

Methodology

The Central Valley Index of Economic Indicators is constructed using the methodology provided by the Conference Board – an independent, not-for-profit research organization – in the computation of the U.S. Leading Index. The procedure consists of selecting a base year, calculating the monthly percentage change in each component, taking a weighted average of these changes, and constructing the index recursively starting from the base year. The percentage change of each component is weighted according to its volatility, so that more volatile components receive a lower weight.

With the exception of non-farm payrolls, all of the components of the index are considered to lead to business cycle. As a result, the index is intended to predict economic activity three to six months in advance. Since the index fluctuates considerably from month to month, the six-month percentage change in the index may provide a better indicator of economic activity than the level of the index in a particular month.

The diffusion index is a measure of the proportion of index components that increase during a given month, or six-month period. Components that increase by more than 0.05 percent are assigned a value of one, components that decrease by more than 0.05 percent are assigned a value of zero, and those that show a change of less than 0.05 percent in absolute value, are assigned a value of 0.5. The average of these values is calculated in for each month and multiplied by 100. As a result, a value of 50 for the diffusion index indicates that half of the index components showed improvement, a value of more than 50 indicates that a majority of the components showed improvement, and a value of less than 50 indicates that a majority of the index components deteriorated during the specified time period.

As a general rule, when the index shows a decline of more than 2.0 percent over a six month period and the diffusion index shows deterioration during this same time period, this is considered a strong indication that a recession is imminent. The Conference Board has recently changed the rule-of-thumb value from a 2.0 percent decline to 3.5 percent. However, the Central Valley Index of Economic Indicators will continue to use the 2.0 percent rule unless diagnostic checks show it to be inadequate.

Data

The index consists of seven components: non-farm payrolls; new building permits; new claims for unemployment insurance; average weekly hours worked; real manufacturers' new orders of non-defense, non-aircraft capital goods; a consumer confidence index; and the interest rate spread. The first three components – non-farm payrolls, new building permits, and new claims for unemployment insurance – are unique to the Central Valley. For the purposes of this index, the Central Valley is defined as consisting of the Fresno, Kings, Madera, and Kings Counties. Average weekly hours worked in manufacturing jobs is taken from the state of California and the remaining components – new orders of capital goods, consumer confidence and the interest rate spread – are gathered nationwide.

Non-Farm Payrolls

Non-farm payrolls are the total number of people, excluding farm workers, employed during a given month. Other than farm workers, this number contains full- and part-time employees from all industry classifications, including government workers. Since this series contains the actual number of people employed in the region, it is an important indicator of economic performance and is considered to be strongly related to the business cycle. This series is seasonally adjusted before being included in the index. Source: The Employment Development Department of the State of California.

New Building Permits

New building permits consist of all newly issued permits for both single family and multi-family housing. Newly issued building permits are considered a strong leading indicator of construction activity, which has a ripple effect into other types of economic production. This series is seasonally adjusted before being included in the index. Source: The Construction Industry Research Board.

New Claims for Unemployment Insurance

This series consists of all new claims for unemployment insurance in the four counties of the central San Joaquin Valley. New claims for unemployment insurance tends to be more sensitive to changes in economic activity than total employment or the unemployment rate, and tend to lead the business cycle. Since unemployment claims are countercyclical, i.e. they increase as economic growth slows, in addition to being seasonally adjusted, this series is inverted before being included in the index. Source: The Employment Development Department of the State of California.

Average Weekly Hours Worked

This series consists of the length of the average work week among California manufacturers. It is considered to lead the business cycle since manufacturers can often adjust the hours of their employees according to prevailing business conditions. This series is seasonally adjusted before being included in the index. Source: U.S. Bureau of Labor Statistics.

Real Manufacturers' New Orders of Non-defense, Non-aircraft Capital Goods

Data for the new orders of capital goods is considered to lead the business cycle since the orders are placed prior to an expansion of production. That is, manufacturers must order new equipment and machinery before they can be used in production. In this sense, new orders reflects prevailing sentiments about future economic activity by manufacturers. This series is seasonally adjusted before being included in the index. To adjust for inflation, the series is deflated using a producer price index for capital goods. Source: both series are obtained from the St. Louis Federal Reserve Bank's Economic Database.

Consumer Confidence

The consumer confidence index is constructed from a survey of consumers conducted by the Survey Research Center at the University of Michigan. This series reflects consumer expectations about future economic activity and therefore is considered to lead the business cycle. It is not seasonally adjusted. Source: St. Louis Federal Reserve Bank's Economic Database.

Interest Rate Spread

The interest rate spread is calculated as the difference between the yield on a ten-year treasury bond and the federal funds rate. Both series are annualized. The federal funds rate is the interest rate private banks charge each other when funds are lent to meet the Federal Reserve System's reserve requirements. The idea of the interest rate spread is to capture the difference between long term interest rates – the yield on ten-year treasury bonds – and short term interest rates – the federal funds rate. When short term interest rates are higher than long term rates, the interest spread becomes negative. Historically, a negative interest rate spread has been a powerful leading indicator of an economic recession. Source: Federal Reserve Statistical Release H.15.