MarketDesk U.S. Risk Demand Indicator (USRDI)

A Simple Data-Driven Framework for Managing Portfolios

Primer Report

March 14, 2025

What is the U.S. Risk Demand Indicator?

The U.S. Risk Demand Indicator (USRDI) is a quantitative tool built to measure investors' risk appetite in real-time. Understanding risk regimes is crucial, as they impact asset class returns and inform asset allocation decisions. By tracking broad market trends, the indicator defines the current environment and answers a fundamental question: What portfolio beta exposures should we own?

Knowing the Current Risk Regime is Key to Managing Portfolios

USRDI classifies the market into two risk environments: "Risk-On" (increase portfolio beta) and "Risk-Off" (decrease portfolio beta). The two regimes impact markets differently, including asset class returns, market volatility, and drawdown risk. Knowing the current risk environment helps investors manage equity and credit beta exposures, such as cyclical vs defensive sectors, high beta vs low volatility stocks, and investment grade vs high yield bonds. Adjusting your portfolio's beta exposure to match the current risk environment can enhance risk-adjusted returns and reduce drawdowns. In contrast, mismanaging betas can lead to missing out on gains in bull market and participating in selloffs during bear markets. This primer explains USRDI, discusses how each risk regime style impacts financial markets, and provides a roadmap for managing portfolios.

How to Monitor and Implement USRDI into Your Process?

The USRDI is updated every Friday and can be tracked in the MarketDesk Weekly Note. It's designed to be a quick reference. Most of the time, there's no immediate action required—if your portfolio is already well-positioned, you can stay the course. However, during major market shifts, typically once a year or every other year, USRDI becomes a powerful tool. When it comes to implementation, each investment committee meeting should start by reviewing the latest USRDI reading. Tracking the indicator helps establish a structured framework for understanding market conditions and offers insight into the potential for volatility and drawdown risk. The key is to maintain a big-picture focus and compare your portfolio's beta exposures to the preferred betas for the current regime. (Note: The USRDI signal flows into the MarketDesk Stock Models, helping to automate risk management. The MarketDesk ETF Models are updated as the USRDI signal changes so that equity and credit exposures align with the current risk demand reading.)

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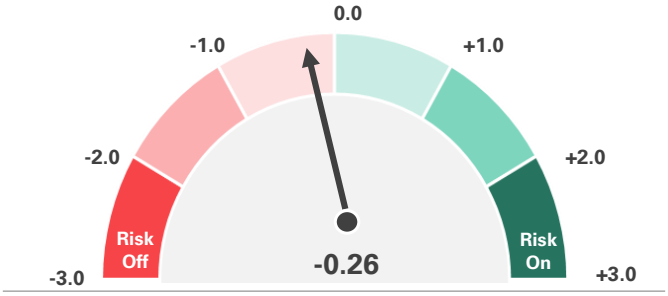
Figure 1 – MarketDesk U.S. Risk Demand Indicator (USRDI)

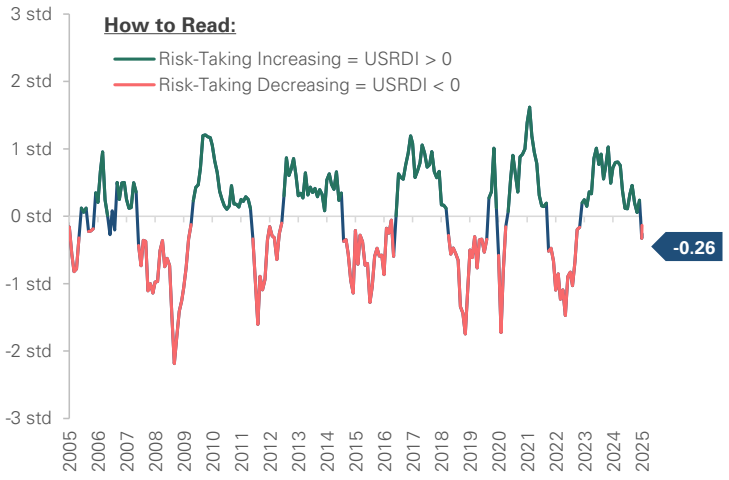


Indicator Inputs (Equal-Weighted)	Reading	Status
Equity Markets	-1.0	Risk-Off
Equity Volatility	-0.6	Risk-Off
FX / Currencies	-0.3	Risk-Off
Credit Markets	+0.8	Risk-On

Source: MarketDesk Quant Pack. As of 3/14/2025.

Figure 2 – MarketDesk U.S. Risk Demand Indicator (USRDI)

Historical USRDI Readings Since 2005



Source: MarketDesk Quant Pack. As of 3/14/2025.

USRDI Signal History and Model Track Record

USRDI provides a real-time measure of investors' risk appetite. When USRDI is above zero, it signals a risk-on environment, which favors cyclical sectors, high beta stocks, high yield corporate bonds, and hybrid bonds (convertible bonds). In contrast, a reading below zero signals a risk-off environment, which favors defensive sectors, low volatility stocks, and U.S. Treasury bonds. Figure 3 shows USRDI's monthly risk demand signal since 2000. Figure 4 shows the performance of various models that incorporate the signal, with more in-depth statistics on page 11, and Figure 5 tracks the performance of a simple stock/bond model. The next page discusses how USRDI is constructed and the average length of risk-on and risk-off regimes.

Figure 3: USRDI Model Signal History (Risk-On vs Risk-Off)

The table shows the indicator's historical model signal for each month since 2000.

	USRDI Model Signals (Implemented at the Start of the Month)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2000	Risk-On	Risk-On	Risk-On	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off
2001	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-On
2002	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-Off	Risk-Off	Risk-On	Risk-On	Risk-On
2003	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On
2004	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-On
2005	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-On	Risk-On	Risk-On	Risk-Off	Risk-Off
2006	Risk-Off	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-Off	Risk-Off	Risk-On	Risk-Off	Risk-On	Risk-On
2007	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off
2008	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off
2009	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On
2010	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On
2011	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off
2012	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-On	Risk-On	Risk-On	Risk-On
2013	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On
2014	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-Off	Risk-Off	Risk-Off
2015	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off
2016	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On
2017	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On
2018	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off
2019	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-On	Risk-On
2020	Risk-On	Risk-On	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On
2021	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-Off
2022	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off
2023	Risk-Off	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On
2024	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On
2025	Risk-On	Risk-On	Risk-Off									

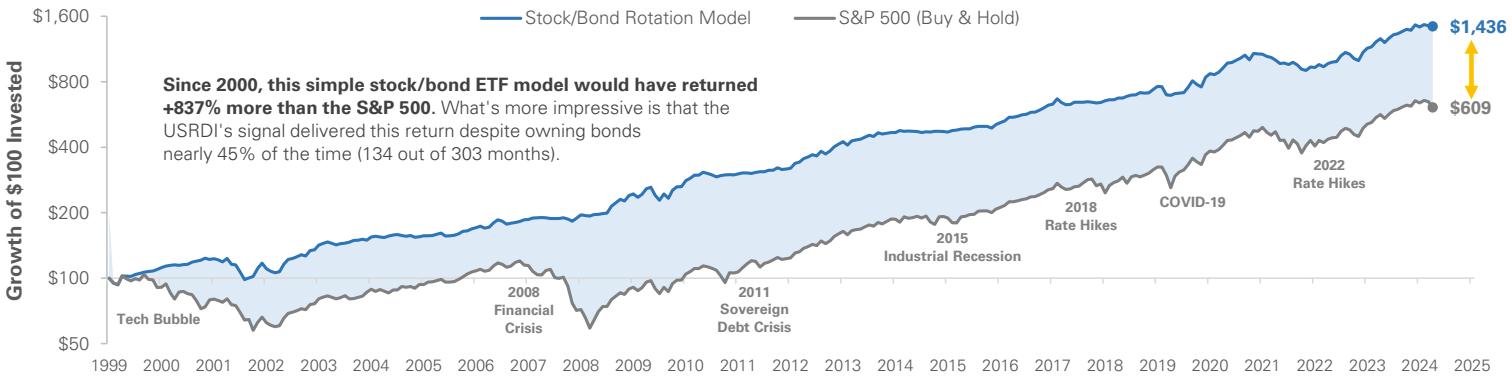
Figure 4: Annual Model Returns

See page 11 for additional statistics for each model.

S&P 500	U.S. Sector Rotation	U.S. Credit Rotation	High Beta/ Low Vol
-4%	49%	12%	47%
-12%	-15%	8%	2%
-22%	-15%	1%	-32%
29%	36%	30%	85%
11%	5%	8%	11%
5%	6%	4%	1%
16%	25%	10%	-1%
5%	19%	8%	6%
-37%	-22%	16%	-21%
26%	29%	17%	32%
15%	26%	17%	27%
2%	10%	17%	5%
16%	16%	10%	21%
32%	36%	14%	41%
14%	14%	11%	19%
1%	3%	0%	4%
12%	17%	15%	33%
22%	23%	11%	18%
-4%	7%	3%	5%
31%	25%	16%	40%
18%	16%	25%	16%
29%	31%	4%	49%
-18%	0%	-20%	-5%
26%	12%	13%	15%
25%	16%	8%	9%
-5%	-1%	0%	-5%

Figure 5 – Sample Stock/Bond Model Demonstrates the Accuracy of the USRDI Model Signal

This sample model owns 100% S&P 500 in Risk-On periods and 100% U.S. Bond Aggregate in Risk-Off periods.



Source: MarketDesk Quant Pack. Past performance does not guarantee future results. Performance is shown as total returns with dividends and income reinvested. The performance information shown herein does not reflect the deduction of advisory and/or other fees normally incurred in the management of a portfolio. Hypothetical performance results are presented for illustrative purposes only.

How USRDI is Constructed – What Are the Inputs?

USRDI relies on actual price data and market internals to provide real-time insights into risk demand. As shown in Figure 6, the indicator analyzes and classifies trends across four broad categories:

1. **Equity Beta Performance** – Cyclical vs. Defensive, Large vs. Small, and High Beta vs. Low Volatility stocks.
2. **Market Volatility** – Tracks the VIX Index and the ratio of put/call buying.
3. **Credit Spread Movement** – Monitors credit spreads and changes in interest rates.
4. **Currency Pair Performance** – Analyzes the relative performance of key currency pairs.

The concept is simple: when one half of the pair outperforms or underperforms the other, it provides a clear indication of which direction risk investor appetites are moving. If High Beta and Cyclical stocks are outperforming, it signals strong risk demand and a willingness to own riskier equity factors with higher betas. In contrast, if Low Volatility and Defensive stocks are outperforming, it signals increased caution and reduced risk appetite.

USRDI primarily focuses on price movement because it captures the market's underlying views, including expectations around Fed policy, interest rates, earnings revisions, Washington policy, and current valuation levels. To put it simply, price offers the purest sense of risk appetite. To increase USRDI's accuracy and reduce false signals, we adjust each input for volatility. This ensures the USRDI signal reflects only statistically significant information, smooths out near-term noise, and highlights longer-term trends. The objective is to remain invested as long as possible and minimize portfolio turnover.

The line chart in Figure 7 graphs the length of each risk-on and risk-off regime since 2000. USRDI's signal durations have generally lengthened since the start of the 2007 financial crisis. However, two periods in the 2000s—July 2002 and 2004-2006—demonstrate the potential for signal volatility. In mid-2002, accounting scandals at Enron and WorldCom undermined investor confidence, triggering a brief risk-off period. However, those fears were short-lived, and the market quickly returned to a risk-on stance. From 2004 to 2006, the USRDI rotated more frequently between risk-on and risk-off signals, with some shifts lasting only one month. The signal volatility was driven by broader market volatility and an uncertain environment, with the market navigating a Fed tightening cycle, inflation concerns, and recession fears. The constant shifting narrative led to elevated market volatility, causing USRDI to switch between risk-on and risk-off signals.

Figure 6 – USRDI Underlying Inputs

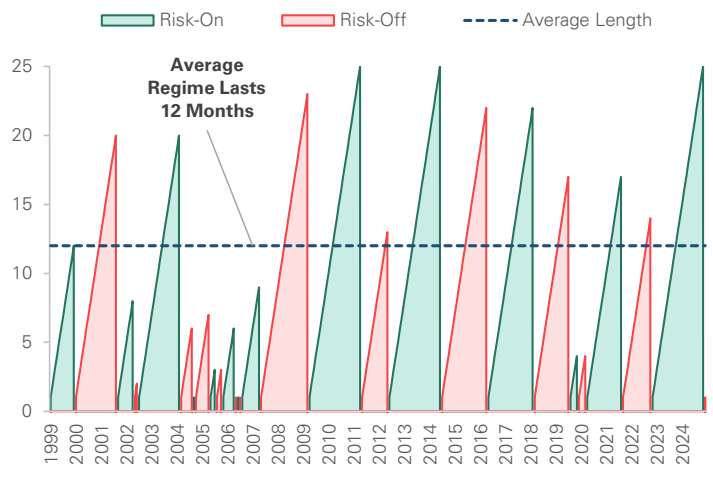
Current Reading of Each Underlying Input as of 3/14/2025

Asset Class	Input	Measure	Reading
Equities	International	Price Momentum	Risk-On
	Cyclical Businesses	Price Momentum	Risk-Off
	Size Factor	Price Momentum	Risk-Off
	High Beta	Price Momentum	Risk-Off
Equity Vol	VIX	Volatility Trends	Risk-Off
	Put/Call Ratio	Volatility Trends	Risk-On
Credit	U.S. High Yield	Credit Spreads	Risk-On
	Europe High Yield	Credit Spreads	Risk-On
	U.S. Interest Rates	Monetary Policy Trends	Risk-Off
	Europe Interest Rates	Monetary Policy Trends	Risk-On
FX	APAC Currencies	Currency Pairs Momentum	Risk-Off
	Europe Currencies	Currency Pairs Momentum	Risk-On
	USD Index	Currency Pairs Momentum	Risk-On

Source: MarketDesk Quant Pack

Figure 7 – Length of USRDI Cycles (in Months)

# of Months in Each Regime Since 1999

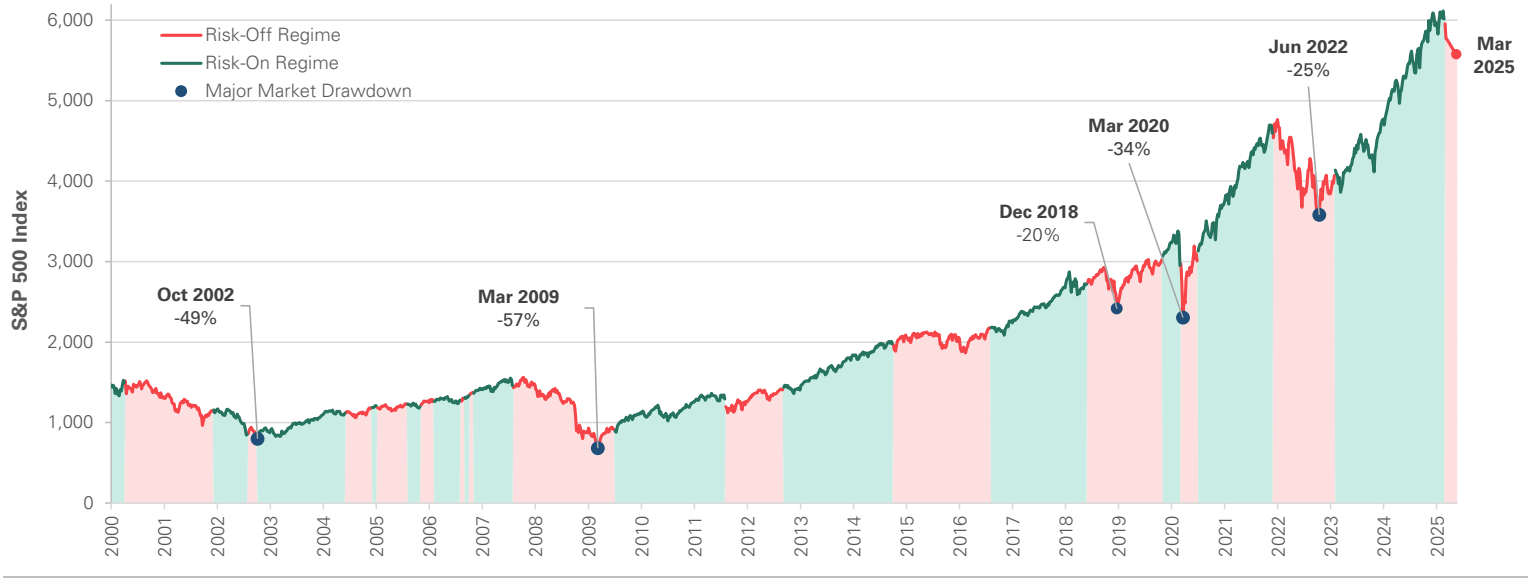


Source: MarketDesk Quant Pack

Risk Management – Avoiding Major Market Drawdowns with USRDI

USRDI excels at avoiding major market drawdowns. The chart below graphs the S&P 500 price index since 2000 and overlays USRDI risk-on regimes (green) and risk-off regimes (red). As shown in Figure 12 on page 6, the average risk-on regime lasts 13 months and the S&P 500 produces a +17% price return with a 71% win rate. The average risk-off regime lasts 10 months and the S&P 500 produces a -2% return with a 69% win rate. The statistics are clear: risk-on regimes offer a more favorable risk/reward environment.

Figure 8 – History of the MarketDesk U.S. Risk Demand Indicator (USRDI)



Source: MarketDesk Quant Pack. Data as of 3/14/2025.

Looking at the chart above, there are two types of risk-off regimes. The first is a bear market. Each of the past five bear markets are marked on the chart, and the table below details USRDI's movement during those periods. Except for the COVID-driven bear market in March 2020 when USRDI didn't turn risk-off until the end of February 2020, the indicator has successfully avoided each major bear market. The lead time of the risk-off signal can vary from the month that the bear market starts, as in March 2000, to as long as 2-3 months before the start, such as 2007, 2018, and 2021.

S&P 500 Bear Market	S&P 500 Drawdown Statistics			Notes on USRDI Risk-Off Signal Timing
	Buy & Hold	w/ USRDI	% Saved	
Mar. 2000 - Oct. 2002	-49%	-20%	**+29%**	Signaled risk-off at end of March 2000, 7 days after bear started
Oct. 2007 - Mar. 2009	-57%	0%	**+57%**	Signaled risk-off at end of July 2007, 70 days before bear started
Sept. 2018 - Dec. 2018	-20%	0%	**+20%**	Signaled risk-off at end of May 2018, 112 days before bear started
Feb. 2020 - Mar. 2020	-34%	-13%	**+21%**	Signaled risk-off at end of February 2020, 10 days after bear started
Jan. 2022 - Oct. 2022	-25%	0%	**+25%**	Signaled risk-off at end of November 2021, 34 days before bear started

Source: MarketDesk Quant Pack. Note: "w/ USRDI" column assumes you move to 100% cash at the start of each Risk-Off regime.

The second type of risk-off regime occurs when the stock market consolidates and experiences increased volatility within an existing bull market. These risk-off readings, such as 2004-2005, 2011-2012, and 2014-2016, did not result in bear markets (based on the technical definition of -20% drawdown); however, the S&P 500 experienced choppy price action during each of the periods.

The challenge lies in identifying which type of risk-off regime is unfolding at the start of the risk-off regime. When USRDI turns negative, it's impossible to know whether the market is entering a bear market or a consolidation period. Regardless of which regime style follows, history shows that negative USRDI readings are associated with lower returns, higher volatility, and increased downside risk. The next page discusses what inputs our team focuses on to analyze whether the risk-off regime will be a bear-market or a consolidation period.

How to Use the USRDI Signal – Pay Close Attention to Credit & FX Markets

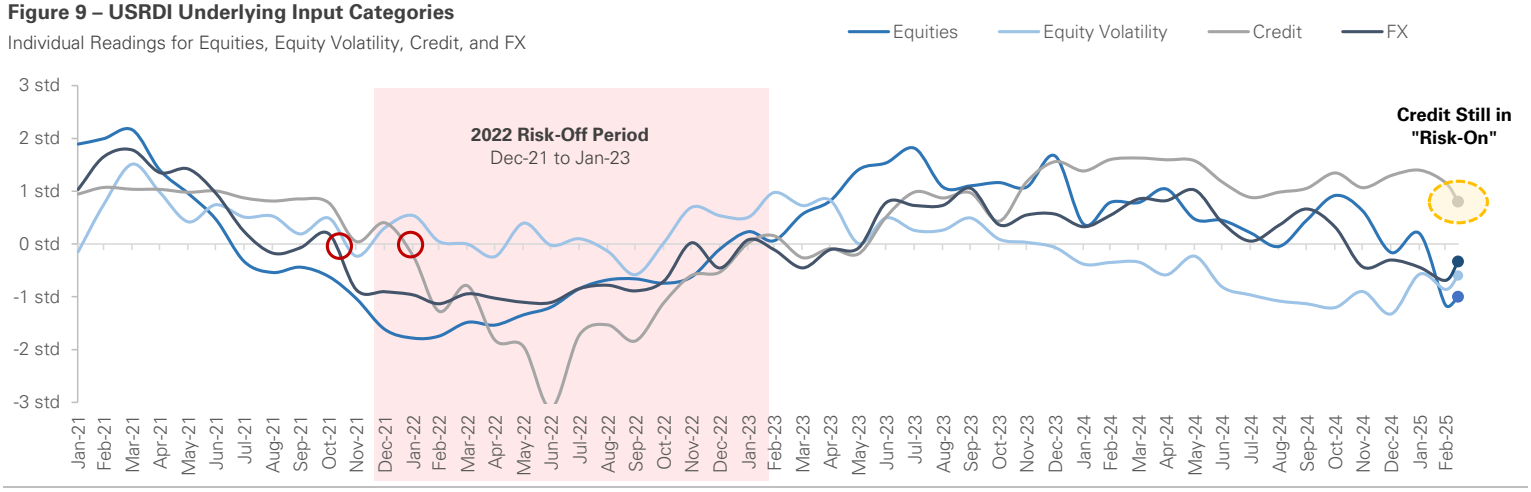
How can you distinguish between risk regimes that are short-term consolidation periods vs. bear markets? The answer lies in analyzing the underlying USRDI inputs and focusing on two questions. First, which inputs are negative? Second, which inputs recently pushed USRDI into negative territory? Here's what the analysis looks like as of March 2025. Figure 9 shows the equity, equity volatility, and FX inputs are all negative, while credit is positive. Moving to the second part of the analysis, we see that the equity input had the biggest recent decline, which ultimately caused USRDI to turn negative in late February.

Which are the most important inputs to follow? Figure 10 graphs each input's number of false signals, showing that credit and FX provide the fewest false signals. We define a false signal as the number of times an input causes the headline USRDI reading to turn negative, but the risk-off cycle is short. When credit and FX push USRDI negative, it's more likely that risk appetite is weak market wide. In contrast, if equity or equity volatility causes USRDI to turn negative, it's important to watch for follow-through in credit and FX markets.

Why focus on credit and FX? These markets are larger, more global, and harder to move than equities. As shown in Figure 11, the global credit market is much larger than the stock market. The credit market reflects liquidity conditions, corporate solvency, and funding stress. Similarly, FX markets reflect global risk sentiment, capital flows, and economic imbalances. Credit and FX tend to weaken before equities because they respond to big macro risks earlier. When credit and FX experience a sharp drop and push USRDI negative, the implications are bigger and more global. **This is why, as of the time of this publication in March 2025, our team is closely monitoring FX movements and credit spreads. While the equity market is showing the first sign of risk-off sentiment, credit and FX will be key in determining whether the risk-off shift signals the start of a bear market or short-term consolidation.**

Figure 9 – USRDI Underlying Input Categories

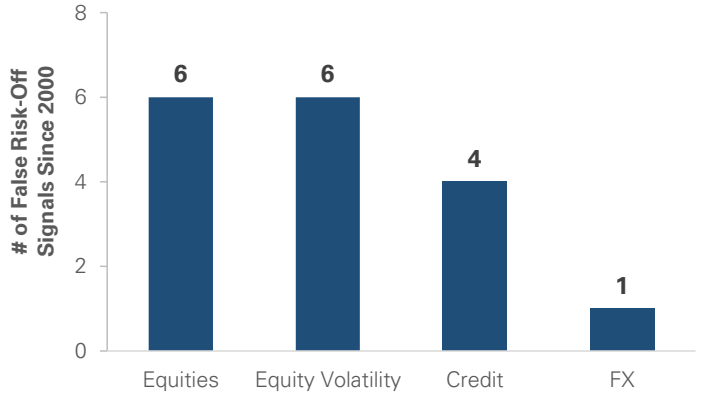
Individual Readings for Equities, Equity Volatility, Credit, and FX



Source: MarketDesk Quant Pack

Figure 10 – # of False Signals by USRDI Input Category

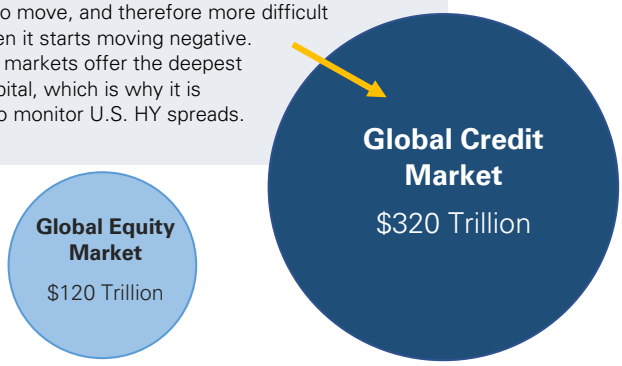
# of Times Input Caused USRDI to Turn Negative, But Risk-Off Cycle was Short



Source: MarketDesk Quant Pack

Figure 11 – Size of Global Equity vs Global Credit Markets

The **size of the global credit market is magnitudes larger** than the global stock market. Due to the size, it's harder to move, and therefore more difficult to stop when it starts moving negative. U.S. capital markets offer the deepest pools of capital, which is why it is important to monitor U.S. HY spreads.



Source: Institute of International Finance

Past Regimes, Asset Class Performance, and Average S&P 500 Return Path

Figure 12 – Historical Regime Dates Since 1999

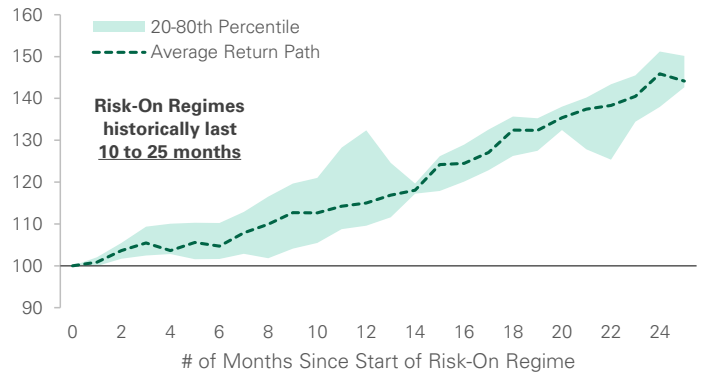
Risk-On vs Risk-Off Regime Dates

Risk-On Regimes			Risk-Off Regimes		
Start	Mos.	Return %	Start	Mos.	Return %
3/31/1999	12	16%	3/31/2000	20	-24%
11/30/2001	8	-20%	7/31/2002	2	-11%
9/30/2002	20	37%	5/31/2004	6	5%
11/30/2004	1	3%	12/31/2004	7	2%
7/31/2005	3	-2%	10/31/2005	3	6%
1/31/2006	6	0%	7/31/2006	1	2%
8/31/2006	1	2%	9/30/2006	1	3%
10/31/2006	9	6%	7/31/2007	23	-37%
6/30/2009	25	41%	7/31/2011	13	9%
8/31/2012	25	40%	9/30/2014	22	10%
7/31/2016	22	24%	5/31/2018	17	12%
10/31/2019	4	-3%	2/29/2020	4	5%
6/30/2020	17	47%	11/30/2021	14	-11%
1/31/2023	25	46%	*2/28/2025*		*-7%*
Average	**13mo**	**+17%**	**Average**	**10mo**	**-2%**

Source: MarketDesk Quant Pack. Current regime italicized. Data as of 3/14/2025.

Figure 14 – Average S&P 500 Return Path During Risk-On Regimes

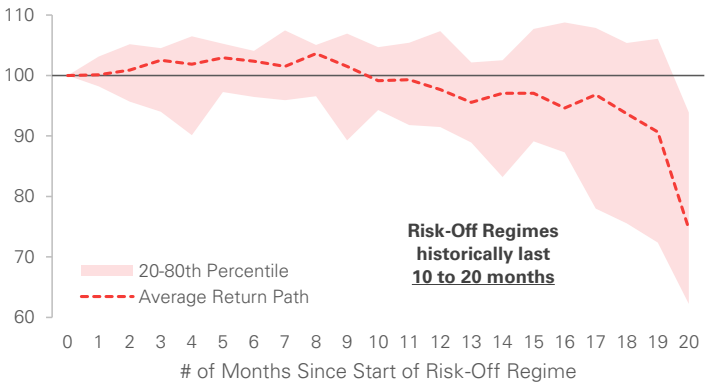
Price Return Path Indexed to 100 for all Risk-On Regimes Since 2000



Source: MarketDesk Quant Pack

Figure 15 – Average S&P 500 Return Path During Risk-Off Regimes

Price Return Path Indexed to 100 for all Risk-Off Regimes Since 2000



Source: MarketDesk Quant Pack

Figure 13 – Asset Class Performance During Risk-On & Risk-Off Regimes

Historical Returns Since January 2000

Market Segment	Risk-On Regimes		Risk-Off Regimes	
	Average	% Positive	Average	% Positive
Equity Styles				
S&P 500	16.9%	-	-0.4%	-
Small Cap	17.1%	43%	0.8%	33%
Value	14.6%	0%	0.1%	17%
Growth	19.4%	100%	-1.8%	83%
Low Beta	12.1%	0%	8.7%	83%
High Beta	23.5%	71%	-7.0%	17%
Momentum	18.5%	86%	0.7%	67%
High Quality	17.2%	71%	1.9%	83%
High Div. Yield	14.1%	14%	7.9%	83%
U.S. Sectors				
Comm Svcs	13.4%	43%	-3.1%	67%
Cons Disc	18.5%	71%	1.3%	67%
Cons Stpls	9.3%	0%	10.1%	83%
Energy	15.6%	29%	5.1%	33%
Financials	19.5%	43%	-3.7%	17%
Health Care	11.4%	29%	7.8%	100%
Industrials	18.5%	43%	-0.1%	17%
Materials	15.6%	43%	2.6%	50%
Real Estate	13.9%	17%	8.3%	50%
Tech	22.6%	86%	-1.9%	83%
Utilities	9.7%	14%	9.2%	83%
Credit				
Bond Aggregate	3.1%	-	5.5%	-
+10Y US Treasuries	1.9%	14%	10.5%	67%
1-5Y US Treasuries	2.2%	71%	3.9%	50%
High Yield	9.6%	71%	3.6%	17%
Corp IG	4.9%	57%	5.6%	33%
Fallen Angels	11.3%	71%	7.7%	0%
Municipals	4.1%	71%	5.6%	50%
MBS	2.8%	57%	5.3%	33%
TIPs	5.0%	71%	5.3%	67%
Convertibles	15.3%	100%	-1.3%	50%
International Equity				
Emerging	16.6%	17%	0.4%	17%
Developed	12.3%	17%	-2.5%	17%
FX				
U.S. Dollar	-2.2%	14%	4.0%	67%
Commodities				
Broad Cmdty.	6.9%	14%	-4.6%	33%
Gold	7.4%	57%	8.9%	83%
Crude Oil	16.4%	43%	5.1%	33%

Source: MarketDesk Quant Pack. **Average** = Annualized total return for each market segment during Risk On and Risk Off periods. The return is calculated as the average monthly total return multiplied by 12. **% Positive** = The percentage of regimes each Equity, FX, and Commodity category outperformed the S&P 500 Index and each Credit category outperformed the Bloomberg Bond Aggregate Index (% positive based on price returns).

How USRDI Can Help Manage Portfolio Beta Exposure

USRDI helps investment committees address key portfolio questions, such as:

- Is the current market environment favorable for increasing portfolio beta?
- Does the market environment favor cyclical or defensive sectors and factors?
- Should we allocate the credit sleeve to higher-yielding, higher-risk bonds to enhance income potential?

The common thread in these questions is the challenge of managing beta—knowing when to dial portfolio exposure up or down across various market factors. Examples of equity betas include cyclical vs. defensive sectors and high beta vs. low volatility stocks. Examples of credit betas include credit rating quality and interest rate risk (i.e., bond duration). Each beta performs differently based on the market's overall risk appetite. Mismanaging beta exposures produces lower risk-adjusted returns and is equivalent to swimming against the current.

The table in Figure 16 shows preferred equity and credit positioning based on USRDI. In a risk-on environment with a positive USRDI, equity exposure should tilt toward sectors and factors with more cyclicality and higher betas. The two primary equity betas to own in risk-on regimes are high beta (over low volatility) and cyclical sectors (over defensive). This preference extends to credit, including corporate high-yield, fallen angels, and hybrid equity bonds such as convertible bonds. For duration positioning within credit portfolios, risk-on regimes favor extending duration in corporate investment-grade bonds to benefit from credit spread tightening while maintaining a neutral to slightly underweight stance in U.S. Treasury bonds (i.e., less exposure to rising back-end of yield curve as macro outlook improves). Within alternatives, crude oil historically outperforms gold during risk-on periods.

Moving to the right column in the table, performance trends shift notably in risk-off regimes. Negative USRDI readings favor equity factors and sectors that are less cyclical with lower betas. High beta stocks underperform low volatility stocks, while defensive sectors outperform cyclical sectors. In credit markets, corporate high yield and fallen angels struggle to outperform corporate investment grade bonds, while convertible bonds tend to underperform U.S. Treasuries as the stock market sells off. For duration positioning, risk-off environments favor extending duration in U.S. Treasury bonds while maintaining a neutral to slight underweight stance in corporate investment-grade. In the commodities market, crude oil underperforms gold.

Figure 16 – Positioning Ideas Based on Whether USRDI is Risk-On or Risk-Off

Asset Classes	Risk-On Regimes Preferred List	Risk-Off Regimes Preferred List
Equity Factors	High Beta Factor Growth Factor Cyclical Sectors	Low Volatility Factor High Dividend Defensive Sectors
Credit Factors	Corp High Yield Fallen Angel Bonds Convertible Bonds Preferreds Neutral U.S. Treasury Bond Duration	U.S. Treasury Bonds (Long Duration) Corp Investment Grade Mortgage-Backed Securities
International & Commodities	Crude Oil Emerging Markets	Gold (safe haven) U.S. Dollar (safe haven) International Low Vol Factor

Source: MarketDesk

What does managing portfolios look like in practice? An investment portfolio can be divided into core and tactical sleeves. The core sleeve consists of broad equity and credit betas, including growth and value factors, large- and small-cap stocks, and investment grade and high yield bonds. The emphasis is on low cost and low turnover, and in our examples, it accounts for 85% of the total portfolio. The remaining 15% can be allocated to tactically managing the various equity and credit beta pairs. For example, when USRDI is risk-on, the 15% can be allocated to higher beta assets such as cyclical sectors, high beta stocks, high yield corporate bonds, fallen angels, and convertible bonds. When USRDI turns risk-off, these positions can rotate into their defensive counterparts: defensive sectors, low volatility stocks, investment grade corporate bonds, and U.S. Treasuries. By limiting active management to just a portion of the portfolio, overall turnover remains controlled while still allowing for meaningful shifts in portfolio beta. As the sample models on page 11 show, managing betas on a small portion of the portfolio can make a big difference.

Appendix

Market Volatility, Corporate Fundamentals, & Sample Models

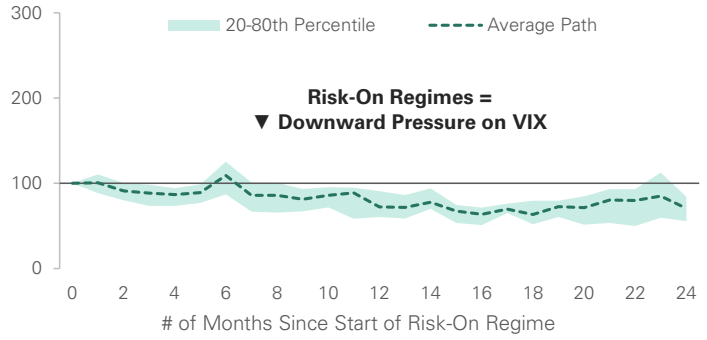
Market Volatility and Historical Drawdowns

Equity Market Volatility Increases in Risk-Off Regimes. The charts below track the VIX's movement during risk-on and risk-off regimes. In general, equity markets experience more volatility during risk-off regimes than risk-on regimes. Figure 17 shows the VIX historically declines during risk-on periods. The 20-80th percentile range shows that there are periods of elevated volatility, but the volatility is usually short-lived, and the VIX doesn't rise much above its starting point. In contrast, Figure 18 shows the VIX historically remains above its starting point throughout risk-off periods, with occasional volatility spikes.

The difference in regime volatility is also evident in the S&P 500's monthly returns. The average monthly return in risk-on regimes is +1.0% with a 65% win rate and a standard deviation of 3.7%. In contrast, the average monthly return in risk-off regimes is +0.1% with a 58% win rate and a standard deviation of 5.2%. To summarize, risk-off regimes historically produce lower average returns, lower win rates, and more volatility.

Figure 17 – Equity Market Volatility Declines In Risk-On Regimes but ...

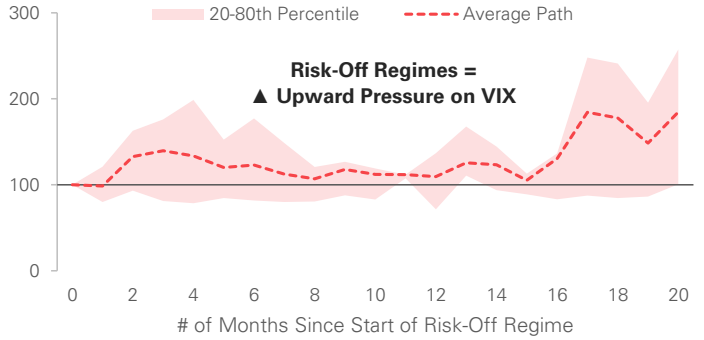
Average CBOE VIX Trend During Risk-On Regimes Since 2000



Source: MarketDesk Quant Pack

Figure 18 – ... Increases In Risk-Off Regimes

Average CBOE VIX Trend During Risk-Off Regimes Since 2000

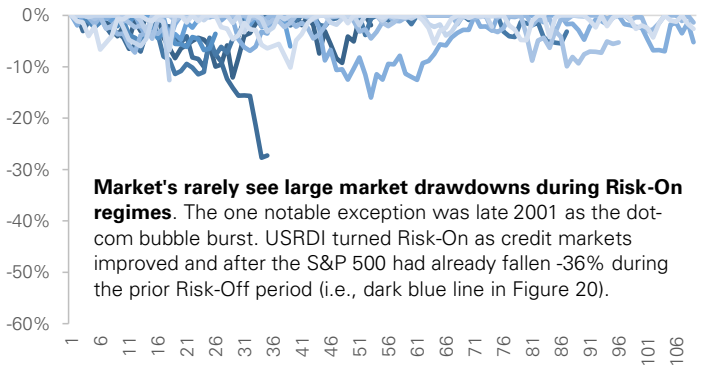


Source: MarketDesk Quant Pack

Historical Drawdowns. The difference in volatility between risk-on and risk-off regimes impacts drawdown risk. Figures 19 and 20 graph the S&P 500's drawdown during each risk-on and risk-off regime since 2000. For comparability, the two charts use the same axis scales. The chart on the left shows risk-on regimes historically experience smaller drawdowns, with investors buying the dip. In contrast, the chart on the right shows risk-off regimes historically experience bigger and longer drawdowns. The average drawdown in risk-off regimes is -15.5%, roughly 50% bigger than risk-on regimes, with 4 of the last 14 phases experiencing drawdowns greater than -20%. Simply put, dips tend to be bought in risk-on regimes and sold in risk-off regimes. Trying to pick the market bottom in a risk-off regime is both difficult and risky.

Figure 19 – Market Drawdowns are Shallow During Risk-On Regimes but ...

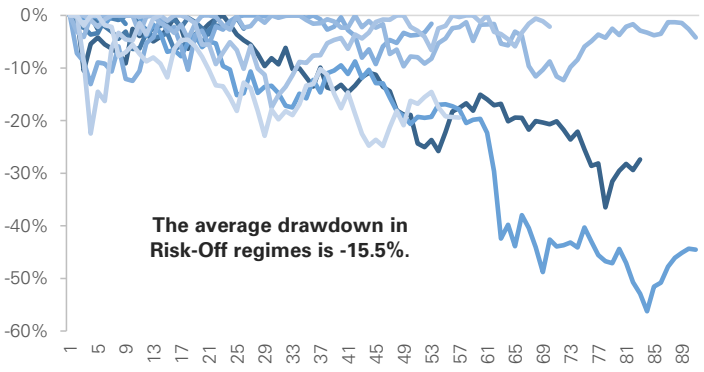
S&P 500 Drawdowns During Risk-on Regimes Since 2000



Source: MarketDesk Quant Pack

Figure 20 – ... Increase During Risk-Off Regimes

S&P 500 Drawdowns During Risk-off Regimes Since 2000



Source: MarketDesk Quant Pack

Corporate Fundamentals – Trends in Earnings Growth & Valuation Changes

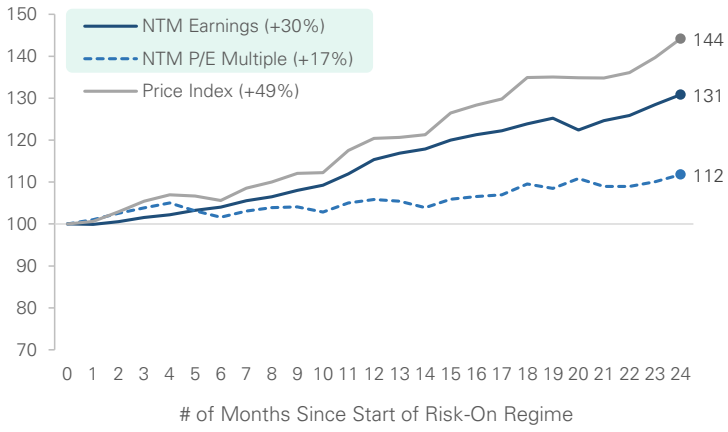
Market performance is a function of earnings growth and valuation changes. The charts below break down the S&P 500's performance drivers into these two key components. The data shows the sharp divide between risk-on and risk-off regimes. Figure 21 shows risk-on regimes historically benefit from a combination of P/E multiple expansion and earnings growth. In contrast, Figure 22 shows risk-off regimes historically experience P/E multiple contraction early on followed by slowing earnings growth.

Risk-on regimes benefit from a dual tailwind of P/E multiple expansion and earnings growth. Historically, P/E multiples expand during risk-on regimes as macro conditions improve and earnings rise. As the equity market grows into its valuation, P/E multiples drift sideways, and earnings growth drives returns. Figure 21 shows this transition from P/E multiple expansion to earnings growth historically takes place in the first six months of the risk-on regime.

Fundamentally, the drivers of S&P 500 returns in risk-off regimes are the opposite of risk-on regimes. Unlike risk-on periods, where P/E multiples expand, risk-off regimes typically see P/E multiples contract. Corporate earnings momentum from the previous risk-on regime historically carries over early into risk-off regimes. However, as the risk-off period lengthens, earnings growth slows, and earnings revisions turn negative. This leads to negative returns, with falling valuation multiples and weakening earnings weighing on stock prices.

Figure 21 – Risk-On Regimes Experience Dual Tailwinds

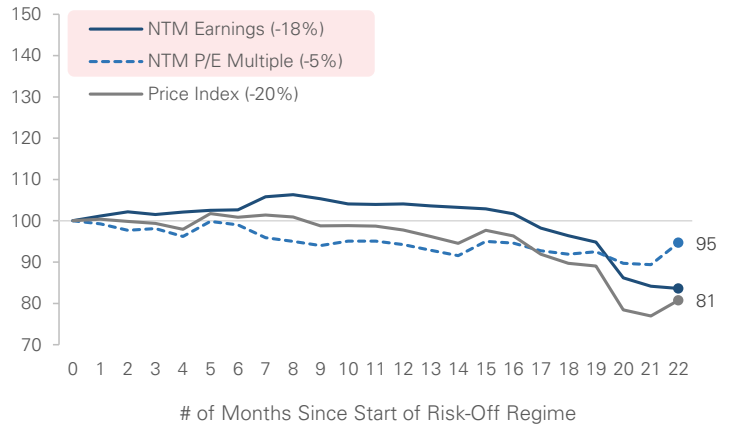
Average Changes in Multiples & Earnings During Risk-On Regimes Since 2000



Source: MarketDesk Quant Pack. Indexed to 100 at start of the regime.

Figure 22 – Risk-Off Regimes Experience Dual Headwinds

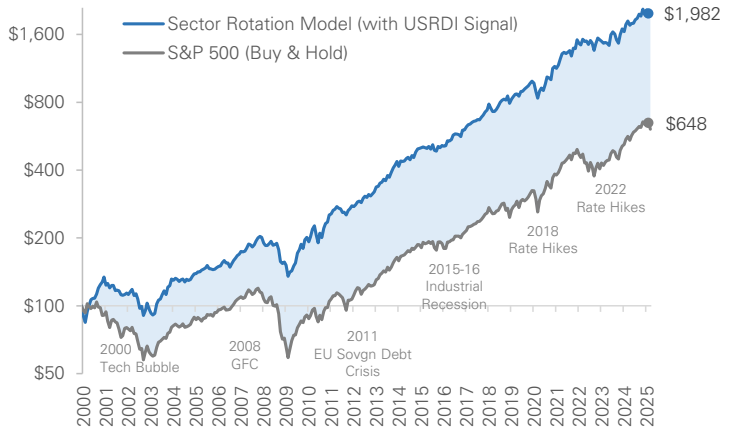
Average Changes in Multiples & Earnings During Risk-Off Regimes Since 2000



Source: MarketDesk Quant Pack. Indexed to 100 at start of the regime.

Sample Equity and Credit Models Based on USRDI Signal

Figure 23: Total Returns – U.S. Sector Rotation Model



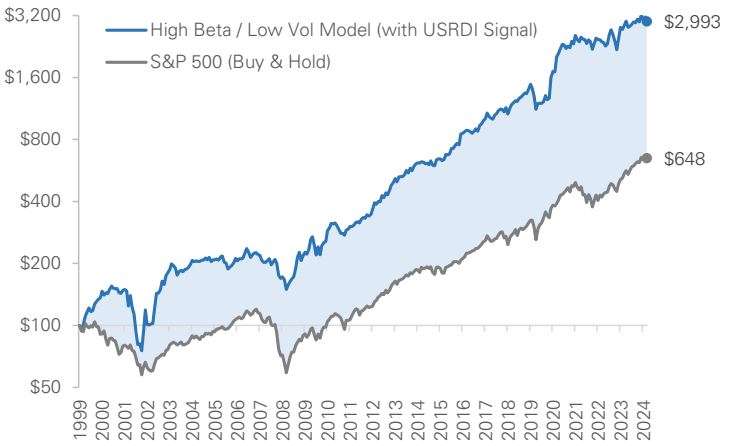
Source: MarketDesk Quant Pack. Own Defensive Sector ETFs during Risk-Off Regimes (XLU, XLV, XLP) and Cyclical Sector ETFs during Risk-On Regimes (XLB, XLI, XLY). The portfolio is rebalanced monthly.

Figure 24: Performance Statistics – U.S. Sector Rotation Model

Annual Statistics of Returns & Risks	S&P 500 (Benchmark)	U.S. Sector Rotation Model
Average Return	9.4%	13.7%
Strategy CAGR	**6.5%**	**12.3%**
Max Drawdown	-51%	-34%
% of Positive Years	**76%**	**88%**
Up Capture	100%	105%
Down Capture	**100%**	**11%**
Net Capture	-	+95%
Max Positive Year	32%	36%
Max Negative Year	-37%	-22%
Max Risk / Reward	0.9	1.6

Source: MarketDesk Quant Pack

Figure 25: Total Returns – High Beta/Low Vol Rotation Model



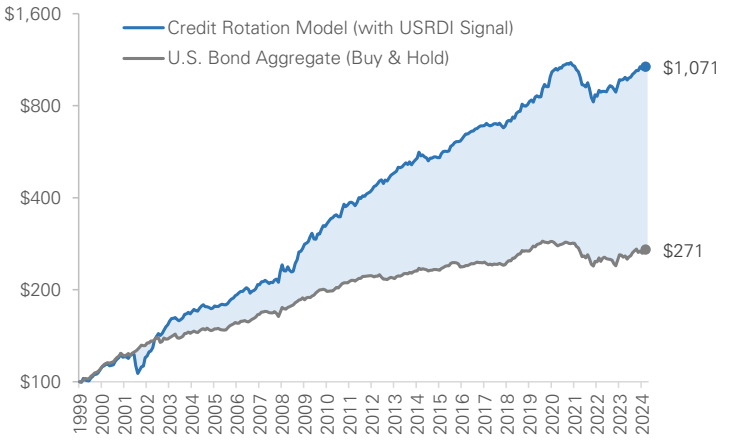
Source: MarketDesk Quant Pack. Own 100% S&P 500 Low Volatility factor during Risk-Off Regimes and 100% S&P 500 High Beta factor during Risk-On Regimes. The portfolio is rebalanced monthly.

Figure 26: Performance Statistics – High Beta/Low Vol Model

Annual Statistics of Returns & Risks	S&P 500 (Benchmark)	High Beta / Low Vol Model
Average Return	9.4%	17.0%
Strategy CAGR	**6.5%**	**14.6%**
Max Drawdown	-51%	-52%
% of Positive Years	**76%**	**84%**
Up Capture	100%	128%
Down Capture	**100%**	**5%**
Net Capture	-	+123%
Max Positive Year	32%	85%
Max Negative Year	-37%	-32%
Max Risk / Reward	0.9	2.6

Source: MarketDesk Quant Pack

Figure 27: Total Returns – Credit Sector Rotation Model



Source: MarketDesk Quant Pack. Own High-Quality Credit Sectors during Risk-Off Regimes (10Y U.S. Treasuries & MBS) and Low-Quality Credit Sectors during Risk-On Regimes (High Yield, Fallen Angels, Convertibles). The portfolio is rebalanced monthly.

Figure 28: Performance Statistics – Credit Sector Rotation Model

Annual Statistics of Returns & Risks	Bond Aggregate (Benchmark)	Credit Sector Rotation Model
Average Return	4.1%	10.3%
Strategy CAGR	**4.1%**	**9.9%**
Max Drawdown	-17%	-26%
% of Positive Years	**88%**	**96%**
Up Capture	100%	220%
Down Capture	**100%**	**14%**
Net Capture	-	+206%
Max Positive Year	12%	30%
Max Negative Year	-13%	-20%
Max Risk / Reward	0.9	1.5

Source: MarketDesk Quant Pack

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