SSGA Market Regime Indicator Update

Strategy Update
Multi-Asset Solutions

December 2022

The Market Regime Indicator (MRI) is a proprietary macro indicator developed by the SSGA Investment Solutions Group (ISG). Based on forward-looking market information, it is designed to identify the level of Risk aversion/appetite in the market. The factors utilized to generate the signal include implied equity and currency volatility as well as spreads on fixed income.

The Investment Solutions Group uses the MRI as one of the inputs into its global tactical asset-allocation decision-making process.

The MRI is the result of over twelve months of rigorous testing by the Investment Solutions Group. The test results showed that the MRI tracked historical market stress events and trading strategies based on the level of outperformance generated by the indicator. By design, the MRI signal varies between 0% and 100%. On this scale, a high level is often characterised by market tensions, such as a significant increase in volatility and a drop in Risky asset prices.

We Have Identified Five Different Market Regimes:

Crisis (level close to 100%) — Extreme Risk aversion ('Fear/Panic')

High Risk Aversion (level above the average) — Aversion towards Risky assets

Normal (level oscillating around the mean) — Characterised by neutral market sentiment

Low Risk Aversion (level below the average) — Appetite towards Risky assets

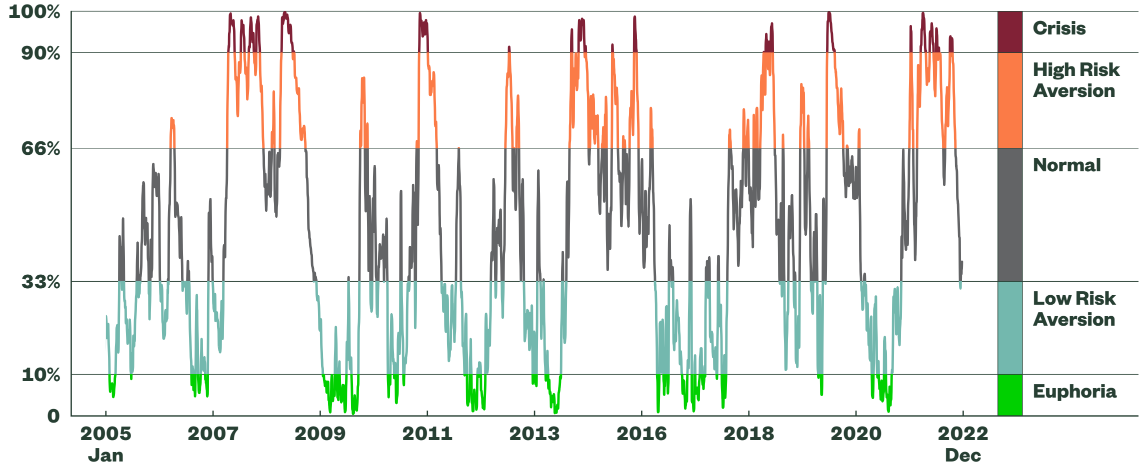
Euphoria (level close to 0%) — Extreme Risk appetite ('Greed/Complacency')

Figure 1 **Market Regime Indicator**

Market Regime Indicator	30/09/2022	30/12/2022
Average — Equity Implied Volatility	High	High
Average — Risky Debt Spreads	Crisis	Normal
Average — Currency Implied Volatility	Crisis	Normal
MRI Level	Crisis	Normal

Source: State Street Global Advisors Investment Solutions Group, 30 December 2022.

Figure 2 **Market Regime Indicator (MRI) Evolution**



Source: As of December 30, 2022. The data displayed is not indicative of the past or future performance of any State Street Global Advisors product. The portion of results through March 31, 2011 represents a back-test of the MRI model, which means that those results were achieved by means of the retroactive application of the model which was developed with the benefit of hindsight. Data displayed beyond this date is not backtested, but is still generated by the model referenced. All data shown above does not represent the results of actual trading, and in fact, actual results could differ substantially, and there is the potential for loss as well as profit. The Market Regime Indicator (MRI) is a quantitative framework that attempts to identify the current market risk environment based on forward-looking market indicators. We believe the factors used, equity implied volatility, currency pairs implied volatility and bond spreads, are good indicators of the current risk environment as they are responsive to real-time market impacts and in theory should include all current and forward views of those markets. These factors are combined to create a single measure and used to identify one of five risk regimes: Euphoria, Low Risk, Normal, High Risk, and Crisis. A slight calculation change was made as of June 28, 2019.

Market Commentary

The MRI entered October in Crisis regime, after a third quarter in which inflation, central bank policy, energy supply concerns and a rather extraordinary fiscal announcement in the UK were all driving forces behind market volatility. While many of these themes were evident once again in the fourth quarter, the MRI broadly trended lower during the period. The signal moved into High Risk regime in the middle of October and continued its downward path to move into Normal regime around mid-November. In December the MRI briefly moved into Low Risk regime, for the first time since September 2021, before closing the year back in Normal regime.

The Implied Volatility on Equities factor began the period in High Risk regime, though sentiment initially was more positive as early October saw markets bounce back strongly from their year lows. The driving force was a familiar theme as weak ISM manufacturing data in the US increased speculation that a central back pivot towards a more dovish stance could be in the offing. In addition further falls in natural gas prices supported the risk on move. Fairly quickly though, multiple Fed speakers suggested they saw little reason to ease the pace of tightening, with equity markets reversing and the S&P 500 hitting its lowest level since November 2020, with the factor remaining in High Risk regime. Late in the month however the factor did begin to move lower, as the UK government abandoned their mini-budget, and positive earnings helped sentiment. The pivot trade was also firmly back on the radar as a smaller-than-expected increase in interest rates by the Bank of Canada and a more dovish tone from the ECB improved sentiment with the implied volatility on equities factor moving into Normal regime.

Early November saw a blow to the pivot trade narrative as Federal Reserve chair Powell stated it was premature to talk about pausing hikes, and that the ultimate level of interest rates would be higher than previously expected. However, just a few days later a downside CPI surprise was latched onto by investors and buoyed equity markets with the factor moving into Low Risk regime. This was followed late in the month by a speech from Jerome Powell in which he stated that 'the time for moderating the pace of rate increases may come as soon as the December meeting', with the factor briefly moving into Euphoria regime. In December the implied volatility on equities factor moved between Low Risk and Euphoria regimes, as although hawkish messaging from central banks saw equities struggle, another positive inflation print (US core CPI fell to its lowest level in 15 months) provided some positive support.

The Implied Volatility on Currencies factor started the quarter in Crisis regime and, perhaps unsurprisingly against a backdrop of numerous central bank meetings, remained elevated for the longest of the three MRI inputs. October saw significant swings in GBP with UK chancellor of the exchequer, Kwasi Kwarteng, sacked and a huge about turn in policy dropping the majority of what had proved to be a disastrous mini-budget. In addition the Japanese Yen was also volatile as it moved to 30+ year lows against the USD as BOJ Governor Haruhiko Kuroda indicated that he intended to stick to large-scale monetary easing. The factor remained in Crisis regime until late in the month when it moved into High Risk regime. November initially saw the factor trend lower until the CPI surprise mid-month saw some significant moves in FX, with the USD index having its worst daily return since 2015, which saw the factor move higher, back to the cusp of Crisis regime. December did see the factor move lower, into Normal regime where it closed the year, despite some big moves as the BOJ shocked markets by allowing the 10-year bond yield to move 50 basis points either side of its 0% target, wider than the previous 25 basis point band, with the Japanese Yen seeing its largest daily gain in over 20 years.

The Risky Debt Spread factor entered October in Crisis regime where it remained for much of the month. The factor then moved into High Risk regime late in the month, followed by Normal regime in late November, as risky debt spreads tightened. Global High Yield spreads dropped markedly over the quarter, as the asset class was supported by optimism that future rates could be softer, solid earnings and continued low default levels. Emerging market (EM) debt spreads also tightened, again supported by the anticipated reduction in the pace of Fed hikes, and also rising prospects of China's economy reopening. The factor closed the year in Normal regime.

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Marketing communication.
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