THE CONFERENCE BOARD

Business Cycle Indicators

A monthly report from The Conference Board

GLOBAL INDICATORS PROGRAM

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This month's release incorporates annual benchmark revisions to the composite indexes, bringing them up-to-date with revisions in component data. Also, several components of the composite indexes that were in chain-weighted 1996 dollars have been changed to chain-weighted 2000 dollars. These revisions do not change the cyclical properties of the indexes.

The leading index continued to rise in December, and the annual benchmark revisions had very little effect on growth in recent months. The coincident index also increased again in December, reflecting widespread gains among its components—production, sales, income, and even employment—in the past few months.

The leading index has now increased at a 4.7 percent annual rate from its most recent low in March, and this pickup has continued to be widespread. The exception to this trend is a sharp decline in the money supply (M2), which caused the growth rate of the leading index to slow to only 3 percent over the last four months. But, if the money supply is excluded, the growth rate of the leading index is still almost 5 percent.

Consistent with the upturn in the leading index, real GDP growth jumped to at least a 6 percent average annual rate in the second half of 2003. The growth in the leading index in recent months is a signal that strong economic growth (in the 5 to 6 percent range) should continue in the near term.

About Business Cycle Indicators

This report is an exciting complement to the Board's economics program. To ensure that Business Cycle Indicators is one of the most useful resources for monitoring current economic conditions, suggestions pertaining to content are welcomed and should be addressed to Ataman Ozyildirim at The Conference Board, or sent via e-mail at indicators@conference-board.org. For inquiries about subscriptions, call Customer Service at 212 339 0345.

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Business Cycle Indicators

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The Cyclical Indicator Approach

The business cycle indicators are a group of statistical time series that have proven useful in analyzing the alternating waves of economic expansion and contraction known as the business cycle. The charts and data tables in this publication provide a broad range of information about the business cycle, past and present. In particular, the charts offer easy comparisons between the current business cycle and those of the previous three or four decades.

The indicator approach was originated in the mid 1930s by economists at the National Bureau of Economic Research. This research explores patterns of economic fluctuation that consist of expansions (periods of positive growth in general economic activity), followed by recessions (contractions in economic activity), which then merge into the expansion phase of the next cycle.

Timing Classifications

Based on the timing of their movements, the cyclical indicators are classified into three categories: leading, coincident, and lagging. The leaders are those series that tend to shift direction in advance of the business cycle; for this reason they get the lion's share of the attention. The coincident indicators, such as employment and production, are broad series that measure aggregate economic activity; thus they define the business cycle. Lagging indicators tend to change direction after the coincident series; they are used to confirm turning points and to warn of structural excesses and imbalances that are developing within the economy.

With few exceptions, the cyclical indicators included in this publication have been subjected to, and survived, a half-dozen statistical and economic tests: (1) **conformity** to the general business cycle, (2) **consistent timing** as a leading, coincident, or lagging indicator, (3) **economic significance** based on generally accepted business cycle theories, (4) **statistical adequacy** by way of a reliable data-collection process, (5) **smoothness** in month-to-month movements, and (6) **currency** through a reasonably prompt publication schedule. Since no single time series fully qualifies as an ideal cyclical indicator, it is important to analyze groups of indicators and to look for consistent or common patterns.

Composite and Diffusion Indexes

The leading, coincident, and lagging composite indexes are useful summary measures of the cyclical indicators because, as averages, they tend to smooth out much of the volatility of individual series. Diffusion indexes, which measure the proportion of a set of indicators that is rising, are useful because they indicate the extent, or breadth, of a particular business cycle movement. (The individual series that make up the leading, coincident, and lagging composite indexes are listed in the table on page 26.)

The coincident index has a good record of turning at the same time as the general economy. It also rises and falls at about the same pace as the Gross Domestic Product (GDP). The leading index has turned down before all recessions, but sometimes gives a false signal. The lagging index has the most inconsistent record and receives limited attention. The ratio of the coincident index to lagging index is often used, however, as a measure of cyclical balance and tends to lead turning points in the coincident index.

It is often reported that a three-month decline in the leading index signals a recession. However, few economists actually use such a simple and inflexible rule. Historical analysis shows that a decline of between 1 and 2 percent for the leading index, coupled with declines in at least half of the components during a six-month period, is a reasonable, albeit not perfect, criterion for a recession warning. Nonetheless, the U.S. economy is continuously evolving and is far too complex to be summarized by one economic series, even a composite index. This publication includes a broad range of series indispensible for monitoring the business cycle.

2004 Annual Benchmark Revisions to the Composite Indexes

The January 22, 2004, release of The Conference Board's U.S. composite indexes of leading, coincident, and lagging indicators through December 2003 incorporated annual benchmark revisions. Benchmark revisions have long been part of the index methodology and were adopted to avoid numerous minor revisions to the index during the course of the year. This process essentially updated the composite indexes to include the revisions made to the history of the components in the past year. The monthly updates made to the composite indexes throughout the year only included revisions to the underlying component data going back six months. Since the composition of the indexes was not altered, the changes were very minor and the cyclical performance of the indexes was not affected. Nonetheless, the new benchmarked indexes are not strictly comparable to those published previously.

Standardization Factors

The index methodology includes an adjustment, through the standardization factors, which equalizes the volatility of each component in the index. The standardization factors are calculated by inverting the standard deviation of the monthly symmetric changes in each component. These inverse standard deviations are then normalized so that they add up to one. Hence, these factors only take into account the relative volatility of the component indicators. A relatively more volatile component has a smaller standardization factor but this would not necessarily mean that it has less significance to the performance of the index. Components that are wider in coverage, however, typically tend to be less volatile and this results in larger standardization factors for those components. The current index methodology treats the components as having equivalent importance to the performance of the corresponding index and does not assign weights to each component.[1]

The standardization factors are updated at the same time annual benchmark revisions are undertaken. The factors for the leading index were calculated using 1984–2002 as the sample period for measuring volatility. (A separate set of factors for the 1959–1983 period is available upon request.) The primary sample period for the coincident and lagging indexes was 1959–2002. Last year's standardization factors were based on the period from 1959–2001.[2] The table on this page shows the standardization factors used in 2003 and the new factors for 2004. As can be seen, the standardization factors do not change very much from year to year.

U.S. Composite Indexes: Components and Standardization Factors

		2003	2004
Leading Index			
1	Average weekly hours, manufacturing	0.1946	0.1965
2	Average weekly initial claims for unemployment insurance	0.0268	0.0252
3	Manufacturers' new orders, consumer goods and materials	0.0504	0.0588
4	Vendor performance, slower deliveries diffusion index	0.0296	0.0292
5	Manufacturers' new orders, nondefense capital goods	0.0139	0.0146
6	Building permits, new private housing units	0.0205	0.0202
7	Stock prices, 500 common stocks	0.0309	0.0291
8	Money supply, M2	0.2775	0.2774
9	Interest rate spread, 10-year Treasury bonds less federal funds	0.3364	0.3303
10	Index of consumer expectations	0.0193	0.0188
Coincident Index			
1	Employees on nonagricultural payrolls	0.5186	0.5235
2	Personal income less transfer payments	0.2173	0.2141
3	Industrial production	0.1470	0.1467
4	Manufacturing and trade sales	0.1170	0.1157
Lagging Index			
1	Average duration of unemployment	0.0368	0.0378
2	Inventories to sales ratio, manufacturing and trade	0.1206	0.1249
3	Labor cost per unit of output, manufacturing	0.0693	0.0648
4	Average prime rate	0.2692	0.2788
5	Commercial and industrial loans	0.1204	0.0968
6	Consumer installment credit to personal income ratio	0.1951	0.2019
7	Consumer price index for services	0.1886	0.1950

[1] See the January 2003 issue of *Business Cycle Indicators* for more details on a weighting scheme previously used by the National Bureau of Economic Review (NBER) and the U.S. Department of Commerce.

[2] Effective with the January 22, 2004, release, a programming error in the calculation of the leading index–in place since January 2002–has been corrected. The cyclical behavior of the leading index was not affected by either the calculation error or its correction, but, as a result of the correction, the level of the index in the 1959–1996 period is slightly higher.

Component Revisions and Cyclical Performance of the Composite Indexes

The Bureau of Economic Analysis (BEA) revisions in December 2003 changed the base year for series expressed in constant dollars from 1996 to 2000. Therefore, several series in the composite indexes are now expressed in 2000 chain dollars. Real money supply (M2) in the leading index and commercial and industrial loans outstanding in the lagging index are also now expressed in 2000 chain dollars because the personal consumption expenditure deflator used to deflate these series was benchmarked. Among the components of the coincident index, personal income less transfer payments and manufacturing and trade sales are the series affected by the BEA benchmark revisions. In the lagging index, the ratio of manufacturing and trade inventories to sales, is now based on benchmarked (2000 chain dollar) data.

One of the strengths of the index methodology is its ability to keep the indexes very stable. While revisions to the components may be substantial at times, these revisions are usually not reflected to the same extent in the index. Component revisions tend to offset each other, thereby diminishing the impact of data revisions to the index.

Benchmark Revisions to U.S. Composite Indexes