

LMCI Chart Technical Documentation

The LMCI chart on the Kansas City Fed Labor Market Conditions Indicators (LMCI) webpage allows users to remove up to five variables from the construction of the LMCI. It also allows users to plot normalized versions of input variables against the LMCI series. This document explains how these series are calculated.

Modified Versions of the LMCI Level of Activity and Momentum Series

The LMCI chart allows users to remove up to five of the 24 input variables from the calculation of the LMCI. When a user opts to leave out variables, a principal components analysis (PCA) is rerun on the remaining input series, much like in the baseline LMCI. This process delivers a new set of coefficients to be used when constructing the modified level of activity and momentum indicators. In other words, the remaining input variables receive new weights and feed into the calculation of the indicators differently compared with the original LMCI.

Thus, users should be careful in how they interpret the modified LMCI series. For example, the difference between a modified LMCI series and the original LMCI series does not constitute the contribution from the removed input series to the original LMCI.

However, the modified LMCI can be useful in other cases. For instance, if a researcher uses one of the normal inputs to the LMCI as a left-hand-side variable in a regression, they can remove that input variable from the calculation of the LMCI. Additionally, if a researcher thinks an input variable to the LMCI is not currently representative of the state of the labor market, they can construct a modified version of the LMCI that does not use that variable.

Selected Labor Market Variables

The LMCI chart allows users to plot selected labor market variables as a green line on the chart. Only publicly available series may be plotted. Proprietary series are not available. The selected labor market series are normalized to have a mean of zero and a standard deviation of one. Additionally, some variables are flipped (multiplied by negative one) so that higher values are indicative of a tighter labor market and lower values are indicative of a weaker labor market. For example, the unemployment rate, a series where higher values normally indicate weaker conditions, is flipped such that it is negative in recessions.