

U.S. PMI Momentum Indicator

Report Overview

The Model Signal Reports translate Quant Pack Leading Indicators into asset allocation insights. This report provides the historical performance data of each sample model since 2000 and will be updated on an annual basis going forward. You can find more information on the indicator and its latest model signal in the MarketDesk Quant Pack published each Friday.

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Overview of Indicator

- The U.S. PMI Momentum Indicator forecasts the path of U.S. manufacturing activity 12 months into the future.
- Based on a composite of 14 macro inputs (regional Fed surveys, interest rates, commodity demand, monetary policy, business confidence, inflation, etc.) that exhibit a high statistical correlation with the year-over-year change in Manufacturing PMI.
- The leading indicator (1) provides a 12-month view into the overall direction of U.S. manufacturing activity, and (2) informs portfolio positioning across asset classes, sectors, industries, and bonds.

Overview of Model Signal

When the U.S. PMI Momentum Indicator is below zero, own 100% Risk-Off Exposure (i.e., Defensive Sectors, High-Quality Credit, and Bonds). When the indicator is above zero, own 100% Risk-On Exposure (i.e., Cyclical Sectors, Low-Quality Credit, and Stocks). All sample model portfolios are rebalanced monthly to equal weight.

Figure 1: Historical Model Signals (Risk-On vs Risk-Off)

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

| Model Signals Based on U.S. PMI Momentum Indicator | | | | | | | | | | | | |
|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |
| 2000 | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | 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-On | Risk-On |
| 2002 | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On |
| 2003 | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-On | Risk-On |
| 2004 | Risk-Off | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | Risk-Off | Risk-Off | Risk-Off |
| 2005 | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off |
| 2006 | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off |
| 2007 | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | 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-On |
| 2009 | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | 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-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | 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-On | Risk-On | Risk-Off | 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-Off | Risk-Off | 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-On | Risk-On |
| 2016 | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | Risk-On | 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-Off | Risk-Off | Risk-Off | Risk-Off | Risk-Off | 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-Off | Risk-Off |
| 2020 | Risk-Off | Risk-Off | Risk-Off | Risk-On | Risk-On | Risk-On | 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-On |
| 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-Off | Risk-Off | Risk-Off | | | | | | | | |

Figure 2: Annual Model Returns

| | Page 3 | Page 4 | Page 5 |
|---------|----------------------|----------------------|---------------------|
| S&P 500 | U.S. Sector Rotation | U.S. Credit Rotation | Stock/Bond Rotation |
| -4% | 19% | 6% | 10% |
| -12% | -6% | 14% | 20% |
| -22% | -19% | -4% | -22% |
| 29% | 23% | 17% | 16% |
| 11% | 16% | 5% | 1% |
| 5% | 9% | 5% | 2% |
| 16% | 14% | 4% | 4% |
| 5% | 14% | 8% | 7% |
| -37% | -22% | 20% | 3% |
| 26% | 37% | 57% | 26% |
| 15% | 26% | 17% | 15% |
| 2% | 16% | 17% | 8% |
| 16% | 22% | 12% | 11% |
| 32% | 36% | 14% | 32% |
| 14% | 17% | 13% | 8% |
| 1% | -1% | -3% | 0% |
| 12% | 14% | 18% | 12% |
| 22% | 23% | 11% | 22% |
| -4% | 1% | 0% | 0% |
| 31% | 25% | 11% | 9% |
| 18% | 40% | 57% | 52% |
| 29% | 25% | 7% | 29% |
| -18% | 0% | -20% | -13% |
| 9% | 1% | 5% | 4% |

Source: MarketDesk Quant Pack. Data as of 4/30/2023. 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.

Indicator Signal Overview – U.S. Sector Rotation Model

When the U.S. PMI Momentum Indicator is below zero, own 100% Risk-Off Exposure. When the indicator is above zero, own 100% Risk-On Exposure. The sample model is rebalanced monthly to equal weight. Refer to page 2 to see when the model held Risk-On or Risk-Off exposure for each month since January 2000.

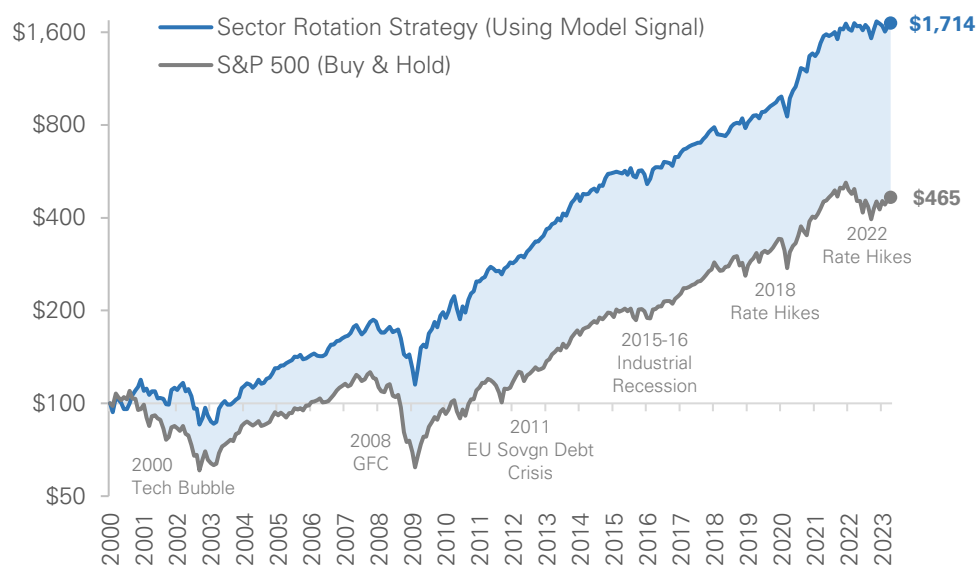
- **Risk-On** = Cyclical Sectors (Industrials, Materials, Cons. Discretionary)
- **Risk-Off** = Defensive Sectors (Utilities, Health Care, Cons. Staples)

Figure 3: Performance Statistics – U.S. Sector Rotation Model

| Annual Statistics of Returns & Risks | S&P 500 (Benchmark) | U.S. Sector Rotation Model |
|--------------------------------------|---------------------|----------------------------|
| Average Return | 8.2% | 14.3% |
| Strategy CAGR | 6.8% | 13.0% |
| Maximum Drawdown | -51% | -38% |
| % of Positive Years | 74% | 83% |
| Upside Capture | 100% | 124% |
| Downside Capture | 100% | 27% |
| Net Capture | 0% | +98% |
| Max Positive Year | 32% | 40% |
| Max Negative Year | -37% | -22% |
| Max Risk / Reward Ratio | 0.88 | 1.84 |

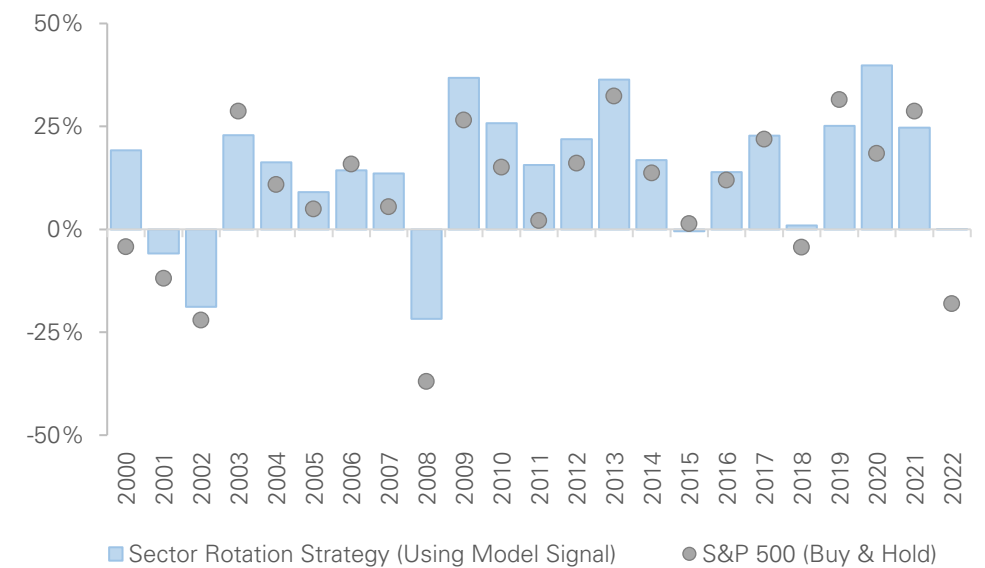
Source: MarketDesk Quant Pack. Based on annual calendar year returns since 2000.

Figure 4: Total Returns – U.S. Sector Rotation Model



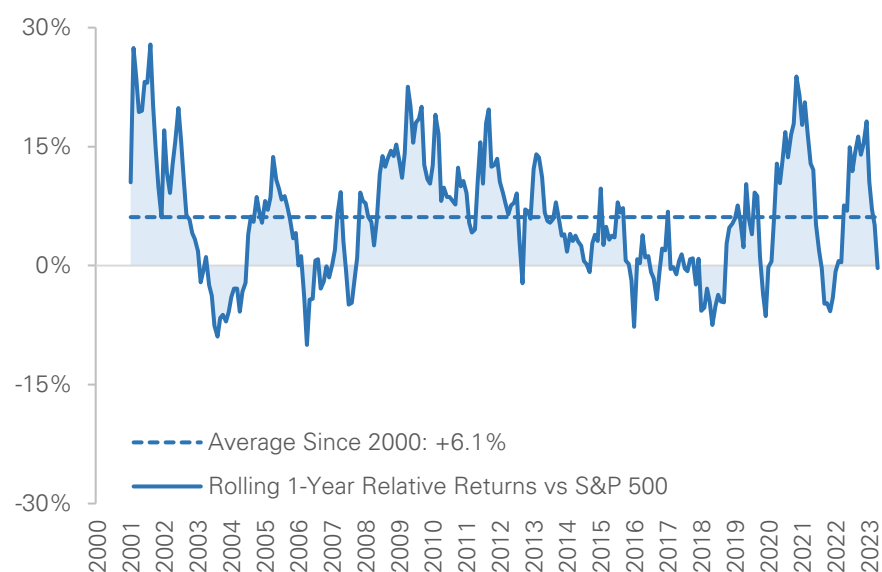
Source: MarketDesk Quant Pack. The portfolio is rebalanced monthly.

Figure 5: Historical Annual Returns – U.S. Sector Rotation Model



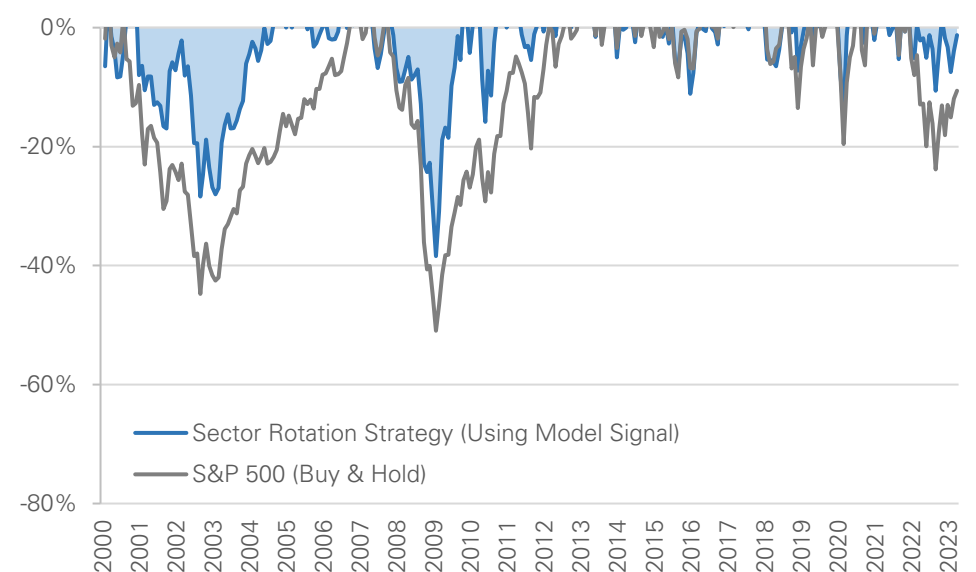
Source: MarketDesk Quant Pack

Figure 6: 1-Year Relative Returns – U.S. Sector Rotation Model



Source: MarketDesk Quant Pack

Figure 7: Portfolio Drawdowns – U.S. Sector Rotation Model



Source: MarketDesk Quant Pack

Indicator Signal Overview – U.S. Credit Rotation Model

When the U.S. PMI Momentum Indicator is below zero, own 100% Risk-Off Exposure. When the indicator is above zero, own 100% Risk-On Exposure. The sample model is rebalanced monthly to equal weight. Refer to page 2 to see when the model held Risk-On or Risk-Off exposure for each month since January 2000.

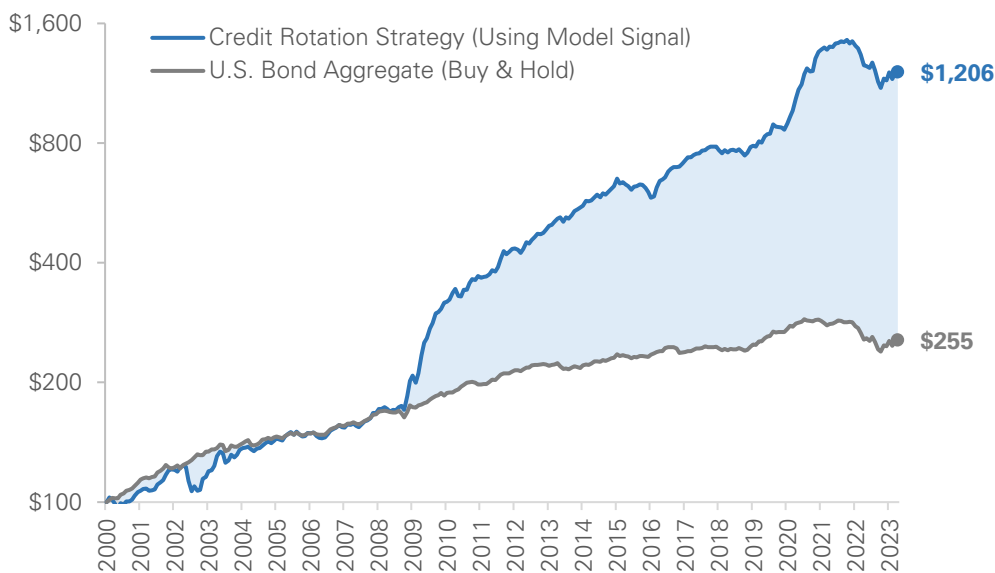
- **Risk-On** = Low-Quality Credit (High Yield, Fallen Angels, Convertibles)
- **Risk-Off** = High-Quality Credit (U.S. Treasuries & MBS)

Figure 8: Performance Statistics – U.S. Credit Rotation Model

| Annual Statistics of Returns & Risks | US Bond Aggregate (Benchmark) | Credit Sector Rotation Model |
|--------------------------------------|-------------------------------|------------------------------|
| Average Return | 4.1% | 12.3% |
| Strategy CAGR | 4.1% | 11.3% |
| Maximum Drawdown | -17% | -24% |
| % of Positive Years | 87% | 83% |
| Upside Capture | 100% | 254% |
| Downside Capture | 100% | 1% |
| Net Capture | 0% | +253% |
| Max Positive Year | 12% | 57% |
| Max Negative Year | -13% | -20% |
| Max Risk / Reward Ratio | 0.92 | 2.81 |

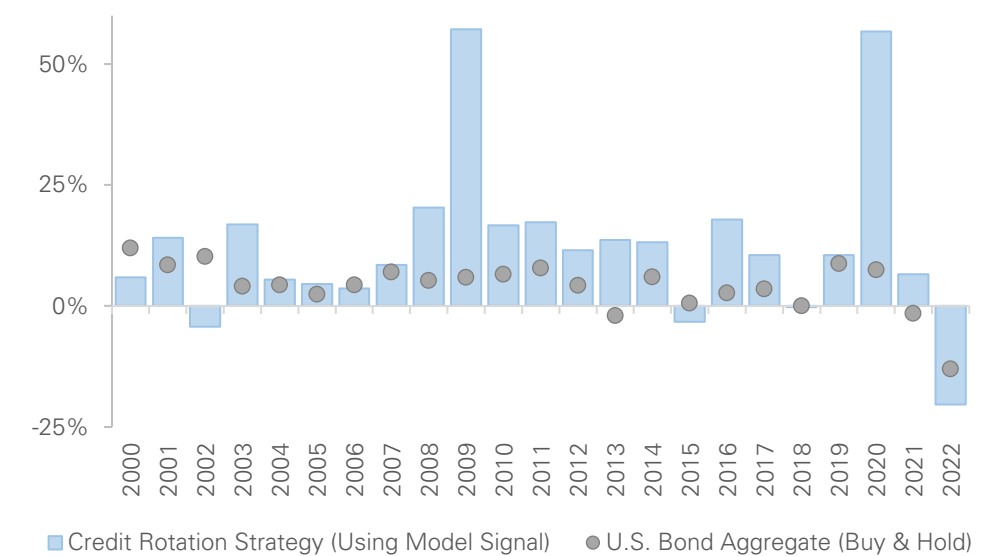
Source: MarketDesk Quant Pack. Based on annual calendar year returns since 2000.

Figure 9: Total Returns – U.S. Credit Rotation Model



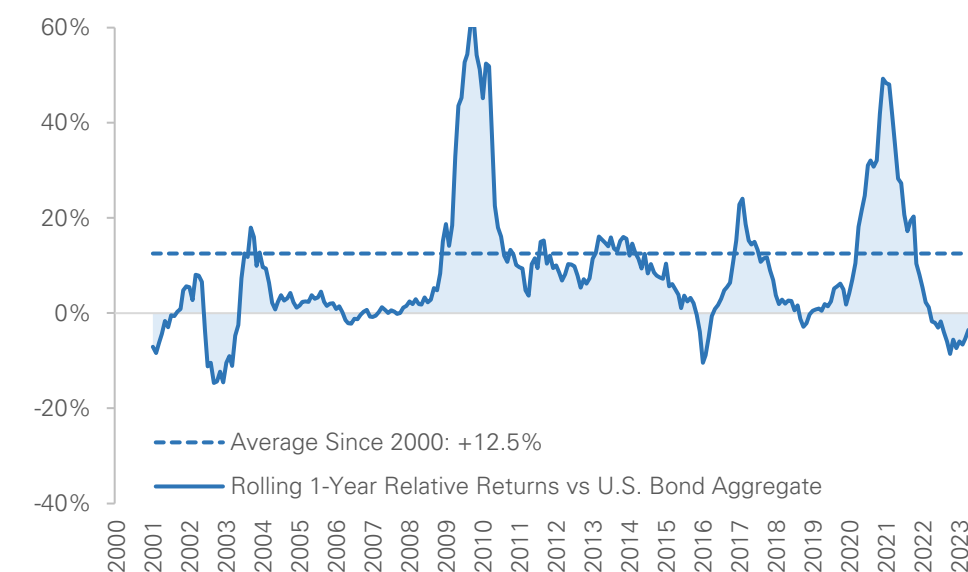
Source: MarketDesk Quant Pack. The portfolio is rebalanced monthly.

Figure 10: Historical Annual Returns – U.S. Credit Rotation Model



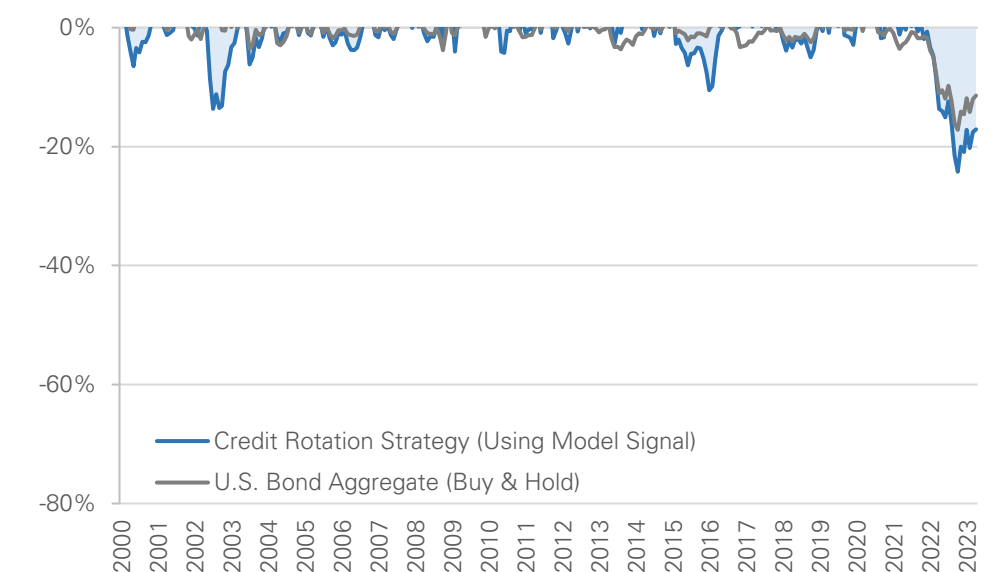
Source: MarketDesk Quant Pack

Figure 11: 1-Year Relative Returns – U.S. Credit Rotation Model



Source: MarketDesk Quant Pack

Figure 12: Portfolio Drawdowns – U.S. Credit Rotation Model



Source: MarketDesk Quant Pack

Indicator Signal Overview – Stock / Bond Rotation Model

When the U.S. PMI Momentum Indicator is below zero, own 100% Risk-Off Exposure. When the indicator is above zero, own 100% Risk-On Exposure. Refer to page 2 to see when the model held Risk-On or Risk-Off exposure for each month since January 2000.

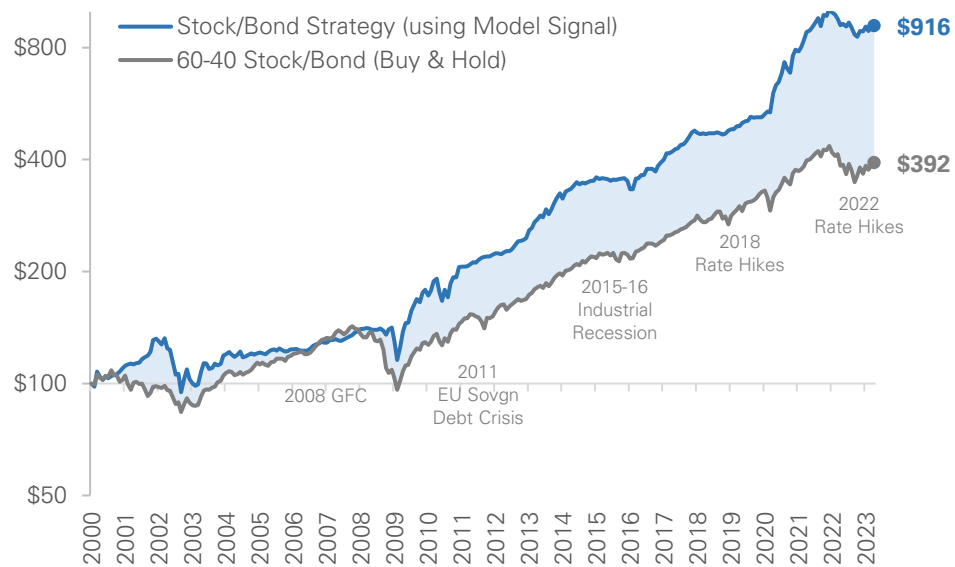
- **Risk-On** = Stocks (S&P 500 Index)
- **Risk-Off** = Bonds (U.S. Bond Aggregate Index)

Figure 13: Performance Statistics – Stock / Bond Rotation Model

| Annual Statistics of Returns & Risks | 60-40 Stock/Bond (Benchmark) | Stock / Bond Rotation Model |
|--------------------------------------|------------------------------|-----------------------------|
| Average Return | 6.4% | 10.9% |
| Strategy CAGR | 6.1% | 10.0% |
| Maximum Drawdown | -33% | -28% |
| % of Positive Years | 78% | 87% |
| Upside Capture | 100% | 131% |
| Downside Capture | 100% | 23% |
| Net Capture | 0% | +108% |
| Max Positive Year | 22% | 52% |
| Max Negative Year | -22% | -22% |
| Max Risk / Reward Ratio | 1.01 | 2.35 |

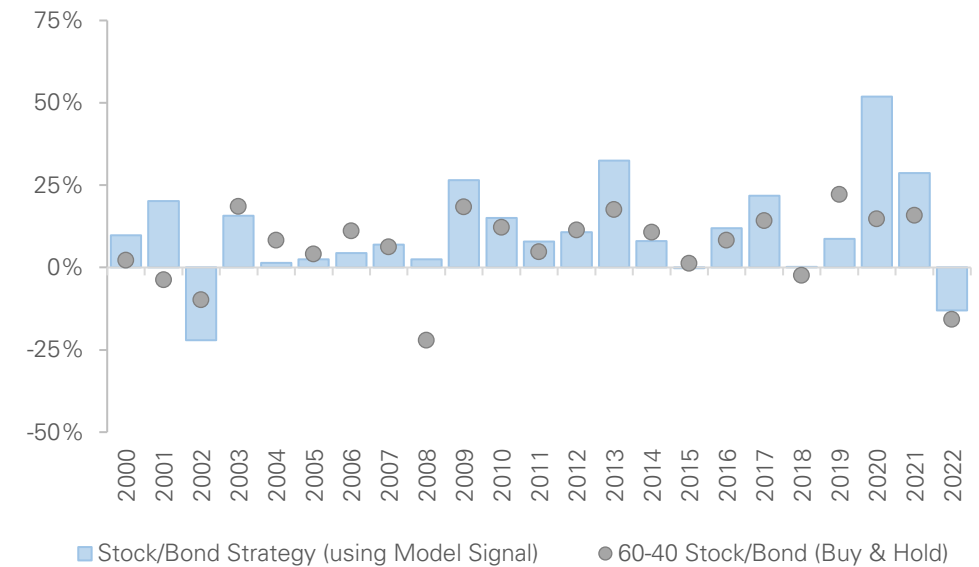
Source: MarketDesk Quant Pack. Based on annual calendar year returns since 2000.

Figure 14: Total Returns – Stock / Bond Rotation Model



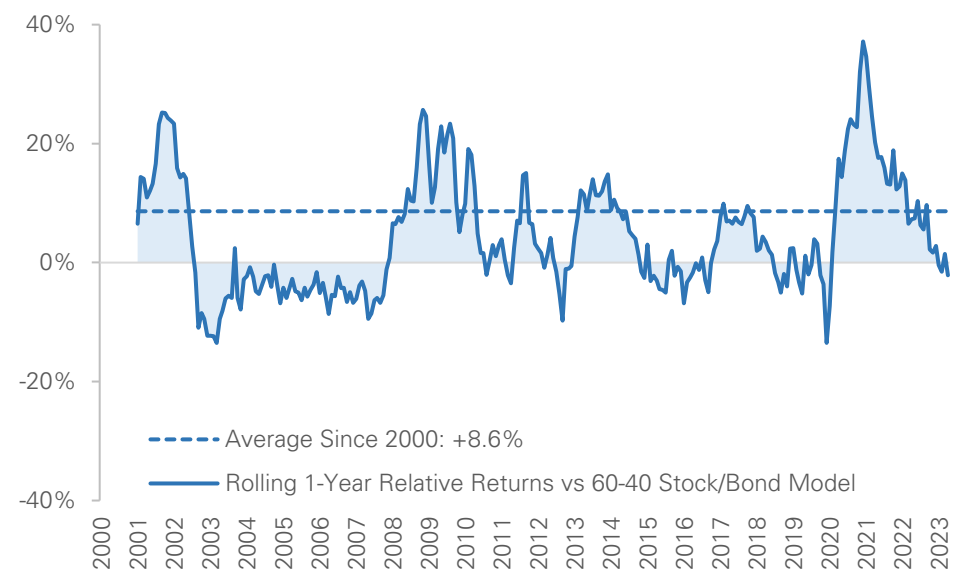
Source: MarketDesk Quant Pack. The portfolio is rebalanced monthly.

Figure 15: Historical Annual Returns – Stock / Bond Rotation Model



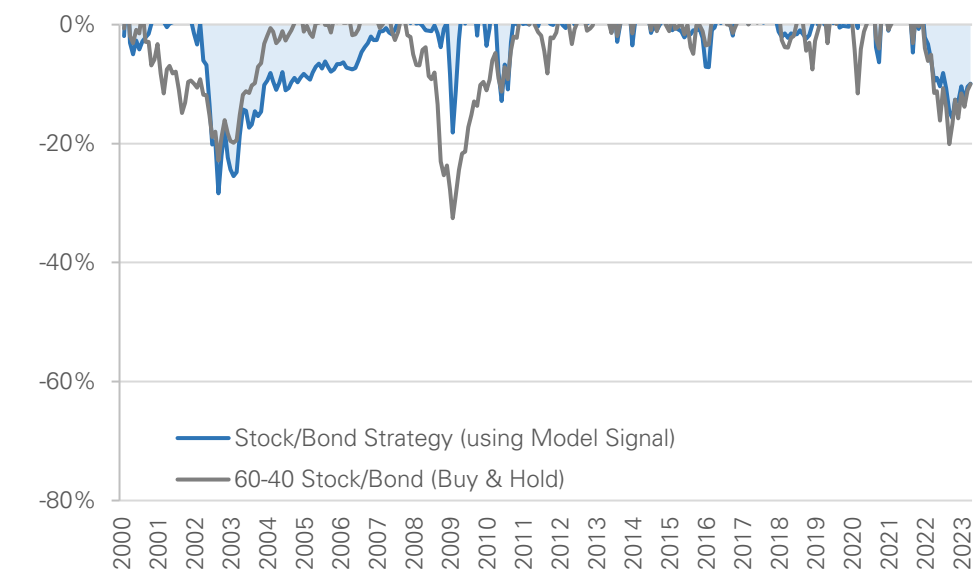
Source: MarketDesk Quant Pack

Figure 16: 1-Year Relative Returns – Stock / Bond Rotation Model



Source: MarketDesk Quant Pack

Figure 17: Portfolio Drawdowns – Stock / Bond Rotation Model



Source: MarketDesk Quant Pack

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