

## QUIP (QES Understanding Investor Positioning) - Tearsheet

### Introduction

Our QUIP datafeed is intended for portfolio managers, research analysts, traders, and risk managers seeking to understand stock-level investor positioning. The QUIP datafeed includes ~45 factors spanning technical, volatility & beta, retail, quant, hedge fund, shorts, ETFs, news & corporate filings, and sell-side analyst sentiment to provide a comprehensive picture of stock ownership and sentiment. Our QES risk model suite includes investor positioning factors to measure systematic sources of risk and return, the QUIP datafeed offers a more comprehensive dataset to better understand **both the systematic and idiosyncratic implications of investor positioning and sentiment.**

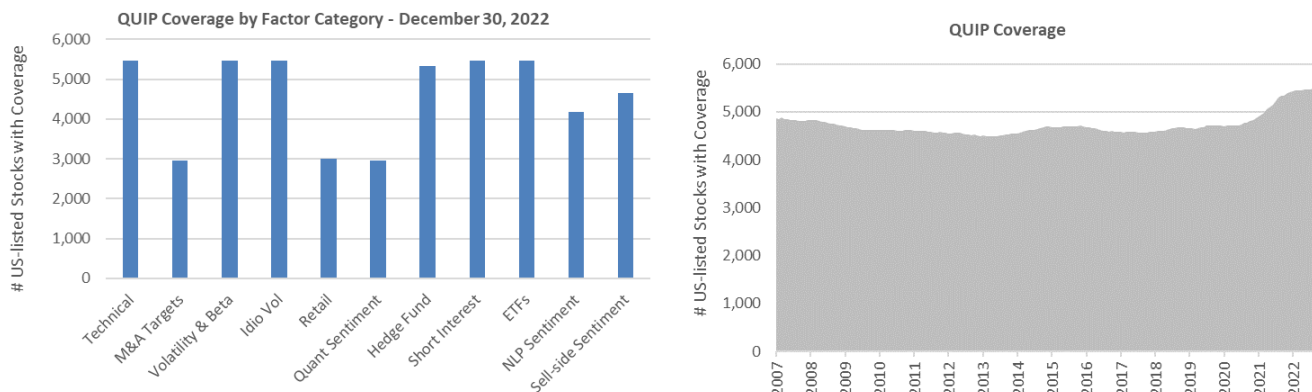
### Factor Descriptions

Category	FactorName	FactorDescription	Update	StartDate
Technical	Size	Current market capitalization	Daily	2007-01-01
	Notional ADV, 3M	Average daily notional value traded over previous 3M	Daily	2007-01-01
	Liquidity, 3M	Average daily notional value traded relative to market-capitalization over previous 3M	Daily	2007-01-01
	1D Abnormal	Previous 1D trading volume relative to previous 5D trading volume	Daily	2007-01-01
	1W Abnormal	Previous 5D trading volume relative to previous 21D trading volume	Daily	2007-01-01
	12M-1M Momentum	Realized volatility based on daily returns over prior 12M	Daily	2007-01-01
	1M Reversal	Inverse of total return over past 1M	Daily	2007-01-01
	Announced Deal Targets	Binary indicator to identify announced deal targets from within Russell 3000	Daily	2007-01-01
Vol & Beta	Realized Volatility, 12M	Realized volatility, based on daily returns over the past 12-months	Daily	2007-01-01
	Predicted Volatility	Predicted volatility, from the medium-horizon QES US All-Cap risk model	Daily	2007-01-01
	Realized Beta, 12M	CAPM beta to S&P 500, based on daily returns over the past 12-months	Daily	2007-01-01
	Predicted Beta	Predicted beta to S&P 500, derived from the medium-horizon QES US All-Cap risk model	Daily	2007-01-01
Idio Vol	Residual Volatility	Residual from CAPM beta to S&P 500, based on daily returns over the past 12-months	Daily	2007-01-01
	Predicted Idio Vol	Predicted idiosyncratic volatility, from the medium-horizon QES US All-Cap risk model	Daily	2007-01-01
	Realized Idio Vol, 1M	Realized volatility of residual daily returns over past 1-month using QES US All-Cap risk model	Daily	2008-01-01
	Realized Idio Vol, 3M	Realized volatility of residual daily returns over past 3-months using QES US All-Cap risk model	Daily	2008-01-01
	Realized Idio Vol, 12M	Realized volatility of residual daily returns over past 12-months using QES US All-Cap risk model	Daily	2008-01-01
Retail	Retail Popularity	Retail Composite Score	Daily	2020-04-30
	Retail Popularity - 1W Change	1W change in Retail Composite Score	Daily	2020-04-30
Quant	Quant Sentiment	Sentiment from a quant alpha stock-selection model with medium-turnover	Daily	2007-01-01
Hedge Fund	HF Level	AUM held in aggregate by hedge funds from 13F filings	Quarterly	2007-01-01
	HF Level - 3M Change	3M change in hedge fund level at stock price on 13F filing date	Quarterly	2007-01-01
	HF Intensity	Hedge fund ownership in aggregate as a percentage of market-cap	Quarterly	2007-01-01
	HF Intensity - 3M Change	3M change in hedge fund intensity	Quarterly	2007-01-01
	HF Popularity	Number of hedge funds holding security from 13F filings	Quarterly	2007-01-01
	HF Popularity - 3M Change	3M change in hedge fund popularity	Quarterly	2007-01-01
	HF Crowding	Composite of hedge fund level and intensity	Quarterly	2007-01-01
Short Interest	Shorts as % Float	Shorts outstanding as a percentage of float	Bi-Monthly	2007-01-01
	Days-to-Cover	Shorts outstanding divided by the stock's 20D ADV	Bi-Monthly	2007-01-01
ETF	ETF Level	AUM held in aggregate by US-listed equity ETFs	Daily	2007-01-01
	ETF Popularity	Number of US-listed equity ETFs holding the security	Daily	2007-01-01
	ETF Intensity	Percent of float owned by US-listed equity ETFs	Daily	2007-01-01
	ETF Intensity, 3M Change	3M change in ETF intensity - ie. ETF Flow signal from risk model	Daily	2007-01-01
	ETF Intensity, 1M Change	1M change in ETF intensity	Daily	2007-01-01
	ETF Flow, 1M	Net creation/redemption flows as % of volume over prior 1M	Daily	2007-01-01
	ETF Flow, 10D	Net creation/redemption flows as % of volume over prior 10D	Daily	2007-01-01
	ETF Flow, 5D	Net creation/redemption flows as % of volume over prior 5D	Daily	2007-01-01
NLP Sentiment	News Sentiment	Composite NLP sentiment score based on news with insightful categorical events (NICE)	Daily	2007-01-01
	Abnormal News Volumes	Average daily new stories in the past 30 days divided by average from the past 365 days	Daily	2007-01-01
	10-K/10-Q Sentiment	Composite NLP sentiment score based on systematic profiling of EDGAR corporate filings (SPEC)	Daily	2007-01-01
Sell-side Sentiment	Limited Coverage	Binary indicator identifying stocks with fewer than three sell-side analysts currently providing N	Daily	2007-01-01
	Earnings Revisions, 3M	3M change in mean consensus EPS estimates for the next 12M	Daily	2007-01-01
	Earnings Revisions, 1M	1M change in mean consensus EPS estimates for the next 12M	Daily	2007-01-01
	Earnings Diffusion, 3M	Ratio of upwards to downwards revisions in EPS estimates over past 3M	Daily	2007-01-01
	Sales Revisions, 3M	3M change in mean consensus sales estimates for the next 12M	Daily	2007-01-01
	Sales Revisions, 1M	1M change in mean consensus sales estimates for the next 12M	Daily	2007-01-01
	Sales Diffusion, 3M	Ratio of upwards to downwards revisions in sales estimates over past 3M	Daily	2007-01-01
	Revisions, 3M	Composite of sales and earnings revisions over the prior 3Ms	Daily	2007-01-01

The information contained on this document is intended only for institutional investors as defined in FINRA Rule 4512(c)

## Data Availability

We seek to provide comprehensive coverage of US equities in our QUIP datafeed which currently covers **~5,500 US-listed stocks and ADRs**. Signal coverage and updates are provided wherever source data is available. Our QUIP datafeed includes **daily updates from 2007 onwards** where source data is available.



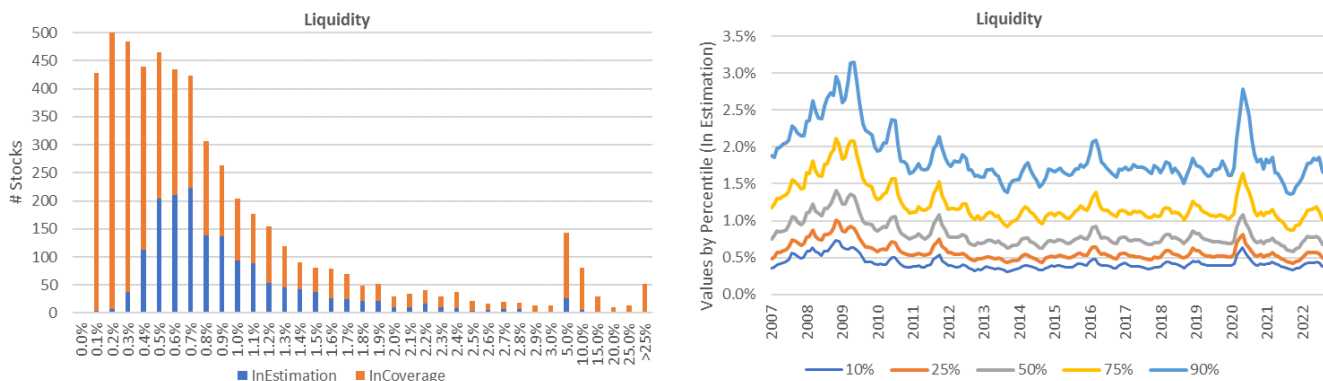
Sources: Wolfe Research Lu's QES, Bloomberg Finance LLP, FactSet, FTSE Russell, MSCI, Refinitiv, S&P Global. September 30, 2022.

We provide **raw signals, z-scores, and signal-weight factor returns** in the daily QUIP datafeed. Cross-sectional z-scores transform raw signals using the mean and standard deviation across the estimation universe from our Wolfe QES US All-Cap risk model at each point-in-time. Signal-weight factor portfolios are weighted by z-scores and constructed within the estimation universe without controlling for other systematic risks or tradability.

## Technical Factors

We offer technical factors to help investors understand the recent behavior of stocks and portfolios. Size, volatility, and liquidity factors are commonly used in fundamental risk models, as these technical factors typically contribute significant risk and return in equity portfolios. 1M Reversal is sometimes used in medium-horizon risk models but introduces significant turnover in other factors. Liquidity relative to market-capitalization is an indicator of active participation given that passive investors contribute volumes pro-rata to market-cap benchmarks.

## Statistical Arbitrage in a Volatile Market



Sources: Wolfe Research Lu's QES, Bloomberg Finance LLP, FactSet, FTSE Russell, MSCI, Refinitiv, S&P Global. December 30, 2022.

The information contained on this document is intended only for institutional investors as defined in FINRA Rule 4512(c)  
[gesrisk@wolferesearch.com](mailto:gesrisk@wolferesearch.com)

January 2023

## M&A Activity

This binary indicator identifies stocks that are announced M&A deal targets from within the Russell 3000 universe. Investors typically use this factor as an exclusionary filter, as announced targets typically start to trade on deal dynamics not the typical risk and return drivers for equities. Note, we do not have coverage outside of Russell 3000 for this factor.

### Systematic Alpha from Risk Arbitrage

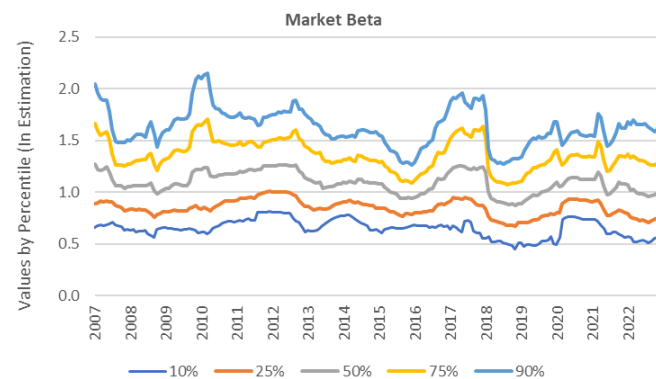
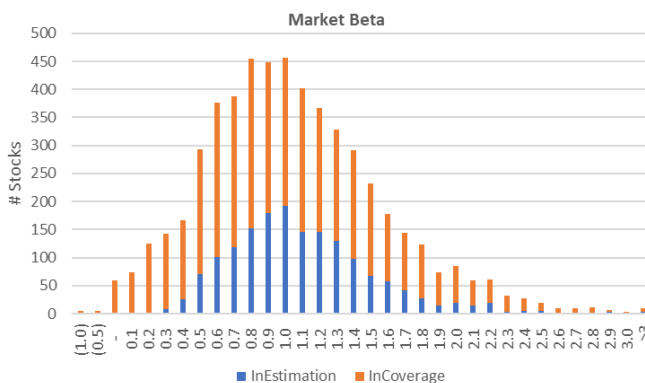


Sources: Wolfe Research Luo's QES, Bloomberg Finance LLP, FactSet, FTSE Russell, MSCI, Refinitiv, S&P Global. December 30, 2022.

## Volatility and Market Beta

QUIP includes several factors to quantify market beta and total volatility for each security. Realized volatility and historical beta to S&P 500 are commonly used by investors, however predicted volatility and market beta from a multi-factor risk model are less often easily available. The Wolfe QES risk model suite uses total volatility (252d realized) instead of following the conventional modeling decision to separate market beta and residual volatility. Most active managers are net long (or overweight) higher volatility stocks. Total volatility is an intuitive risk-on, risk-off indicator; its explanatory power is identical to the combined market beta and residual volatility factors; and it is more efficient to hedge total volatility in terms of capital deployment. However, the negative premia associated with total volatility is driven by the negative premia of residual vol not by market beta.

### Statistical Arbitrage in a Volatile Market



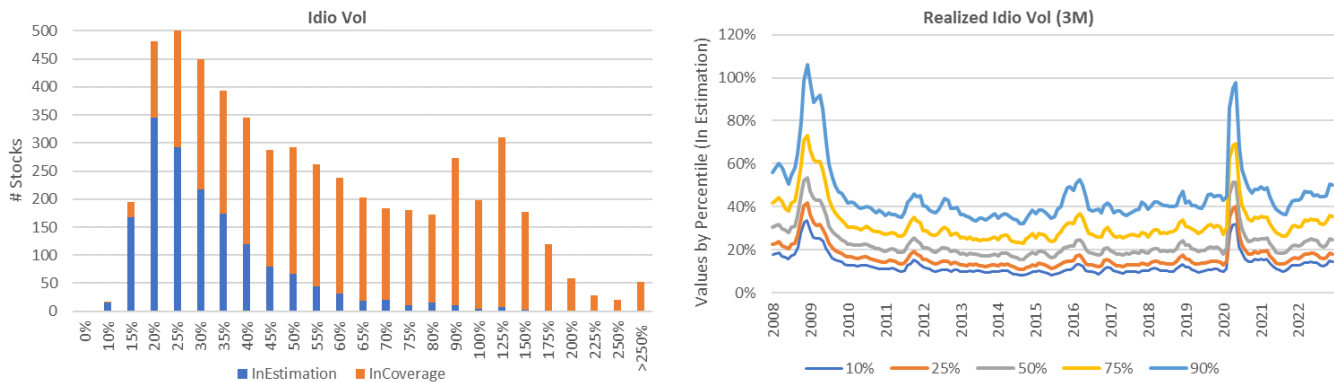
Sources: Wolfe Research Luo's QES, Bloomberg Finance LLP, FactSet, FTSE Russell, MSCI, Refinitiv, S&P Global. December 30, 2022.

The information contained on this document is intended only for institutional investors as defined in FINRA Rule 4512(c)

## Idiosyncratic Volatility

Fundamental managers are experts in stock-selection, however systematic factors have been an increasing driver of portfolio volatility and returns in recent years. Risk models help investors measure and control systematic exposures in their portfolio, so fundamental managers can focus on their expertise in stock-selection. QUIP offers investors a range of idiosyncratic volatility factors, both historical and predicted. These QUIP factors can help investors understand how much of the risk in a stock is attributable to market beta or systematic factors versus idiosyncratic risk.

### Portfolio Compass: Stock Specific Risk Premia



Sources: Wolfe Research Luo's QES, Bloomberg Finance LLP, FactSet, FTSE Russell, MSCI, Refinitiv, S&P Global. December 30, 2022.

## Retail

Retail investors become increasingly active in equity markets during the stay-at-home COVID restrictions. The MEME stock blow-up driven by retail participation significantly impacted institutional managers, particularly some short positions held by hedge funds. We measure retail participation using our proprietary NLP engine to analyze stock mentions on Reddit's "wallstreetbets" community targeting the thread "What Are Your Moves Tomorrow?" The QUIP datafeed includes our Retail Rank as featured in our daily *Retail Red Alert* and the 1W change in Retail Rank.

### A Battle between Retail and Institutional Investors

Ticker	Name	Composite Retail Rank (Higher = More Retail Participation)	Ticker	Name	1 Week Rank Change
TSLA	Tesla Inc	100	JPM	JPMorgan Chase & Co	↑ 98
CVNA	Carvana Co	99	IQ	iQIYI Inc	↑ 94
JPM	JPMorgan Chase & Co	98	ES	Eversource Energy	↑ 91
AAPL	Apple Inc	97	IP	International Paper Co	↑ 90
U	Unity Software Inc	96	WISH	Contextlogic Inc	↑ 89
BA	Boeing Co	95	AIR	AAR Corp	↓ -11
IQ	iQIYI Inc	94	AMD	Advanced Micro Devices Inc	↓ -11
GB	Global Blue Group Holding AG	93	NVDA	NVIDIA Corporation	↓ -33
F	Ford Motor Co	92	AMZN	Amazon.com Inc	↓ -37
ES	Eversource Energy	91	PLTR	Palantir Technologies Inc	↓ -43

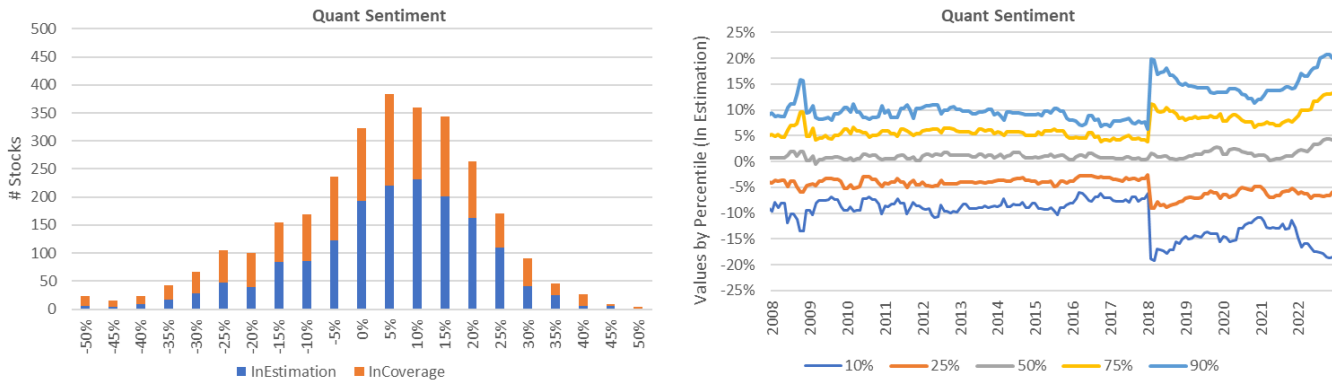
Sources: Wolfe Research Luo's QES, Bloomberg Finance LLP, FactSet, FTSE Russell, MSCI, Refinitiv, S&P Global. December 30, 2022.

The information contained on this document is intended only for institutional investors as defined in FINRA Rule 4512(c)

## Quant Sentiment

Our flagship LEAP model is a traditional multi-factor model with style rotation and machine learning overlay that is a good proxy for sophisticated quant sentiment. With significant growth in assets tracking equity risk premia and stock-selection models, LEAP suggests where quantitative strategies are likely to be long (overweight) or short (underweight). This quant sentiment score can be used to understand quant sentiment in a single-stock and also to measure your portfolio's alignment in aggregate with quant strategies.

### Style Rotation, Machine Learning, and the Quantum LEAP

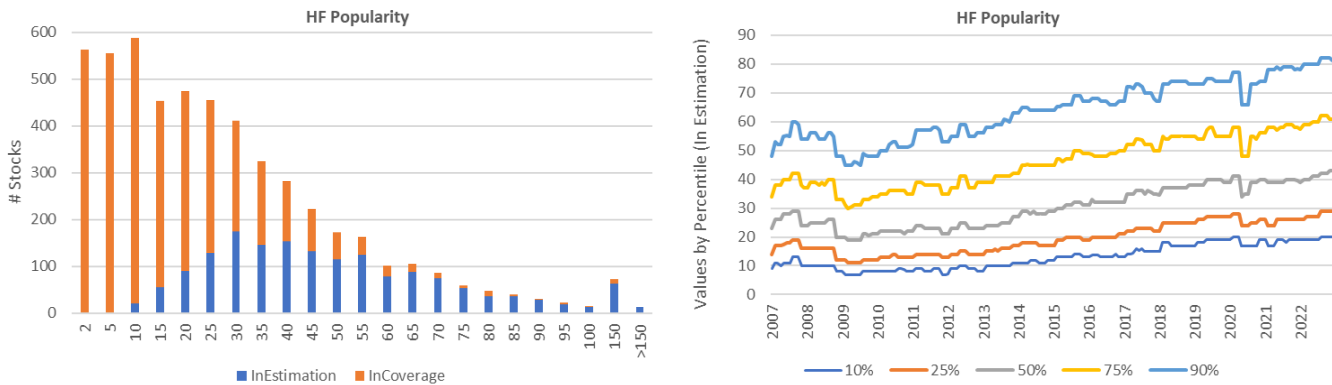


Sources: Wolfe Research Luo's QES, Bloomberg Finance LLP, FactSet, FTSE Russell, MSCI, Refinitiv, S&P Global. December 30, 2022.

## Hedge Fund

Our 13F-based hedge fund signals represent the long side of equity L/S strategies. While these signals are updated infrequently with a significant delay, turnover in fund-level filings suggests that the holding period for 70% of the asset base averages six months or longer. We also see drawdowns in these signals that coincide with anecdotal evidence of equity L/S de-risking events. Level (aggregated \$AUM) and Popularity (# funds) are highest for mega/large-caps, while intensity (% mktcap) is highest for mid/small-caps. Investors can use these signals to understand equity L/S consensus long positioning in individual stocks or at the aggregated portfolio level.

### Port@ble Ownership

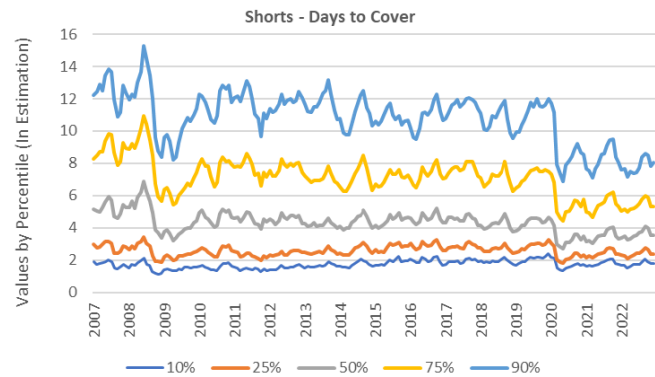
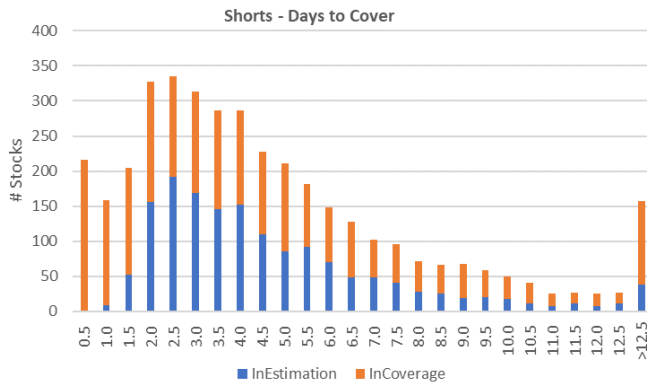


Sources: Wolfe Research Luo's QES, Bloomberg Finance LLP, FactSet, FTSE Russell, MSCI, Refinitiv, S&P Global. December 30, 2022.

## Short Interest

Short interest signals reflect the shorting activity of many players who might short stocks (eg. equity L/S, merger-arb, derivatives traders, index arb etc). Equity L/S managers typically have negative exposure from selling popular shorts so benefit from the factor's negative return premia in the long-run. However, short-squeeze rallies and equity L/S de-risking events negatively contribute to returns, and covering can exacerbate moves especially in less liquid names. These short interest signals source exchange-reported data that updates twice per month. Our risk models source third-party vendors that provide daily updates, however exchange-reported factors are highly correlated during most time periods.

### New Insights in Short Interest – A Global Perspective

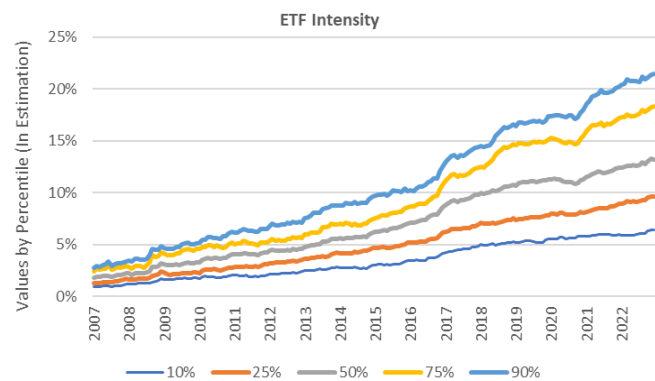
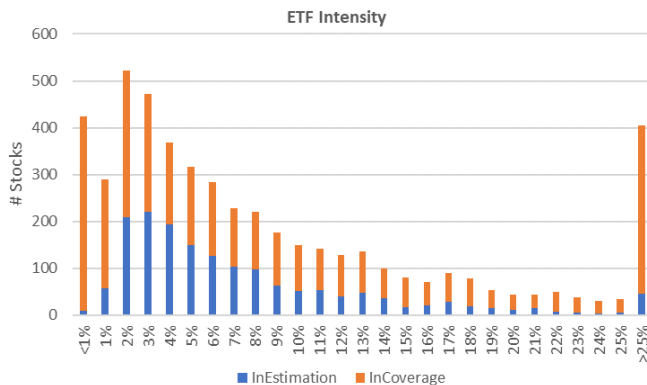


Sources: Wolfe Research Lu's QES, Bloomberg Finance LLP, FactSet, FTSE Russell, MSCI, Refinitiv, S&P Global. December 30, 2022.

## Passive ETFs

Our passive ETF signals provide daily updates on stock-level ownership by systematic, rules-based products. With massive product growth in recent years, an increasing percentage of market-capitalization is held by ETFs. Our research suggests that strong increases in passive ETF intensity over the prior 1M-12Ms are associated with future underperformance even after controlling for the other style factors and industries in our US All-Cap risk model. QUIP offers a more comprehensive set of passive ETF signals beyond the 3M delta in ETF intensity in our US risk models.

### Alpha and Risk from ETF Data



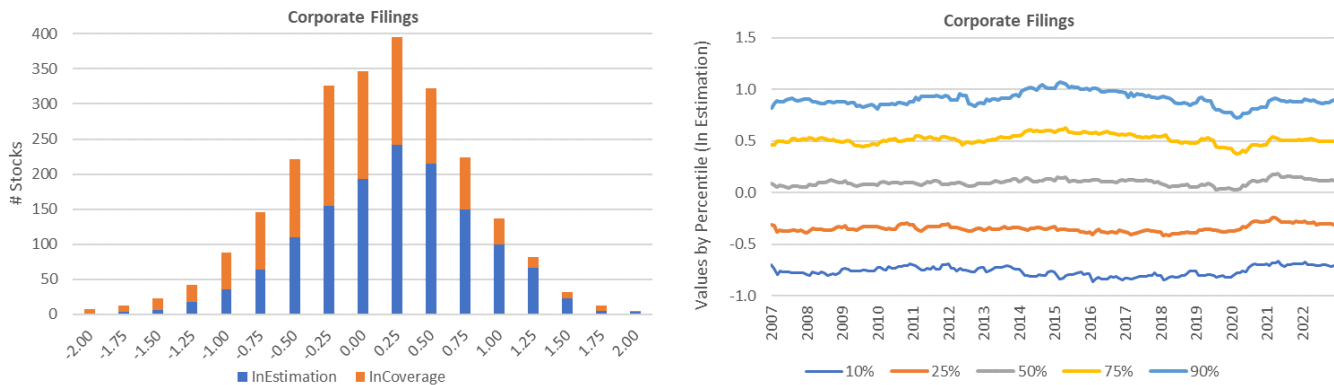
Sources: Wolfe Research Lu's QES, Bloomberg Finance LLP, FactSet, FTSE Russell, MSCI, Refinitiv, S&P Global. December 30, 2022.



## NLP Sentiment

These NLP sentiment signals measure positive or negative sentiment from news stories and corporate filings. For news stories, we combine multiple event-based sentiment and behavioral factors from Ravenpack and our own factor library into one composite signal. We also report on recent news volumes (30D) relative to the prior year (365D) for stocks within coverage. For corporate filings, we web-scrape the EDGAR database and combine text-mining signals into one composite signal. QUIP provides a core set of NLP signals for investors seeking to understand company sentiment.

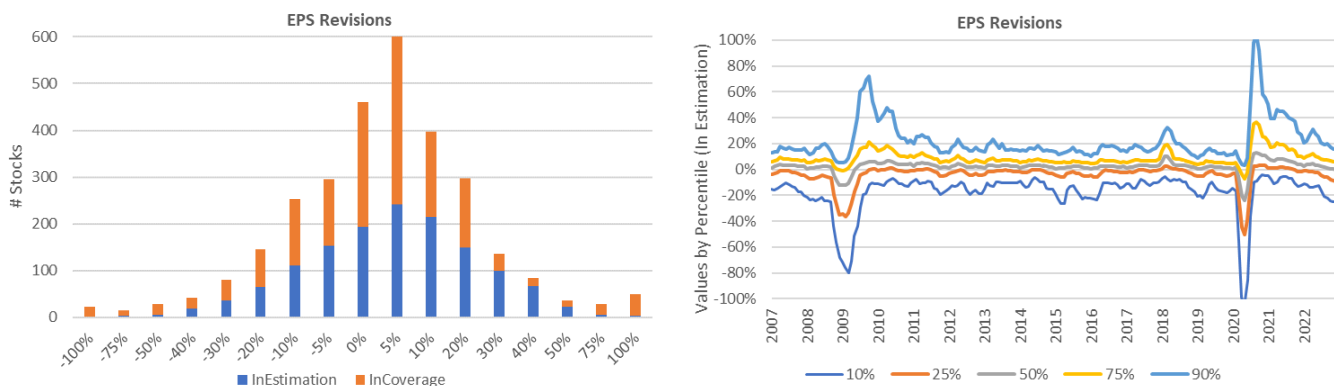
[Beyond Fake News](#)  
[Text Mining Unstructured Corporate Filing Data](#)



Sources: Wolfe Research Luo's QES, Bloomberg Finance LLP, FactSet, FTSE Russell, MSCI, Refinitiv, S&P Global. December 30, 2022.

## Sell-side Sentiment

These sell-side sentiment signals give insight into recent changes in consensus EPS and sales estimates from sell-side research analysts covering a stock. Our US All-Cap risk model uses a composite revisions factor that combines changes in EPS and sales estimates over the prior three months. In the QUIP datafeed, we provide those components as well as additional information on changes over the prior one month and diffusion of recent changes. We provide signals for all stocks with updated EPS or sales estimates from the sell-side over the past 90 days but identify those stocks with coverage by fewer than three analysts.



Sources: Wolfe Research Luo's QES, Bloomberg Finance LLP, FactSet, FTSE Russell, MSCI, Refinitiv, S&P Global. December 30, 2022.

## DISCLOSURE SECTION

Wolfe Research, LLC does not assign ratings of Buy, Hold or Sell to the stocks it covers. Outperform, Peer Perform and Underperform are not the respective equivalents of Buy, Hold and Sell but represent relative weightings as defined above. To satisfy regulatory requirements, Outperform has been designated to correspond with Buy, Peer Perform has been designated to correspond with Hold and Underperform has been designated to correspond with Sell.

Wolfe Research Securities and Wolfe Research, LLC have adopted the use of Wolfe Research as brand names. Wolfe Research Securities, a member of FINRA ([www.finra.org](http://www.finra.org)) is the broker-dealer affiliate of Wolfe Research, LLC and is responsible for the contents of this material. Any analysts publishing these reports are dually employed by Wolfe Research, LLC and Wolfe Research Securities.

The content of this report is to be used solely for informational purposes and should not be regarded as an offer, or a solicitation of an offer, to buy or sell a security, financial instrument or service discussed herein. Opinions in this communication constitute the current judgment of the author as of the date and time of this report and are subject to change without notice. Information herein is believed to be reliable but Wolfe Research and its affiliates, including but not limited to Wolfe Research Securities, makes no representation that it is complete or accurate. The information provided in this communication is not designed to replace a recipient's own decision-making processes for assessing a proposed transaction or investment involving a financial instrument discussed herein. Recipients are encouraged to seek financial advice from their financial advisor regarding the appropriateness of investing in a security or financial instrument referred to in this report and should understand that statements regarding the future performance of the financial instruments or the securities referenced herein may not be realized. Past performance is not indicative of future results. This report is not intended for distribution to, or use by, any person or entity in any location where such distribution or use would be contrary to applicable law, or which would subject Wolfe Research, LLC or any affiliate to any registration requirement within such location. For additional important disclosures, please see [www.wolferesearch.com/disclosures](http://www.wolferesearch.com/disclosures).

The views expressed in Wolfe Research, LLC research reports with regards to sectors and/or specific companies may from time to time be inconsistent with the views implied by inclusion of those sectors and companies in other Wolfe Research, LLC analysts' research reports and modeling screens. Wolfe Research communicates with clients across a variety of mediums of the clients' choosing including emails, voice blasts and electronic publication to our proprietary website

Copyright © Wolfe Research, LLC 2023. All rights reserved. All material presented in this document, unless specifically indicated otherwise, is under copyright to Wolfe Research, LLC. None of the material, nor its content, nor any copy of it, may be altered in any way, or transmitted to or distributed to any other party, without the prior express written permission of Wolfe Research, LLC.

This document is limited for the sole use of clients of Wolfe Research. Authorized users have received an encryption decoder which legislates and monitors the access to Wolfe Research, LLC content. Any distribution of the content produced by Wolfe Research, LLC will violate the understanding of the terms of our relationship.