# A Look at Phil Fed's Coincident and Leading Indexes

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**S**tate Coincident Indexes
The Federal Reserve Bank of Philadelphia produces a monthly coincident index for each of the 50 states and the nation, and it combines four state-level indicators, nonfarm payroll employment, average hours worked in manufacturing, the unemployment rate, and wage and salary disbursements deflated by the consumer price index (U.S. city average) to summarize current economic conditions in a single statistic. The trend for each state's index is set to the trend of its gross domestic product (GDP), so long-term growth in the state's index matches long-term growth in its GDP.

A dynamic single-factor model is used to create the state indexes. James Stock and Mark Watson developed the basic model for constructing a coincident index for the United States. Theodore Crone and Alan Clayton-Matthews of Philadelphia Fed adapted the basic model for the states. The method involves a system of five major equations: one equation for each input variable and one equation for an underlying (latent) factor that is reflected in each of the indicator (input) variables. The underlying factor represents the state coincident index. The model and the input variables are consistent across the 50 states, so the state indexes are comparable to one another. Latest monthly Connecticut and U.S. data are published on page 5 of the Connecticut Economic Digest.

As the Chart 1 shows, while our State has been struggling to regain jobs lost in the last recession, overall economic output recovery is further along. In fact, from 1992, the gap between the employment index and coincident index progressively widened, which, in part, suggests increasing productivity over the last two decades. In January, the newly revised coincident index level surpassed the previous prerecession peak in March 2008 for the first time. Despite the relatively slower job growth, Philadelphia Fed coincident index suggests that Connecticut's overall economic growth is gaining faster momentum.

**State Leading Indexes**
The Philadelphia Fed also produces leading indexes for all 50 states and the nation. The indexes are calculated monthly and are usually released a week after the release of the coincident indexes. The leading index for each state predicts the six-month growth rate of the state's coincident index. In addition to the coincident index, the models include other variables that lead the economy: state-level housing permits (1 to 4 units), state initial unemployment insurance claims, delivery times from the Institute for Supply Management (ISM) manufacturing survey, and the interest rate spread between the 10-year Treasury bond and the 3-month Treasury bill. A time-series model (vector autoregression) is used to construct the leading index. Current and prior values of the forecast variables are used to determine the future values of the index.

January's leading index of 1.8% growth suggests continued recovery in Connecticut's economy into the third quarter of 2013 (see Chart 2), while the nation as a whole is predicted to grow 1.2%. Thus, based on Phil Fed's Leading Index, Connecticut's economy is poised to grow faster than the nation over the next six months. ■



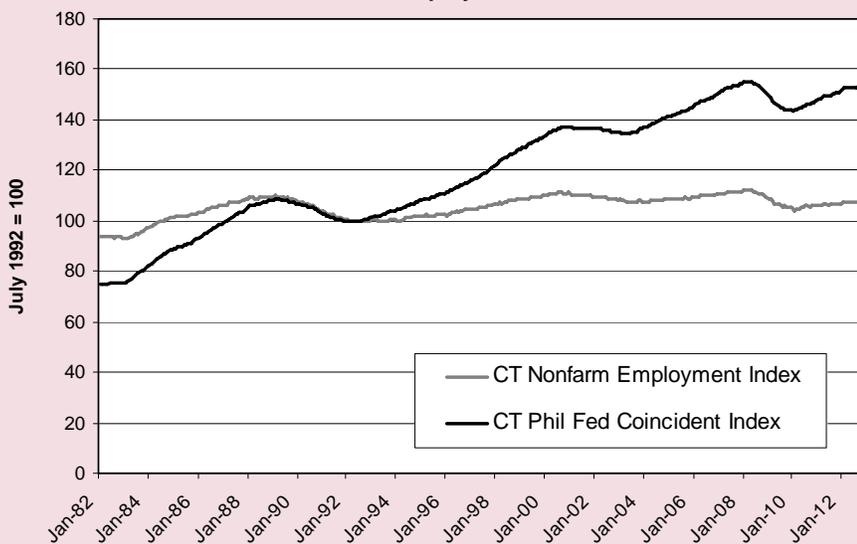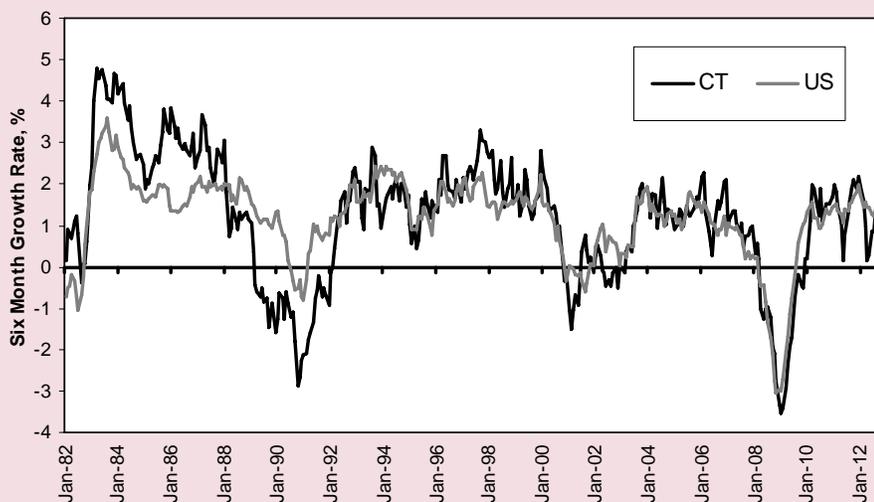**CHART 1: CT Coincident and Employment Indexes, 1982-Jan. 2013**

*July 1992 = 100*

- CT Nonfarm Employment Index
- CT Phil Fed Coincident Index



**CHT 2: Phil. Fed's CT and U.S. Leading Indexes, 1982-Jan. 2013**

*Six Month Growth Rate, %*

- CT
- US

Sources: Phil Fed, CT DOL