

## Risk Indicators in the NFCI and ANFCI

Financial Indicator <sup>1</sup>	Start Date	Transformation <sup>2</sup>	Frequency	Weight <sup>3</sup>	
				NFCI	ANFCI
BofAML 3-5 yr AAA CMBS OAS spread <sup>4</sup>	02-Jan-1998	LV	W	3.62	3.23
ICE BofAML ABS/5-yr Treasury yield spread	01-Feb-1991	LV	M	3.60	3.56
2-yr Interest Rate Swap/Treasury yield spread <sup>7</sup>	03-Apr-1987	LV	W	3.06	3.58
ICE BofAML Financial/Corporate Credit bond spread	31-Jan-1997	LV	M	3.04	3.41
CBOE Market Volatility Index VIX	05-Jan-1990	LV	W	2.98	2.83
BofAML Home Equity ABS/MBS yield spread	05-Jul-1991	LV	W	2.90	2.65
3-mo. BofAML Swaption Volatility Estimate Index	06-Dec-1996	LV	W	2.49	2.74
1-mo. BofAML Option Volatility Estimate Index	08-Apr-1988	LV	W	2.28	2.60
1-mo. Asset-backed/Financial commercial paper spread	05-Jan-2001	LV	W	2.27	3.18
3-mo. LIBOR/CME Term SOFR-Treasury spread <sup>8</sup>	06-Jun-1980	LV	W	2.18	2.91
Counterparty Risk Index (formerly maintained by Credit Derivatives Research) <sup>5</sup>	13-Sep-2002	LV	W	-2.16	-1.23
10-yr Interest Rate Swap/Treasury yield spread <sup>6</sup>	03-Apr-1987	LV	W	2.09	2.33
3-mo./1-wk AA Financial commercial paper spread	10-Jan-1997	LV	W	2.02	2.71
3-mo. Eurodollar spread (LIBID-Treasury)	08-Jan-1971	LV	W	1.74	2.26
ICE BofAML Mortgage Master MBS/10-year Treasury yield spread	27-Jan-1989	LV	M	1.12	1.39
3-mo. Overnight Indexed Swap (OIS)/Treasury yield spread	19-Sep-2003	LV	W	1.04	3.02
Repo Market Volume (Repurchases+Reverse Repurchases of primary dealers)	07-Oct-1994	DLNQ	W	-0.89	-0.39
10-yr/2-yr Treasury yield spread	20-Aug-1971	LV	W	-0.82	-0.71
3-mo. Financial commercial paper/Treasury bill spread	08-Jan-1971	LV	W	0.69	1.52
Fed Funds/Overnight Treasury Repo rate spread	24-May-1991	LV	W	0.65	1.67
1-yr./1-mo. LIBOR/CME Term SOFR spread <sup>8</sup>	10-Jan-1986	LV	W	0.63	1.20
Commercial Paper Outstanding	10-Nov-1995	DLN	W	-0.48	-0.16
Agency MBS Repo Delivery Failures Rate	07-Oct-1994	DLNQ	W	0.46	0.45
On-the-run vs. Off-the-run 10-yr Treasury liquidity premium	20-Aug-1971	LV	W	-0.44	0.35
Total Money Market Mutual Fund Assets/Total Long-term Fund Assets	28-Dec-1984	LV	M	0.39	0.20
Treasury Repo Delivery Fails Rate	07-Oct-1994	DLNQ	W	0.26	-0.06
Agency Repo Delivery Failures Rate	07-Oct-1994	DLNQ	W	0.26	-0.10
Fed Funds/Overnight MBS Repo rate spread	24-May-1991	LV	W	-0.23	0.44
Fed Funds/Overnight Agency Repo rate spread	24-May-1991	LV	W	-0.22	0.93
3-mo./1-wk Treasury Repo spread	24-May-1991	LV	W	-0.11	0.89
2-yr/3-mo. Treasury yield spread	08-Jan-1971	LV	W	-0.11	0.38
Advanced Foreign Economies Trade-weighted US Dollar Value Index	12-Jan-1973	DLN	W	0.10	0.16
Corporate Securities Repo Delivery Failures Rate	05-Oct-2001	DLNQ	W	0.07	-0.04
FDIC Volatile Bank Liabilities	01-Jul-1994	DLN	Q	-0.07	0.04

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- <sup>1</sup> All of the financial indicators are in basis points or percentages and are obtained from Haver Analytics unless otherwise noted.
- <sup>2</sup> LV: Level, LVMA: Level Relative to Moving Average, DLV: First Difference, DLN: Log First Difference, DLNQ: 13-Week Log First Difference, . . . SA: Seasonally Adjusted Prior to Transformation.
- <sup>3</sup> Indicators are sorted by NFCI weight. The weights have been scaled to sum to 100 in absolute value for ease of presentation.
- <sup>4</sup> ICE/Bank of America Merrill Lynch.
- <sup>5</sup> Weekly average of 5-yr CDS spreads of top 15 major financial institutions; except as expressly provided elsewhere on this website, modifying, distributing, transmitting, performing, broadcasting, publishing, uploading, licensing, reverse engineering, transferring, selling or creating derivative works from the ICE Data Services data on this website is expressly prohibited.
- <sup>6</sup> Adjusted for mean break at 11/21/2008
- <sup>7</sup> Adjusted for mean break at 1/1/2010
- <sup>8</sup> LIBOR and SOFR data are spliced to form a single time series.

Credit Indicators in the NFCI and ANFCI

Financial Indicator <sup>1</sup>	Start Date	Transformation <sup>2</sup>	Frequency	Weight <sup>3</sup>	
				NFCI	ANFCI
1-mo. Nonfinancial commercial paper A2P2/AA credit spread	10-Jan-1997	LV	W	3.23	2.56
FRB Senior Loan Officer Survey: Tightening Standards on Small C&I Loans	12-Oct-1990	LV	Q	3.21	2.15
NACM Survey of Credit Managers: Credit Manager's Index	15-Feb-2002	LV	M	-3.15	-1.82
BofAML High Yield/Moody's Baa corporate bond yield spread	07-Nov-1986	LV	W	3.10	1.45
30-yr Jumbo/Conforming fixed rate mortgage spread	12-Jun-1998	LV	W	3.10	3.41
Markit Investment Grade (IG) 5-yr Senior CDS Index <sup>8</sup>	21-Sep-2007	LVMA	W	3.08	3.55
FRB Senior Loan Officer Survey: Tightening Standards on CRE Loans	11-Jan-1991	LV	Q	3.08	2.60
FRB Senior Loan Officer Survey: Tightening Standards on Large C&I Loans	12-Oct-1990	LV	Q	3.05	1.95
FRB Senior Loan Officer Survey: Tightening Standards on RRE Loans	11-Jan-1991	LV	Q	3.03	2.67
FRB Senior Loan Officer Survey: Increasing spreads on Small C&I Loans	12-Oct-1990	LV	Q	3.03	2.40
FRB Senior Loan Officer Survey: Increasing spreads on Large C&I Loans	12-Oct-1990	LV	Q	3.00	2.04
Markit High Yield (HY) 5-yr Senior CDS Index <sup>8</sup>	28-Dec-2007	LVMA	W	2.74	2.56
Moody's Baa corporate bond/10-yr Treasury yield spread	03-Jan-1986	LV	W	2.51	1.52
CBOE Crude Oil Volatility Index, OVX	18-May-2007	LV	W	1.79	0.83
FRB Senior Loan Officer Survey: Willingness to Lend to Consumers	15-Jan-1971	LV	Q	-0.77	-0.48
30-yr Conforming Mortgage/10-yr Treasury yield spread	02-Apr-1971	LV	W	0.76	1.06
Commercial Bank 24-mo. Personal Loan/2-yr Treasury yield spread <sup>5</sup>	04-Aug-1972	LV	Q	-0.60	-0.66
Commercial Bank 48-mo. New Car Loan/2-yr Treasury yield spread	04-Aug-1972	LV	Q	-0.55	-1.16
UM Household Survey: Mortgage Credit Conditions Good/Bad spread <sup>7</sup>	24-Feb-1978	LV	M	-0.41	-0.37
UM Household Survey: Durable Goods Credit Conditions Good/Bad spread <sup>6</sup>	27-Jan-1978	LV	M	-0.40	-0.27
UM Household Survey: Auto Credit Conditions Good/Bad spread <sup>4</sup>	24-Feb-1978	LV	M	-0.34	-0.24
NFIB Survey: Credit Harder to Get	02-Nov-1973	LV	M	0.34	0.32
S&P US Bankcard Credit Card: Excess Rate Spread	28-Feb-1992	DLVSA	M	-0.30	-0.24
ABA Value of Delinquent Bank Card Credit Loans/Total Loans	26-Feb-1999	DLV	M	0.30	0.29
ABA Value of Delinquent Home Equity Loans/Total Loans	26-Feb-1999	DLV	M	0.25	0.34
S&P US Bankcard Credit Card: 3-mo. Delinquency Rate	28-Feb-1992	DLVSA	M	0.22	0.16
Commercial Bank Noncurrent/Total Loans	28-Jun-1985	DLN	Q	0.21	0.17
ABA Value of Delinquent Consumer Loans/Total Loans	26-Feb-1999	DLV	M	0.20	0.19
S&P US Bankcard Credit Card: Receivables Outstanding	28-Feb-1992	DLNSA	M	-0.18	-0.01
ABA Value of Delinquent Noncard Revolving Credit Loans/Total Loans	26-Feb-1999	DLV	M	0.05	0.14
Finance Company Owned & Managed Receivables	29-Jan-1971	DLNSA	M	0.03	0.04
Consumer Credit Outstanding	29-Jan-1971	DLN	M	-0.03	0.01
Bond Market Association Municipal Swap/State & Local Government 20-yr GO bond spread	07-Jul-1989	LV	W	0.03	0.55
MBA Serious Delinquencies	29-Sep-1972	DLV	Q	0.02	0.05
Money Stock: MZM <sup>9</sup>	01-Mar-1974	DLN	M	-0.01	-0.09

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- <sup>3</sup> Indicators are sorted by NFCI weight. The weights have been scaled to sum to 100 in absolute value for ease of presentation.
- <sup>4</sup> Series vehrn\_nr\_all
- <sup>5</sup> Adjusted for mean break at 7/1/1990
- <sup>6</sup> Series durrrn\_nr\_all
- <sup>7</sup> Series homrn\_nr\_all
- <sup>8</sup> Consecutive Markit series are backfilled in growth rates to form a consistent time series
- <sup>9</sup> The monthly average of FZMAH@WEEKLY is backfilled in growth rates using the discontinued series, FZMZ@USECON, to form a consistent time series.

## Leverage Indicators in the NFCI and ANFCI

Financial Indicator <sup>1</sup>	Start Date	Transformation <sup>2</sup>	Frequency	Weight <sup>3</sup>	
				NFCI	ANFCI
S&P 500 Financials/S&P 500 Price Index (Relative to 2-yr MA)	06-Sep-1991	LVMA	W	-2.94	-3.90
S&P 500, S&P 500 mini, NASDAQ 100, NASDAQ mini Open Interest	17-Sep-2010	DLNQ	W	1.14	0.06
3-mo. Eurodollar, 10-yr/3-mo. swap, 2-yr and 10-yr Treasury Open Interest	23-Jun-1995	DLNQ	W	-1.04	-0.81
CMBS Issuance (Relative to 12-mo. MA)	28-Dec-1990	LVMASA	M	-0.27	-0.33
Net Notional Value of Credit Derivatives <sup>5</sup>	07-Nov-2008	DLN	W	-0.26	-0.22
Nonmortgage ABS Issuance (Relative to 12-mo. MA)	29-Dec-2000	LVMASA	M	-0.21	-0.10
New US Corporate Debt Issuance (Relative to 12-mo. MA)	01-Jan-1988	LVMASA	M	-0.19	-0.41
Commercial Bank Total Unused C&I Loan Commitments/Total Assets	29-Jun-1990	DLN	Q	-0.18	-0.14
S&P 500, NASDAQ, and NYSE Market Capitalization/GDP	28-Jun-1985	DLN	Q	-0.14	-0.10
Broker-dealer Debit Balances in Margin Accounts <sup>4</sup>	29-Jan-1971	DLN	M	-0.11	-0.18
New State & Local Government Debt Issues (Relative to 12-mo.h MA)	27-Feb-2004	LVMASA	M	-0.10	-0.00
COMEX Gold/NYMEX WTI Futures Market Depth	04-Jan-2008	LV	W	-0.08	-0.02
Commercial Bank Consumer Loans/Total Assets	02-Mar-1973	DLN	M	-0.08	-0.02
CME Eurodollar/CBOT T-Note Futures Market Depth	01-Feb-2008	LV	W	-0.08	0.10
CoreLogic National House Price Index	02-Apr-1976	DLN	M	-0.07	-0.16
Total Agency and GSE Assets/GDP	30-Mar-1984	DLN	Q	0.06	0.07
Commercial Bank Securities in Bank Credit/Total Assets	02-Mar-1973	DLN	M	-0.06	-0.12
Commercial Bank C&I Loans/Total Assets	02-Mar-1973	DLN	M	0.06	0.13
Total Assets of ABS issuers/GDP	30-Mar-1984	DLN	Q	-0.06	-0.05
New US Corporate Equity Issuance (Relative to 12-mo. MA)	01-Jan-1988	LVMASA	M	-0.06	-0.05
Wilshire 5000 Stock Price Index	29-Jan-1971	DLN	M	-0.05	-0.11
Household debt outstanding/PCE Durables and Residential Investment <sup>6</sup>	02-Apr-1971	DLN	Q	0.03	0.01
10-yr Constant Maturity Treasury yield	08-Jan-1971	DLV	W	-0.03	-0.17
Total MBS Issuance (Relative to 12-mo. MA)	29-Dec-2000	LVMASA	M	0.03	-0.08
Total Assets of Insurance Companies/GDP	02-Apr-1971	DLN	Q	-0.02	-0.03
Nonfinancial business debt outstanding/GDP <sup>6</sup>	02-Apr-1971	DLN	Q	0.02	0.06
Total Assets of Funding Corporations/GDP	02-Apr-1971	DLN	Q	0.01	0.01
Total Assets of Broker-dealers/GDP	02-Apr-1971	DLN	Q	-0.01	-0.03
Federal, state, and local debt outstanding/GDP	02-Apr-1971	DLN	Q	0.01	0.00
Total REIT Assets/GDP	02-Apr-1971	DLN	Q	-0.01	0.07
CME E-mini S&P Futures Market Depth	04-Jan-2008	LV	W	-0.01	-0.64
Fed funds and Reverse Repurchase Agreements/Total Assets of Commercial Banks	30-Mar-1973	DLN	M	-0.01	-0.04
Total Assets of Pension Funds/GDP	02-Apr-1971	DLN	Q	-0.00	-0.01
FRB Commercial Property Price Index	02-Apr-1971	DLN	Q	0.00	-0.01
Total Assets of Finance Companies/GDP	02-Apr-1971	DLN	Q	-0.00	0.02
Commercial Bank Real Estate Loans/Total Assets	02-Mar-1973	DLN	M	-0.00	0.06

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- <sup>4</sup> FINRA and NYSE data are spliced to form a single time series.
- <sup>5</sup> Data provided under a license granted to the Federal Reserve Bank of Chicago by DTCC Solutions LCC ("DTCC Solutions"), an affiliate of The Depository Trust & Clearing Corporation. DTCC Solutions, its affiliates, and third parties from which they obtained data have no liability for the content of this material.
- <sup>6</sup> Nonfinancial leverage subindex indicators.