

S&P 500 Earnings Leading 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.

Table of Contents

2. Overview & History of Model Signal
3. U.S. Sector Rotation Model
4. U.S. Credit Rotation Model
5. Stock / Bond Rotation Model
6. Disclosures

Overview of Indicator

- The S&P 500 Earnings Leading Indicator forecasts U.S. corporate earnings 12 months ahead.
- Based on a composite of 15 macro inputs (interest rates, housing activity, business confidence, manufacturing activity, commodity prices, etc.) that exhibit a high statistical correlation with the year-over-year change in S&P 500 earnings growth.
- The leading indicator (1) provides an early signal for the direction of earnings growth over the next 12 months, and (2) spots key 'turning points'. The indicator is not designed to predict with precision, but that is typically not necessary for successful asset allocation. Instead, investors should focus on the direction and magnitude of the 12-month forecast.

Overview of Model Signal

When the S&P 500 Earnings Leading Indicator's forecast is below zero, own 100% Risk-Off Exposure (i.e., Defensive Sectors, High-Quality Credit, and Bonds). When the S&P 500 Earnings Leading Indicator's forecast 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 S&P 500 Earnings Leading 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-On	Risk-On	Risk-On	Risk-On	Risk-On
2001	Risk-On	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-On
2002	Risk-Off	Risk-Off	Risk-Off	Risk-Off	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-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-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On
2005	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On
2006	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	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-Off
2009	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	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-On	Risk-On	Risk-On	Risk-On	Risk-On
2012	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	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-On	Risk-On	Risk-On
2015	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On
2016	Risk-On	Risk-On	Risk-On	Risk-On	Risk-Off	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-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On
2019	Risk-On	Risk-On	Risk-On	Risk-On	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off
2020	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	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-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On	Risk-Off	Risk-Off	Risk-Off
2023	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off
2024	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-Off	Risk-On	Risk-On	Risk-On	Risk-On	Risk-On

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%	0%	-5%	-4%
-12%	-5%	15%	12%
-22%	-15%	-4%	-16%
29%	36%	30%	29%
11%	15%	11%	11%
5%	0%	2%	5%
16%	17%	11%	14%
5%	14%	8%	7%
-37%	-22%	16%	5%
26%	20%	9%	15%
15%	26%	17%	15%
2%	-1%	1%	2%
16%	18%	17%	16%
32%	36%	14%	32%
14%	9%	6%	14%
1%	0%	-4%	1%
12%	16%	17%	10%
22%	23%	11%	22%
-4%	-9%	-2%	-4%
31%	36%	19%	25%
18%	16%	24%	22%
29%	25%	7%	29%
-18%	-16%	-17%	-22%
26%	-1%	4%	6%
27%	21%	5%	11%

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 S&P 500 Earnings Leading Indicator's forecast is below zero, own 100% Risk-Off Exposure. When the S&P 500 Earnings Leading Indicator's forecast 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.

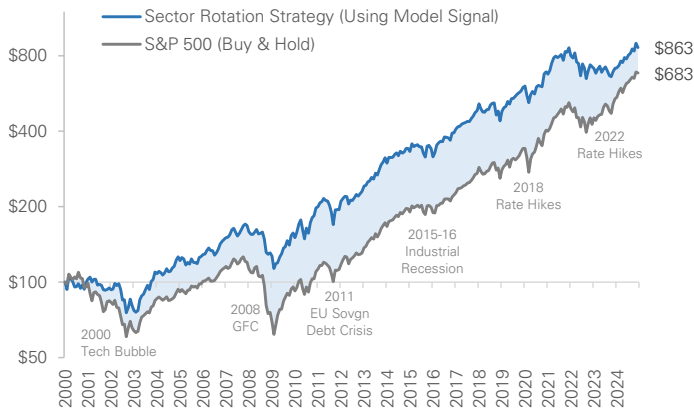
- **Risk-On** = Cyclical Sectors (Industrials, Materials, Cons. Discretionary)
- **Risk-Off** = Defensive Sectors (Utilities, Health Care, Cons. Staples)

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	9.6%	10.2%
Strategy CAGR	8.0%	9.0%
Maximum Drawdown	-51%	-34%
% of Positive Years	76%	64%
Upside Capture	100%	96%
Downside Capture	100%	69%
Net Capture	0%	+27%
Max Positive Year	32%	36%
Max Negative Year	-37%	-22%
Max Risk / Reward Ratio	0.88	1.64

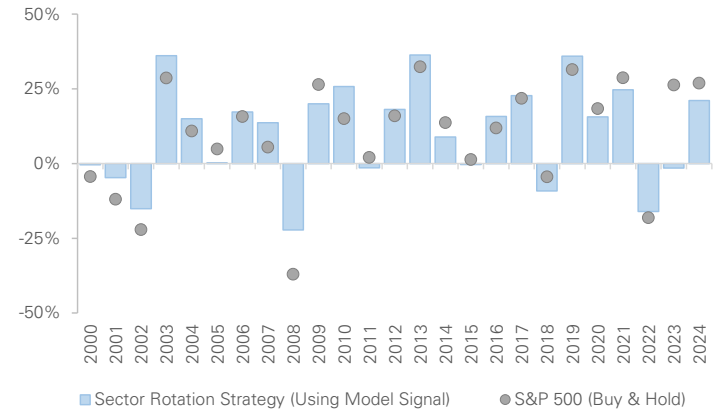
Source: MarketDesk Quant Pack. Based on annual calendar year returns since 2000.

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



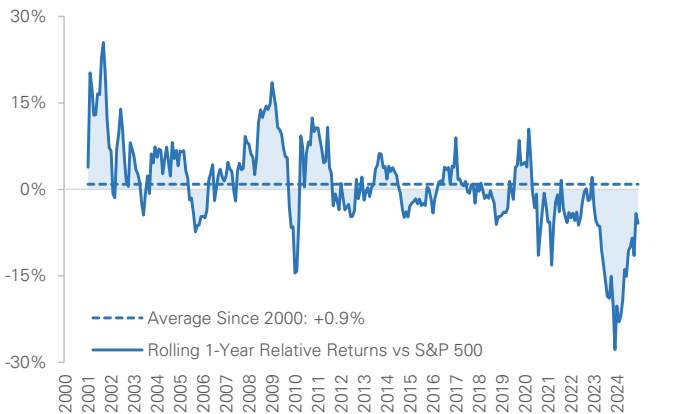
Source: MarketDesk Quant Pack. The portfolio is rebalanced monthly.

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



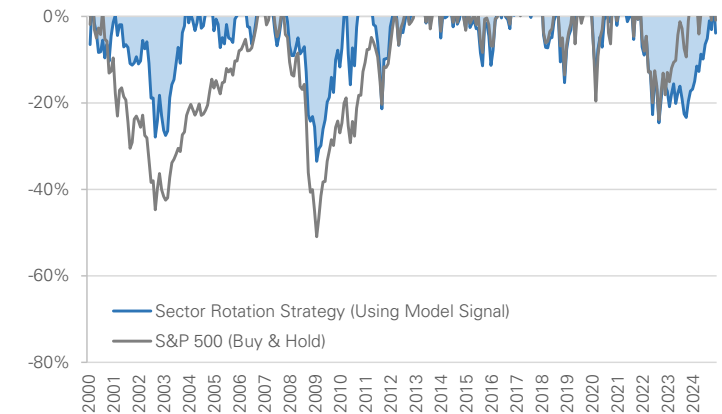
Source: MarketDesk Quant Pack

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 S&P 500 Earnings Leading Indicator's forecast is below zero, own 100% Risk-Off Exposure. When the S&P 500 Earnings Leading Indicator's forecast 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.

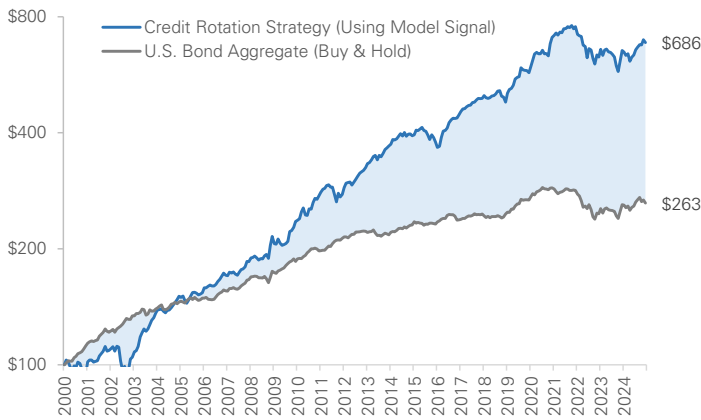
- **Risk-On** = Low-Quality Credit (High Yield, Fallen Angels, Convertibles)
- **Risk-Off** = High-Quality Credit (U.S. Treasuries & MBS)

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%	8.5%
Strategy CAGR	4.0%	8.0%
Maximum Drawdown	-17%	-24%
% of Positive Years	88%	80%
Upside Capture	100%	177%
Downside Capture	100%	-22%
Net Capture	0%	+199%
Max Positive Year	12%	30%
Max Negative Year	-13%	-17%
Max Risk / Reward Ratio	0.92	1.81

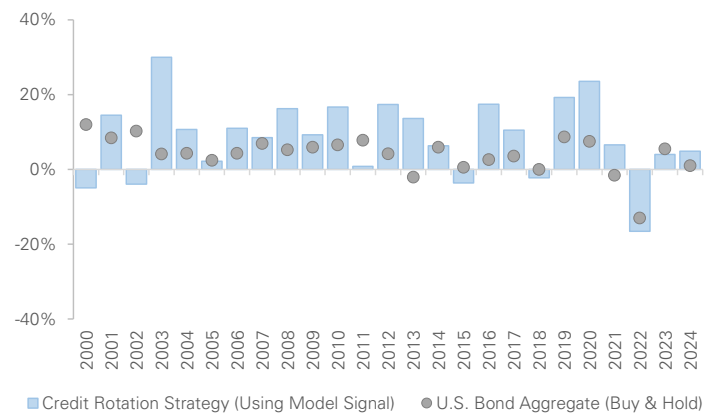
Source: MarketDesk Quant Pack. Based on annual calendar year returns since 2000.

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



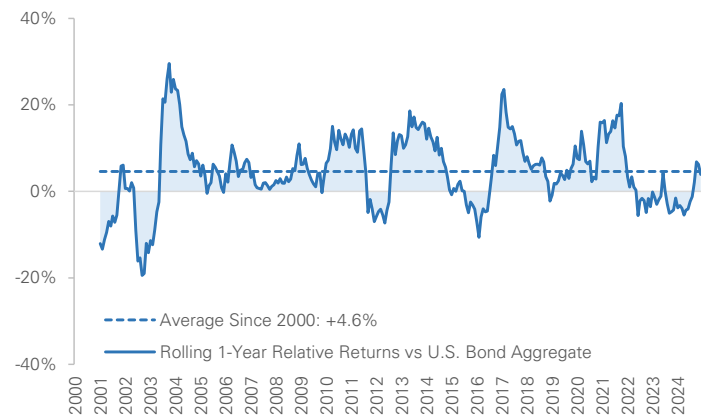
Source: MarketDesk Quant Pack. The portfolio is rebalanced monthly.

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



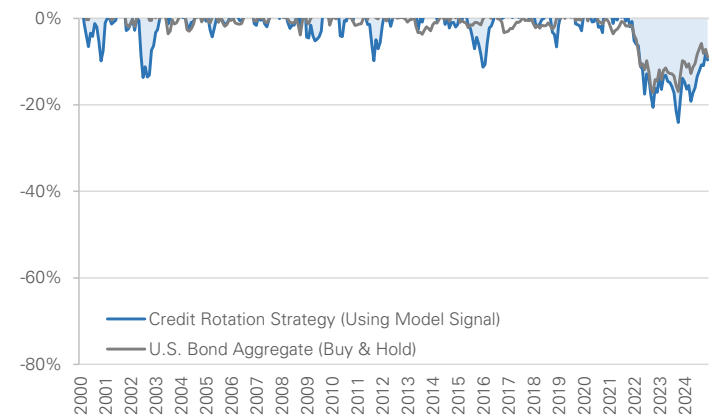
Source: MarketDesk Quant Pack

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 S&P 500 Earnings Leading Indicator's forecast is below zero, own 100% Risk-Off Exposure. When the S&P 500 Earnings Leading Indicator's forecast 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.

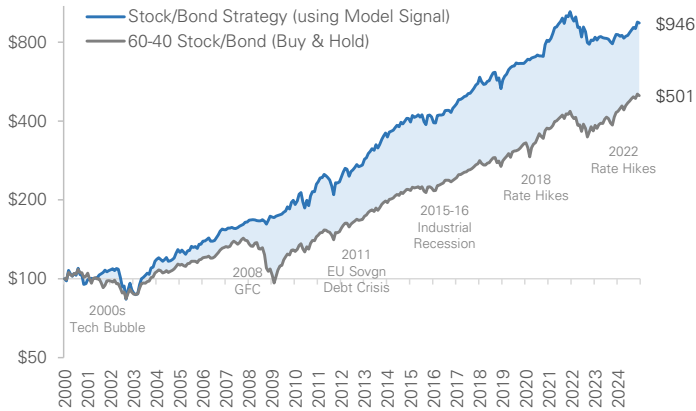
- **Risk-On** = Stocks (S&P 500 Index)
- **Risk-Off** = Bonds (U.S. Bond Aggregate Index)

Figure 13: Performance Statistics – Stock / Bond Rotation Model

Annual Statistics of Returns & Risks	60-40 Stock/Bond (Benchmark)	Stock / Bond Rotation Model
Average Return	7.3%	10.2%
Strategy CAGR	6.7%	9.4%
Maximum Drawdown	-33%	-25%
% of Positive Years	80%	84%
Upside Capture	100%	119%
Downside Capture	100%	47%
Net Capture	0%	+73%
Max Positive Year	22%	32%
Max Negative Year	-22%	-22%
Max Risk / Reward Ratio	1.01	1.44

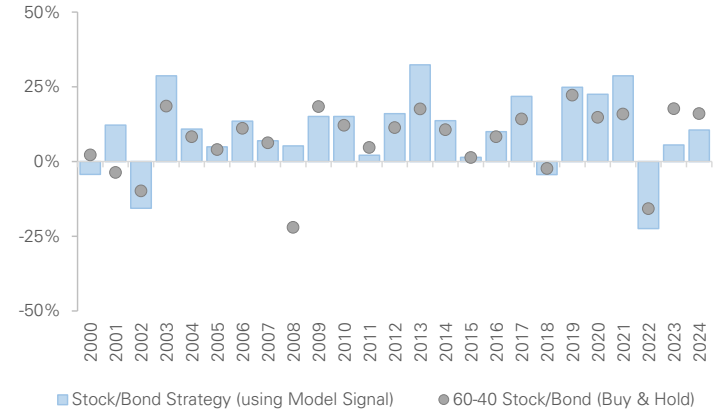
Source: MarketDesk Quant Pack. Based on annual calendar year returns since 2000.

Figure 14: Total Returns – Stock / Bond Rotation Model



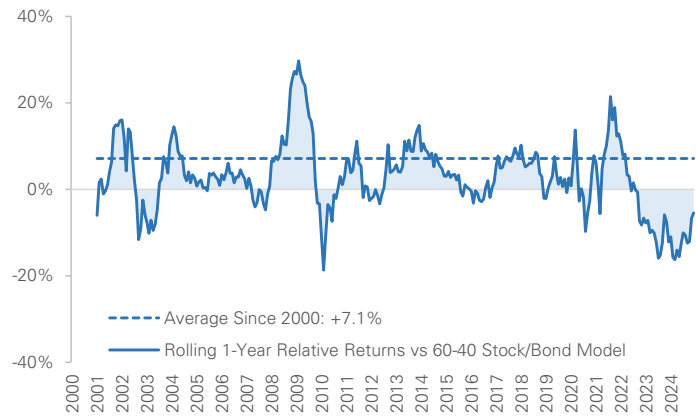
Source: MarketDesk Quant Pack. The portfolio is rebalanced monthly.

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



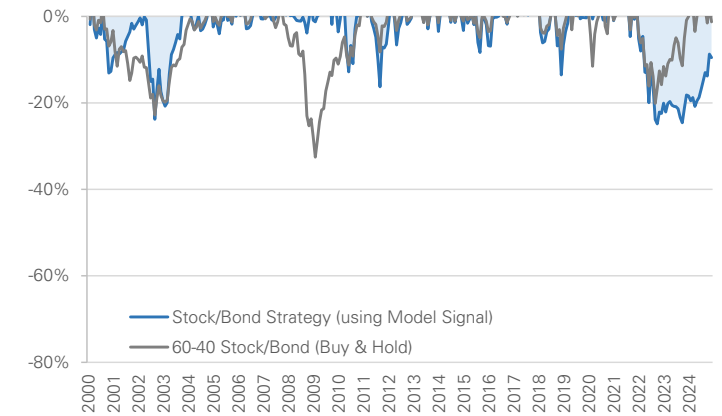
Source: MarketDesk Quant Pack

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

Important Notices & Disclaimer

Quant Pack is wholly-owned by MarketDesk Research, LLC (“MarketDesk Research”). MarketDesk Research has an affiliated registered investment adviser, which serves as the sub-adviser to an exchange traded fund. This affiliated investment adviser does not provide advice to individual investors.

This research is for MarketDesk Research clients only. This research is based on current public information that we consider reliable, but we do not represent it is accurate or complete, and it should not be relied on as such. The information, opinions, estimates, and forecasts contained herein are as of the date hereof and are subject to change without prior notification, and there is no guarantee that any future event discussed herein will come to pass. MarketDesk Research disclaims responsibility for updating information. In addition, MarketDesk Research disclaims responsibility for third-party content, including information accessed through hyperlinks.

MarketDesk Research provides “impersonal advisory services” to its subscribers, defined as services that do not purport to meet the objectives or needs of specific clients, and statistical information containing no expression of opinions as to the investment merits of particular securities. MarketDesk Research does not provide personalized investment advice; all content, opinions and recommendations are impersonal and are not tailored to meet individual subscribers’ investment needs. The information and opinions provided herein are provided as general market commentary only.

MarketDesk Research is not offering advisory services through nor soliciting any action based upon this report. Recipients of the information provided herein should consult with a financial advisor before purchasing or selling a security. The information in this report is not intended to be used as the primary basis of investment decisions, and because of individual client objectives, should not be construed as advice designed to meet the particular investment needs of any investor. The comments may not be relied upon as recommendations, investment advice or an indication of trading intent.

Past performance does not guarantee or indicate future results. Index performance is for illustrative purposes only and does not reflect any management fees, transaction costs or expenses. Indexes are unmanaged and one cannot invest directly in an index. Index performance does not represent the actual performance that would be achieved by investing in a fund.

Various pages in this report include hypothetical performance. Hypothetical performance results have inherent limitations, such as the results do not reflect the results of actual trading, but were achieved by means of retroactive application, which may have been designed with the benefit of hindsight. Another limitation is that performance may not reflect the impact that any material market or economic factors might have had on our decision-making process. Actual individual investor performance will vary depending on the time of the initial investment, amount and frequency of contributions, allocation changes and taxes. For various reasons, including the reasons noted above, actual client experience and investment results vary and may be different from those portrayed.

No mention of a particular security, index, or other instrument in this report constitutes a recommendation to buy, sell, or hold that or any other security, nor does it constitute an opinion on the suitability of any security or index. The report is strictly an informational publication and has been prepared without regard to the particular investments and circumstances of the recipient. **SUBSCRIBERS SHOULD VERIFY ALL CLAIMS AND COMPLETE THEIR OWN RESEARCH BEFORE INVESTING IN ANY INVESTMENTS MENTIONED IN THE PUBLICATION. INVESTING INVOLVES RISK, INCLUDING THE POSSIBLE LOSS OF PRINCIPAL AND FLUCTUATION OF VALUE.**

Please refer to www.QuantPack.com/terms for the complete list of terms and disclaimers.

© MarketDesk Research LLC. All Rights Reserved.