oriented toward the goods-producing sector—have not outlived their usefulness. This fact and the economy's increased stability mean that the monetary policymaker's job may be getting easier.

—Evan F. Koenig

**CHART 7**  
**THE SHARE OF GOODS IN REAL GDP HAS BEEN SLOWLY RISING**



SOURCE: U.S. Department of Commerce.

**Notes**

- <sup>1</sup> Greenspan (1998) makes a similar point. For a thorough, yet readable, analysis of productivity trends, see Webb (1998). For a rigorous test of the hypothesis that productivity growth has accelerated during the 1990s, see Filardo and Cooper (1997).
- <sup>2</sup> Chart 1 is an updated version of a chart presented in Krugman (1996) and Koenig (1997).
- <sup>3</sup> For a description of the technical changes to the CPI, see Jacobs (1997).
- <sup>4</sup> I estimated a vector autoregression in fourth-quarter-over-fourth-quarter changes in the relative price of food and energy, fourth-quarter-over-fourth-quarter changes in the relative price of imports, the fourth-quarter unemployment rate, and fourth-quarter-over-fourth-quarter changes in the chain-weight GDP price index. Changes in the relative import price were weighted by the value of imports relative to the value of gross domestic purchases.
- <sup>5</sup> For a more detailed analysis of the issues discussed in this section, see McConnell and Quiros (1997).
- <sup>6</sup> Alternatively, there may have been a shift in the composition of output toward goods-producing industries where inventories are more easily controlled.
- <sup>7</sup> The Federal Reserve Bank of Dallas has devoted several annual reports to these issues. See Cox and Alm (1992–96).

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