

# Tracking Global Financial Stress

## GFSI™ critical stress turns off as markets shrug off banking and recession risks

Asset Allocation

### Exiting critical stress as risk turns complacent on macro

The GFSI's [Critical Stress Signal](#) (CSS) has turned off as cross-asset stress declined by more than 50% from the gain prior to the signal triggering on [13-Mar-23](#), when 15 of GFSI's 42 sub-components rose by >0.5 standard deviations within a 10-day period. Since then, all of those 15 sub-components have witnessed a stress decline (Exhibit 2).

Global equities (MSCI ACWI) have largely shrugged off the banking sector and recession risks that roiled markets in March, rising over 5% since the 13-Mar CSS trigger. This was the 6th consecutive trigger since the March-20 Covid shock that has identified close to a local low in global equities (see Exhibit 3), indicating the CSS continues to operate as a successful contrarian indicator. In fact, so far in 2023, US equities have recorded their second best return following down-days in 95yrs (see, [Hedging fearlessness](#), Chart 8) suggesting a strong buy-the-dip market psychology persists.

### Still need to watch central banks, rates and recession risk

What's still stressed? Rates vol, despite having declined, is still among the most stressed GFSI metrics, both in the US and Europe (Exhibit 2). With the central bank inflation fight not over and the recent OPEC+ production cut adding to risks, relying on dip-buyers for protection while the Fed put is constrained remains a precarious proposition, in our view. We foresee a challenging backdrop for risk assets that appear to be defying growing recession risk and longer-term consequences of March's banking turmoil in the face of reduced central bank support.

The rates versus other asset class risk gap that we've highlighted for some time still persists and indeed EUR rates vol is the most stressed GFSI sub-component while European equity volatility is among the 5 least stressed (Exhibit 2). We continue to recommend watching rates stress closely and take advantage of the low equity vol opportunity via establishing hedges (see our GEVI titled [Ignoring recession makes for good hedges](#), for instance).

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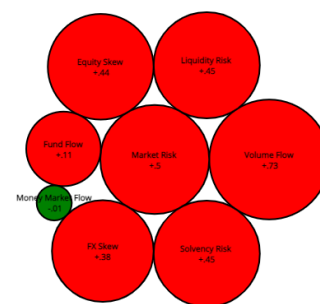
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### Exhibit 1: Financial Stress Landscape. Stress by component

Current Sub Component Stress

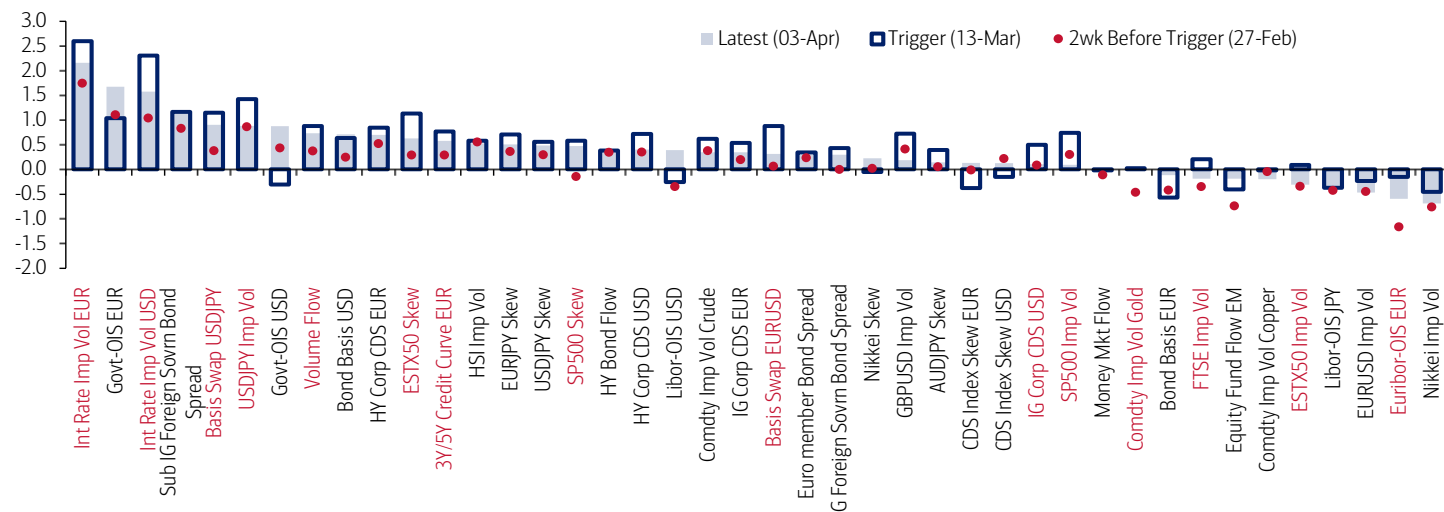


**Source:** BofA Global Research, (intra-day GMT update on 4-Apr-23 for data as of 3-Apr-23)

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## Exhibit 2: All 15 subcomponents (in red) that triggered the 13-Mar-23 CSS have declined since, but rates risks remain the most stressed while equity risks are among the most optimistic

Latest distribution of stress in the GFSI at the most granular level vs pre-trigger (minimum stress in the 2wk prior) and trigger levels, sorted by latest stress levels. Red labels in the Exhibit indicate the GFSI sub-components that were responsible for the 13-Mar-23 CSS trigger



Source: BofA Global Research. Latest data as of 3-Apr-23

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## Exhibit 3: Critical Stress Signal (CSS) history ('live' signals shown in bold)

The CSS turned off as x-asset stress declined by more than 50% from the gain prior to the signal triggering on 23-Sep-22, when 16 of GFSI's sub-components rose by >0.5 standard deviations within a 10-day period

Risk-off Signals	Start Date	End Date	MSCI ACWI return	MSCI ACWI max drawdown	MSCI ACWI max drawup
1	19-Apr-00	21-Jun-00	2.3%	-4.7%	2.6%
2	08-Sep-00	21-Nov-00	-10.1%	-10.5%	0.0%
3	09-Mar-01	27-Mar-01	-4.4%	-10.4%	0.0%
4	12-Sep-01	26-Oct-01	2.7%	-9.7%	2.7%
5	01-Jul-02	22-Aug-02	-3.4%	-15.1%	1.0%
6	17-May-04	08-Jun-04	6.7%	0.0%	6.7%
7	27-Jul-07	19-Sep-07	3.7%	-5.9%	3.7%
8	22-Oct-07	25-Apr-08	-5.9%	-14.7%	4.6%
9	15-Sep-08	13-Feb-09	-32.4%	-38.2%	3.8%
10	23-Feb-09	11-Mar-09	-3.1%	-8.6%	1.1%
11	05-May-10	14-Jul-10	-3.5%	-10.1%	0.0%
12	16-Mar-11	01-Apr-11	6.7%	0.0%	6.7%
13	12-Jul-11	04-Jan-12	-9.1%	-18.9%	3.1%
14	10-Apr-12	26-Apr-12	2.3%	0.0%	2.3%
15	14-May-12	19-Jun-12	0.1%	-6.1%	0.1%
16	24-Jun-13	10-Jul-13	5.0%	0.0%	5.0%
17	16-Oct-14	03-Nov-14	6.4%	0.0%	7.0%
18	24-Aug-15	06-Oct-15	3.6%	-2.2%	4.5%
19	09-Feb-16	01-Mar-16	5.6%	-1.4%	5.6%
20	13-Jun-16	29-Jun-16	-0.5%	-4.2%	2.8%
21	08-Feb-18	26-Feb-18	5.5%	0.0%	5.5%
22	05-Aug-19	12-Sep-19	5.0%	-0.7%	5.0%
23	25-Feb-20	29-Apr-20	-9.3%	-29.3%	0.0%
24	11-Jun-20	30-Jun-20	1.9%	0.0%	3.6%
25	26-Nov-21	13-Dec-21	0.9%	-1.3%	2.0%
26	24-Feb-22	16-Mar-22	0.2%	-3.9%	2.4%
27	13-Jun-22	25-Jul-22	3.3%	-2.2%	3.8%
28	23-Sep-22	18-Oct-22	0.4%	-3.1%	2.5%
29	13-Mar-23	04-Apr-23	5.7%	-0.3%	5.7%

Source: BofA Global Research. Instances where the drawdown was <-5% have been highlighted. Backtested data from 03-Jan-00 to 16-May-11. Live data from 16-May-11 to present. This performance is back-tested and does not represent the actual performance of any account or fund. Back-tested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein.

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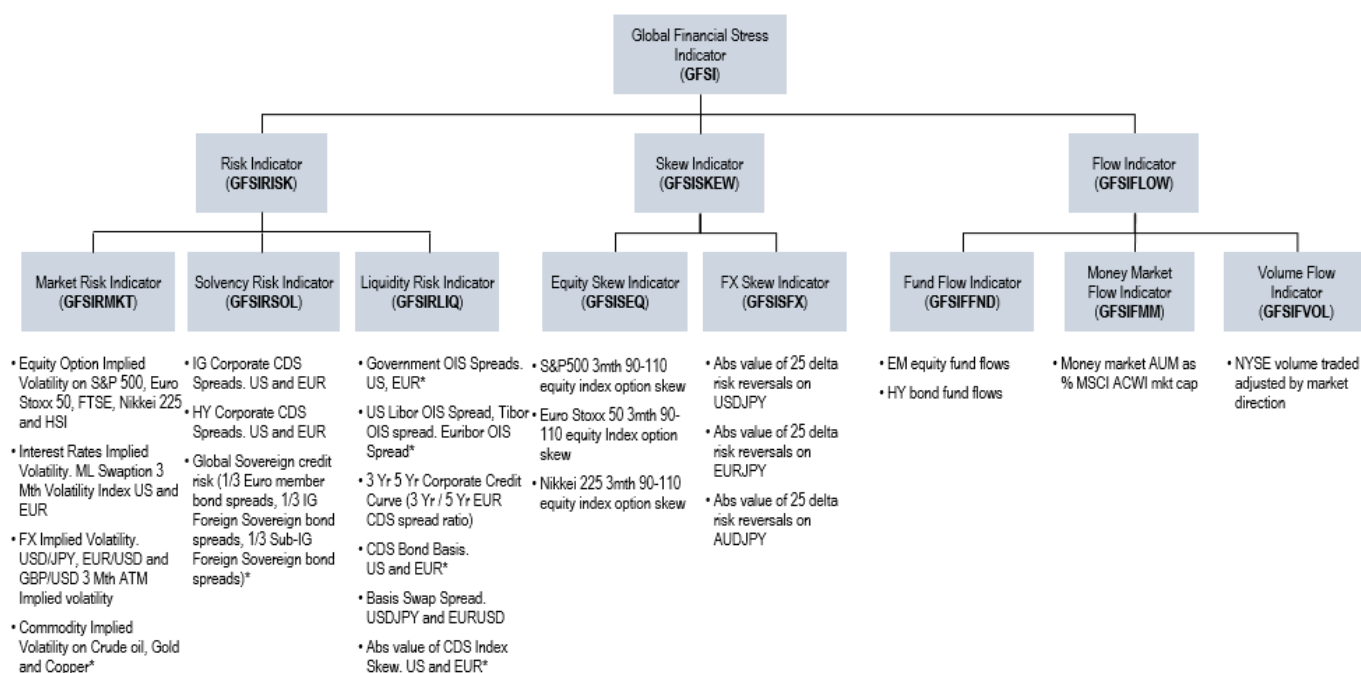
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## GFSI's microstructure: The full picture

Exhibit 4 shows the structure of the GFSI index family.

### Exhibit 4: The GFSI family - 12 indices, 23 components across 5 asset classes

GFSI microstructure



Source: BofA Global Research.

\*Component has changed since inception. See GFSI changes table for details.

**Exhibit 5: Changes to the GFSI structure**

Historical changes to the structure of the GFSI since inception

<b>Id</b>	<b>Date</b>	<b>Component</b>	<b>Sub-Component</b>	<b>Details</b>
1	08-Jan-13	GFSIRLIQ	CDS Bond Basis US & EUR	CDS bond basis = Difference between CDS spread & cash bond spread. Component changed from actual (signed) value to the absolute value.
2	12-Feb-13	GFSIRLIQ	CDS Index Skew US & EUR	CDS Index skew = Difference between the index CDS spread and the fair value of the index CDS spread calculated from single name CDS spreads. Component changed from actual (signed) value to the absolute value.
3	06-Mar-15	GFSIRSOL	Global Sovereign Credit Risk	Changed from using 2/3 Global sovereign CDS & 1/3 USD denominated EM bond spreads to 1/3 Euro member bond spreads, 1/3 IG Foreign Sovereign bonds spreads & 1/3 sub-IG Foreign Sovereign bond spreads
4	08-Jul-16	GFSIRMKT	Commodity Implied Volatility	Changed from using the ICE BofA Commodity eXtra 3Mth index to equally weight (1/3 each) stress observed from Crude Oil (WTI) volatility, Gold volatility and Copper volatility. Crude and Gold is the average of ATM call and put volatilities for GC2 Comdty and C13 Comdty respectively. For Copper this is 50 Delta volatility of the 3rd future (LP3 Comdty)
5	07-Oct-19	GFSIRMKT	Commodity Implied Volatility	Change in source for Gold and Crude volatility to IVOLGOLD Index and IVOLCRUD index respectively
6	02-Dec-19	GFSIRLIQ	CDS Bond Basis US and EUR	Changed from use the absolute value to the actual (signed) of the CDS bond basis. The Source of the data also changed from BofA Global Markets to ICE BofA
7	02-Dec-19	GFSIRLIQ	CDS Index Skew US and EUR	Change in source of data from BofA Global markets to IHS Markit
8	03-Jan-22	GFSIRLIQ	LIBOR-OIS spread EUR	Change from LIBOR-OIS to Euribor-OIS
9	18-Jul-22	GFSIRLIQ	Govt-OIS Spread EUR	Change of OIS swap rate from EONIA to ESTR
10	18-Jul-22	GFSIRLIQ	Euribor-OIS Spread EUR	Change of OIS swap rate from EONIA to ESTR
11	02-Jan-23	GFSIRLIQ	Libor-OIS spread GBP	Removal of sub-component from the indicators
12	02-Jan-23	GFSIRLIQ	Basis Swap Spread USDJPY and EURUSD	Change in source from LIBOR to SOFR for the USD leg of the basis swap

Source: BofA Global Research

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**What is the GFSI: a comprehensive measure of global cross-asset risk**

An important advantage of the GFSI family of indices over other risk measures is that it can be disaggregated easily into component indices to see what precisely is driving market stress at any point in time. Please see [our introductory report on GFSI](#) for how our Critical Stress Signal leverages this granularity to anticipate 'risk-off' environments.

Risks have emanated from areas outside of many investors' comfort zones, from other asset classes and regions, and everyone has been forced to boost their market knowledge to understand what factors may dominate their base-case investment thesis.

**GFSI integrates implied risks, hedging demand & investor flows**

We have classified the risk factors that constitute the GFSI into three main categories, represented by the sub-indices **RISK**, **SKEW** and **FLOW**. Briefly, RISK comprises measures of market, liquidity and solvency risk, SKEW contains factors representing hedging demand against tail events and FLOW measures investor risk appetite via flows into and out of assets. Positive values suggest greater stress in the financial system than average.

**Calculating GFSI**

RISK has 13 components => 57% weight  
 SKEW has 6 components => 26% weight  
 FLOW has 4 components => 17% weight  

$$\text{GFSI} = 0.57 \cdot \text{RISK} + 0.26 \cdot \text{SKEW} + 0.17 \cdot \text{FLOW}$$

Each of the 8 sub-indices and their 23 components capture a different aspect of a 'stressful' or 'benign' market environment. But how do we ensure that the readings across indices are comparable? We construct each component as a z-score, measuring how many standard deviations the current observation is above or below a long term median. The median calculation is from 3-Jan-00 through 15-Aug-10, a period of time that we believe captures a long enough history of risk factors to enable us to assess distributions across benign and stressed markets. For readings after 15-Aug-2010, we expand our window of calculation of medians and standard deviations to include all new observations. This allows new readings to reflect all historical information available, thus building a larger distribution as the index evolves.

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