

# The NBER's Business-Cycle Dating Procedure

Business Cycle Dating Committee, National Bureau of Economic Research

Robert Hall, Chair

Martin Feldstein, President, NBER

Jeffrey Frankel

Robert Gordon

Christina Romer

David Romer

Victor Zarnowitz

April 10, 2003

According to the most recent data, the U.S. economy continues to experience growth in output and income without growth in employment. Though employment grew in January after several months' downturn, it declined substantially in February and March. Because of the behavior of employment, it remains our conclusion that additional time is needed to interpret the movements of the economy last year and this year. The NBER's Business Cycle Dating Committee will determine the date of a trough in activity when it concludes that a hypothetical subsequent downturn would be a separate recession, not a continuation of the past one. The trough date will mark the end of the recession. The committee will not issue any judgment about whether the economy has reached a trough until it makes its formal decision on this point. The committee waits for many months after an apparent trough to make its decision, because of data revisions and the possibility that the contraction would resume. For example, the committee waited until December 1992 to announce that a trough had occurred in March 1991.

In November 2001, the committee determined that a peak in business activity occurred in the U.S. economy in March 2001. A peak marks the end of an expansion and the beginning of a recession. The determination of a peak date in March is thus a determination that the expansion that began in March 1991 ended in March 2001 and a recession began in March. The expansion lasted exactly 10 years and was the longest in the NBER's chronology.

A recession is a significant decline in activity spread across the economy, lasting more than a few months, visible in industrial production, employment, real income, and wholesale-retail sales. A recession begins just after the economy reaches a peak of activity and ends as the

economy reaches its trough. Between trough and peak, the economy is in an expansion. Expansion is the normal state of the economy; most recessions are brief and they have been rare in recent decades.

Because a recession influences the economy broadly and is not confined to one sector, the committee emphasizes economy-wide measures of economic activity. The traditional role of the committee is to maintain a monthly chronology, so the committee refers almost exclusively to monthly indicators. The committee gives relatively little weight to real GDP because it is only measured quarterly.

The committee generally studies two monthly measures of activity across the entire economy: (1) employment and (2) personal income less transfer payments, in real terms (adjusted for price changes). In addition, the committee refers to two indicators with coverage primarily of manufacturing and goods: (3) the volume of sales of the manufacturing and wholesale-retail sectors adjusted for price changes and (4) industrial production. The Bureau of Economic Analysis of the Commerce Department compiles the first and the Federal Reserve Board the second. Because manufacturing is a relatively small part of the economy, the movements of these indicators often differ from those reflecting other sectors.

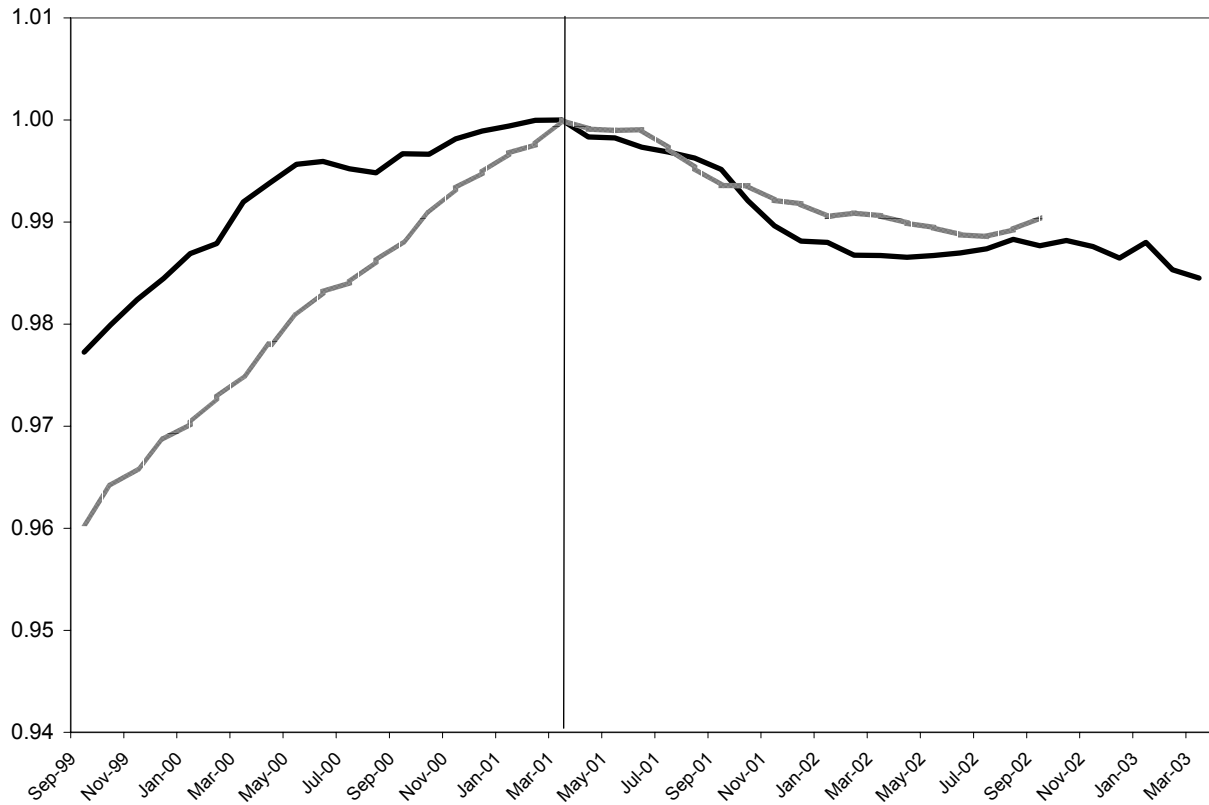
Although the four indicators described above are the most important measures considered by the NBER in developing its business cycle chronology, there is no fixed rule about which other measures contribute information to the process.

Figure 1 shows the recent movements of employment superimposed on the average movement over the past six recessions. Employment reached a peak in March 2001 and declined through April 2002. Current revised data show that employment rose slightly from May through August, but declined, for the most part, through the end of 2002. Employment rose by 203,000 in January 2003, but fell by 357,000 in February and another 108,000 in March, the most recent reported month. It is now 2.05 million below the March 2001 peak. Employment is lower than in any previous month since December 1999.

Figure 2 shows the movements of real personal income less transfers. Real income generally fell from late 2000 through late 2001, and generally rose through January 2003, but fell in February 2003, the most recent reported month. This indicator is now just below its previous peak in November 2000.

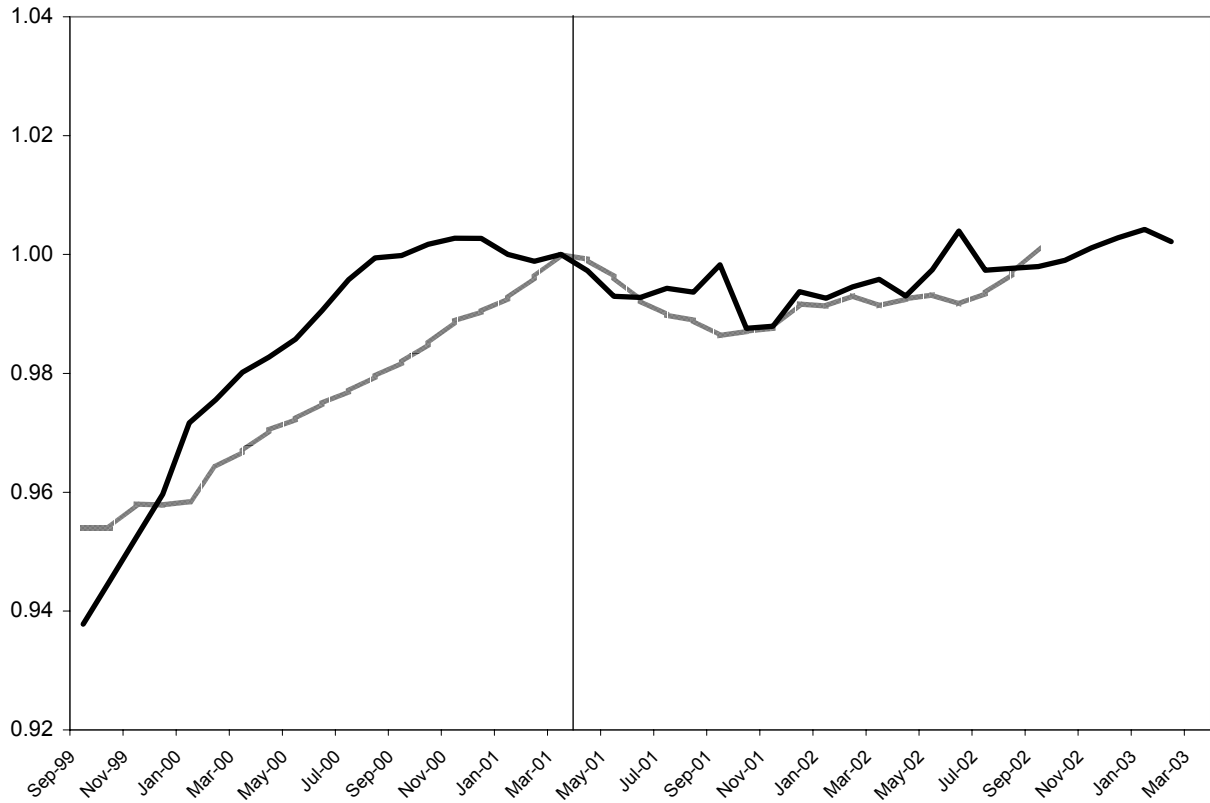
Figure 3 shows industrial production. A peak occurred in June 2000 and the index declined over the next 18 months by 6.8 percent to its low point in December 2001. Industrial production rose between January and July 2002, fell until October, then generally rose through February 2003, the most recent reported month.

Figure 4 shows real manufacturing and wholesale-retail sales. This measure reached a peak in July 2002, turned downward through October, but then turned upward and is now at a new peak as of January 2003, the most recent reported month.



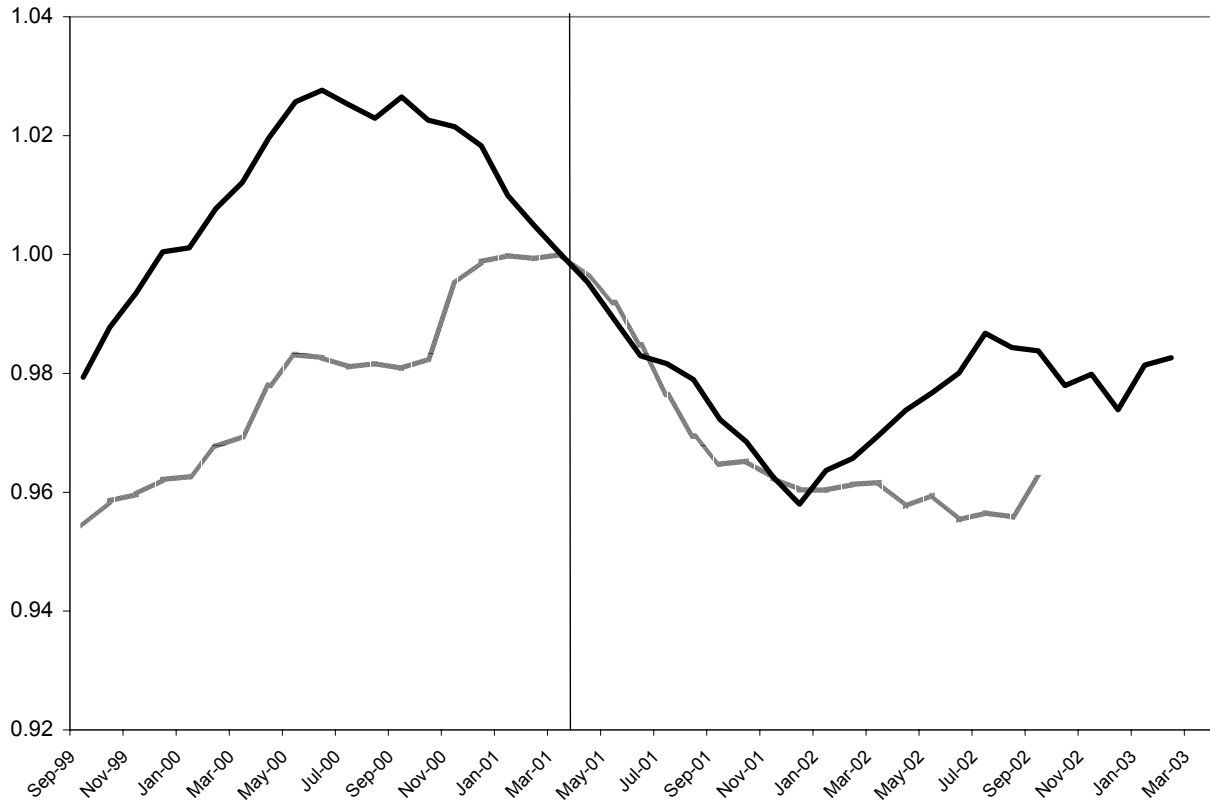
**Figure 1. Employment**

The dark line shows the movement of employment in 1999-2003 and the shaded line the average over the past 6 recessions.



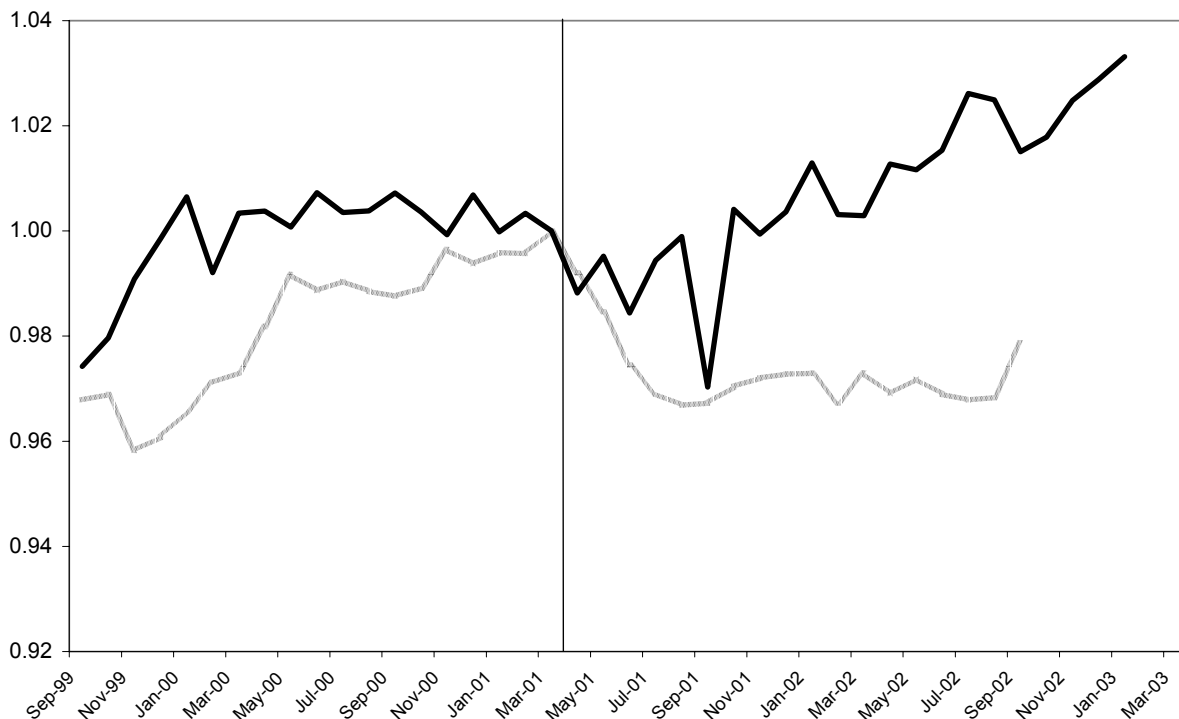
**Figure 2. Real Personal Income Less Transfers**

The dark line shows the movement of income in 1999-2003 and the shaded line the average over the past 6 recessions. Source: The Conference Board (<http://www.globalindicators.org>)



**Figure 3. Industrial Production**

The dark line shows the movement of industrial production in 1999-2003 and the shaded line the average over the past 6 recessions.



**Figure 4. Real Manufacturing and Wholesale-Retail Sales**

The dark line shows the movement of sales in 1999-2003 and the shaded line the average over the past 6 recessions. Source: The Conference Board (<http://www.globalindicators.org>)

In 2002 and early 2003, indicators measuring output and income generally have been rising, while employment has been essentially constant with declines in November and December, an increase in January 2003, and a large decline through March. The primary factor accounting for the more favorable performance of income and production relative to employment is the continuation of rapid productivity growth resulting in corresponding growth in real wages.

According to data released in March (<http://www.bea.doc.gov/bea/newsrel/gdpnewsrelease.htm>), real GDP increased at an annual rate of 1.4 percent in the fourth quarter of 2002, 4.0 percent in the third quarter, and 1.3 percent in the second quarter. GDP reached a peak in the fourth quarter of 2000. This was followed by contraction during the first three quarters of 2001 and growth since then. In the fourth quarter of 2001, real GDP surpassed its earlier peak. This performance of real GDP is consistent with the other data considered by the committee. Output fell less than employment during the recession and currently is rising faster than employment because of unusual productivity growth.

For more information, see the FAQs at the end of this memo, and also see <http://www.nber.org/cycles.html>. An Excel spreadsheet containing the data and figures is available from that page as well.

## **FAQs**

**Q: Suppose that the economy turns down this year, contrary to current forecasts. How will the NBER decide about turning points?**

A: The first step would be to determine if the period of weakness amounts to a recession. In this determination, we would refer to our standard criteria of depth, duration, and dispersion. The definition of a recession is stated in the third paragraph of this memo. The second step would be to determine if the recession starting some time in 2003 was a continuation of the recession that we have already determined began in March 2001. We would decide in favor of a single, longer recession if we determined that economic activity in the period from March 2001 through early 2003 never surpassed its peak in March 2001. Here, we would have to reconcile the conflicting behavior of output and employment. Output surpassed its previous peak in late 2001, while employment in January 2003 was almost 1.5 percent below its peak in March 2001.

**Q: The financial press often states the definition of a recession as two consecutive quarters of decline in real GDP. How does that relate to the NBER's recession dating procedure?**

A: Most of the recessions identified by our procedures do consist of two or more quarters of declining real GDP, but not all of them. According to current data for 2001, the present recession falls into the general pattern, with three consecutive quarters of decline. Our procedure differs from the two-quarter rule in a number of ways. First, we use monthly indicators to arrive at a monthly chronology. Second, we use indicators subject to much less frequent revision. Third, we consider the depth of the decline in economic activity. Recall that our definition includes the phrase, "a significant decline in activity."

**Q: Could you give an example illustrating this point?**

A: On July 31, 2002, the Bureau of Economic Analysis released revised figures for gross domestic product that showed three quarters of negative growth in 2001—quarters 1, 2 and 3—where previously the data had shown only quarter 3 as negative. This revision shows why the committee does not rely on a simple rule of thumb such as two consecutive quarters of negative growth, nor relies on GDP data alone, in making its determinations, but rather looks at a broader array of statistics. In November 2001, the committee determined the date of the peak in activity in March 2001 using its normal indicators. The two-quarter-decline rule of thumb would not have allowed the declaration of the recession until August 2002, let alone a declaration that it had begun early in 2001, as in the statement that the committee made in November 2001. It wasn't until eight months later that revisions in the GDP data showed declining real GDP for the first, second, and third quarters of 2001.

**Q. The NBER refers to the recession as having begun in March 2001. Some observers, however, cite April as the start of the recession, reasoning that if the peak ended in March, then the recession began in April.**

A: The exact peak occurred sometime in March. For the rest of the days in March, the economy was in recession. So the expansion ended and the recession began in March.

**Q: Isn't a recession a period of diminished economic activity?**

A: It's more accurate to say that a recession—the way we use the word—is a period of *diminishing* activity rather than *diminished* activity. We identify a month when the economy reached a peak of activity and a later month when the economy reached a trough. The time in between is a recession, a period when the economy is contracting. The following period is an expansion. Economic activity is below normal or diminished for some part of the recession and for some part of the following expansion as well. Some call the period of diminished activity a *slump*.

**Q: How does the NBER balance the differing behavior of employment and output?**

A: Following the precedents established in many decades of maintaining its business cycle chronology, the NBER considers employment, production, sales, and real income. When special factors—such as unusual productivity growth and favorable shifts in the terms of trade—make income and production-based measures move differently from those based on employment, we balance the two types of evidence.

**Q. You emphasize the payroll survey as a source for data on economy-wide employment. What about the household survey?**

A. Although the household survey is a large, well-designed probability sample of the U.S. population, its estimates of total employment appear to be noisier than those from the payroll survey. The two sources agree reasonably closely about the movement of employment in this recession.

**Q. How do the movements of unemployment claims inform the Bureau's thinking?**

A: A bulge in jobless claims would appear to forecast declining employment, but we don't use forecasts and the claims numbers have a lot of noise.

**Q. What about the unemployment rate?**

A: Unemployment is generally a lagging indicator. Its rise from a very low level to date is consistent with the employment data.

**Q: How do structural changes in the economy in the 1990s affect the NBER's method for dating business cycles? The Bureau notes that industrial production measures a declining part of the economy. What other substitutes for output bear watching, particularly with regard to service-sector activity?**

**A:** Economy-wide employment and real personal income are the most important monthly indicators. At a quarterly frequency, real GDP is informative. Another interesting monthly indicator is aggregate hours of work.

**Q: Regarding movements of income as an indicator of recessions, isn't it true that real income has not fallen substantially during five of the past nine recessions?**

**A.** That is why employment is probably the single most reliable indicator.

**Q: Is the NBER committee considering re-dating the beginning of the recession, based on the revised GDP data which seem to indicate that the peak of the last cycle was reached before your current date? Has the committee ever before changed a cycle date based on new information?**

**A:** There has been a discussion, but it is not active currently. To our knowledge, there has never been a change, and definitely not since 1978 when the current chairman was appointed.

**Q: When did the NBER first establish its business cycle dates?**

**A:** The NBER first compiled a chronology in the early 1920s, soon after the founding of the Bureau in 1920.

**Q. When was your committee first formed?**

**A:** When Martin Feldstein became president of the NBER in 1978. Robert Hall has chaired the committee since its inception.

**Q: How is the committee's membership determined?**

**A:** The President of the NBER appoints the members, who include directors of the macro-related programs of the NBER plus other members with specialties in business-cycle research.