

**NEITHER TOO HOT NOR TOO COLD:
THE U.S. ECONOMY IN THE 1990s**

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Introduction

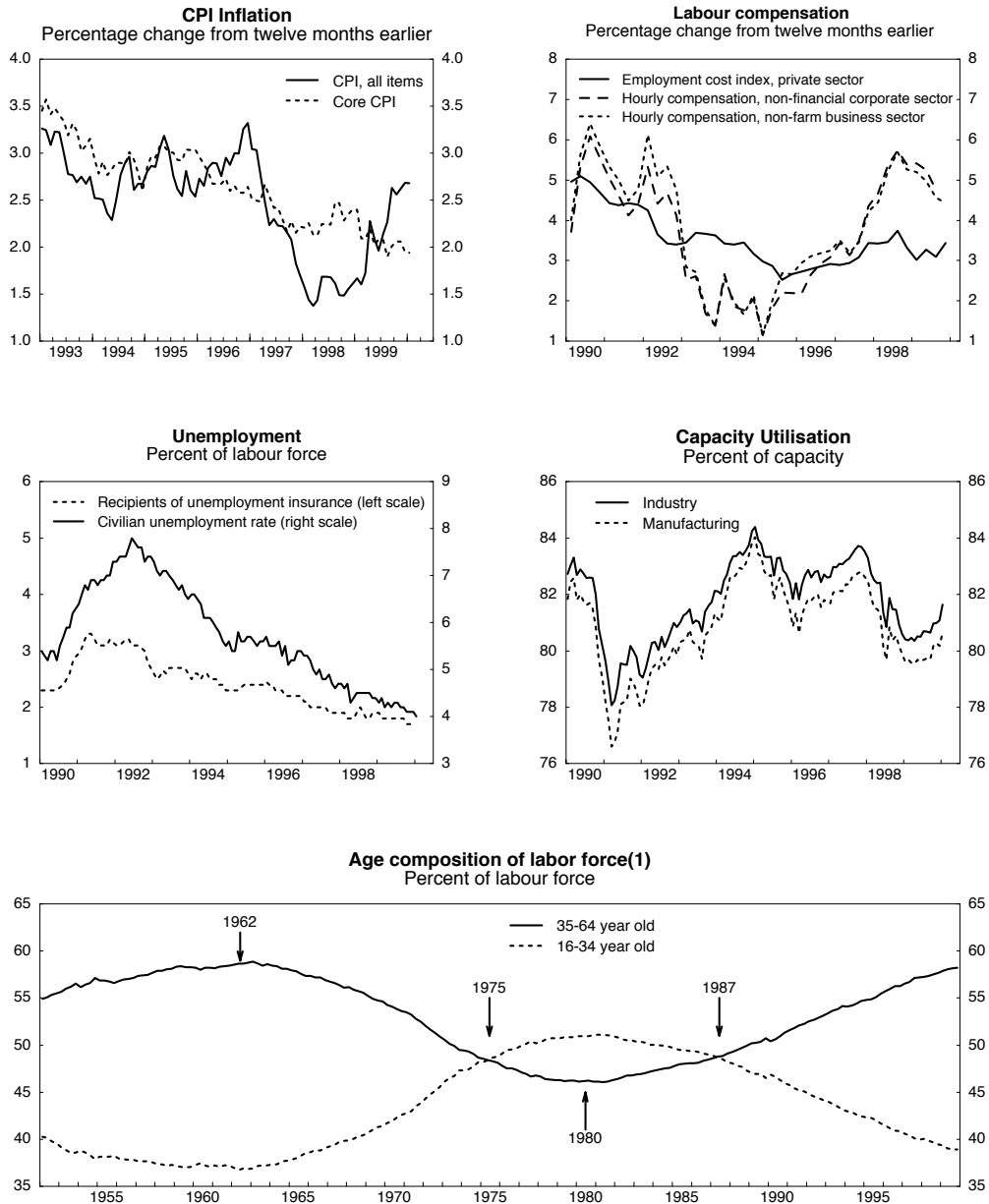
Based on data through the end of 1999, the “Goldilocks” U.S. economy continued to be “neither too hot, nor too cold, but just right.” Unemployment had declined to the lowest level since 1969, yet inflation had not yet begun to accelerate as would universally have been predicted as recently as three years ago based on existing structural relationships. Included among the remarkable achievements of the U. S. economy is the longest business expansion, as of February 2000, in United States historical records that date back to 1850.

While there are many important questions to raise about this successful macroeconomic record, by far the most important is why inflation has remained so low (Chart 1). Once we can explain that, we can explain everything else, including:

- Why short-term interest rates are currently lower than in late 1994, when unemployment was 6 percent instead of the current 4.1 percent.
- With the economy booming and interest rates low, why profits have grown so rapidly?
- With booming profits, why stock prices have exploded? (Accounting for this requires not just low inflation, but also an explanation as to why the stock market overreacted on the low side to high inflation in the 1970s and why it overreacted on the high side to the low inflation of the 1990s).
- With booming stock prices, why consumption has grown much faster than income during the past few years?

Some commentators quibble at the exclusive focus on inflation behaviour as an explanation of the U. S. macroeconomic miracle. One group of commentators argues that the low inflation is not surprising, since an acceleration of wage growth from 1994 to 1998 (which stopped at least temporarily in 1999) was offset by an acceleration of productivity growth, so that unit labour costs did not exhibit any acceleration. In this view, the central question is why productivity growth has accelerated, not why inflation is so low. Another group of commentators argues that low inflation is not surprising in light of the relatively low and declining rate of industrial capacity utilisation. On this view, the spotlight should be shifted to ask why unemployment is so low given this low utilisation rate.

Chart 1. Trends in inflation and unemployment



1. Oldest and youngest baby boomers turned 16 in 1962 and 1980, respectively.
Source: Bureau of Labor Statistics and Board of Governors of the Federal Reserve System.

Explaining low inflation

The standard organising principle in U.S. mainstream macroeconomics is the natural rate version of the Phillips curve. According to this principle, there is a natural rate of unemployment or NAIRU (non-accelerating inflation rate of unemployment) at which the inflation rate is constant. When the actual unemployment rate declines below the NAIRU, inflation accelerates. When the actual unemployment rate rises above the NAIRU, inflation decelerates.

In order to determine the value of the NAIRU, we run a regression over some period of time in which the inflation rate is explained by its own lagged values (representing the role of “inertia”), the unemployment rate and by other relevant variables representing the impact of supply shocks. The constant term in the regression can be converted into a constant NAIRU. It is also possible to allow the constant to vary over time, which yields a time-varying NAIRU.

The supply shock variables, at least in the United States context, typically include the rate of change of *real* import prices and *real* food and energy prices. When these relative price changes are equal to zero, then the influence of supply shocks is absent, and inflation is determined only by lagged inflation and the gap between the actual unemployment rate and the estimated NAIRU. The NAIRU concept is sometimes called the “no-shock” NAIRU, namely the unemployment rate consistent with steady inflation in the absence of supply shocks. When adverse supply shocks occur, i.e. in the form of a sharp increase in the real price of oil, the unemployment rate needed to maintain inflation unchanged is, of course, much higher than the no-shock NAIRU. When beneficial supply shocks occur, the unemployment rate consistent with steady inflation can fall below the no-shock NAIRU, and this appears to have occurred in the United States in the period 1995-98. In fact, the easiest way to explain the conjunction of high inflation and high unemployment in the 1970s, and of low inflation and low unemployment in the late 1990s, is to emphasise the role of supply shocks operating in opposite directions in these episodes. In addition to the role of import and oil shocks in pushing unemployment up or down relative to the NAIRU, other events can push down the no-shock NAIRU itself, and quite a long list of these factors contributes to a full explanation of the experience of the United States.

Let’s turn to the quantitative significance of these supply shocks. Real import prices fell at an annual rate of 1.9 percent between 1992 and 1996. Thereafter, the rate of decline accelerated to an annual rate of 6.2 percent, between 1996 and the first quarter of 1998, and then continued at a still rapid 4.5 percent per annum between then and the first quarter of 1999. Amplifying the effect of declining real import prices were real energy prices, which as measured by the CPI declined by 10 percent in 1998 to a trough in early 1999. These relatively large beneficial supply shocks help us to understand how the economy was able to operate with an unemployment rate of 4.1-4.5 percent during a period when the most optimistic NAIRU estimate was in the range of 5.1-5.2 percent.

Factors pushing down the NAIRU

Added to the beneficial impact of supply shocks was the combined effect of several other factors that did not enter into the econometric estimation of inflation, but that helped to push down the NAIRU directly. First among these factors was a series of measurement changes in the CPI, which

between 1993 and 1999 reduced CPI inflation by 0.6-0.7 percentage points relative to “true” inflation¹. Second, there was a sharp deceleration of inflation in the medical care sector, a sector that accounts for 12 percent of GDP and 16 percent of consumption expenditures. After running at twice the overall inflation rate in 1990-93, medical care inflation slowed to a rate equal to overall inflation in 1996-97. Third, there was a sharp acceleration in the rate of *decline* of computer prices. The computer sector is now contributing to deduct nearly 0.6 percentage point from the inflation rate that pertains to the rest of the economy with the computer sector omitted.

A separate set of explanations for the declining NAIRU relates to behaviour in the United States labour market. Several unrelated factors have combined to reduce the NAIRU. The first is demographics. Teenagers typically have much higher unemployment rates than adults, as they experience multiple transitions between school and work. The share of teenagers in the labour force fell continuously after 1981. This beneficial event was offset by other factors, including an acceleration of medical care inflation during the 1980s, but made a small contribution to the favourable 1990s outcome. Second, the United States adopted “get-tough” anti-crime and anti-drug legislation that resulted in a tripling of the number of imprisoned individuals between 1985 and the late 1990s. Some of these prisoners would have been unemployed if they had not been behind bars, and a recent estimate suggests that this reduced the NAIRU by perhaps 0.1-0.2 percentage points. A third factor which contributed to the increased efficiency of the labour market in the United States was a rapid rise in the share of employment attributable to temporary help agencies, which allow workers to be matched much more quickly than before to part-time and unskilled job vacancies. Finally, legal and illegal immigration – particularly from Mexico, Central and Latin America, and the Caribbean nations – contributed to make the supply of low-skill labour more elastic. Recent reports suggest a sharp reduction in official attempts to locate and deport illegal immigrants.

All four of these factors worked in the direction of reducing the unemployment rate for any given degree of labour-market tightness. They help to explain why the unemployment rate is relatively low without the rate of capacity utilisation being relatively high. Finally, a general set of factors has reduced the bargaining power of labour and helps to explain the relatively slow acceleration of wages in the face of low unemployment. These include the steady decline in the fraction of workers who belong to unions and the sharp decline in the real minimum wage that occurred in the 1980s and early 1990s.

The productivity growth revival

Between 1972 and 1995, non-farm business output per hour in the United States grew at a dismal rate. This rate, until recently, was estimated to be a mere 1.1 percent per year, in contrast to a rate of 2.8 percent per year recorded between 1948 and 1972. Economists despaired to find a convincing explanation of this productivity growth slowdown. But since 1995 the slowdown appears to be over, and there is much discussion of the reasons for this turnaround. Part of the improvement is accounted by improved inflation measurement, which has reduced measured inflation while boosting measured output and productivity growth. As a result of this factor, the dismal 1.1 percent average growth rate for 1972-95 was boosted to 1.5 percent in revisions released in late 1999. But since the end of 1995, productivity has been growing at an average annual rate of 2.8 percent, equal to the golden age of 1948-72. What caused this recovery? And, will it last?

1. Most of these changes were “backcast” in the national accounts deflators to 1978. As a result, measurement improvements play virtually no role in explaining why inflation in the deflators was so low in 1998-99.

No doubt part of the recovery reflects transitory cyclical factors. Historically, any increase of output growth above its trend rate has been followed by a less than proportionate increase in hours worked, leading to a temporary bulge in productivity growth. Though the growth in the output trend has accelerated, there can be no doubt that actual output growth has been above any sustainable trend. We know that – as much of the labour producing the extra output has come from a decline in unemployment (from 5.6 percent in the fourth quarter of 1995 to 4.1 percent in the fourth quarter of 1999) – this is unsustainable, as the unemployment rate cannot decline forever. Even if the unemployment rate was to level off at 4 percent without rising back toward the NAIRU, output will of necessity grow slower. Most observers expect the unemployment rate to move back toward at least 5 percent, as the economy experiences the lagged impacts of higher real prices of imports and oil that has occurred since early 1999. In Alan Greenspan's worlds, the remarkable rate of expansion of real GDP has been facilitated by two “safety valves”: the unsustainable decline in the unemployment rate and the unsustainable rise in the United States trade deficit.

Econometric techniques developed long before the recent productivity growth revival suggest that roughly 0.5 percentage points of the 1.3 percent productivity growth revival (from 1.5 to 2.8 percent) is attributable to this cyclical effect. This would imply that the sustainable long-run trend rate of productivity growth has accelerated from 1.5 to 2.3 percent. A small further contribution of 0.2 percent has been made by measurement improvements, and by a favourable demographic shift in the age and sex composition of the work force. This leaves 0.6 percent as the remaining portion of the acceleration of productivity. All of this has been achieved within the durable manufacturing sector, leaving no structural acceleration at all in the 88 percent of the private business economy producing non-durable goods and all types of services.

Whatever the explanations of the productivity revival, this automatically contributes to holding down the rate of change of unit labour costs on a one-and-for-all basis. The productivity revival may have operated directly to hold down inflation by a mechanism similar to the productivity slowdown of the early 1970s, but working in the opposite direction. In the earlier episode, the rise of real wage may have been set at the customary rate of productivity increase, so that a slowdown in productivity growth would have directly boosted the growth of unit labour cost. In the recent episode, if real wage increases were set at the slow rate of productivity increase that was customary in the 1972-95 period, then the productivity growth revival would have directly reduced the growth rate of unit labour cost.

Conclusion

Sometimes we are satisfied to find a single “smoking gun” or “silver bullet” that is powerful enough to explain a macroeconomic puzzle. However, on this occasion we have no fewer than twelve separate and largely unrelated explanations of why inflation has been so low given unemployment, or why unemployment has been so low without igniting inflation. These twelve factors, in the order discussed here, are:

1. Falling real import prices through early 1999.
2. Falling real oil prices through early 1999.
3. Measurement improvements that reduced measured inflation relative to true inflation.
4. An autonomous deceleration in medical-care inflation.

5. An autonomous acceleration in the rate of decline of computer prices.
6. Favourable demographic developments.
7. A “get-tough” anti-crime and anti-drug policies.
8. The growth of temporary-help agencies.
9. The flood of legal and illegal immigrants.
10. The declining importance of unions.
11. The declining real minimum wage.
12. The productivity growth revival, which overlaps with the faster decline of computer prices as it was partially caused by dynamic technological acceleration in the computer industry.

Overall, the late 1990s were an unusually brilliant period in the macro-economic history of the United States because an unusually long list of favourable events came together to hold down inflation, unemployment, or both. Further, this occurred at a time when monetary policy pursued a “wait-and-see” attitude that allowed these favourable developments to run their course without pre-emptive increases in interest rates. However, this environment began to change in early 2000, as rising import and energy prices (in real terms) began to feed through to other prices. Some other elements in the list also showed signs of turning around, including medical care prices. Further, the direct contribution of rapid productivity growth would surely lessen in importance, as the rate of real output growth slowed either through natural forces or under pressure of renewed monetary vigilance and restriction. While the macro-economic performance of the United States may continue to look relatively good in the next five years by historical standards and relative to other countries, it is extremely unlikely to match the platinum standard achieved over the period from 1995 to 1999.