
FRBSF WEEKLY LETTER

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The Landing Was Harder than We Thought!

In July of each year, the Bureau of Economic Analysis issues revised estimates of the gross national product for the previous three years. These "benchmark" revisions incorporate new information that was not available when the earlier estimates were released. Some information is available only on an annual basis (for example, from annual surveys of firms in various industries and from annual tabulations of tax data), so the quarterly estimates of GNP are based on interpolations and extrapolations and must be revised when new annual data become available.

The resulting re-estimates may alter our views of where the economy has been and where it is heading, and may, in turn, have implications for monetary policy. This *Letter* discusses the most recent GNP revisions, which showed that real (inflation-adjusted) growth since 1987 has been less than previously estimated, particularly in 1989.

Not as soft...

In recent years, the economy has been operating at or close to its productive capacity, and the demands on the economy's resources have been strong. These demand pressures have tended to feed inflationary pressures. The Federal Reserve has been conducting monetary policy with a view to reducing these pressures and bringing the inflation rate gradually down toward zero. This has entailed slowing the growth of real output to a rate below the rate of growth of the economy's productive capacity ("potential growth rate") in order to reduce the pressure of demand on resources.

At the same time, however, the Fed has been concerned that the economy might slow so sharply that there could be a serious risk that real GNP actually would decline. The goal of policy has been to guide the economy toward what many have been calling a "soft landing;" this would avoid both the rapid growth that could increase inflation and a recession that could cause unemployment to rise to unacceptable levels.

Prior to the release of the revised GNP data, it appeared that the economy had been following a path close to that needed to achieve a soft landing. The growth rate of real GNP had slowed from 5.3 percent over the four quarters of 1987 to 3.3 percent in 1988 and to 2.5 percent in 1989. Growth in 1989 actually would have been slower than this if it had not been for the bounce-back in farm production associated with the end of the previous year's drought. Excluding this temporary boost, the growth rate last year was originally estimated to be 1.8 percent.

Most estimates of the economy's potential growth rate, which depends on the growth of the labor force and its productivity, fall in the 2½ to three percent range. With 1989's drought-adjusted rate just below this range, it appeared that a soft-landing was being achieved.

However, the revised GNP data show slower real growth in each of the last three years. The downward revision was especially large for 1989; drought-adjusted real GNP increased only 1.1 percent last year, rather than the 1.8 percent previously estimated. Moreover, the slow pace of growth in 1989 persisted in the first half of this year. Despite this sluggish pace, inflation appears not to have been affected: almost no revisions were made in the estimates of the average level of prices. The combination of sluggish growth and unchanged inflationary pressures suggests that the landing was not as "soft" as had been thought.

A closer look at the revisions

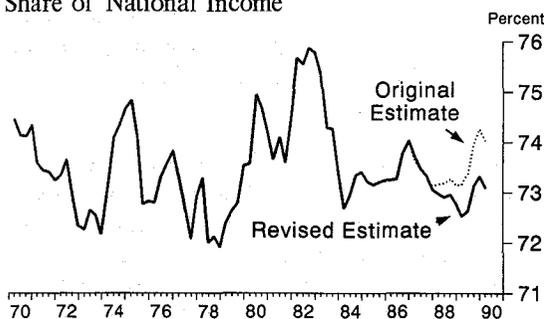
To put the not-so-soft landing into perspective, it is useful to look at the revisions to the main components of GNP. The largest revisions for 1989 were in the output of consumer services, especially of medical care services. The revised data indicate that real personal spending on medical care increased only 2½ percent last year rather than the 6½ percent previously estimated. Households also spent less on private education and on state lotteries than earlier estimated. In

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addition to the revision to household spending, small downward revisions were made to the 1989 estimates of spending on business equipment, inventory accumulation, and goods purchased by state and local governments.

These downward revisions in turn were reflected in lower estimates of national income. The *shares* of income going to different groups also were revised. Labor income, which comes mainly from wages and salaries was revised downward by more than the revision in total GNP, while corporate profits and the incomes of noncorporate businesses were revised upward. The previous estimates had suggested that the share of the nation's output going to employees had been trending upward in recent years. It now appears (see the chart) that, excluding the effects of the sharp decline in business profits in the early 1980s, labor's share has been roughly constant since the late 1970s.

Employee Compensation as a Share of National Income



Since the revised GNP data were released, benchmark revisions also have been made to data on payroll employment and hours of work. These new data show no major change in the estimates of total hours worked in the economy. But since both output and labor income were revised downward, output per employee hour (labor productivity) and hourly compensation (real wages) also were lower. After adjusting for the effects of the drought, the revised data indicate that output per hour in private business declined by 1½ percent over the four quarters of 1989. Real hourly compensation decreased by 2½ percent. Before the data revisions, hourly output and compensation both were estimated to have risen slightly last year.

Implications for policy

These data revisions point up a problem that faces the Federal Reserve when it conducts policy on the basis of measures of current economic activity. Revised data may suggest a different policy from that adopted on the basis of the earlier data. For example, economic growth that turns out to have been greater or less than previously estimated may suggest that earlier policy decisions should be reviewed. However, other factors must be considered before deciding that a change in policy is indicated.

For example, data revisions may not justify a policy response if they do not cause policy-makers to alter their forecasts of future activity and especially of future inflation. Because monetary policy has observable effects on the economy and the price level only after a considerable time lag, policy actions always must be taken with an eye to the future (see the *Letter* of July 8, 1988). Thus, when revisions to past data do not alter the forecast of future economic activity, they will not change the Fed's judgment of the appropriate course for policy.

The reasons for the revised estimate of past growth generally will have an important bearing on the Fed's response to the revisions. When data revisions can be attributed to stronger or weaker aggregate demand than previously thought, a reassessment of earlier policy actions may be needed. Data revisions that are due to a hitherto-unrecognized change in aggregate supply ("supply shock"), on the other hand, may not justify a change of policy.

Supply shocks arising from changes in such factors as the population's willingness to work or the prices of important raw materials, such as oil, affect the economy's capacity to produce goods and services. Monetary actions cannot do much to offset the effects of these kinds of shocks on real growth. Consequently, a change in policy probably would not be justified in the case of a supply shock, even though supply shocks generally do affect inflation, at least temporarily.

These observations suggest that to the extent the recent downward revision in 1989's growth can be attributed to weaker demand, the current stance of monetary policy may be tighter than

would be desirable. On the other hand, to the extent the downward revision is the result of a shock to aggregate supply, earlier actions to tighten policy remain appropriate.

Supply or demand?

In practice, it may be difficult to determine whether a revision in GNP is due to demand or supply considerations. One possible interpretation of the recent data revisions is that the Federal Reserve's tightening of monetary policy in 1988 and early 1989 has had a greater impact on aggregate demand than was estimated earlier. If this were the case, however, the revision should have been concentrated in areas of the economy that generally are particularly sensitive to a tightening of monetary policy. Instead, the principal revisions were to consumer expenditures on services which generally are considered relatively insensitive to monetary actions.

Of course, this does not rule out the possibility that aggregate demand was reduced by some other shock unrelated to Federal Reserve policy. If aggregate demand was weaker than earlier estimated, whether or not this was due to past policy actions, upward pressure on inflation probably was less than previously assumed.

An alternative interpretation is that the aggregate supply factors that have sustained the long expansion of the 1980s have weakened somewhat in recent quarters. As discussed in a recent *Letter* (June 22, 1990), the expansion apparently has been associated with an increase in workers' willingness to work. Both labor force participation and average hours of work have risen strongly since the early 1980s, thus boosting the potential growth rate of the economy. Although it is clear that the supply of labor has continued to rise, the revised GNP data suggest that this positive supply-side effect on real output has been partially offset in recent quarters by slower growth of labor productivity. In addition, both labor force participation and hours of work have increased less strongly in recent quarters than earlier in the expansion.

In this regard, it is notable that, in a number of instances, the downward revisions to the estimated output of consumer services directly

reflect lower estimates of labor productivity in the service industries. The preliminary estimates used employment data to calculate service sector income, based on assumptions regarding the growth of productivity. These assumptions turned out to be too high. For example, the results of the Census Bureau's annual survey of the service industries showed that the receipts of suppliers of medical care were less than had been estimated from payroll employment data.

It is difficult to determine whether the slowing in the growth of labor supply and labor productivity represents a supply shock or merely a response to reduced aggregate demand. For example, the slower growth in output per hour may have occurred because firms did not immediately adjust their payrolls in response to reduced output associated with reduced demand. Alternatively, the slower growth in labor supply and labor productivity may be due to changes in the age structure of the population and other "exogenous" changes in aggregate supply.

Inflation pressures

Given that the recent revisions to the GNP data show that the economy's growth rate has been less than earlier estimated, but that inflation has been no lower, it is likely that supply factors have played an important role. If the slowing reflected weaker aggregate demand, one would have expected the underlying inflation rate to begin to ease after a year and a half of below-potential growth. In contrast, negative supply shocks do not affect the underlying inflation rate and may even raise inflation temporarily. The supply-side explanation, moreover, is consistent with the nature of many of the detailed data revisions.

In recent years, the Federal Reserve has conducted monetary policy with a view to lowering the inflation rate by reducing aggregate demand pressures. If changes on the supply side (most likely in the form of slower growth of both labor supply and labor productivity) are primarily responsible for the slower real growth, the recent revisions in the GNP data do not imply any lessening of inflationary pressures.

Brian Motley
Senior Economist

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Research Department
Federal Reserve
Bank of
San Francisco

P.O. Box 7702
San Francisco, CA 94120