FEDERAL RESERVE BANK OF DALLAS

Issue 6 November/December 2000

Southwest Economy

Do Rising Oil Prices Threaten Economic Prosperity?

This year's sharp oil price increases have led to concerns about a threat to continued economic prosperity, and with good reason. Rising oil prices have preceded eight of the nine post-World War II recessions. But rising oil prices do not seem to be having much effect on U.S. economic growth this year. Are we waiting for the other shoe to drop, hoping oil prices will fall, or has there been a change in the relationship between oil prices and the economy?

Most of us have become accustomed to thinking of supply shocks originating in the Middle East as being the primary impetus to rising oil prices. OPEC meetings have helped reinforce this thinking. And much of the analysis about the possible economic effects of rising oil prices shares this conventional wisdom.

But the oil price increases occurring in 2000 owe more to growing world demand fostered by a robust world economy than to a supply shock. Consequently, U.S. economic activity has been and should remain much less responsive to rising oil prices than the conventional wisdom might have us expect. The *un*conventional wisdom sug-

(Continued on page 2)

How Energy Prices and FOMC Actions Are Affecting the U.S. Economy

Monetary Policy: On the Right Track?

The Federal Reserve's Federal Open Market Committee (FOMC) raised its federal funds interest rate target by 175 basis points between June 1999 and June 2000. From June 2000 to this writing (in mid-October), monetary policy has been on hold.

As is often the case, the FOMC's actions have been controversial. Some analysts, citing unprecedented stock market valuations and a historically low unemployment rate, have claimed that an increase in the funds rate was long overdue.[1] Others have questioned the need for any policy tightening at all, arguing that the old rules no longer apply—that greater competition, the globalization of product and capital markets, and the spread of new technologies have made traditional measures of labor-market slack and stock market overvaluation obsolete. Evidence that U.S. productivity growth has been strongly increasing has put the first group of analysts on the defensive,

(Continued on page 6)

Monetary Policy: On the Right Track?

(Continued from front page)

because most economists recognize that rising productivity growth can prevent tight labor markets from putting upward pressure on inflation and that high trend productivity growth can justify high stock market valuations (Koenig 2000).

The main point of this article is that one doesn't need to believe in stock market bubbles or a stable inflation–unemployment trade-off to understand the motivation for the Fed's latest round of tightening. In particular, recent policy actions have been entirely consistent with the FOMC's past response, under Alan Greenspan's leadership, to direct signs of building inflationary pressure in product markets. This consistency will be reassuring to those who feel that the Greenspan Fed has generally done a good job of holding inflation in check without unduly damping real growth. A secondary goal is to provide some insight on the likely course of real economic activity in coming quarters, as the interest-rate increases of the past 18 months begin to bite.

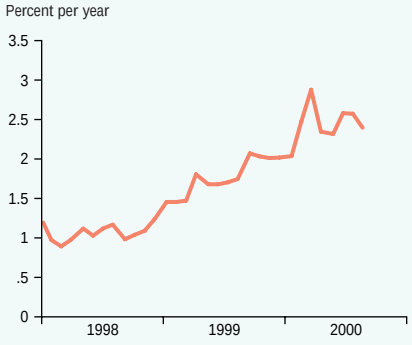
Some Perspective on Inflation

Chart 1 shows the path of inflation from January 1998 to the present, as measured by the chain price index for personal consumption expenditures.

Chart 1

Reason for Concern

(12-month percent change, price index for personal consumption expenditures)

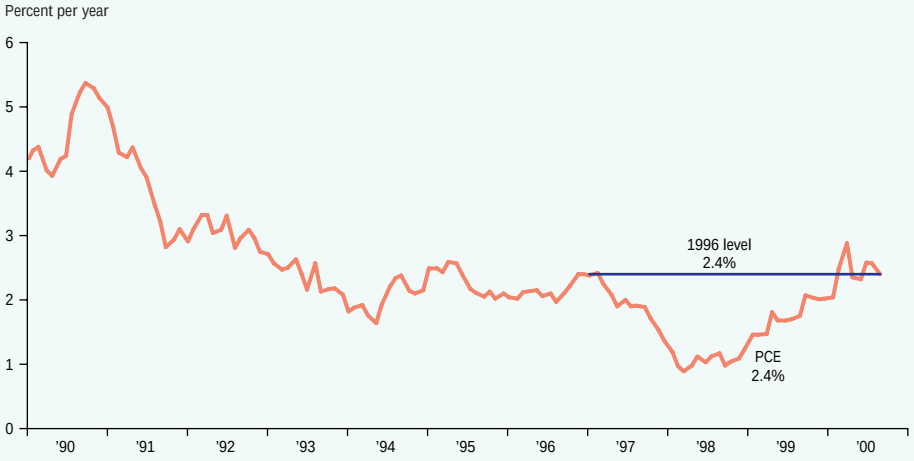


SOURCE: Bureau of Economic Analysis.

Chart 2

Some Perspective

(12-month percent change, price index for personal consumption expenditures)



SOURCE: Bureau of Economic Analysis.

The strong upward trend from December 1998 onward is prima-facie evidence that over this period demand was outstripping supply and, hence, that a tightening of monetary policy was appropriate.[2] To quote Robert McTeer, president of the Dallas Fed: "I didn't think we should shoot inflation while it is trying to surrender. But, more recently, it's been showing signs of resisting arrest" (McTeer 2000).

Should the Fed have acted sooner or more vigorously? Chart 2 puts the recent inflation increases in perspective by extending the plot displayed in Chart 1 backward to 1990. The revised plot makes it clear that recent increases have only brought inflation back to where it was in 1996, before the Asian economic crisis. With the collapse of the Asian economies, resources around the world that had been devoted to meeting the needs of consumers overseas suddenly became available to people in the United States. In other words, from the U.S. perspective, the Asian economic crisis amounted to a favorable supply shock. It gave U.S. businesses and consumers an opportunity to purchase imports and import substitutes at bargain-basement prices.

Given the rapidity with which events unfolded, the Fed could hardly have avoided—even if it had desired to do so—the dip in inflation that began in 1997 and extended into 1998. And given the uncertainty surrounding recovery of the Asian economies during much of 1999, it is also unrealistic to expect that the Fed could have acted quickly enough to prevent an inflation rebound over the past year. Indeed, according to some theories of optimal monetary policy, a temporary decline in inflation is exactly what one would *want* to see in response to a shock like the Asian downturn and recovery (Koenig 1995).

In short, the inflation genie is still in its bottle. It remains to be seen whether the policy actions taken during the second half of 1999 and the first half of 2000 will keep it there.

Monetary Policy on Target

Given the Federal Reserve's success in engineering a soft landing for the economy in 1994–95 and its near success in achieving a soft landing in 1990, it is reassuring that the Fed's latest round of tightening is consistent with its past behavior.[3] In particular, recent increases in the federal funds rate bear the same

relationship to various direct measures of inflation pressure in product markets as have past changes. This implies that the motivation for the latest funds-rate increases can be understood without reference to tight labor markets, rising wages or stock market bubbles.

Chart 3 displays the 12-month change in the federal funds rate along with each of four variables measuring supply–demand imbalance or emerging inflationary pressure in product markets. The charts show that during 1999 we saw accelerating unfilled orders and inflation expectations, along with slower supplier deliveries and rising rates of capacity utilization. Over the period during which Alan Greenspan has chaired the FOMC, it is apparent that the Federal Reserve has typically responded to such signs of excess demand by tightening monetary policy.

Chart 4 shows actual and expected changes in the federal funds rate, where the expected changes are from a regression of the funds rate on the excess-demand indicators displayed in Chart 3. (For details, see the box titled "Understanding Federal Funds Rate Changes.") Chart 4 suggests that as of the third quarter of 2000, the funds rate was within 25 basis points of where one would have expected it to be, given the past behavior of the Greenspan Fed. There is no indication that the FOMC has acted any more or less aggressively lately than in the past.

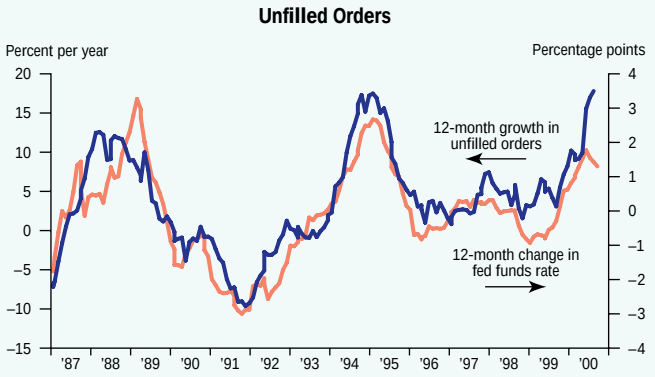
Likely Future Impact of Recent Policy Moves

How much slowing of growth in economic activity can we expect as a result of policy moves taken to date? Recent research suggests that the junk-bond spread—the yield on high-yield bonds less the yield on AAA-rated corporate bonds—is a good long-leading indicator of movements in economic activity (Gertler and Lown 1999). Other useful long-leading indicators are the real federal funds rate (the federal funds rate less professional forecasters' one-year inflation expectations) and the inflation-adjusted growth rate of the M2 money stock.

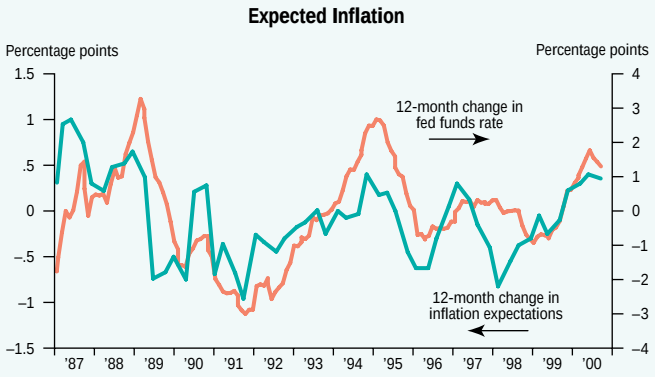
Intuitively, the junk-bond spread is a measure of the risk that marginal borrowers will default on their loans. Default risk tends to increase as economic prospects dim. The real federal funds rate is a measure of the price banks must pay to obtain funds that can, in turn, be lent out to households and businesses. It is heavily influenced by FOMC decisions. Inflation-adjusted M2 growth measures changes in the quantity of liquid assets held by the nonbank public. Variables like stock prices and the slope of the yield curve (the spread between long- and short-term interest rates) have no marginal predictive power for real activity in the 1980s and 1990s in the presence of

Chart 3

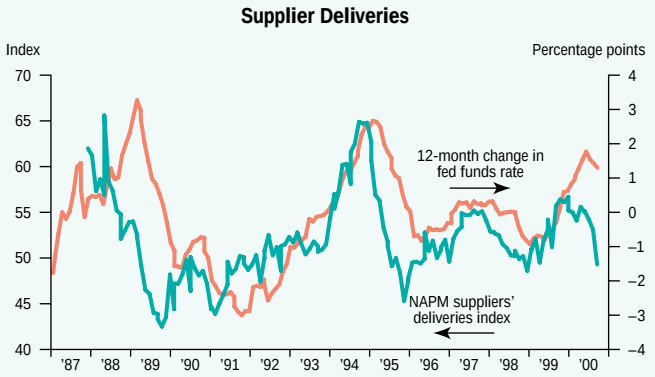
The Federal Funds Rate and Four Measures of Demand–Supply Imbalances



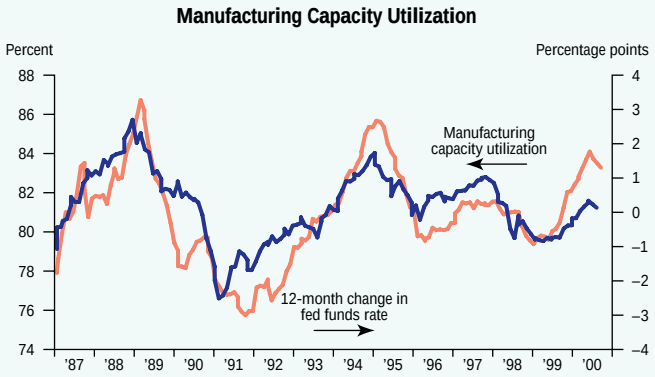
SOURCES: Bureau of the Census; Federal Reserve Board of Governors.



SOURCES: Federal Reserve Bank of Philadelphia; Federal Reserve Board of Governors.



SOURCES: National Association of Purchasing Management; Federal Reserve Board of Governors.



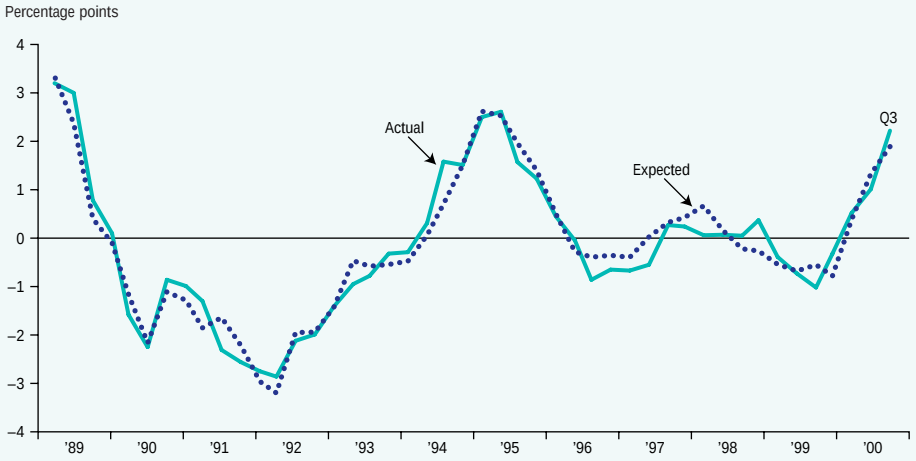
SOURCE: Federal Reserve Board of Governors.

The bottom line is that policy actions taken to date appear likely to slow employment growth substantially but not drive the economy into a recession.

Chart 4

Fed Policy on Track

(Actual and expected 12-month change in federal funds rate)



SOURCES: Federal Reserve Board of Governors; author's calculations.

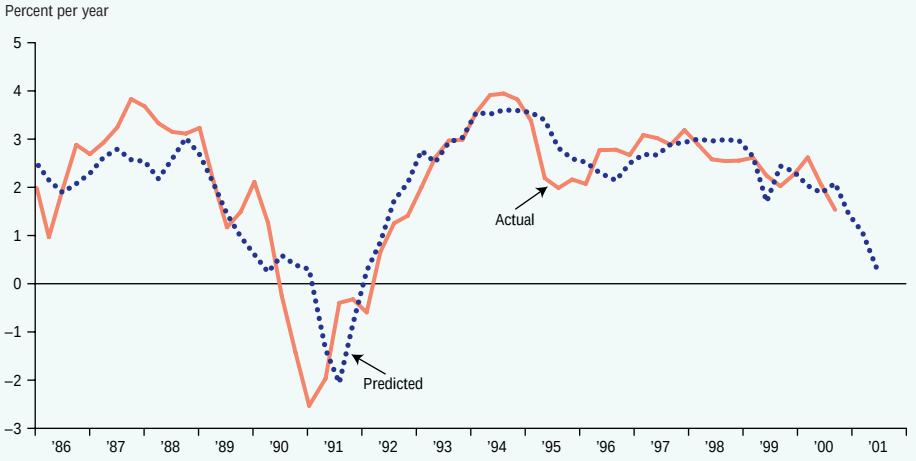
the junk-bond spread, the real funds rate and real M2 growth.

Chart 5 combines and summarizes the information in real M2 growth, the real federal funds rate and the junk-bond spread. It shows the annualized six-month growth rate of private nonfarm employment along with the employment growth rate one would have predicted nine months earlier by observing the three financial indicators. (Details are provided in the box titled "Predicting Employment Growth.") The latest forecast is based on M2, funds-rate, bond-yield, inflation and inflation-expectations data that were available in mid-October. Annualized employment growth during the first half of 2001 is predicted to be 0.3 percent—down from 2 percent actual growth during the first six months of 2000 and from 1.5 percent growth over the six months ending in September. Since most analysts project 1 percent annual labor-force growth, the forecast implies a small

Chart 5

Long-Leading Indicators Predict a Further Slowing of Employment Growth

(Actual and predicted annualized six-month growth rates of private nonfarm employment)



SOURCES: Bureau of Labor Statistics; author's calculations.

Understanding Federal Funds Rate Changes

Chart 4 captures the relationship between the 12-month change in the federal funds rate (Δff) and four direct measures of demand–supply imbalance in product markets: the 12-month change in unfilled orders (Δuo), the National Association of Purchasing Management's measure of lengthening supplier delivery lags ($napm$), the level of manufacturing capacity utilization ($capu$) and the four-quarter change in professional forecasters' inflation expectations (Δpie). The larger any of these four variables is, the greater the increase in the federal funds rate tends to be. The exact relationship is as follows:

$$\Delta ff = -32.2746 + .1219\,\Delta uo + .0654\,\Delta uo(-4) + .0093\,napm + .0368\,napm(-4)$$
$$(6.2140)\ (.0190)\qquad (.0247)\qquad (.0289)\qquad (.0223)$$

$$+ .1911\,capu + .1709\,capu(-4) + 1.3312\,\Delta pie + .8883\,\Delta pie(-4) - .6136\,\Delta ff(-4)$$
$$(.0661)\qquad (.0604)\qquad (.1680)\qquad (.1480)\qquad (.1035)$$

Adjusted $R^2 = .930$ S.E. = .399 Sample: 1989:Q1–2000:Q3.

Standard errors of the coefficients are given in parentheses. The estimation methodology makes due allowance for a moving-average error term.

Because many of the right-hand-side variables are contemporaneous with the left-hand-side variable, the equation above is not directly useful for giving advance warning of Fed policy decisions. However, the fact that the equation does a good job of explaining funds-rate changes after the fact suggests that the variables to which policymakers respond in real time are highly correlated with emerging imbalances in product markets, as subsequently evidenced by high rates of capacity utilization and increases in unfilled orders, delivery lags and inflation expectations. The equation provides a means for assessing whether recent policy decisions are in line or out of line with past Fed responses to emerging imbalances.

increase in the unemployment rate during the first half of next year.[4]

The bottom line is that policy actions taken to date appear likely to slow employment growth substantially but not drive the economy into a recession.

Summary

The federal funds rate increases that occurred during 1999 and 2000 can be understood without reference to tight labor markets and high stock prices—traditional indicators of economic overheating that are of dubious relevance when labor-productivity growth is high and rising. In fact, the latest round of monetary policy tightening was entirely consistent with past Fed responses to direct signs of demand–supply imbalance and inflationary pressure in product markets. This consistency is encouraging, for it suggests that the Fed stands a good chance—barring an unexpected oil-supply disruption—of stabilizing inflation while maintaining growth in output and employment.

—Evan F. Koenig

Koenig is vice president and senior economist in the Research Department of the Federal Reserve Bank of Dallas.

Predicting Employment Growth

Chart 5 shows annualized six-month growth in private, nonfarm employment together with job-growth predictions made nine months before the fact. The predictions come from a regression of employment growth ($\Delta pemp$) on lagged employment growth ($\Delta remp$), the lagged level of the real federal funds rate (rff), lagged real growth in the M2 money supply measure ($\Delta rm2$) and the lagged difference between the yields on so-called junk bonds and high-quality, AAA-rated corporate bonds ($spred$). The data are quarterly. The results of this regression are as follows:

$$\Delta pemp = 4.1069 + .3708\,\Delta remp(-3) - .4965\,rff(-3) + .0580\,\Delta rm2(-3) - .4629\,spred(-3)$$
$$(.5760)\ (.1093)\qquad (.1025)\qquad (.0425)\qquad (.1362)$$

Adjusted $R^2 = .687$ S.E. = .789 Sample: 1985:Q4–2000:Q3.

The six-month growth rates of employment and money that appear on the right-hand side of the regression are calculated using real-time levels data from the third month of each quarter. (The dependent variable is calculated similarly, except using revised data.) These data do not become available until the first month of the subsequent quarter. All interest rates are measured as of the middle of this same month. The real federal funds rate is obtained from the market funds rate by subtracting the one-year inflation expectations of professional economists, as reported by the Federal Reserve Bank of Philadelphia. To obtain real M2, nominal M2 data are deflated using the Consumer Price Index. The standard errors of the estimated coefficients (appropriately adjusted for a moving-average error term) are given in parentheses.

Notes

Thanks to Charis Ward and Ricardo Llaudes for first-rate research assistance.

1 For discussion of the roles of the stock market and unemployment rate in policymaking, see Koenig (2000). Bernanke and Gertler (1999) and Cecchetti et al. (2000) present sharply different views on the amount of attention policymakers ought to give to stock prices.

2 Plots of core and median consumer price inflation display similar trends, although the exact timing of the recent upward movement differs from one inflation measure to another.

3 The economy is said to experience a soft landing when demand growth slows sufficiently to prevent a threatened increase in inflation and yet an outright recession is avoided. Many analysts feel that the U.S. economy was on track to a soft landing in 1990 had Iraq not invaded Kuwait.

4 Consistent results are obtained when six-month changes in the unemployment rate are regressed directly on the three financial indicators.

References

Bernanke, Ben, and Mark Gertler (1999), "Monetary Policy and Asset Price Volatility," in *New Challenges for Monetary Policy*, symposium sponsored by the Federal Reserve Bank of Kansas City, Jackson Hole, Wyo., August 26–28.

Cecchetti, Stephen G., Hans Genberg, John Lipsky, and Sushil Wadhwani (2000), "Asset Prices and Central Bank Policy," report prepared for the International Centre for Monetary and Banking Studies conference "Central Banks and Asset Prices," Geneva, May 5.

Gertler, Mark, and Cara S. Lown (1999), "The Information in the High-Yield Bond Spread for the Business Cycle: Evidence and Some Implications," *Oxford Review of Economic Policy* 15:3 (Autumn), 132–50.

Koenig, Evan F. (2000), "Productivity, the Stock Market and Monetary Policy in the New Economy," Federal Reserve Bank of Dallas *Southwest Economy*, Issue 1, January/February, 6–9, 12.

——— (1995), "Optimal Monetary Policy in an Economy with Sticky Nominal Wages," Federal Reserve Bank of Dallas *Economic Review*, Second Quarter, 24–31.

McTeer, Robert (2000), quoted in "Fed's McTeer Again Says Mounting Inflation Pressures Warrant Action," *Dow Jones Business News*, May 1.