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# Business Cycle Indicators

A monthly report from The Conference Board U.S. and Global Indicators Program



# The Conference Board Leading Economic Index® for the United States in the 2007 Recession

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The U.S. economy entered a recession in December 2007. How well did The Conference Board Leading Economic Index® (LEI) for the United States anticipate this downturn?

## Behavior of the Leading Economic Index and Its Components from 2006 to 2008

The LEI essentially moved sideways, with alternating short up-and-down movements, from the first quarter of 2006 to the second quarter of 2007.<sup>1</sup> During this period, the LEI formed a high, generally flat level that contained multiple peaks, where each successive peak was at the same level or slightly below the previous one. After the benchmark revisions of February 2010, the LEI was shown to have reached a peak of 105.1 in both January and March 2006, and the revised LEI had a slight decline through the summer months before it climbed again in the fourth quarter to reach the same peak level of 105.1 in December 2006.<sup>2</sup> The revised LEI continued its small up-and-down movements through the middle of 2007, reaching its lowest and final peak of 104.8 in July 2007 (Chart 1). This multi-peak pattern can also be observed in the LEI before the benchmark revision (Chart 2).<sup>3</sup> However, as a result of data revisions, the peak of December 2006 (postbenchmark revision) now shows a longer and more articulated lead than the July 2007 peak determined prior to the benchmark revisions.

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Chart 1  
The Conference Board Leading Economic Index® for the United States (2005–2010)

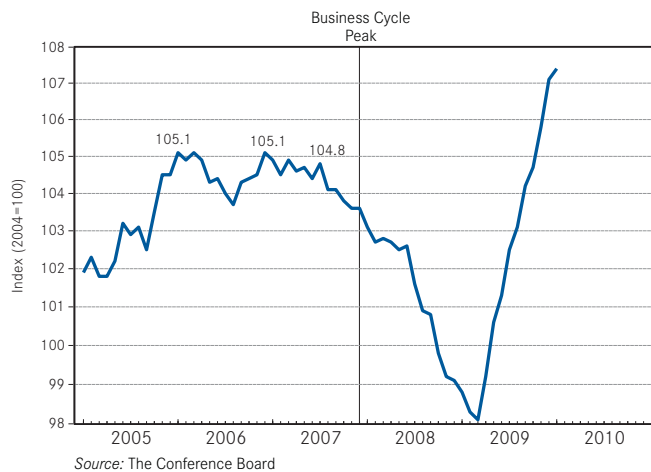
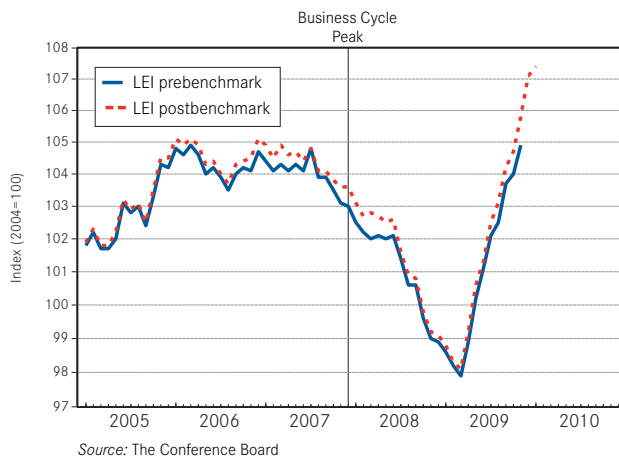


Chart 2  
The Conference Board Leading Economic Index® for the United States (2005–2010) – Prebenchmark vs. Postbenchmark



<sup>1</sup> See page 7 for the U.S. Composite Index of 10 Leading Indicators chart.

<sup>2</sup> See “2010 Annual Benchmark Revisions to the Composite Indexes” on page 4 for an explanation of the revisions.

<sup>3</sup> In the prebenchmark data before the latest data revisions, the last peak in July 2007 slightly exceeded the peak in December 2006.

## The 2010 Annual Benchmark Revisions to the Composite Indexes

The February release by The Conference Board of the U.S. composite indexes of leading, coincident, and lagging indicators through January 2010 incorporated annual benchmark revisions. Benchmark revisions have long been part of the index methodology and were adopted to avoid numerous minor revisions to the history of the indexes during the course of the year. This process essentially updated the history of 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 include revisions to the underlying component data going back six months. These revisions do not change the cyclical properties of the indexes.

### Standardization factors

The standardization factors used in the calculation of the indexes are updated at the same time annual benchmark revisions are undertaken. The factors for the leading index were calculated using 1984–2008 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 1959–2008. The standardization factors change only slightly from year to year. The revisions to the composite indexes are small, both because of the standardization factors and the fact that the underlying components were not revised significantly.

### Trend adjustment factors

With the 2010 benchmark, the trend adjustment factors have also been revised to  $-0.0042$  for the leading index and  $0.1524$  for the lagging index. The trend adjustment factor is calculated over the 1959–2008 period, and it is applied to the whole history of the respective composite indexes.

### Comprehensive revisions

The Conference Board continuously reviews the behavior and performance of the composite indexes and their components and makes changes from time to time. These comprehensive revisions are consistent with a long-standing policy to make changes to the indexes when research indicates substantial improvements are possible.

During the relatively flat period from 2006 to mid-2007, housing permits and, to a lesser extent, the interest rate spread and new orders for consumer goods and materials were already contributing negatively to the index (Table 1). However, their negative impact on the LEI was more than offset by increases in other components—notably the sharp expansion in real money supply, as well as the strength in stock prices and continued gains in weekly hours.

Table 1  
Cumulative Contributions of the LEI Components

	Jan. 06 to July 07	Aug. 07 to Dec. 07
Real money supply	1.40%	0.21%
Stock prices	0.70	-0.10
Weekly hours, manufacturing	0.33	-0.07
Housing permits	-1.17	-0.45
Interest rate spread	-0.56	-0.16
Manufacturers orders, consumer goods	-0.29	-0.24
Supplier deliveries	-0.12	0.17
Manufacturers orders, capital goods	0.06	-0.06
Consumer expectations	0.04	-0.47
Unemployment claims	0.01	-0.28

Source: The Conference Board

Among the rest of the components, the index of supplier deliveries was also making slight negative contributions to the LEI, but capital goods (new) orders, consumer expectations, and initial unemployment insurance claims (inverted) were largely flat. All in all, the strengths among the leading components were roughly balanced with (or slightly less than) the weaknesses during this period, with the six-month diffusion rate at or just below 50 percent.

Until mid-2007, the behavior of the LEI was largely interpreted as signaling a growth slowdown rather than a recession; few analysts were expecting an outright recession.<sup>4</sup> However, in the second half of 2007, the LEI began to fall steadily amid a sharp drop in consumer expectations, weaknesses in stock prices, and a rise in unemployment claims. Beginning in January 2008, the six-month decline in the LEI accelerated, while the six-month diffusion index fell consistently and sharply below 50 percent. The declines in the LEI picked up further in the fourth quarter of 2008. By that time, the six-month decline in the LEI had reached an annual rate of around 6.0 percent.

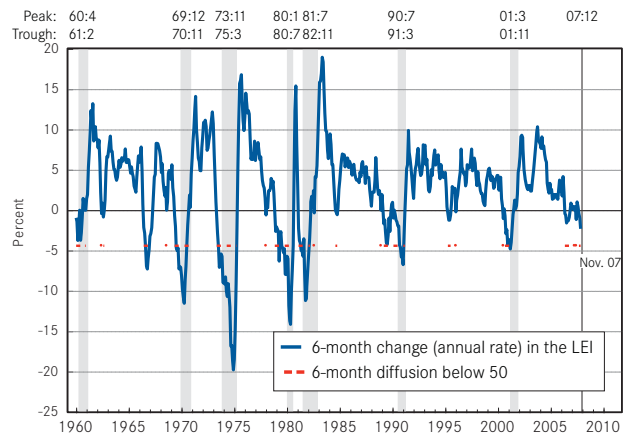
<sup>4</sup> Victor Zarnowitz, "Will the First Widely Predicted Recession Actually Happen?" *Business Cycle Indicators*, The Conference Board, March 2008.

The relatively flat period in the LEI from January 2006 to July 2007 was generally consistent with economic conditions prevailing at that time. Real GDP was still expanding, but it was also beginning to grow more slowly. The initial weakness in **The Conference Board Coincident Economic Index® (CEI)** for the United States in early 2008 was also mild, with the contraction only deepening sharply in the second half of that year.

### Using the Three Ds to Signal Recession

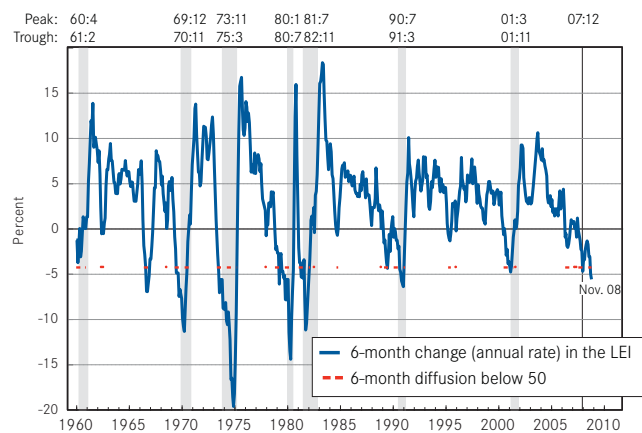
The three Ds—depth, diffusion, and duration—of a decline in the LEI can be a useful tool to analyze whether the economy is headed for a recession.<sup>5</sup> According to this approach, a recession usually follows when the (annualized) six-month decline in the LEI reaches 4.0–4.5 percent and the six-month diffusion index falls below 50.0 percent. As of December 2007, the six-month decline in the LEI had reached 2.3 percent, which was not deep enough to signal a recession based on the three Ds criteria (Chart 3). At that time, the fall in the LEI was being dampened primarily by continued increases in money supply (M2).<sup>6</sup> The six-month decline in the LEI quickened at the beginning of 2008, but it was not until October 2008 that it reached and exceeded the threshold decline called for in the three Ds rule (Chart 4).<sup>7</sup> Revisions to the LEI in subsequent months were relatively small (Chart 5), and they did not alter the cyclical outlook as they unfolded in real time.

Chart 3  
Three Ds – Depth, Duration, and Diffusion – of the LEI in December 2007\*



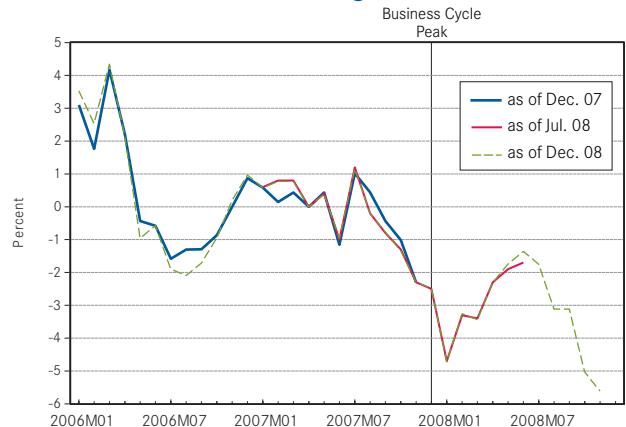
\* The data used were what was available in December 2007.  
Source: The Conference Board

Chart 4  
Three Ds – Depth, Duration, and Diffusion – of the LEI in December 2008\*



\* The data used were what was available in December 2008.  
Source: The Conference Board

Chart 5  
Annualized Six-month Change in the LEI in Real Time\*



\* The data used were what was available in December 2007, July 2008, and December 2008.  
Source: The Conference Board

<sup>5</sup> Zarnowitz, “Will the First Widely Predicted Recession Actually Happen?”

<sup>6</sup> Next month’s issue of *Business Cycle Indicators* will discuss the recent performance of M2 and its impact on the LEI.

<sup>7</sup> Some analysts use an even simpler rule of thumb that asserts three consecutive monthly declines in the LEI precede a recession a rule that generates many false signals (i.e., signals that are not followed by recessions). The LEI declined for three consecutive months from October to December 2007.

## LEI through the Recession and the Coming Recovery

The LEI showed multiple peaks within a generally flat pattern from early 2006 to mid-2007, with each successive peak at or slightly below the previous level. Using the Bry-Boschan turning point analysis on post-benchmark data, December 2006 was identified as the cyclical peak of the LEI in the last business cycle. Although real money supply and the index of supplier deliveries kept the LEI from falling more severely in the second half of 2007, the LEI's cyclical peak in December 2006 was a full year ahead of the start of the recession in December 2007.

Given these circumstances, tracking the developments in the composite indexes during this period proved helpful in providing a signal for the end of the last economic expansion. The LEI typically shows a short lead ahead of the end of a recession, since the average lead time of the LEI ahead of troughs in the business cycle tends to be shorter—about five to seven months. Most recently, the LEI reached a trough in March 2009. Not surprisingly, the CEI currently shows a trough in June 2009.