

## 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	4.45	3.64
ICE BofAML ABS/5-yr Treasury yield spread	01-Feb-1991	LV	M	4.44	3.76
2-yr Interest Rate Swap/Treasury yield spread <sup>7</sup>	03-Apr-1987	LV	W	3.87	4.27
ICE BofAML Financial/Corporate Credit bond spread	31-Jan-1997	LV	M	3.67	3.32
CBOE Market Volatility Index VIX	05-Jan-1990	LV	W	3.62	3.16
BofAML Home Equity ABS/MBS yield spread	05-Jul-1991	LV	W	3.46	3.06
1-mo. Asset-backed/Financial commercial paper spread	05-Jan-2001	LV	W	2.99	4.08
3-mo. BofAML Swaption Volatility Estimate Index	06-Dec-1996	LV	W	2.98	2.41
3-mo. LIBOR/CME Term SOFR-Treasury spread <sup>8</sup>	06-Jun-1980	LV	W	2.74	3.43
1-mo. BofAML Option Volatility Estimate Index	08-Apr-1988	LV	W	2.69	2.44
10-yr Interest Rate Swap/Treasury yield spread <sup>6</sup>	03-Apr-1987	LV	W	2.65	3.00
Counterparty Risk Index (formerly maintained by Credit Derivatives Research) <sup>5</sup>	13-Sep-2002	LV	W	-2.62	-1.61
3-mo./1-wk AA Financial commercial paper spread	03-Jan-1997	LV	W	2.61	2.44
3-mo. Interbank Deposit Spread (OBFR/LIBID-Treasury)	08-Jan-1971	LV	W	2.16	2.62
ICE BofAML Mortgage Master MBS/10-year Treasury yield spread	27-Jan-1989	LV	M	1.63	1.71
GCF Treasury/MBS Repo rate spread	07-Jan-2005	LV	W	-1.54	-2.79
3-mo. Overnight Indexed Swap (OIS)/Treasury yield spread	19-Sep-2003	LV	W	1.48	4.12
Fed Funds/Overnight Treasury Repo rate spread	24-May-1991	LV	W	0.98	2.16
10-yr/2-yr Treasury yield spread	20-Aug-1971	LV	W	-0.94	-0.64
3-mo. Financial commercial paper/Treasury bill spread	08-Jan-1971	LV	W	0.94	1.82
1-yr./1-mo. LIBOR/CME Term SOFR spread <sup>8</sup>	10-Jan-1986	LV	W	0.77	1.41
Commercial Paper Outstanding	10-Nov-1995	DLN	W	-0.58	-0.26
Repo Market Volume (Repurchases+Reverse Repurchases of primary dealers)	07-Oct-1994	DLNQ	W	-0.57	-0.26
Agency MBS Repo Delivery Failures Rate	07-Oct-1994	DLNQ	W	0.57	0.51
On-the-run vs. Off-the-run 10-yr Treasury liquidity premium	20-Aug-1971	LV	W	-0.55	0.44
Total Money Market Mutual Fund Assets/Total Long-term Fund Assets	28-Dec-1984	LV	M	0.46	0.20
Treasury Repo Delivery Fails Rate	07-Oct-1994	DLNQ	W	0.39	0.05
Agency Repo Delivery Failures Rate	07-Oct-1994	DLNQ	W	0.32	-0.06
Advanced Foreign Economies Trade-weighted US Dollar Value Index	12-Jan-1973	DLN	W	0.13	0.16
Corporate Securities Repo Delivery Failures Rate	05-Oct-2001	DLNQ	W	0.11	0.04
3-mo./1-wk Treasury Repo spread	24-May-1991	LV	W	0.04	0.70
2-yr/3-mo. Treasury yield spread	08-Jan-1971	LV	W	-0.01	0.53
FDIC Volatile Bank Liabilities	01-Jul-1994	DLN	Q	0.01	0.04

<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	4.19	3.11
Markit Investment Grade (IG) 5-yr Senior CDS Index <sup>8</sup>	21-Sep-2007	LVMA	W	4.07	4.19
30-yr Jumbo/Conforming fixed rate mortgage spread	12-Jun-1998	LV	W	3.67	4.32
Markit High Yield (HY) 5-yr Senior CDS Index <sup>8</sup>	28-Dec-2007	LVMA	W	3.64	2.91
BofAML High Yield/Moody's Baa corporate bond yield spread	07-Nov-1986	LV	W	3.50	1.76
CBOE Crude Oil Volatility Index, OVX	18-May-2007	LV	W	2.38	0.81
NACM Survey of Credit Managers: Credit Manager's Index	01-Mar-2002	LV	M	-0.88	-0.41
30-yr Conforming Mortgage/10-yr Treasury yield spread	02-Apr-1971	LV	W	0.77	0.91
Commercial Bank 24-mo. Personal Loan/2-yr Treasury yield spread <sup>5</sup>	05-May-1972	LV	Q	-0.65	-0.43
Commercial Bank 48-mo. New Car Loan/2-yr Treasury yield spread	05-May-1972	LV	Q	-0.53	-1.11
UM Household Survey: Durable Goods Credit Conditions Good/Bad spread <sup>6</sup>	27-Jan-1978	LV	M	-0.45	-0.25
S&P US Bankcard Credit Card: Excess Rate Spread	28-Feb-1992	DLVSA	M	-0.42	-0.27
UM Household Survey: Mortgage Credit Conditions Good/Bad spread <sup>7</sup>	24-Feb-1978	LV	M	-0.42	-0.29
NFIB Survey: Credit Harder to Get	02-Nov-1973	LV	M	0.39	0.35
UM Household Survey: Auto Credit Conditions Good/Bad spread <sup>4</sup>	24-Feb-1978	LV	M	-0.35	-0.17
Moody's Baa corporate bond/10-yr Treasury yield spread	08-Jan-1971	LV	W	0.32	0.93
S&P US Bankcard Credit Card: 3-mo. Delinquency Rate	28-Feb-1992	DLVSA	M	0.28	0.18
Bond Market Association Municipal Swap/State & Local Government 20-yr GO bond spread	07-Jul-1989	LV	W	0.28	0.16
FRB Senior Loan Officer Survey: Tightening Standards on Small C&I Loans	29-Jun-1990	LV	Q	0.28	0.11
FRB Senior Loan Officer Survey: Tightening Standards on RRE Loans	28-Sep-1990	LV	Q	0.28	0.22
FRB Senior Loan Officer Survey: Increasing spreads on Large C&I Loans	29-Jun-1990	LV	Q	0.27	0.14
FRB Senior Loan Officer Survey: Increasing spreads on Small C&I Loans	29-Jun-1990	LV	Q	0.27	0.15
FRB Senior Loan Officer Survey: Tightening Standards on CRE Loans	28-Sep-1990	LV	Q	0.27	0.14
FRB Senior Loan Officer Survey: Tightening Standards on Large C&I Loans	29-Jun-1990	LV	Q	0.26	0.09
NY Fed Consumer Credit Panel: Loan Delinquency Status: Non-current (Percent of Total Balance)	02-Jul-1999	DLV	Q	0.24	0.28
NY Fed Consumer Credit Panel: New Seriously Delinquent Loan Balances (Percent of Current Balance)	27-Jun-2003	DLV	Q	0.22	0.21
Commercial Bank Noncurrent/Total Loans	28-Jun-1985	DLN	Q	0.22	0.17
S&P US Bankcard Credit Card: Receivables Outstanding	28-Feb-1992	DLNSA	M	-0.21	-0.06
NY Fed Consumer Credit Panel: New Delinquent Loan Balances (Percent of Current Balance)	27-Jun-2003	DLV	Q	0.19	0.18
Finance Company Owned & Managed Receivables	29-Jan-1971	DLNSA	M	0.05	0.04
FRB Senior Loan Officer Survey: Willingness to Lend to Consumers	02-Apr-1971	LV	Q	-0.04	0.00
MBA Serious Delinquencies	30-Jun-1972	DLV	Q	0.03	0.05
Consumer Credit Outstanding	29-Jan-1971	DLN	M	-0.03	0.03
Money Stock: MZM <sup>9</sup>	01-Mar-1974	DLN	M	-0.01	-0.08

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<sup>4</sup> Series vehrn\_nr\_all

<sup>5</sup> Adjusted for mean break at 7/1/1990

<sup>6</sup> Series durnr\_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.

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## 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	-3.71	-4.46
CME Eurodollar/CBOT T-Note Futures Market Depth	01-Feb-2008	LV	W	3.38	2.20
S&P 500, S&P 500 mini, NASDAQ 100, NASDAQ mini Open Interest	17-Sep-2010	DLNQ	W	1.92	0.62
3-mo. Eurodollar, 10-yr/3-mo. swap, 2-yr and 10-yr Treasury Open Interest	23-Jun-1995	DLNQ	W	-1.19	-0.77
CMBS Issuance (Relative to 12-mo. MA)	28-Dec-1990	LVMASA	M	-0.33	-0.35
New US Corporate Debt Issuance (Relative to 12-mo. MA)	01-Jan-1988	LVMASA	M	-0.23	-0.45
COMEX Gold/NYMEX WTI Futures Market Depth	04-Jan-2008	LV	W	-0.23	-1.42
Nonmortgage ABS Issuance (Relative to 12-mo. MA)	29-Dec-2000	LVMASA	M	-0.22	-0.07
2-yr Constant Maturity Treasury yield	11-Jun-1976	DLV	W	-0.16	-0.25
New State & Local Government Debt Issues (Relative to 12-mo.h MA)	27-Feb-2004	LVMASA	M	-0.15	-0.05
S&P 500, NASDAQ, and NYSE Market Capitalization/GDP	28-Jun-1985	DLN	Q	-0.14	-0.12
Broker-dealer Debit Balances in Margin Accounts <sup>4</sup>	29-Jan-1971	DLN	M	-0.13	-0.20
CME E-mini S&P Futures Market Depth	04-Jan-2008	LV	W	-0.13	-1.78
Commercial Bank Consumer Loans/Total Assets	02-Mar-1973	DLN	M	-0.10	-0.04
Net Notional Value of Credit Derivatives <sup>5</sup>	07-Nov-2008	DLN	W	-0.09	-0.08
Commercial Bank C&I Loans/Total Assets	02-Mar-1973	DLN	M	0.08	0.14
Commercial Bank Securities in Bank Credit/Total Assets	02-Mar-1973	DLN	M	-0.08	-0.12
Federal Funds Rate	08-Jan-1971	DLV	W	-0.08	-0.10
CoreLogic National House Price Index	02-Apr-1976	DLN	M	-0.08	-0.18
New US Corporate Equity Issuance (Relative to 12-mo. MA)	01-Jan-1988	LVMASA	M	-0.08	-0.07
Total Agency and GSE Assets/GDP	02-Apr-1971	DLN	Q	0.07	0.08
Wilshire 5000 Stock Price Index	29-Jan-1971	DLN	M	-0.06	-0.12
Household debt outstanding/PCE Durables and Residential Investment <sup>6</sup>	02-Apr-1971	DLN	Q	0.05	0.02
Commercial Bank Total Unused C&I Loan Commitments/Total Assets	29-Jun-1990	DLN	Q	-0.05	-0.01
10-yr Constant Maturity Treasury yield	08-Jan-1971	DLV	W	-0.05	-0.20
Nonfinancial business debt outstanding/GDP <sup>6</sup>	02-Apr-1971	DLN	Q	0.03	0.05
Total Assets of ABS issuers/GDP	02-Apr-1971	DLN	Q	-0.02	0.00
Total Assets of Insurance Companies/GDP	02-Apr-1971	DLN	Q	-0.02	-0.04
Total Assets of Funding Corporations/GDP	02-Apr-1971	DLN	Q	0.02	0.00
Total REIT Assets/GDP	02-Apr-1971	DLN	Q	-0.01	0.07
Federal, state, and local debt outstanding/GDP	02-Apr-1971	DLN	Q	0.01	-0.01
Fed funds and Reverse Repurchase Agreements/Total Assets of Commercial Banks	30-Mar-1973	DLN	M	-0.01	-0.03
Total MBS Issuance (Relative to 12-mo. MA)	29-Dec-2000	LVMASA	M	0.01	-0.12
Total Assets of Broker-dealers/GDP	02-Apr-1971	DLN	Q	-0.01	-0.04
Total Assets of Finance Companies/GDP	02-Apr-1971	DLN	Q	-0.01	-0.01
FRB Commercial Property Price Index	02-Apr-1971	DLN	Q	0.01	-0.00
Commercial Bank Real Estate Loans/Total Assets	02-Mar-1973	DLN	M	0.00	0.07
Total Assets of Pension Funds/GDP	02-Apr-1971	DLN	Q	-0.00	-0.02

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<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.