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ECONOMIC Synopses

Financial Conditions Indexes

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The burst of the housing bubble and subsequent financial crisis led to the worst recession since the Great Depression. This crisis led economists to look for tools to better understand and take the "temperature" of the financial sector. One of these tools is a financial conditions index. These indexes summarize different financial indicators and, because they measure financial stress, can serve as a barometer of the health of financial markets. In this essay, we explain how these indexes are constructed and compare some of those most widely used.

Each individual index comprises various financial variables and typically covers one of five main categories: (i) short-term Treasury rates, (ii) long-term Treasury rates, (iii) credit spreads, (iv) the foreign exchange value of the dollar, and (v) equity prices.[1]

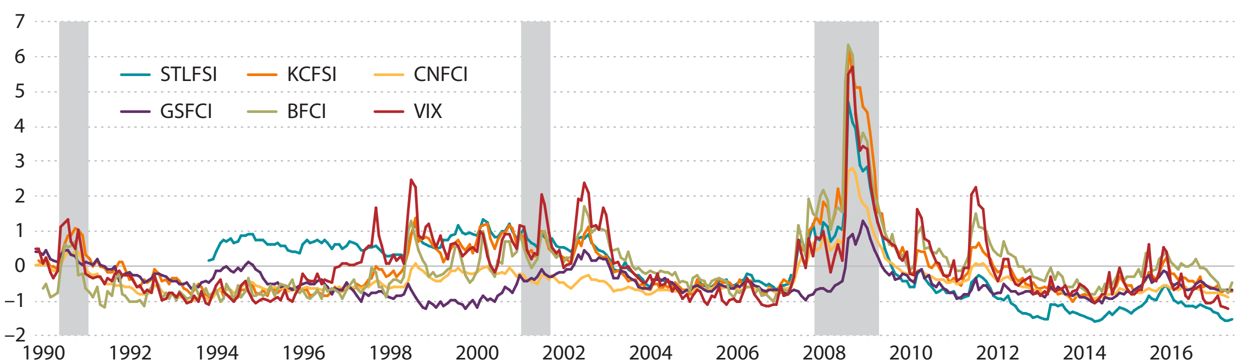
A common approach to constructing each index is to use a weighted average of the financial variables or a statistical technique called principal component analysis (PCA).[2] The goal is for the index to summarize information about the future using current financial variables, providing insight into the health of financial markets.

The figure shows the five most widely used financial conditions indexes and a volatility index: the St. Louis Fed Financial Stress Index© (STLFSI), Chicago Fed National Financial Conditions Index (CNFCI), Bloomberg Financial Conditions Index (BFCI), Kansas City Financial Stress Index (KCFSI), Goldman Sachs Financial Conditions Index (GSFCI), and CBOE (Chicago Board Options Exchange) Volatility Index® (VIX®). To allow for comparison, each index is normalized by subtracting its respective mean and then dividing by its standard deviation, which transforms the data to the same scale and units. Although many financial conditions indexes incorporate the VIX, the VIX is shown for comparison. The VIX is a measure of market expectations of near-term volatility conveyed by S&P 500® index option prices and is a very popular measure to gauge financial markets.[3] Deviations above zero signify financial markets are tightening—heightened stress—while deviations below zero signify financial markets are loosening.

Cross-correlations of Financial Conditions Indexes

	STLFSI	KCFSI	CNFCI	GSFCI	BFCI	VIX
STLFSI	1	0.73	0.72	0.47	0.58	0.69
KCFSI	0.73	1	0.95	0.48	0.89	0.86
CNFCI	0.72	0.95	1	0.57	0.87	0.80
GSFCI	0.47	0.48	0.57	1	0.43	0.45
BFCI	0.58	0.89	0.87	0.43	1	0.83
VIX	0.69	0.86	0.80	0.45	0.83	1

Financial Conditions Indexes



NOTE: Gray bars indicate recessions as determined by the National Bureau of Economic Research.
SOURCE: FRED®, Federal Reserve Bank of St. Louis, and Bloomberg.

Financial markets began to tighten before the start of the Great Recession and peaked mid- recession.

Financial conditions indexes can serve as a barometer of the health of financial markets.

The table shows the correlations among the different indexes. The KCFSI and the CNFCI are the most correlated because they use many of the same broad categories of financial variables, such as various Treasury and bond-yield spreads. They both are constructed using PCA. The BFCI is also highly correlated with the KCFSI and CNFCI. The BFCI uses many similar variables, but it is constructed using an equally weighted average of the underlying financial variables instead of PCA. The GSFCI is less correlated with the other indexes (see row 4 of the table), as it uses only a weighted sum of a long-term corporate bond yield, a short-term bond yield, the exchange rate, and a stock market variable. The other indexes use a broader set of financial variables than the GSFCI. All of the indexes are strongly correlated with the VIX except for the GSFCI. This makes sense since the STLFSI, KCFSI, CNFCI, and BFCI incorporate the VIX.

While some of the indexes have common elements and relatively high correlations (e.g., the KCFSI and CNFCI), others do not (e.g., the BFCI and the STLFSI). As a result, anyone interested in using financial conditions indexes as indicators of financial stress would benefit from looking at several indexes and not just one. ■

Notes

[1] Hatzius, Jan; Hooper, Peter; Mishkin, Frederic S.; Schoenholtz, Kermit L. and Watson, Mark W. "Financial Condition Indexes: A Fresh Look After the Financial Crisis." NBER Working Paper No. 16150, National Bureau of Economic Research, July 2010.

[2] Kliesen, Kevin L.; Owyang, Michael T. and Vermann, Katarina E. "Disentangling Diverse Measures: A Survey of Financial Stress Indexes." Federal Reserve Bank of St. Louis *Review*, September/October 2012, *94*(5), pp. 369-97; https://files.stlouisfed.org/files/htdocs/publications/review/12/09/369-398Kliesen.pdf.

[3] See CBOE VIX; http://www.cboe.com/products/vix-index-volatility/vix-options-and-futures/vix-index.

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