

# BERNSTEIN

SOCIETE GENERALE GROUP



## Bernstein University US 2025

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### Quantitative Research

October 15, 2025

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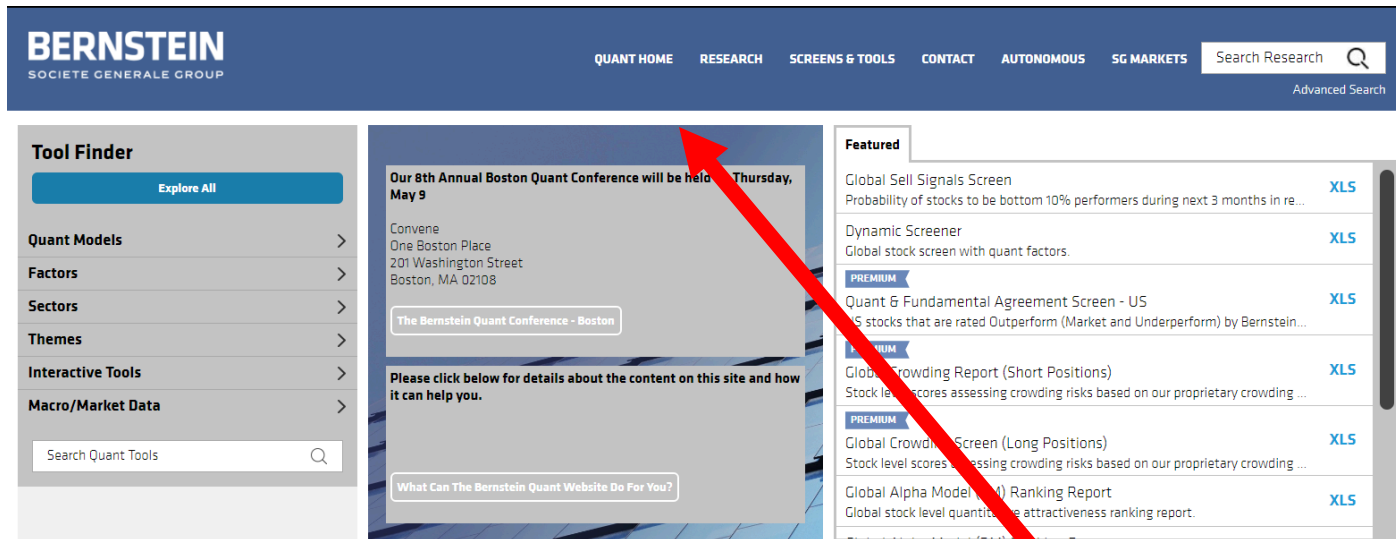
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**See Disclosure Appendix of this report for important Disclosures and Analyst Certifications**

First Published: 08 Oct 2025 19:37 UTC Completion Date: 08 Oct 2025 19:37 UTC

# The Bernstein Quantitative Website



- To access the Bernstein Quant Research Website, go to [BernsteinResearch.com](https://BernsteinResearch.com) and click QUANT at the top of the home page. If you don't see the QUANT link here, ask us or your Bernstein salesperson to activate your account.
- The website hosts all of our latest model scores as downloadable spreadsheets as well as interactive tools, research and portfolio analytics that can be customized to meet your needs.
- For more details: [Quantitative Research: What can the Bernstein Quant Website do for you?](#)

Source: Bernstein

## The Bernstein Quant Product

The Bernstein Quant Team runs a variety of stock level, industry, country and market level models that seek to forecast alpha and risk over long and short horizons (1-12 months), identify crowded trades on the long and short side, assess quality, and help establish sell disciplines for our clients, among other objectives. We have been testing, developing and implementing quantitative metrics and models on the sell side at Bernstein since 1991, and our multifactor frameworks have long track records of outperformance. Our database covers 7500+ stocks globally in developed and emerging markets with many factors stretching back four decades or more.

## Bernstein Alpha Models

- ❑ Global Crowding Model (Longs)
- ❑ Global Crowding Model (Shorts)
- ❑ U.S. Alpha Model
- ❑ Developed Markets Alpha Model
- ❑ Emerging Markets Alpha Model
- ❑ Sell Signals Model
- ❑ Value Timing Model
- ❑ One-Month Alpha Model
- ❑ Bernstein Quality Model
- ❑ Risk Regime Switching Model (U.S. and Global)

# The Bernstein Alpha Models

The Bernstein Alpha Models assess the attractiveness of stocks using a variety of sector and market specific factors including valuation ratios, capital use and profitability metrics, as well as measures of earnings quality, earnings revisions, growth and momentum. The short-term (one month) model also includes factors based on options and technical analysis.

## ❖ U.S.

- [The New Bernstein Alpha Model](#)
- [BOOM! The Bernstein One-Month Model](#)

## ❖ Developed Markets

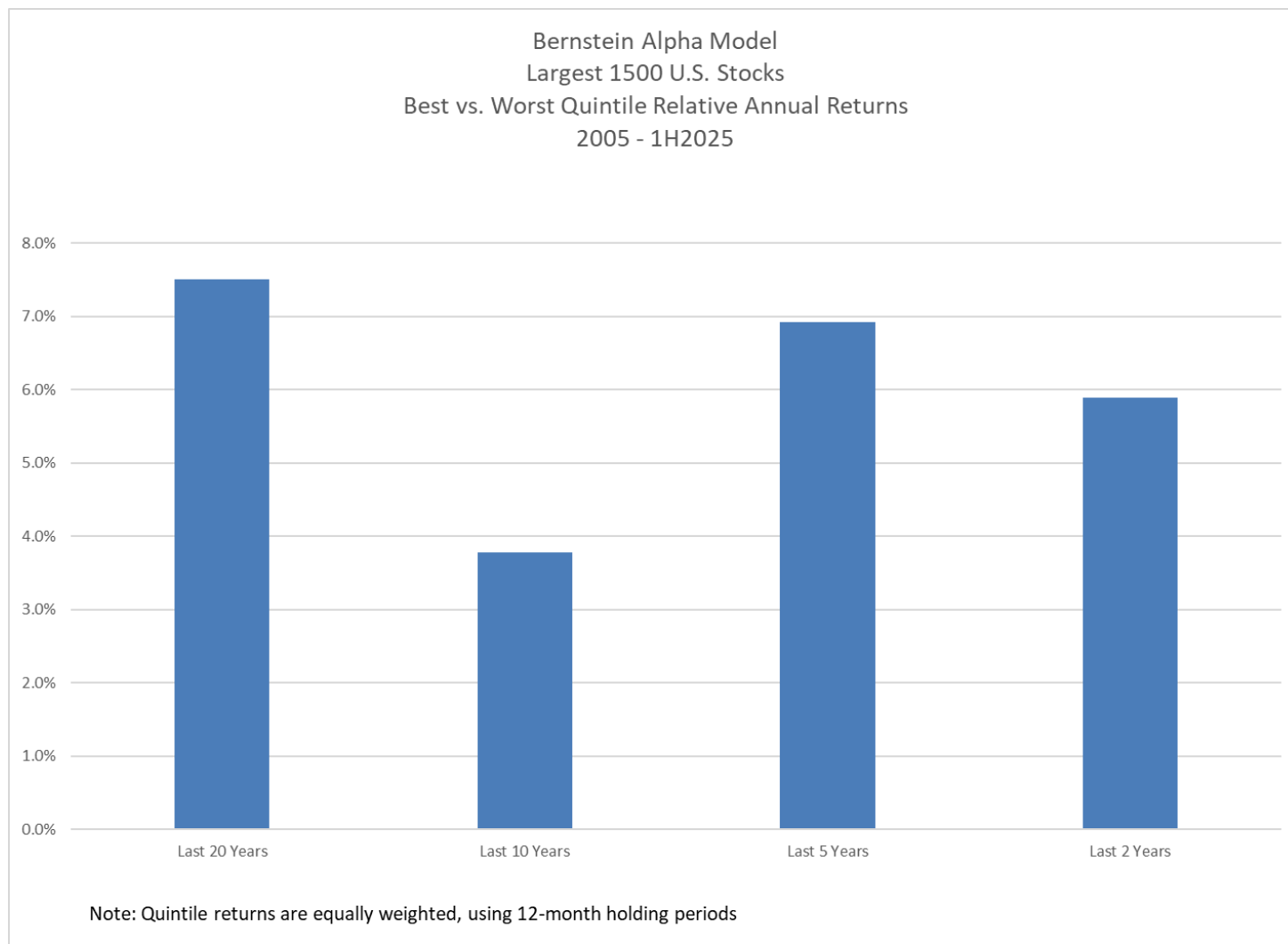
- [Bernstein Global Alpha Model for Developed Markets](#)

## ❖ Emerging Markets

- [Generating Alpha in Emerging Markets](#)

Source: Bernstein Analysis.

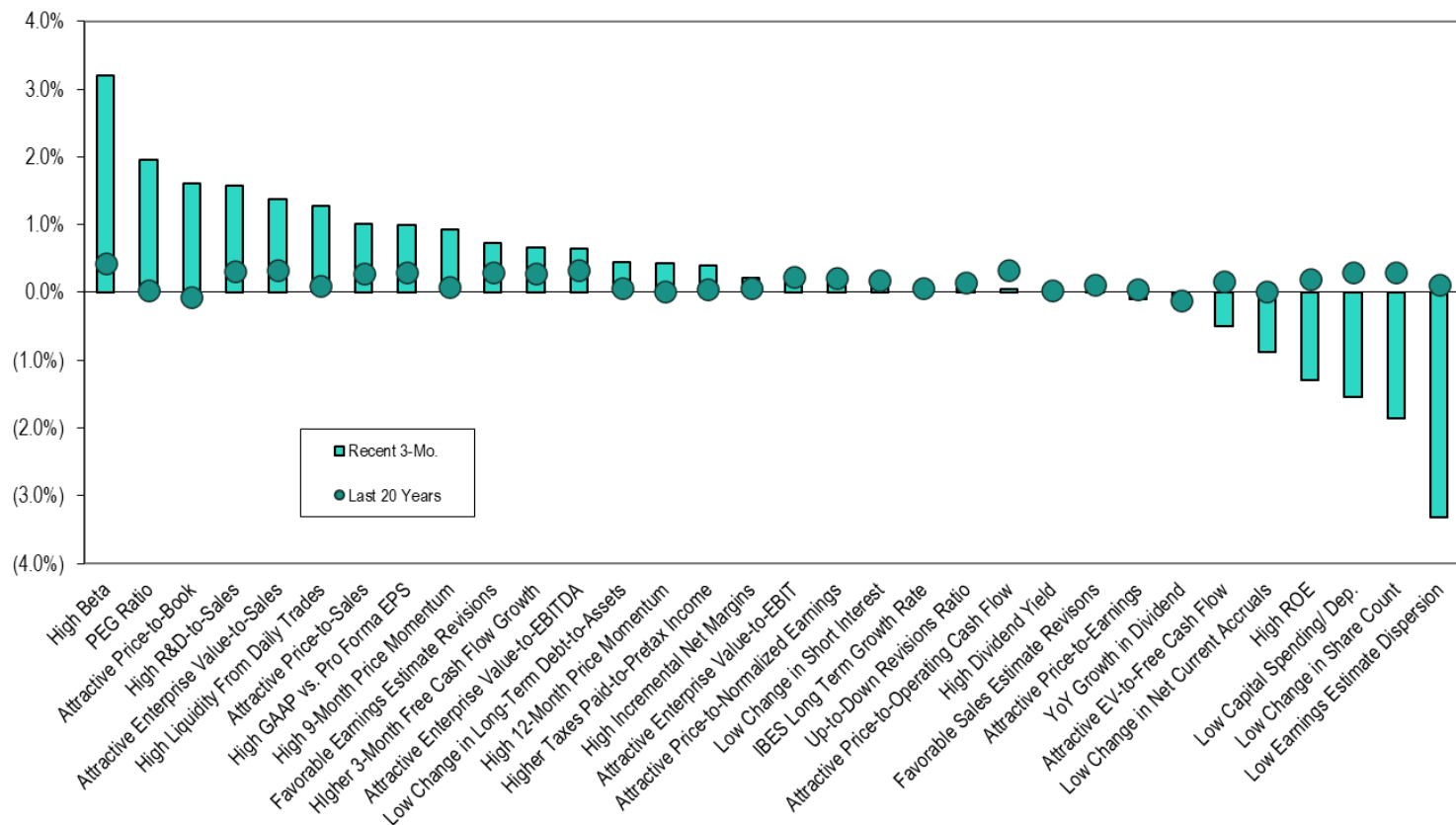
# The Bernstein Alpha Model has a good track record



Source: Factset, MSCI, CRSP, Bernstein analysis

# U.S. Factor Performance: Last Three Months

Factor Effectiveness: Recent 3-Months Comparison to Long Term Performance  
Best vs. Worst Quintile Monthly Returns  
Top 1500 Stocks Universe: Twenty Years Through September 24, 2025

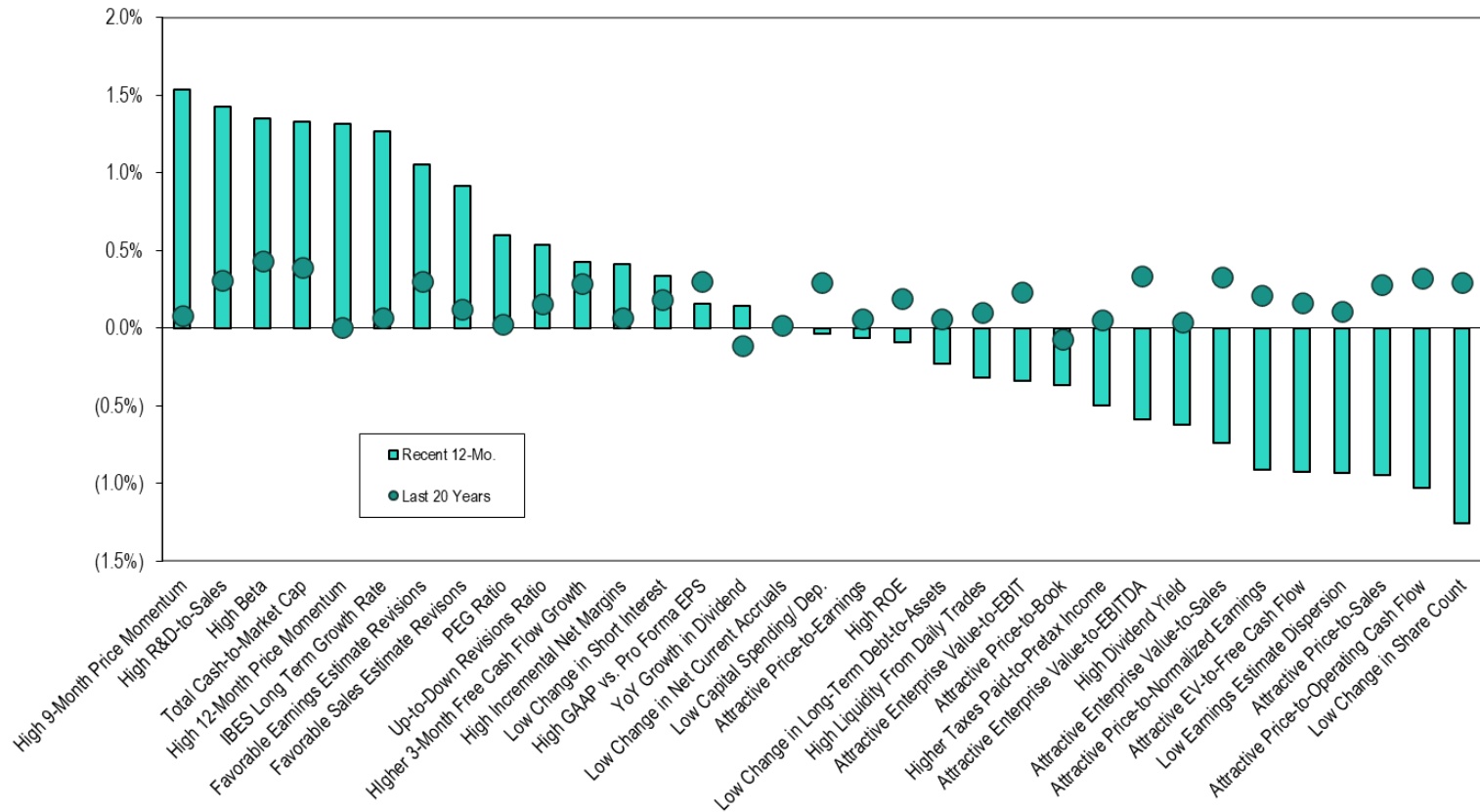


Note: Best – Worst Quintile, Equal Weighted Returns

Source: Factset, MSCI, CRSP, Bernstein analysis

# U.S. Factor Performance: Last Twelve Months

Factor Effectiveness: Recent 12-Months Comparison to Long Term Performance  
Best vs. Worst Quintile Monthly Returns  
Top 1500 Stocks Universe: Twenty Years Through September 24, 2025



Note: Best – Worst Quintile, Equal Weighted Returns

Source: Factset, MSCI, CRSP, Bernstein analysis



# Global Alpha Model: Overview

- Industry and Region Rotation
- Stock Selection Within Blocks
- Regional Regime Timing Signals
- Overall Global Alpha Model: Combining the Component Models

## The Bernstein Global Alpha Model

Stock Selection 64%	Industry/Region Block Attractiveness 33%	Risk Aversion Signal 3%
<p>Stock attractiveness measured relative to industry group</p> <p>Up to six select factors used per industry group</p> <p>Includes metrics such as valuation, growth, momentum, earnings quality, profitability, capital use</p>	<p>Measures industry/region block group attractiveness relative to market</p> <p>Factor aggregates</p> <p>Industry Z-scores</p>	<p>Forecast for whether the forward 3-month regime will be Risk On, Risk Off or Neutral</p> <p>Based on metrics such as:</p> <p>Bond yield spreads, change in yield curve slope, change in consumer sentiment</p>

Source: MSCI and Bernstein Analysis

# Quantitative and Fundamental Investing: Tale of the Tape

## Quantitative Models

- ❖ Consistent and disciplined
- ❖ Easily testable
- ❖ Applicable to large sets of stocks
- ❖ Objective
- ❖ Focus on the power of historical relationships and averages
- ❖ Can adjust forecasts continuously
- ❖ Evenly distributed forecasts that can be easily ranked
- ❖ Can lead to spurious assumptions
- ❖ Largely used to forecast returns

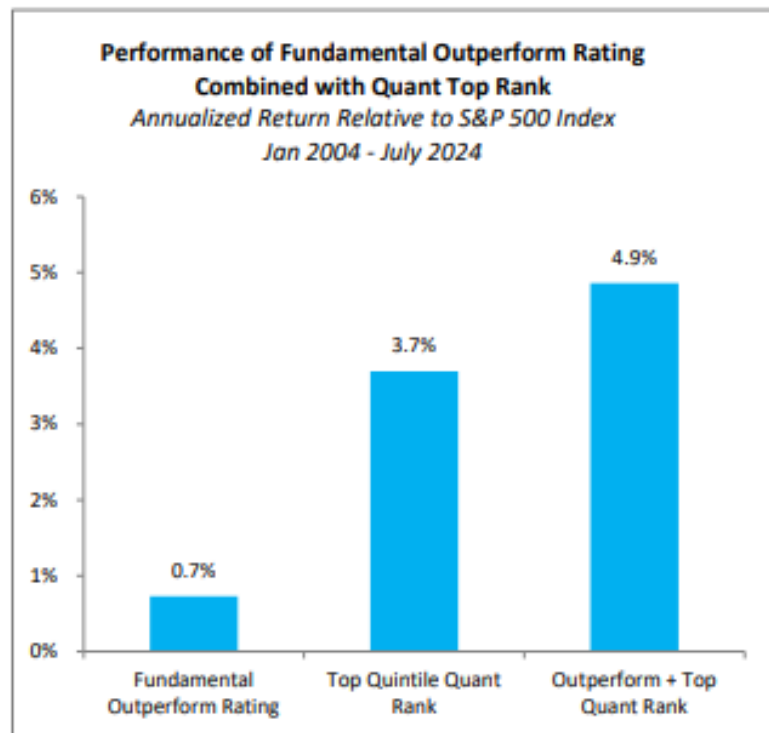
## Fundamental Analysis

- ❖ Creative and imaginative
- ❖ Difficult to reproduce
- ❖ Labor intensive, applies deeper knowledge to narrower universe
- ❖ Subjective
- ❖ Can identify exceptions or inflection points
- ❖ Infrequent forecast changes
- ❖ Recommendations can be uneven (few underperforms)
- ❖ Can be susceptible to behavioral biases
- ❖ More focus on forecasting earnings and fundamentals

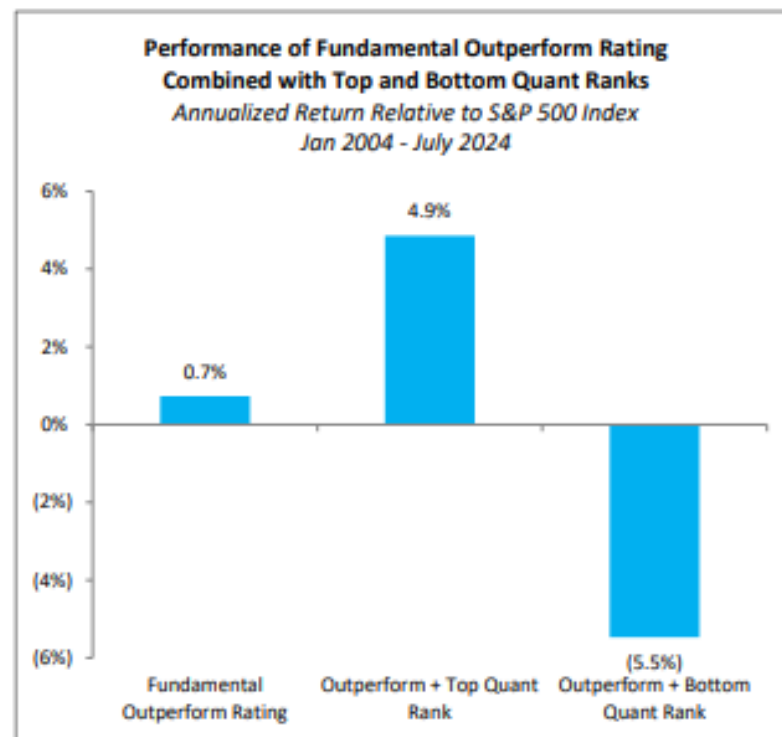
Source: Bernstein analysis

# Quant + Fundamental Research: Better Together

Agreement improves returns



When they disagree, quant trumps fundamentals



Source: MSCI, Factset, CRSP, Bernstein analysis

# The Bernstein Crowding Models: Crowded Longs

## Crowded Longs Overview:

We believe crowding is the most important mispriced risk factor because it's not easily observed. The build-up of forward risk due to ownership mix (speculators vs. long term holders), sentiment imbalances, shared beliefs, high expectations and over-optimism are underestimated by commonly used risk management tools looking at trailing beta and volatility.

On the long side, our proprietary Bernstein Crowding Model measures crowding based on institutional ownership (using our active bets and trade persistence metrics), sentiment (momentum and sell-side analysts' ratings) and expectations (earnings forecasts and valuation). The implications of crowded trades are increased volatility, negatively skewed returns, high pairwise correlations and underperformance in volatile markets.

Source: Bernstein Analysis.

**We believe crowding is the most important mispriced risk.**  
**Implications of Crowded Trades:**

**1. Increasing Realized Volatility**

- Traditional backward-looking risk metrics (e.g., beta) will underestimate the future volatility of crowded stocks

**2. Performance is Negatively Skewed**

- Crowded trades are priced for perfection

**3. High Pairwise Correlation**

- This can cause portfolio managers to overestimate the diversification of their portfolios

**4. Negative Quadratic Beta**

- Crowded trades tend to underperform in volatile markets

# The Bernstein Crowding Model: Crowded Longs

## The Bernstein Crowding Model Factors:

1. **Active Bets**
2. **Trade Persistence**
3. **Long-Term Price Trends**
4. **Sell-Side Analyst Buy Ratings Ratio**
5. **High Expectations With Implied Achievability**

For more information about how the Bernstein Crowded Longs Model is constructed:

[Quantitative Research: Is It Crowded In Here?](#)

[Video - Bernstein Quantitative Research: Crowding - What is it and why should I care?](#)

Source: Bernstein Analysis.

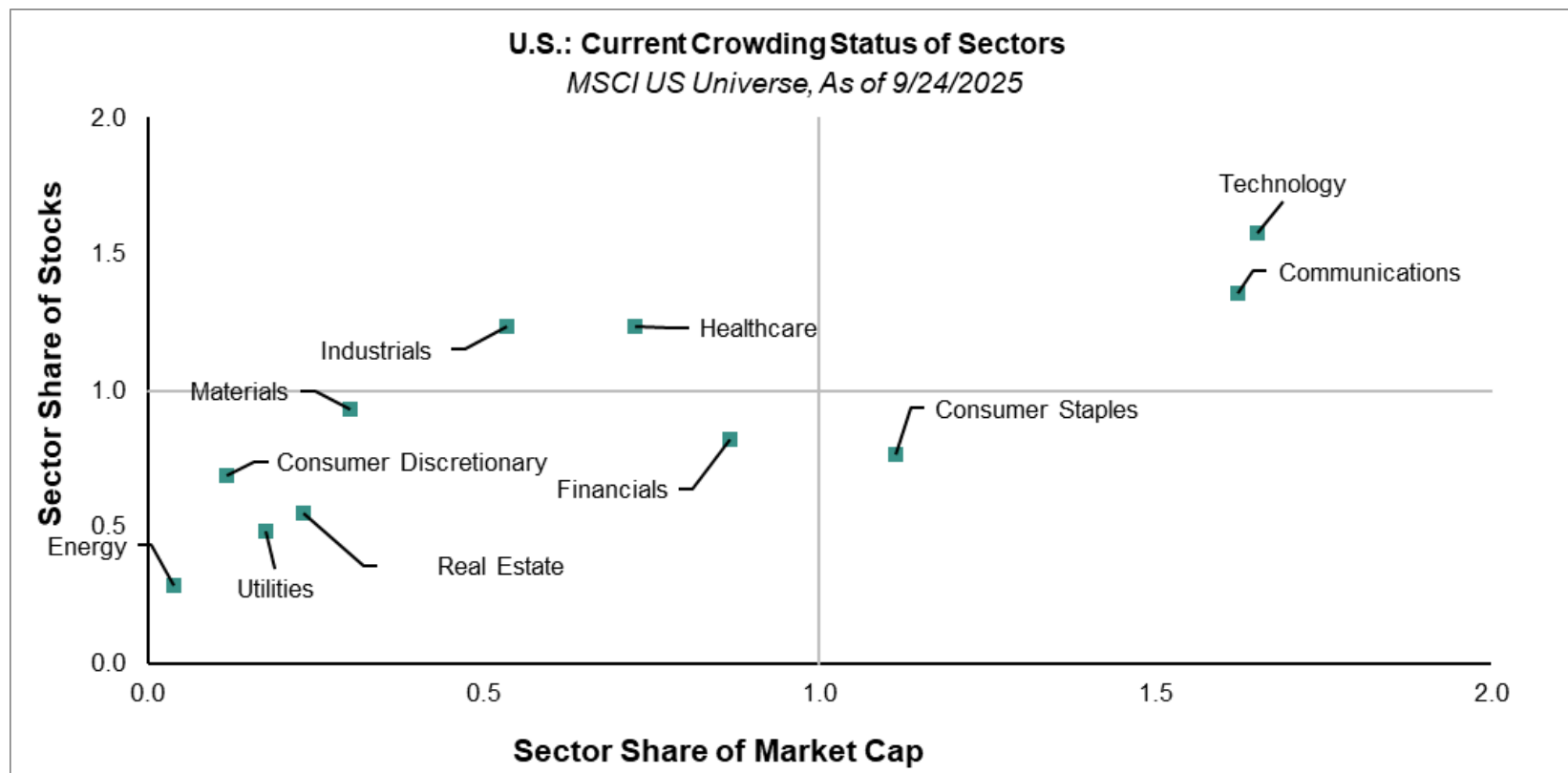
# The Bernstein Crowding Model: Crowded Longs

## The Bernstein Crowded Longs Model Factors:

1. **Active Bets:** Counts how many active funds own that stock as one of its top 20 relative overweights. Funds are weighted by turnover and style to assign more crowding risk to speculative owners/fast money vs. long term holders.
2. **Trade Persistence:** Looks at how many quarters in a row institutions have been net buying that stock in aggregate. The longer net buying has been occurring, the more likely it is to reverse (running out of marginal buyers).
3. **Long-Term Price Trends:** Sentiment measure, crowded stocks are well-loved, but are priced for perfection.
4. **Sell-Side Analyst Buy Ratings Ratio:** Sell-Side Sentiment is usually high as well.
5. **High Expectations With Implied Achievability:** Looks at analysts aggressively raising estimates on these companies. The market's willingness to pay high multiples on those numbers implies that they think those estimates are achievable, and so we use that as an indication that expectations are getting high both on the buy-side and the sell-side.

Source: Bernstein Analysis.

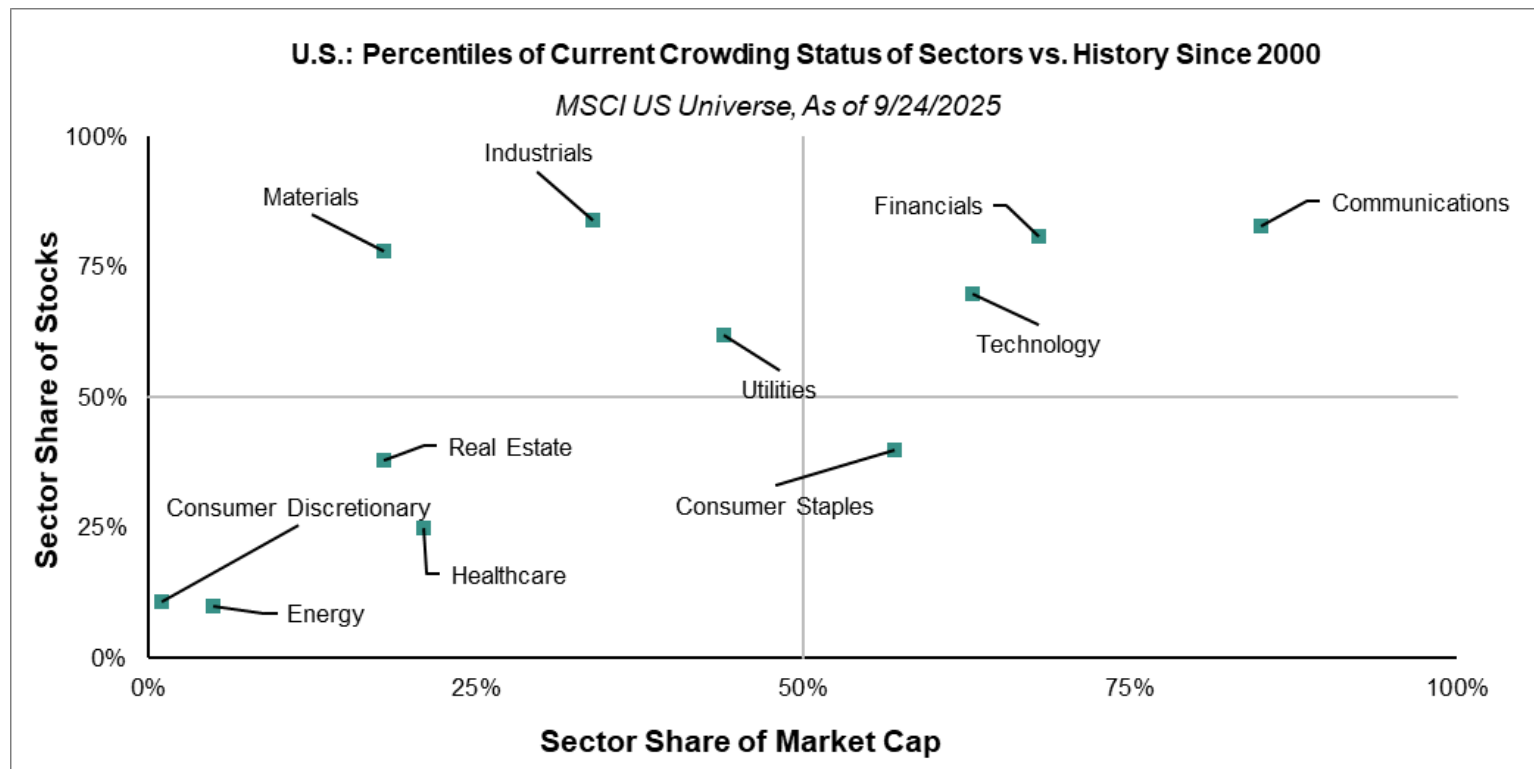
**Technology and Communications are the most crowded sectors on a cross-sectional basis. Utilities and energy are least crowded.**



Source: FactSet, MSCI, Bernstein analysis



# Sector crowding relative to history



100% means the sector is the most crowded it's been since January 2000 by share of stocks (y-axis) or by share of market value (x-axis).

Source: FactSet, MSCI, Bernstein analysis

# Industry Crowding

North America: Current Crowding Status of Industry Groups In Comparison with 3 Months Ago								
As of September 2025								
	Industry Group	% Crowded Market Cap: Industry / Region			% Crowded Stocks: Industry / Region			Sector
		Current	3M Ago		Current	3M Ago		
Sorted from Most Crowded to Least Crowded Industry	Technology Hardware & Equipment	1.77x	0.26x	↑	1.87x	1.77x	↑	Technology
	Semiconductors & Semiconductor Equipment	1.74x	1.95x	↓	1.99x	1.72x	↑	Technology
	Food & Staples Retailing	1.61x	1.74x	↓	1.29x	1.07x	↑	Consumer Staples
	Software & Services	1.45x	1.61x	↓	1.20x	1.57x	↓	Technology
	Retailing	1.35x	1.82x	↓	0.70x	0.98x	↓	Consumer Discretionary
	Banks	1.22x	0.72x	↑	1.07x	0.88x	↑	Financials
	Media & Entertainment	1.09x	2.02x	↓	1.16x	1.38x	↓	Communications
	Pharmaceuticals, Biotechnology & Life Sciences	0.85x	0.62x	↑	1.17x	1.09x	↑	Healthcare
	Food, Beverage & Tobacco	0.80x	0.95x	↓	0.30x	0.36x	↓	Consumer Staples
	Capital Goods	0.77x	0.73x	↑	1.57x	1.48x	↑	Industrials
	Diversified Financials	0.71x	0.49x	↑	0.97x	0.97x	→	Financials
	Health Care Equipment & Services	0.53x	0.56x	↓	1.18x	1.34x	↓	Healthcare
	Materials	0.52x	0.37x	↑	1.17x	0.89x	↑	Materials
	Consumer Services	0.45x	0.52x	↓	1.04x	0.99x	↑	Consumer Discretionary
	Utilities	0.36x	0.05x	↑	0.63x	0.21x	↑	Utilities
	Consumer Durables & Apparel	0.31x	0.16x	↑	0.61x	0.25x	↑	Consumer Discretionary
	Real Estate	0.27x	0.24x	↑	0.55x	0.71x	↓	Real Estate
	Commercial & Professional Services	0.25x	0.33x	↓	0.78x	1.10x	↓	Industrials
	Transportation	0.10x	0.50x	↓	0.61x	0.44x	↑	Industrials
	Energy	0.07x	0.18x	↓	0.37x	0.72x	↓	Energy
	Telecommunication Services	0.05x	0.00x	↑	0.83x	0.00x	↑	Communications
	Household & Personal Products	0.03x	0.03x	→	0.30x	0.36x	↓	Consumer Staples
	Automobiles & Components	0.02x	1.94x	↓	0.58x	0.74x	↓	Consumer Discretionary
	Insurance	0.01x	0.03x	↓	0.13x	0.30x	↓	Financials

Source: FactSet, MSCI, Bernstein analysis

# The Bernstein Crowding Model: Crowded Shorts

## Crowded Shorts Overview:

On the short side, properly assessing crowding risk is as important for short sellers' portfolios as for the long book, if not more, given the uncapped loss potential and possibility of getting caught in a short squeeze.

We found four key characteristics of a crowded short position: 1) a higher chance of large forward price increases, 2) forward stock returns skewed toward the upside, 3) an asymmetric reaction to fundamental news, such as overreacting to positive revisions and under-reacting to estimate cuts, and 4) high intra-cohort correlation, which may cause over-estimation of portfolio diversification in risk models that don't capture crowding risk.

Source: Bernstein Analysis.

## The Bernstein Crowded Shorts Model: What is it? What does it mean for short positions?

- Crowded stocks are the consensus trade
- Crowded shorts are usually viewed very negatively by fundamental analysts and ranked poorly in quantitative models
- Over-represented in the portfolios of short sellers. Many investors may sell the stock short for the same reason
- Neutralizing exposure to crowded trades could be even more critical for short sellers, given unlimited downside potential, possibility of triggering margin calls or a short squeeze, and a long-term upward trend in stock markets

# The Bernstein Crowding Model: Crowded Shorts

## The Bernstein Crowded Shorts Model Factors:

The first component of the Crowded Shorts Model is our Short Interest Composite which includes levels and change in short interest combined with constrained lending inventory and substantial borrowing costs.

The other four components are modified versions of the factors listed above that we use to assess crowding on the long side, but assessing the signal from the opposite tail of the factor distribution. These metrics are combined to form a model that delivers a more robust measure of crowding risk for short sellers.

For more information about how the Bernstein Crowded Shorts Model is constructed:

[Quantitative Research: Crowded Shorts, Part 2 - Introducing the Bernstein Crowded Shorts Model](#)

[Quantitative Research: Crowded Shorts, Part 1](#)

Source: Bernstein Analysis.

# Crowded Shorts: Looking at Short Interest Metrics

We want to include short interest factors that address both the supply and demand side. We found that a combination delivers more robust results than short interest alone. In addition, the short targets identified this way display a skewness in returns toward the upside, and high borrowing costs impose extra pressure on profits net of transaction costs.

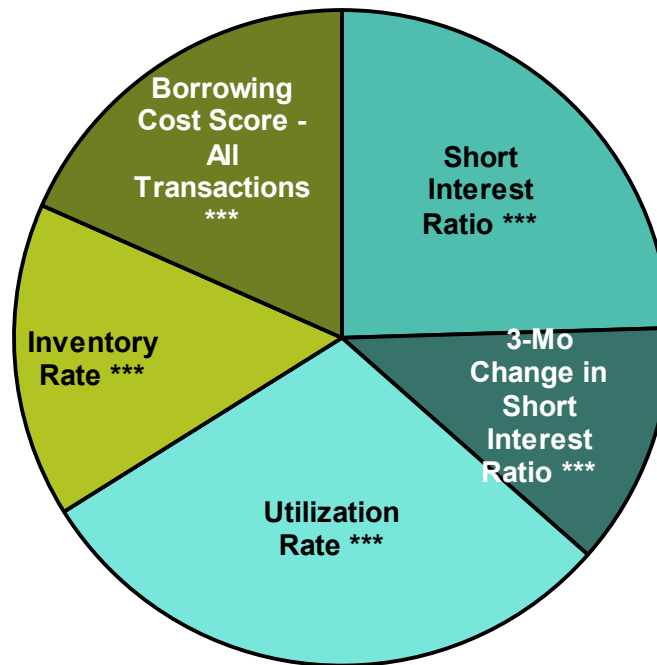
FACTOR	EXPLANATION
<b>DEMAND:</b>	
Short Interest Ratio	Total demand quantity as a percentage of shares outstanding. Total demand quantity is defined as the total quantity of borrowed/loaned securities net of double counting.
3-Month Change in Short Interest Ratio	Percentage change of current short interest ratio relative to the level three months ago.
Days to Cover	Total demand quantity as a multiple of daily trading volume. Total demand quantity is defined as the total quantity of borrowed/loaned securities net of double counting
<b>SUPPLY:</b>	
Inventory Rate	Beneficial Owners (BO) inventory quantity as a percentage of shares outstanding. BO inventory quantity is defined as the quantity of current inventory available from beneficial owners.
<b>DEMAND-to-SUPPLY:</b>	
Utilization Rate	The value of assets on load from beneficial owners (BO on loan value) divided by the total lendable assets (BO inventory value), expressed as a percentage.
<b>BORROWING COSTS:</b>	
Borrowing Cost Score - All Transactions	Value weighted average fee for all trades expressed in undisclosed fee buckets 0-5, where 0 is the cheapest to borrow and 5 is the most expensive.
Borrowing Cost - All Change	Change in the average fee for all trades compared to yesterday's average fee for all trades
Borrowing Cost Score - 1 Day	Value weighted average fee for all new trades on the most recent day expressed in undisclosed fee buckets
Borrowing Cost - 1 Day Change	Change in 1 day average fee compared to yesterday's 1 day average fee
Borrowing Cost Score - 7 Day	Value weighted average fee for all new trades on the most recent 7 calendar days expressed in undisclosed fee buckets
Borrowing Cost - 7 Day Change	Change in 7 day average fee compared to yesterday's 7 day average fee
Borrowing Cost Score - 30 Day	Value weighted average fee for all new trades on the most recent 30 calendar days expressed in undisclosed fee buckets
Borrowing Cost - 30 Day Change	Change in 30 day average fee compared to yesterday's 30 day average fee
Borrowing Cost Score - 60 Day	Value weighted average fee for all new trades on the most recent 60 calendar days expressed in undisclosed fee buckets
Borrowing Cost - 60 Day Change	Change in 60 day average fee compared to yesterday's 60 day average fee

Source: Factset, S&P Global, MSCI, Bernstein analysis

# The Short Interest Composite:

We constructed a Short Interest Composite that combines the utilization rates, short interest ratio levels and changes, borrowing cost scores, and inventory rates

Signal Contribution to Short Interest Composite  
Logistic Regression Model with Binary Inputs



Note: \*\*\* represents significance at 1% level

Source: Factset, IHS Markit, MSCI, Bernstein analysis

## Factors in the Bernstein Crowded Shorts Model:

### 1. Short Interest Composite

- High short interest demand combined with limited lending inventory and considerable borrowing costs

### 2. Institutional Ownership – Trade Persistence

- Several consecutive quarters of net sales by aggregated institutional investors

### 3. Price Momentum

- Underperformance over the trailing two years

### 4. Sell-Side Analyst Buy Ratings Ratio

- A low share rated "buy" or equivalent by sell-side analysts

### 5. Low Expectations

- Aggressive downward revisions in earnings estimates combined with compressed forward P/E multiples



# The Bernstein Sell Signals Model

Investors tell us they get a lot of ideas regarding what to buy, but not nearly enough input on when to sell. The new Bernstein Sell Signals Model is specifically built to help accurately identify the stocks most likely to be in the worst decile of performers over the next three months.

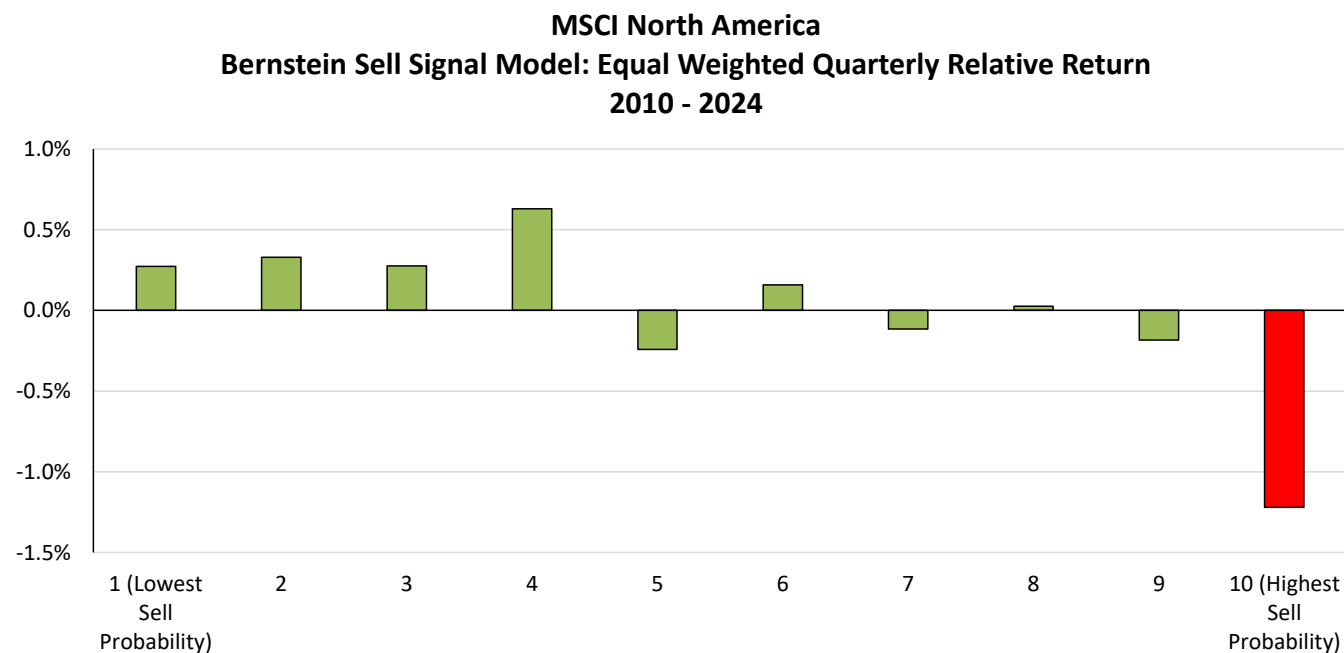
Factors in the model fall into four broad categories: Degradation of Fundamentals (e.g., accounting quality, profitability, capital use, liquidity and leverage), Evidence of Buy-Side Capitulation (including short interest and moving averages), Trading Characteristics (including return skewness and abnormal turnover) and Analysts' Estimates (such as growth forecasts and earnings revisions).

## ❖ Sell Signals Model

- [Quantitative Research: Know when to hold 'em and when to fold 'em - the new Bernstein Sell Signals Model](#)

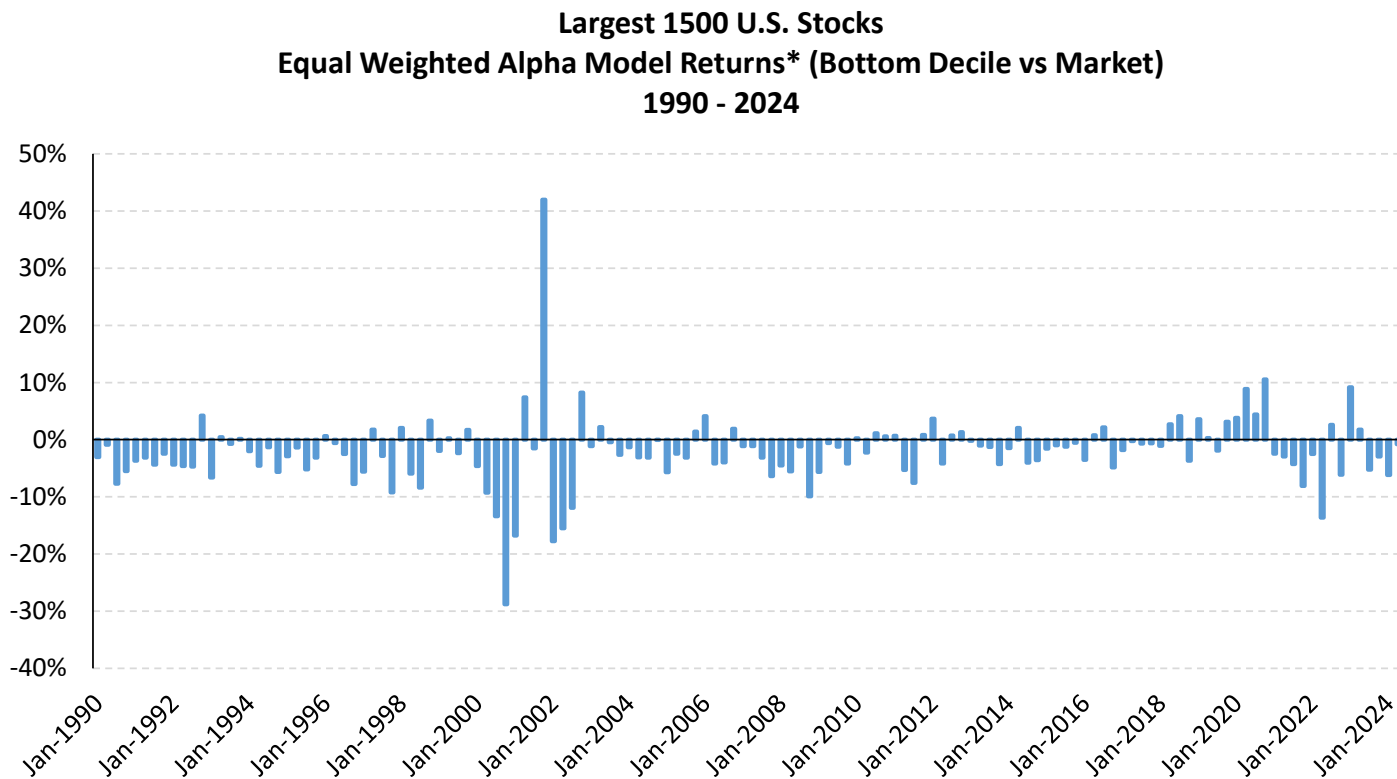
Source: Bernstein Analysis.

# The Bernstein Sell Signals Model aims to identify companies that will be in the bottom 10% of performers over the next three months



Source Factset, MSCI, CRSP, Bernstein analysis

# Worst decile of the Alpha Model relative to the market

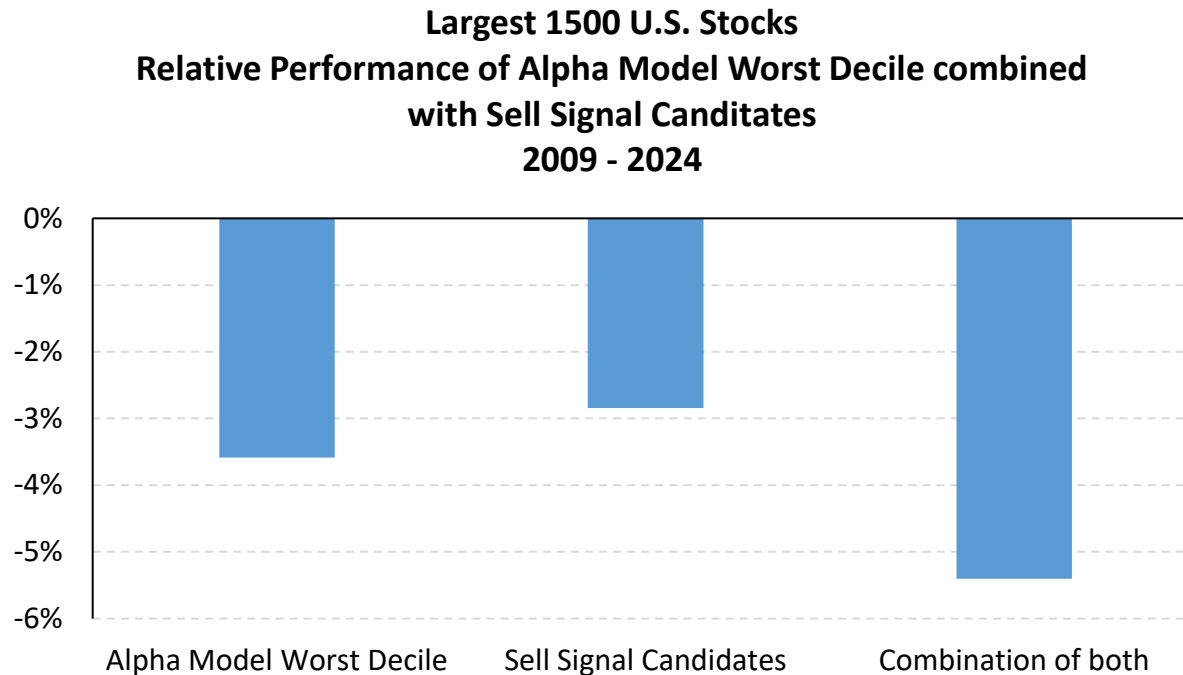


\*Quarterly returns with Bernstein Alpha Model scores rebalanced quarterly. Lowest alpha scores in bottom decile.

Note: Worst Quintile vs. Market, Equal Weighted Returns

Source: Factset, CRSP, Bernstein analysis

# Combining sell signal and alpha model



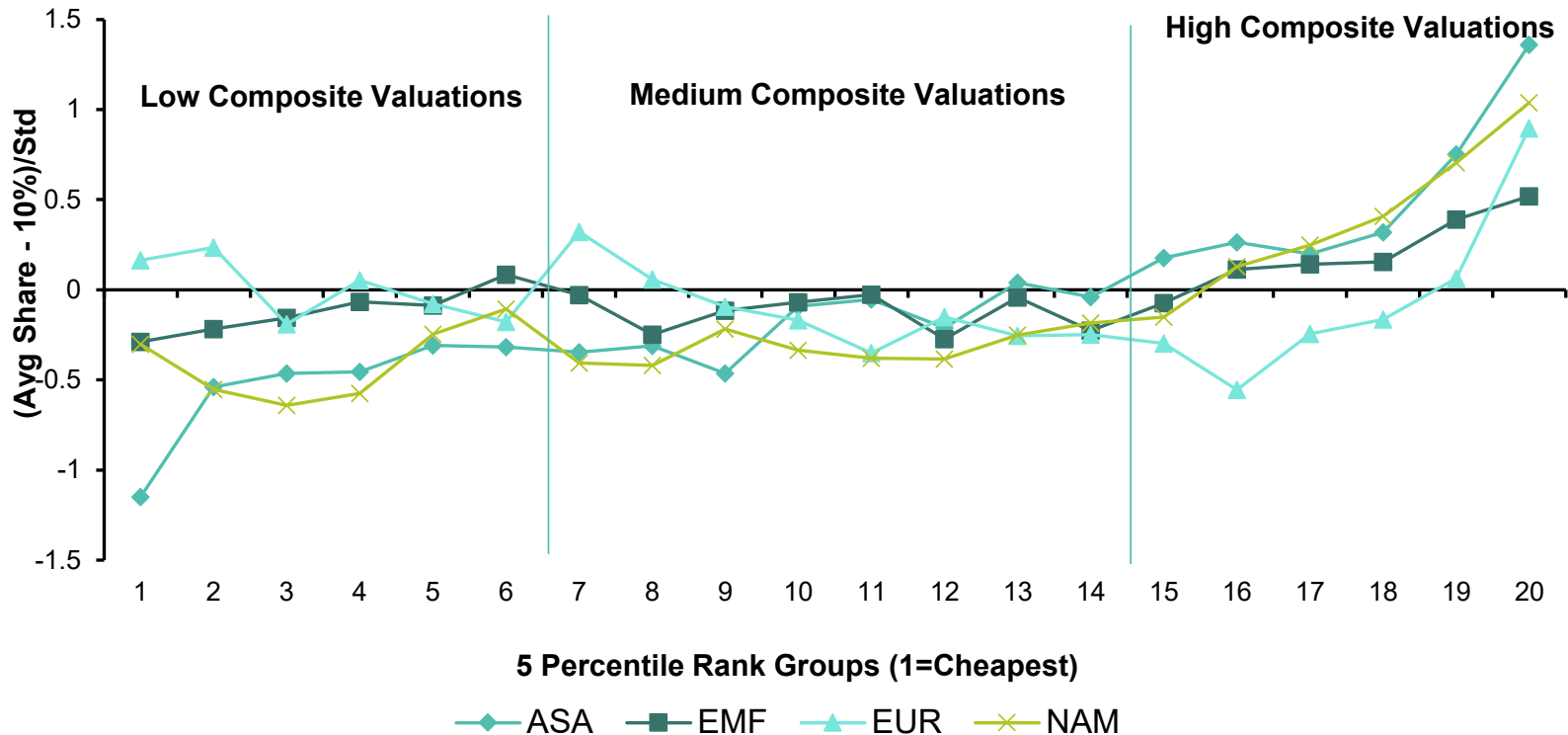
Notes:

- Equal weighted annualized average quarterly returns relative to market (largest 1500 U.S. stocks).
- Bernstein Alpha Model scores rebalanced quarterly. Lower alpha scores in bottom decile.
- Sell Signal Candidates is the decile with stocks having the highest probability of sell-off.

Source: MSCI, Factset, CRSP, Bernstein analysis

**Sell Signals Model:** We divide each region into three groups because fundamental and quantitative characteristics suggest different relationships between future underperformers and stocks with different valuation levels. In short, high premium/high expectation stocks are more likely to "blow up"

**Normalized Share of Bottom 10% Performers Over Next 3 Months**  
*Global Cap Universe, 2009 - April 2019*



Source: MSCI, Factset and Bernstein Analysis

# Sell Signals Model: Binary sell signals criteria

Factor	Signal Criteria			
Degradation in Fundamentals	ASA	EUR	NAM	EMF
Accruals (Year-over-year change in Net Accruals / Assets)	Top 10%		Top 5%	Top 10%
Capital Expenditures to Depreciation	Top 20%	Top 10%	Top 20%	Top 20%
YoY change in net income to operating cash flow	Bottom 10%	Bottom 10%	Bottom 5%	Bottom 10%
QoQ change in shares outstanding	Top 5%	Top 5%	Top 5%	Top 5%
Dividend Yield	Bottom 20%	Bottom 5%	Bottom 15%	Bottom 15%
YoY change in trailing ROE			Top 15%	
YoY change in trailing ROE	Bottom 10%	Bottom 15%	Bottom 5%	Bottom 10%
YoY change in annual sales growth	Top 5%	Top 10%	Top 10%	Top 10%
YoY change in annual sales growth	Bottom 5%	Bottom 10%	Bottom 5%	Bottom 5%
YoY change in debt to total capital	Bottom 5%	Top 10%	Bottom 5%	Top 5%
Debt to total capital		Top 10%	Bottom 15%	
YoY change in current ratio	Top 10%	Top 5%	Top 5%	Top 5%
YoY change in current ratio	Bottom 5%	Bottom 5%	Bottom 5%	Bottom 5%
Current ratio	Top 5%	Top 5%	Top 5%	Top 5%
Current ratio				Bottom 10%
Evidence of buy side capitulation				
Short-term return reversal			Top 10%	Top 10%
Short-term return reversal	Bottom 5%	Bottom 10%	Bottom 10%	
Moving Average Convergence/Divergence	Top 5%			
Moving Average Convergence/Divergence	Bottom 10%	Bottom 10%	Bottom 15%	Bottom 5%
Moving average spread (30 - 200 day)	Top 10%		Top 10%	
Moving average spread (30 - 200 day)	Bottom 5%	Bottom 15%	Bottom 10%	Bottom 15%
Level of Short Interest to Shares outstanding	Top 10%	Top 20%	Top 20%	Top 25%
Estimate related signals				
Expected growth in earnings (FY1 to FY2)	Top 15%	Top 15%	Top 20%	Top 10%
Expected growth in earnings (FY1 to FY2)			Bottom 5%	
Up-to-down revision ratios	Bottom 5%	Bottom 20%	Bottom 10%	Bottom 15%
Analyst earnings estimate revisions			Top 5%	
Analyst earnings estimate revisions	Bottom 5%	Bottom 20%	Bottom 10%	Bottom 10%
YoY change in forward ROE		Top 5%	Top 15%	Top 5%
YoY change in forward ROE	Bottom 10%	Bottom 10%	Bottom 10%	Bottom 10%
Trading Characteristics				
Daily return kurtosis over the past 3 months				Top 5%
Daily return skewness over the past 3 months		Bottom 10%		
Abnormal Turnover		Top 10%	Top 10%	Top 5%
Abnormal Turnover	Bottom 10%	Bottom 5%	Bottom 5%	Bottom 10%

Source: Bernstein Analysis

## Sell Signals Model: Fundamental signals take the most weight, followed by buy-side capitulation and estimate related factors

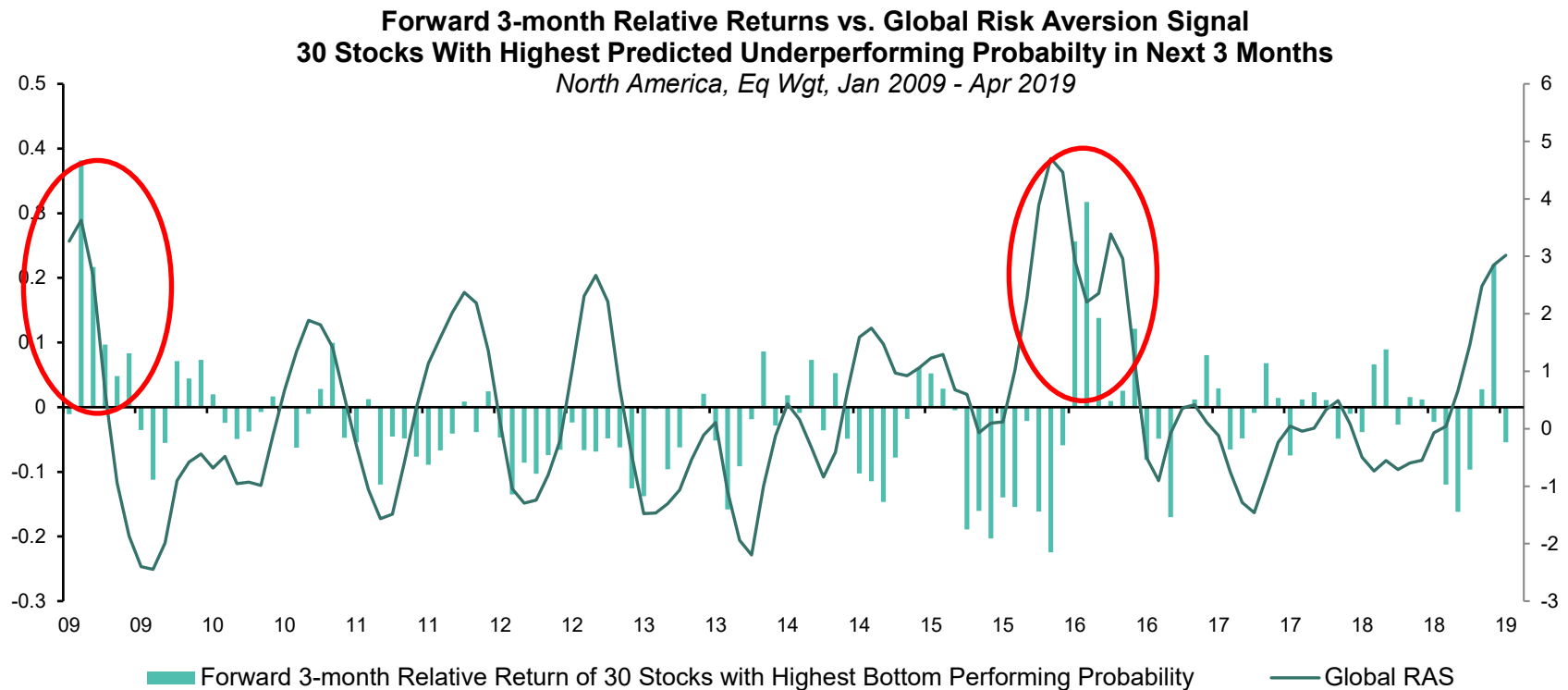
### Contribution of Signals by Category

*Global Cap Universe, Jan 2009 - April 2019*

		Asia	Europe	North America	Emerging Markets
<b>Degradation in Fundamentals</b>	High Valuation	41%	55%	45%	38%
	Medium Valuation	34%	37%	37%	47%
	Low Valuation	40%	44%	30%	45%
<b>Buy Side Capitulation</b>	High Valuation	37%	24%	32%	20%
	Medium Valuation	40%	28%	30%	22%
	Low Valuation	42%	25%	39%	22%
<b>Estimate Related</b>	High Valuation	17%	21%	22%	25%
	Medium Valuation	16%	21%	26%	21%
	Low Valuation	15%	17%	23%	26%
<b>Trading Characteristics</b>	High Valuation	5%	0%	0%	17%
	Medium Valuation	10%	13%	7%	10%
	Low Valuation	3%	15%	8%	8%

Source: Bernstein Analysis

The **Sell Signals Model** identifies stocks with large downside risks; on the rare occasion where aggressive risk seeking behavior took place, the stocks on our list became targets of risk takers and the sell candidates outperformed



Source: MSCI, Factset, S&P, Bernstein Analysis



The Enhanced and Base **Sell Signal Model** Structure: Longer-term "base" factors in the first column are used all the time, shorter-term factors in the second column are included in neutral and risk-off regimes, but excluded during risk-on periods where they are ineffective

The New Bernstein Sell Signals Model		
	Base Signals (Used in All Regimes)	Shorter-term Signals (Excluded in Risk-On Regimes)
Degradation in Fundamentals	Accruals, Capital Expenditures-to-Depreciation, Change in Net Income to Operating Cash Flow, Dividend Yield, Change in Trailing ROE, Change in Annual Sales Growth, Change in Debt to Total Capital, Level of Debt to Total Capital, Change in Current Ratio, Level of Current Ratio	Quarter-Over-Quarter Change in Shares Outstanding
Buy Side Capitulation	Level of Short Interest-to-Shares Outstanding	Short-term Return Reversal, Moving Average Convergence/Divergence, Moving Average Spread (30-200 day)
Estimated Related		Expected Earnings Growth, Change in Forward ROE, Up-to-down Revision Ratio, Earnings Estimate Dispersion
Trading		Return Skewness, Return Kurtosis, Abnormal Turnover

Source: MSCI, Factset, S&P, Bernstein Analysis

# The Bernstein Quality Models

The Bernstein Quality Model was specified using three decades of data and includes seven factors: ROE, Earnings Stability, Year-over-Year Sales Growth, EBIT Margins, Trailing 5-Year Net Cash Ratio Volatility, Debt Ratio, and the Sequential Trend Stability of ROE.

## [Quantitative Research: Quality On Sale Opportunities Across the Globe](#)

### ❖ **U.S.**

- [Quantitative Research: The new Bernstein Quality Model and the benefits of buying "Quality on Sale"](#)

### ❖ **Europe**

- [Quantitative Research: The new Bernstein Quality Model - Global Edition and Quality on Sale opportunities in the U.S. and Europe](#)

### ❖ **Asia**

- [Asia Quantitative Strategy: What does "Quality on Sale" mean in Asia?](#)

Source: Bernstein Analysis.

# The Bernstein Risk Aversion Signals

Our Risk Aversion Signal combines indicators like bond yield spreads, commodity price changes, and consumer sentiment with market-cap concentration, valuation dispersion, options skew and the volatility curve, intra-market correlation and co-movement to assess whether investors will be highly risk averse, risk seeking or neutral over the next three months.

## ❖ U.S.

- [U.S. Alpha Model](#) (explanation of the Risk Aversion Signal for the U.S. market starts on page 103).
- [The US Risk Aversion Signal](#)

## ❖ Developed Markets

- [DM Alpha Model](#) (explanation of the Risk Aversion Signal for DM starts on page 11).

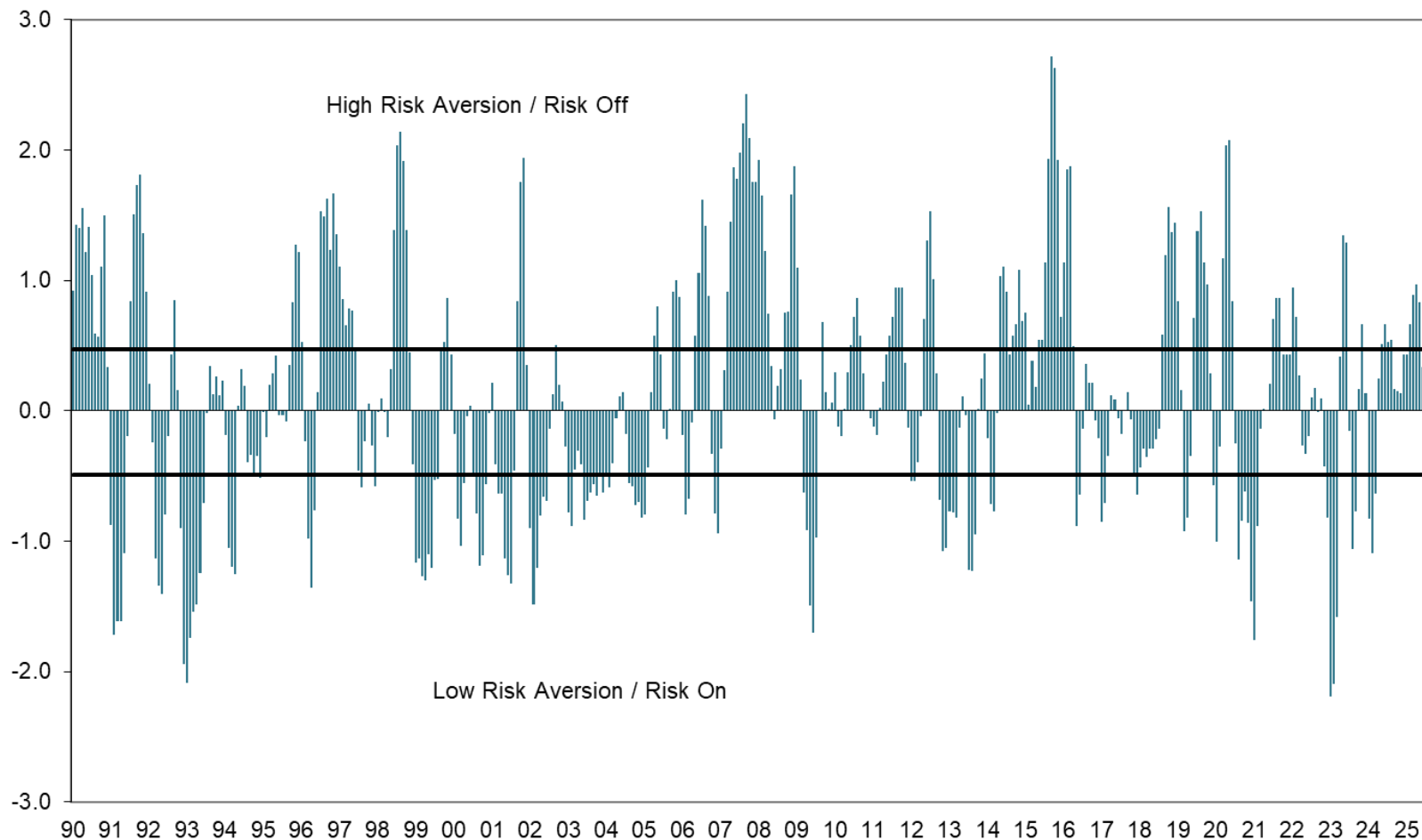
## ❖ Emerging Markets

- [EM Alpha Model](#) (explanation of the Risk Aversion Signal for EM starts on page 20).

Source: Bernstein Analysis.

# Our Global DM Risk Aversion Signal is currently in risk on mode

Global Risk Aversion Signal -- 3-Month Smoothed  
January 1990 - September 18, 2025  
Latest Signal Reading: -0.531, Latest Risk Setting = Low

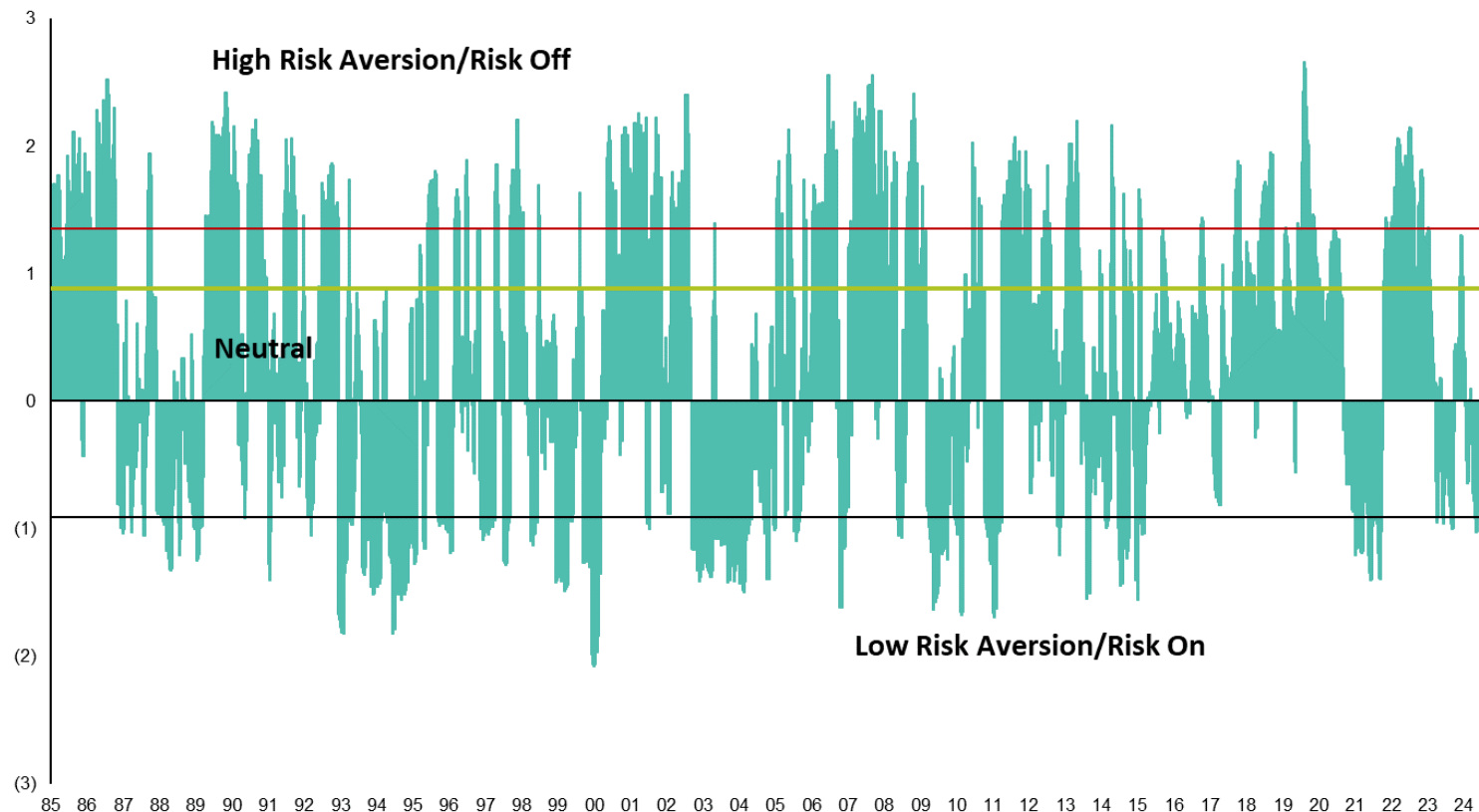


Source: MSCI, Federal Reserve, Bloomberg, FactSet, Bernstein analysis

# Our U.S. Risk Aversion Signal is currently also in neutral

## U.S. Risk Aversion Signal\*

January 1985 through September 24, 2025



\* The red line and black line are the thresholds of Low and High risk regimes, the green line represents the current value of the signal

Source: MSCI, Federal Reserve, Bloomberg, FactSet, Bernstein analysis

# When does the quality factor work?

## **Largest 1500 U.S. Stocks** **Equal Weighted Quality Factor Returns by Risk Regimes (Top vs Bottom Decile)\*** **1990 - 2024**

<b>Risk Regime</b>	<b>Annualized Returns</b>
High Risk Aversion / Risk Off	15.1%
Medium Risk Aversion / Risk Neutral	4.2%
Low Risk Aversion / Risk On	-13.4%

Notes:

\*Annualized average monthly returns. Quality scores rebalanced monthly.

Highest quality score is top decile and lowest quality score is bottom decile.

## **Largest 1500 U.S. Stocks** **Equal Weighted Quality Factor Returns by Business Cycles (Top vs Bottom Decile)\*** **1990 - 2024**

<b>Business Cycle</b>	<b>Annualized Returns</b>
Expansion	3.3%
Slowdown	5.0%
Contraction	5.1%
Recovery	-7.7%

Notes:

\*Annualized average monthly returns. Quality scores rebalanced monthly.

Highest quality score is top decile and lowest quality score is bottom decile.

Note: Economic cycle phases are determined based on the Leading Economic Index (LEI). Growth is based on the rolling six-month change in LEI. A growth rate below its historical average and accelerating = “recovery”; above average and accelerating = “expansion”; above average and decelerating = “slowdown”; and below average and decelerating = “contraction.”

Source: FactSet, CRSP, MSCI, Bernstein analysis

# Quality is more expensive than usual



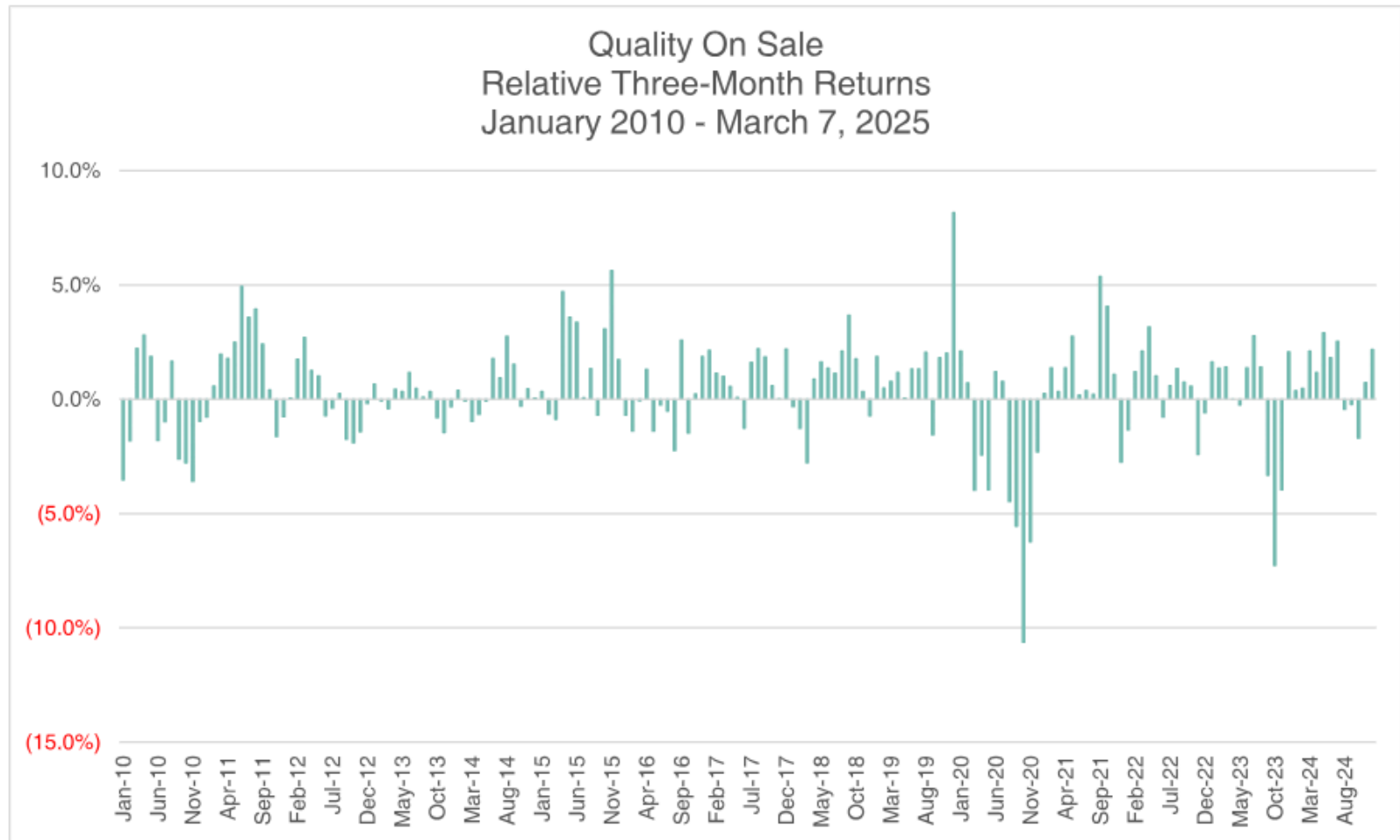
Universe=MSCI North America, cap weighted averages



Universe=MSCI North America, cap weighted averages

Source: FactSet, CRSP, MSCI, Bernstein analysis

# The quality-on-sale strategy has outperformed historically



Source: FactSet, CRSP, MSCI, Bernstein analysis



Quality stocks bounce back quickly if you exclude the biggest losers (Q1 of short term momentum are the worst performers). Rebounds are even better during down markets

### Quality on Sale

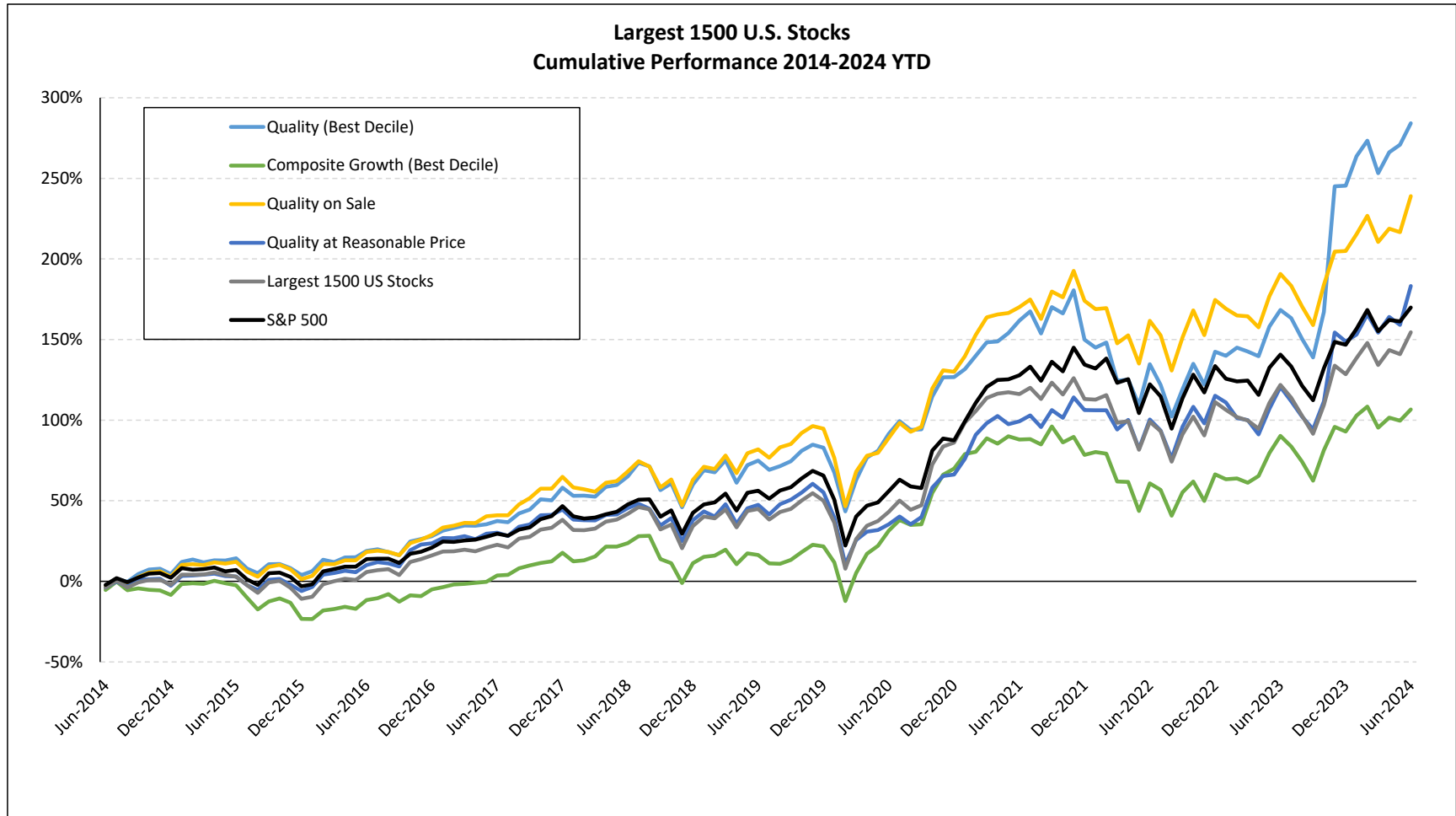
Annualized Relative Forward 3-Month Returns, Equally Weighted  
Universe is the Largest 1500 U.S.Stocks  
Since 1990

Quality (Q1=Best)	3-Month Momentum (Q1=Worst)				
	Q1	Q2	Q3	Q4	Q5
ALL MONTHS					
Q1	0.1%	3.0%	1.8%	0.8%	0.6%
Q2	-1.2%	2.0%	2.4%	0.5%	-1.9%
Q3	-2.0%	0.1%	2.2%	0.3%	-1.7%
Q4	-1.3%	-0.1%	0.6%	-0.5%	-2.1%
Q5	-1.9%	-0.7%	0.2%	-0.3%	-2.4%
DURING MARKET DRAWDOWNS					
Q1	-0.1%	7.5%	6.6%	4.8%	2.3%
Q2	-1.5%	5.5%	5.6%	3.8%	1.0%
Q3	-5.2%	2.5%	4.0%	3.4%	-0.2%
Q4	-10.4%	0.9%	2.5%	1.1%	-5.0%
Q5	-15.0%	-4.0%	-3.6%	-1.9%	-8.0%

*Down markets are defined as the worst third of all months for S&P 500 returns since 1990*

Source: FactSet, CRSP, MSCI, Bernstein analysis

# Quality Model and performance vs. other strategies, 2014-2024



Note: Equally weighted returns

Source: Factset, CRSP, Bernstein Analysis

# Definitions

- **Quality:** Our proprietary quality composite score is based on ROE, earnings stability, sales growth, debt ratios, EBIT margin, sequential trend stability of ROE, and net cash ratio volatility.
- **Quality on Sale:** This indicates stocks in top 2 quintiles of the quality model and Q2/Q3 on trailing 21-day returns. Q1 is the worst 21-day return.
- **Quality at Reasonable Price:** These are the stocks in the best two quintiles of the quality model and the lowest three quintiles of valuation composite (Book-to-Price, Cash Flow-to-Price, Sales-to-Price & Dividend Yield).
- **Composite Growth:** is based on equal weighted average of Internal Growth (3 Year Avg ROE\*(1 - Div Payout), Long Term Consensus EPS Forecast Growth Rate (5 Year) and FY3/FY0 Consensus EPS Forecast Growth Rate

Source: Factset, CRSP, Bernstein Analysis

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Neutral (Autonomous Brand)					
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