National Financial Conditions Index: Frequently Asked Questions

What are the NFCI and adjusted NFCI?

The Chicago Fed's National Financial Conditions Index (NFCI) provides a comprehensive weekly update on U.S. financial conditions in money markets, debt and equity markets, and the traditional and "shadow" banking systems. Because U.S. economic and financial conditions tend to be highly correlated, we also present an alternative index, the adjusted NFCI (ANFCI). This index isolates a component of financial conditions uncorrelated with economic conditions to provide an update on how financial conditions compare with current economic conditions.

How often are they produced and are they available to the public?

The NFCI and ANFCI are updated on a weekly basis at 8:30 a.m. ET on Wednesday, and cover the time period through the previous Friday. When a federal holiday falls on a Wednesday or earlier in the week, the NFCI and ANFCI will be updated on Thursday. Both indexes can be found at www.chicagofed.org/nfci.

How do I interpret the indexes?

Positive values of the NFCI indicate financial conditions that are tighter than on average, while negative values indicate financial conditions that are looser than on average. Similarly, positive values of the ANFCI indicate financial conditions that are tighter on average than would be typically suggested by current economic conditions, while negative values indicate the opposite. The magnitude of how "tight" or how "loose" financial markets are operating is expressed in standard deviations from zero over a sample period extending back to 1973.

How are the indexes constructed?

The NFCI is a weighted average of 100 measures of financial activity, each expressed relative to its sample average and scaled by its sample standard deviation. As such, a zero value for the NFCI can be thought of as a financial system operating at historical average levels of risk, liquidity, and leverage. The ANFCI removes the variation in these financial indicators attributable to economic activity and inflation, as measured by the three-month moving average of the Chicago Fed's National Activity Index (NAI) and three-month total inflation based on the Personal Consumption Expenditures Price Index (PCE). As such, a zero value for the ANFCI corresponds with a financial system operating at historical average levels of risk, liquidity, and leverage consistent with recent economic activity and inflation.

Are the indexes revised? Are the indicator weights fixed?

Some indicators are revised over time, and the history of both indexes will change accordingly depending on the size of the revisions and the weight such an indicator is given in each index. Both the NFCI and ANFCI weights are re-estimated each week, and may change over time. However, these changes tend to be very small. The ANFCI is additionally influenced by revisions to the Chicago Fed's NAI and total PCE inflation, as well as changes over time in the sensitivity of each financial indicator to these measures. As a result, it will tend to show larger revisions to its history over time.

How are the weights estimated?

The methodology used to estimate the weight given to each indicator combines elements of the work of Stock and Watson (2002); Doz, Giannone, and Reichlin (2006); and Aruoba, Diebold, and Scotti (2009) on dynamic factor models. The NFCI and ANFCI each represent a common element, or factor, taken from price, quantity, and survey evidence on broad financial conditions. This factor gives added weight to indicators that are highly correlated with each other and display similar evolutionary patterns. Please see the accompanying articles for further details on the estimation method used to construct both indexes.

How do the indexes differ from other financial conditions indexes?

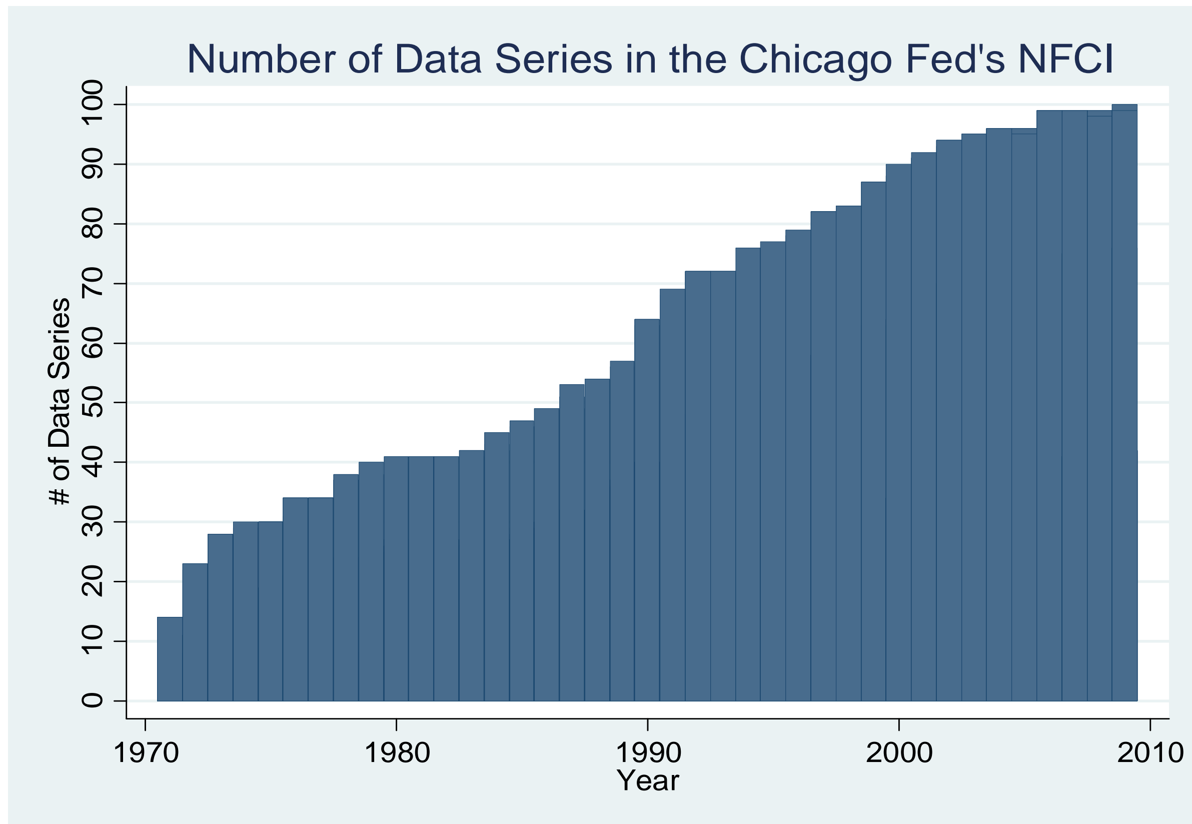
The indexes represent a further contribution to the literature on financial conditions indexes stretching back to a 2006 study by Bank of Canada economists (Illing and Liu, 2006) and including similar publicly available indexes constructed by the Kansas City (Hakkio and Keeton, 2009) and St. Louis Federal Reserve Banks as well as by Hatzius et. al. (2010).

The NFCI and ANFCI, however, have a unique set of features owing to their different method of index construction:

- Weekly index frequency;
- Quarterly, monthly, and weekly indicators with varied start and end dates;
- Historical coverage of nearly 40 years;
- Broad coverage of financial markets (traditional and more recently developed); and
- Indicator weights that reflect systemic and dynamic importance to the financial system.

What time period is covered by the indexes?

The index histories extend back to the first week of 1973 through the Friday of the week prior to each weekly update. The figure below shows the pattern of data availability for the indicators used to construct the NFCI over the period 1971–2009, and demonstrates how coverage of the financial system increases over time to include additional financial markets.



We exclude the period prior to 1973, because less than 25% of the indicators are available prior to this date. It is not until 1987 that more than 50% of the indicators are available, primarily because of the shorter time series of most of the weekly indicators.

Despite the addition of a large number of indicators over time, the index maintains a smooth time series because of the way it is constructed. While this method efficiently deals with the addition of indicators over time, it is still the case that coverage of the financial system is greater in the latter half of the sample period covered by both indexes.

How many weekly, monthly, and quarterly financial indicators are used in each index?

Both indexes contain 41 weekly, 34 monthly, and 25 quarterly indicators.

What do the indicators in each index capture?

The indicators are measures of risk, liquidity, and leverage in the money markets, debt and equity markets, and the traditional and shadow banking systems. By risk, we mean both the premium placed on risky assets embedded in their returns, as well as the volatility of asset prices. In terms of liquidity, the indicators capture the willingness to both borrow and lend at prevailing prices. Measures of leverage provide a reference point for financial debt relative to equity. Risk measures tend to receive positive weights, while liquidity and leverage measures receive negative weights in the index, providing the interpretation that "tight" financial conditions are associated with above-average risk and below-average liquidity and leverage.

What is the shadow banking system?

The shadow banking system represents the network of financial firms outside the traditional banking system. These include investment banks and hedge funds, insurance companies, finance companies, real estate investment trusts, pension funds, and other financial firms not considered commercial banks or savings and thrift institutions.

What financial markets are covered by the indexes?

The table below lists several broadly defined markets that are covered by both indexes.

Category	Market	Count of Indicators
Money Markets:	Repurchase Agreements	10
	Treasuries	9
	Commercial Paper	5
	Interbank Lending	4
Money Markets: Total		**28**
Debt and Equity Markets:	Corporate Bonds	7
	Securitized Debt	7
	Stock Markets	6
	Municipal Bonds	4
	Collateral Prices	3
Debt and Equity Markets: Total		**27**
Banking System:	Consumer Credit Conditions	13
	Banking System Conditions	9
	Shadow Bank Assets and Liabilities	8
	Business Credit Conditions	8
	Commercial Bank Assets and Liabilities	7
Banking System: Total		**45**
Grand Total		**100**

How can I tell which indicators are important to each index?

The absolute value of the weight given to each indicator is a convenient measure of its importance. Within each financial market, the two tables below list the single indicator with the largest weight in absolute value for both indexes.

Market	Indicator w/ the Greatest Weight in the NFCI
Repurchase Agreements	Total Repo Market Volume
Treasuries	2-year Interest Rate Swap/Treasury yield spread
Commercial Paper	1-month Nonfinancial commercial paper A2P2/AA credit spread
Interbank Lending	3-month TED spread (LIBOR-Treasury)
Corporate Bonds	Merrill Lynch High Yield/Moody's Baa corporate bond yield spread
Securitized Debt	Citigroup Global Markets ABS/5-year Treasury yield spread
Stock Markets	CBOE S&P 500 Volatility Index (VIX)
Municipal Bonds	Bond Market Association Municipal Swap/20-year Treasury yield spread
Collateral Prices	MIT Center for Real Estate Transactions-Based Commercial Property Price Index
Consumer Credit Conditions	30-year Jumbo/Conforming fixed rate mortgage spread
Banking System Conditions	Credit Derivatives Research Counterparty Risk Index
Shadow Bank Assets and Liabilities	Total Assets of Funding Corporations/Nominal GDP
Business Credit Conditions	Senior Loan Officer Opinion Survey: Tightening Standards on Small C&I Loans
Commercial Bank Assets and Liabilities	Commercial Bank C&I Loans/Total Assets

Market	Indicator w/ the Greatest Weight in the ANFCI
Repurchase Agreements	Fed Funds/Overnight Treasury Repo rate spread
Treasuries	2-year Interest Rate Swap/Treasury yield spread
Commercial Paper	1-month Nonfinancial commercial paper A2P2/AA credit spread
Interbank Lending	3-month TED spread (LIBOR-Treasury)
Corporate Bonds	Citigroup Global Markets Financial/Corporate Credit bond spread
Securitized Debt	Citigroup Global Markets ABS/5-year Treasury yield spread
Stock Markets	S&P 500 Financials/S&P 500 Price Index
Municipal Bonds	Bond Market Association Municipal Swap/20-year Treasury yield spread
Collateral Prices	Loan Performance Home Price Index
Consumer Credit Conditions	University of Michigan Household Survey: Mortgage Credit Conditions
Banking System Conditions	S&P US Credit Card Quality Index Excess Rate Spread
Shadow Bank Assets and Liabilities	Total Assets of Insurance Companies/Nominal GDP
Business Credit Conditions	Senior Loan Officer Opinion Survey: Tightening Standards on CRE Loans
Commercial Bank Assets and Liabilities	Commercial Bank C&I Loans/Total Assets

What does it mean for an indicator to be "systemically" and "dynamically" important?

Our method of index construction aims to weight more heavily those financial indicators that are best able to explain the variation in all the indicators considered and whose evolution through time mimics the evolution of the others to a high degree. In this sense, an indicator's weight is a reflection of its historical ability to explain fluctuations in the broader financial system, what we term its systemic importance, and of its ability to explain the historical evolution of financial conditions, or its dynamic importance.

What information is there to be gained from estimating the dynamics of each index?

Significant deviations of financial conditions from their historical patterns, captured in the deviation of the NFCI and ANFCI from their estimated dynamics, reflect periods where financial conditions were either much tighter or looser than predicted based on historical patterns. For the NFCI, these periods are likely to reflect the influence of both economic and financial shocks on financial conditions; while for the ANFCI, which explicitly takes into account economic conditions, they reflect only the influence of financial shocks.

Do the indexes have a forward-looking element to them?

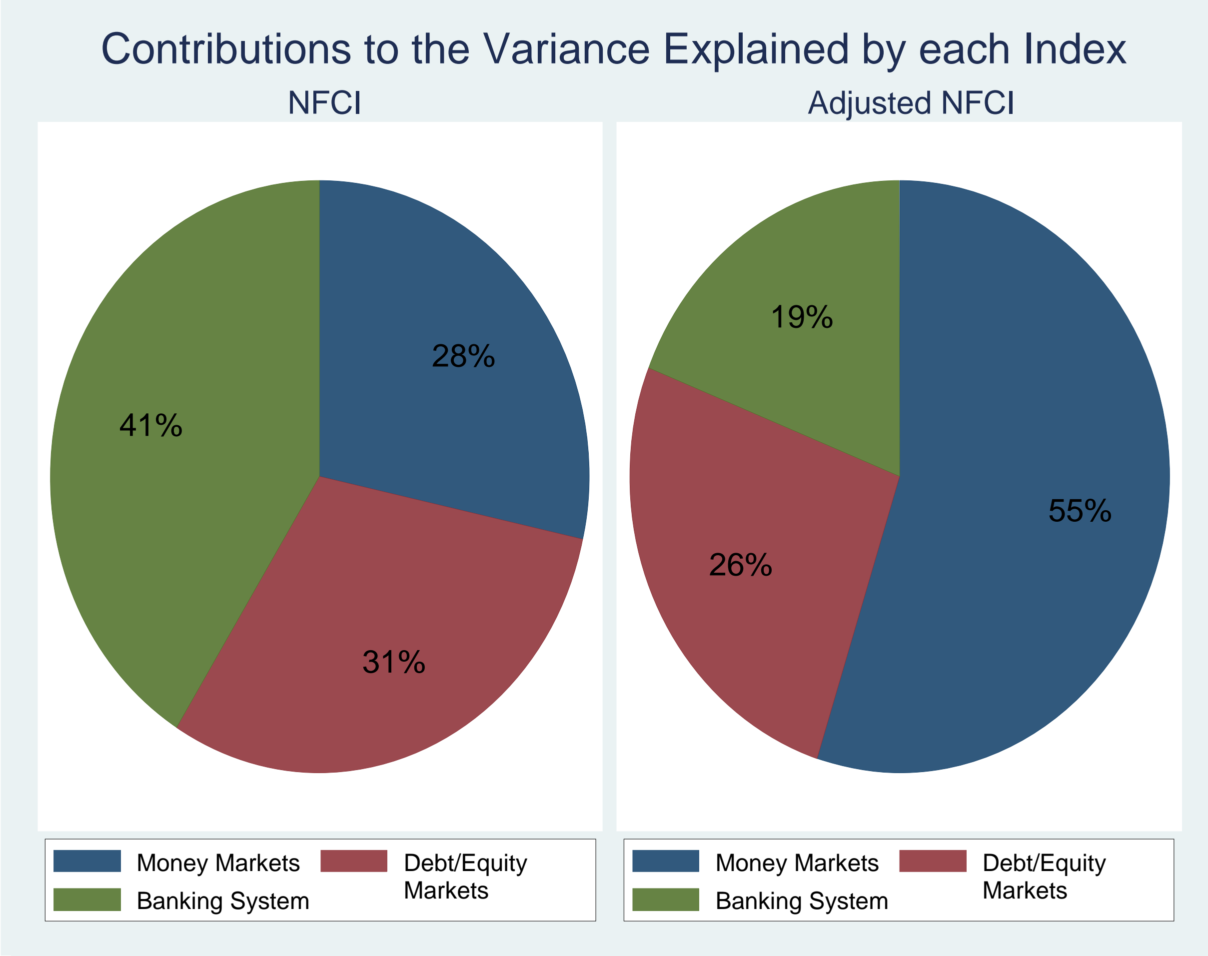
The NFCI and ANFCI are coincident indexes, meaning that they describe contemporary financial conditions. However, the ANFCI displays a discernible pattern with the NFCI such that when financial conditions relative to economic conditions deviate from their historical average for a considerable period, an adjustment to the NFCI tends to follow. Furthermore, Brave and Butters (2011) demonstrate that significant deviations of the NFCI from its historical dynamics are useful in forecasting growth in gross domestic product (GDP) and business investment.

Why do measures of liquidity and leverage receive negative weights? Don't they pose a risk?

Liquidity and leverage tend to be "procyclical," meaning that they vary in direct correlation with the state of the overall economy. This leads to the feature in the NFCI that declining liquidity and leverage are associated with tightening financial conditions. The possibility that current above-average liquidity or leverage may signal a risk to future financial conditions is instead captured through each index's estimated degree of mean reversion; in other words, the more above-average liquidity and leverage become, the more likely it is that financial conditions will tighten in the future back to their average level.

How much do the capital markets versus the banking system explain the indexes?

The relative importance of the capital markets and banking system in explaining fluctuations in financial conditions differs across the NFCI and ANFCI, as demonstrated in the figure below. Capital markets account for nearly 60% of the variation explained by the NFCI, as opposed to the almost 80% of the variation explained by the ANFCI.



How can the indexes be used to monitor financial stability?

Brave and Butters (2010, 2011) document that the historical evolution of the NFCI and ANFCI capture well-known periods of financial crisis and develop threshold rules for characterizing the current state of financial conditions consistent with levels of the NFCI during past financial crises. They also demonstrate how significant deviations of financial conditions from their historical patterns are informative in monitoring the buildup of financial stress.

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