VecViz Expected Up Body & Expected Down Body (EUB & EDB) Performance Report

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1 July 2025

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Introduction

The area of a security's forward return distribution between the 95th and 100th th percentile upward and downward are often referred to as the distribution's "tails". In this report we are going to discuss metrics for the expected value upward and downward for the area inside the tails, i.e., the distribution body.

We refer to these metrics as Expected Up Body and Expected Down Body, or EUB and EDB, respectively. More specifically, EUB is the horizon end date forecast probability-weighted average price between the model date price and the 95th probability percentile price upward. EDB is defined similarly, but pertains to the area between the Model Date price and the 95th probability percentile price downward. We believe that EUB and EDB can be useful to investors as estimates of base case / moderate upside and downside.

The aim of this report is to inform a broad spectrum of readers of the behavior and accuracy of VecViz's EUB and EDB estimates, and how they might influence portfolio performance. To do so, we rely upon both comparison to the well-known and still widely used "Sigma" approach to volatility.

Please see the "Important Considerations" section of this report for important disclosures related to the methods used in this report and other topics as well.

Evaluation of EUB and EDB Estimates

We compare Expected Body metrics derived from VecViz's Vector Model ('V') to VecViz's implementation to comparable statistics for Sigma (S), the standard deviation of the "normal" or "Gaussian" distribution.

Mean absolute average error (MAE)

Mean absolute average error (MAE) is the metric we use when evaluating accuracy. For example, when evaluating EUB, we take the average absolute value of the difference between the actual forward horizon price and the model date EUB price for the given model, for ticker model dates that are in the given model's "evaluation set".

Each model's EUB evaluation set includes all the ticker model dates for which the forward horizon price is between the model date price and that model's estimate of the 95th percentile upward price (95U). Likewise for each model's EDB evaluation set, substituting 95D for 95U. Given that there are differences between the 95th percentile as calculated by the Vector Model and Sigma, the evaluation sets for EUB and EDB estimates can be quite different. The differences in ticker level evaluation set constituents can often be apparent when reviewing the Top/Bottom 30 ticker lists for the Vector Model and Sigma included in this report.

As discussed further below, we evaluate MAE relative to Sigma both on an outright and adjusted basis, to address, at least in part, some of the aforementioned differences in the evaluation sets. We also evaluate MAE on the basis of its variability by date (when averaged across tickers) and by ticker (when averaged across dates), as a consistent, moderate level of error is preferable to potential large spikes in error.

Return on Expected Up Body and Return on Expected Down Body (ROEDB and ROEUB)

To determine the influence of Vector Model EUB and EDB on risk tolerant/ return seeking and risk avoidant strategies relative to Sigma EUB and EDB we calculate ROEUB and ROEDB (Return on EUB and Return on EDB, respectively). Specifically, Sigma ROEUB and Sigma ROEDB are ascribed the underlying ticker return, and Vector Model ROEUB (ROEDB) is ascribed a multiple of the underlying return based on the ratio of Vector Model EUB (Sigma EDB) to Sigma EUB (Vector Model EDB), subject to a cap and floor of 3.00x and 0.333x.

So, for example, if Sigma said EUB for ticker ABC was 2.00% and the Vector Model said EUB for ABC was 4.00%, the Vector Model ROEUB would be double Sigma's. Likewise, if the Vector Model said EUB for ABC was 1.00%, the Vector Model ROEUB would be half of Sigma's.

For the Vector Model ROEUB to be higher than Sigma's it signifies that either (1) Vector Model EUB exceeded Sigma's EUB (to the upside) and the ticker traded higher, or (2) Sigma EUB exceeded the Vector Model's EUB (to the upside) and the ticker traded lower.

However, if Sigma said EDB for XYZ was -2.00% and the Vector Model said EDB for XYZ was -4.00% the Vector Model's ROEDB for XYZ would be half Sigma's. Likewise, if Vector Model EDB for XYZ was -1.00% its ROEDB would be double Sigma's.

For the Vector Model ROEDB to be higher than Sigma's it signifies that either (1) Vector Model EDB exceeded Sigma's EDB (to the downside) and the ticker traded lower, or (2) Sigma EDB exceeded the Vector Model's EDB (to the downside) and the ticker traded higher.

Cost of borrowing or crediting for uninvested funds is incorporated into neither ROEUB or ROEDB.

Addressing The Influence of 95th percentile differences on MAE and ROEB

All else equal, the model with greater distance from the model date price to 95U (95D) will have higher EUB (EDB) distance and also a higher EUB (EDB) MAE. If prices drift upward over time, it will also have a higher ROEUB (lower ROEDB). Thus, MAE for EUB and EDB and ROEUB and ROEDB must be considered in the context of the distance to 95U and 95D, respectively, in order to discern what additional information value they offer.

Thus, when evaluating MAE, in addition to outright comparison of Vector Model MAE to Sigma we also have a 95th percentile distance adjusted comparison. Specifically, for this adjusted comparison we multiply Sigma's MAE by the ratio of the distance to the 95th percentile for the Vector Model relative to Sigma's distance to its 95th percentile. If Sigma's 95th percentile is more distant than the Vector Model's it's adjusted MAE will be smaller than its unadjusted MAE, and vice versa.

Likewise, when evaluating ROEUB and ROEDB, in additionto outright comparison to Sigma ROEDB and ROEUB (which in both cases are simply the underlying ticker returns), we also have an adjusted comparison. Specifically, we multiply Sigma's ROEUB (ROEDB) by the ratio of aggregate average Vector Model EUB (Sigma EDB) to aggregate average Sigma EUB (Vector Model EDB). This multiplication eliminates much of the influence of systematic EUB (EDB) differentials, be them the result of systematic 95U (95D) differentials or otherwise, on the relationship between Vector Model and Sigma ROEUB (ROEDB). The bias that remains reflects the aforementioned capping and flooring when calculating Vector Model ROEUB (ROEDB), and idiosyncratic variability arising from the aforementioned differential in ticker-model date constituents in each model's Expected Body evaluation sets.

We also provide a more elegant, though less transparent metric that addresses this concern - the alpha of Vector Model ROEUB (ROEDB) to Sigma ROEUB (ROEDB) (i.e., the underlying, equally weighted ticker returns). "Alpha", as discussed in this report, is the intercept of an ordinary least squares regression of Vector Model ROEUB (ROEDB) on the underlying ticker forward returns for corresponding TMD's. It represents the expected Vector Model ROEUB (ROEDB) when Sigma ROEUB (ROEDB), i.e., the underlying ticker return, is 0.00%.

Finally, we also include 95U and 95D levels and breakage rates for the Vector Model and Sigma in the Appendix to this report, for your reference as you consider the MAE and ROEUB / ROEDB adjustments.

Determining the drivers of ROEUB (ROEDB) alpha

A ROEUB (ROEDB) Alpha greater than 0.00 across TMD's indicates that Vector Model EUB (EDB) moved favorably from a market timing and / or ticker selection perspective. We present that statistic alongside an average ROEUB (ROEDB)alpha calculated at the single ticker level across dates. If this second alpha is >0 it indicates that market timing added to the overall alpha, and vice versa. If this second alpha exceeds the overall alpha then it indicates that ticker selection detracted from alpha, and vice versa.

ROEUB (ROEDB) Beta

ROEUB (ROEDB)Beta represents the expected sensitivity of Vector Model ROEUB (ROEDB) to Sigma ROEUB (ROEDB), i.e., the underlying ticker return. It is the slope of the aforementioned ordinary least squares regression of Vector Model ROEUB (ROEDB) on Sigma

ROEUB (ROEDB). Like outright ROEUB (ROEDB), it must be considered in the context of 95U (95D), and like alpha it can be bifurcated to reveal additional insight.

We encourage readers to consider the Vector Model ROLOBC beta to Sigma ROLOBC in the context of how well each model's 95% VaR and OaR breakage rates compare to targeted levels. For example, if the Sigma model 95% OaR breakage is well above target and the Vector Model's 95% OaR breakage is close to target, then Vector Model 95% OaR levels are likely higher than Sigma's and if that is the case then more likely than not Vector Model EUB levels are higher than Sigma's as well. The beta of Vector Model ROEUB to Sigma ROEUB should be expected to be > 1.00 in such a situation.

A ROEUB (ROEDB) Beta greater than 1.00 across TMD's indicates that Vector Model EUB (EDB) was higher (more deeply negative) than Sigma's for more volatile dates and / or tickers. We also present an average Beta alpha calculated at the single ticker level across dates. If this second beta is >1.00 it indicates that Vector Model ROEUB (ROEDB) was higher (more deeply negative) than Sigma ROEUB (ROEDB) on more volatile days. If this second beta is less than the overall beta then it indicates that Vector Model ROEUB (ROEDB) tended to be less elevated (less deeply negative) with respect to more volatile tickers than with respect to more volatile dates.

Vector Model Input and Calculation Details

The Vector Model uses systematic price channel identification and scoring in conjunction with machine learning to provide investors with volatility forecasts that reflect the asymmetric, jumpy, clustering, and price dependent behavior of realized and option implied volatility in the financial markets.

The sole input to Vector Model and the Sigma Model out of sample OaR analytics are daily closing prices obtained from QuoteMedia.

The Vector Model was trained upon ~ 60,000 ticker model dates (TMD's) representing ~550 tickers (including equities, currencies, and commodities) and ~ 120 model dates spanning from March 9, 2002 to February 3, 2021. The Out of Sample period starts on 1/31/2022, nearly a full one year from the last model date included in the training data. All Expected Body estimates discussed in this report are for model dates beyond January 31, 2022, making them fully out of sample.

This report includes Vector Model and Sigma model results for ~150 tickers. Only about twenty of these tickers were included in the Vector Model training data set discussed above. These tickers were selected using the following criteria at the time of selection: Top and Bottom 25 S&P 500 performers, Largest 25 publicly traded issuers in the LQD and HYG etf's, constituents of the Metals and Pharmaceuticals sector within the LQD and HYG etf's, and any other tickers that at the time drew significant financial media attention (Mag 7, meme-related stocks, bitcoin related stocks). We also included several major equity and debt-oriented ETF's.

The complete Vector Model EUB and EDB coverage universe discussed in this report includes the following tickers:

AA, AAP, AAPL, ABBV, ACGL, ADBE, AMAT, AMC, AMD, AMGN, AMZN, AVGO, AZN, AZO, BA, BAC, BALL, BBY, BHC, BHP, BIIB, BMY, BUD, BXP, CAH, CCL, CDNS, CHTR, CITI, CLF, CMA, CMCSA, CMG, CNC, COST, CPRT, CSCO, CSTM, CTLT, CVS, CYH, CZR, DHI, ELAN, EMB, ETRN, EXPE, FCX, FIS, FITB, FRA, FRCB, FSUGY, GBTC, GE, GILD, GLD, GME, GNRC, GOLD, GOOGL, GS, GSK, GT, GWW, HCA, HD, HLT, HON, HSBC, HYG, IEP, INTC, INTU, IRM, ISRG, JAZZ, JPM, KALU, KEY, KHC, LEN, LLY, LNC, LQD, LUMN, LVS, LW, META, MNST, MOS, MRK, MS, MSFT, MSI, MSTR, MU, MUB, NAVI, NEM, NFLX, NVDA, NVS, NWL, ON, ORCL, ORLY, OXY, PCG, PEP, PHM, POST, PRGO, PWR, QCOM, QQQ, RIO, SBNY, SBUX, SIVBQ, SLV, SNY, SPY, T, TDG, TEVA, TFC, THC, TLT, TMUS, TRGP, TSLA, TXN, UAA, UNH, USB, VCSH, VFC, VICI, VNO, VST, VZ, WDC, WFC, WRK, WYNN, X, XOM, ZION, ZTS.

The Vector Model is described further in the FAQ and Blog of vecviz.com.

Sigma Details

The core of Sigma, as presented alongside Vector Model output by VecViz, is the standard deviation of price-based returns that very likely gets discussed in any introductory book on risk or portfolio management. This is the same definition of volatility that is utilized in the Black Scholes option pricing formula. Sigma's flaws as an estimate of forward volatility are well documented. Nevertheless, it remains perhaps the most popular metric for "risk" when it comes to investments, likely because of its simplicity and familiarity.

We present Sigma based on daily logarithmic price returns (akin to % changes in price), and a lookback period of two years. To enhance Sigma's accuracy, we apply a 6-month half-life rate of decay to the weightings applied to the daily returns used to calculate Sigma. This weighting scheme causes the most recent 6 month period to be weighted 8x the least recent 6 month period in the 2 year look back window.

Sigma is converted to probabilities by applying multipliers associated with the standard normal (i.e. Gaussian) distribution with a mean of 0 and sigma of 1.00. Thus, 95% VaR is assumed to be-1.645 sigma's lower than the current price and 99% VaR is presumed to be-2.326 sigma's lower than the current price.

Sigma based probability percentiles for longer time horizons are obtained by multiplying Sigma calculated from daily closing prices by the square root of the number of trading days in the given horizon. In doing so, we are assuming daily returns are independent and identically distributed. So, for example, the multiplier that converts daily horizon sigma to 1 year horizon sigma is the square root of 252 (~15.9).

All calculations for Sigma are based on the same pricing data obtained from QuoteMedia data used to calculate Vector Model VaR.

All Sigma estimates discussed in this report are for dates beyond January 31, 2022, the end of the training period for the Vector Model. See the Appendix for the derivation of 0.657 as the Sigma multiplier that is used to calculate Sigma EUB and Sigma EDB.

Using this report

This report is ~200 pages long. Some tips to help you navigate: 1) Clicking on the page headings in the Table of Contents will instantly take you to the corresponding page.
2) Use Ctrl-F to search for tickers of interest, to see what Top/Bottom contributor lists they land on, and for what horizons 3) Click Ctrl-Home to return to the Table of Contents

Important considerations about the analytics and performance metrics presented in this report:

1) Past performance is no guarantee of future results. None of the content in this report is investment advice or an offer to buy or sell securities. VecViz is not a SEC investment advisor or broker-dealer. The staff of VecViz actively transacts in securities tied to many of the tickers discussed in this report.
   See VecViz's Terms and Conditions for more context and detail at https://vecviz.com/terms-and-conditions/
2) Read ""Let me warn you…" of the limitations of VecViz's Analytics.", a blog entry on vecviz.com (https://vecviz.com/let-me-warn-you-of-the-limitations-of-vecvizs-analytics/)
3) There are many volatility models that the Vector Model could be compared to beyond Sigma. Thus, even if this report causes you to conclude that the Vector Model's Expected Body metrics outperforms Sigma Expected Body metrics, you should not necessarily conclude that Vector Model Expected Body metrics are the best for your purposes. See the discussion of some of the other types of volatilty models in this blog for more detail, as Expected Body metrics could likely be calculated from them as well: https://vecviz.com/an-llms-comparison-of-vecviz-to-established-vol-models/
4) All MAE and ROEUB and ROEDB performance statistics are as of the end of the horizon only. All interim price movement is ignored.
5) Clearly, all horizons > 1d overlap when considered on a daily basis. Please note that the volatility of overlapping periodic returns is understated, because each observation shares return experience with other observations for such time horizons.
   Thus, we advise against considering any perceived volatility or volatility related metrics for multi-day horizons in isolation, including p-values for alpha and beta statistics. However, we do believe that their use is valid for comparing the Vector Model to Sigma, whose multi-day horizon ROLOBC returns are calculated similarly.

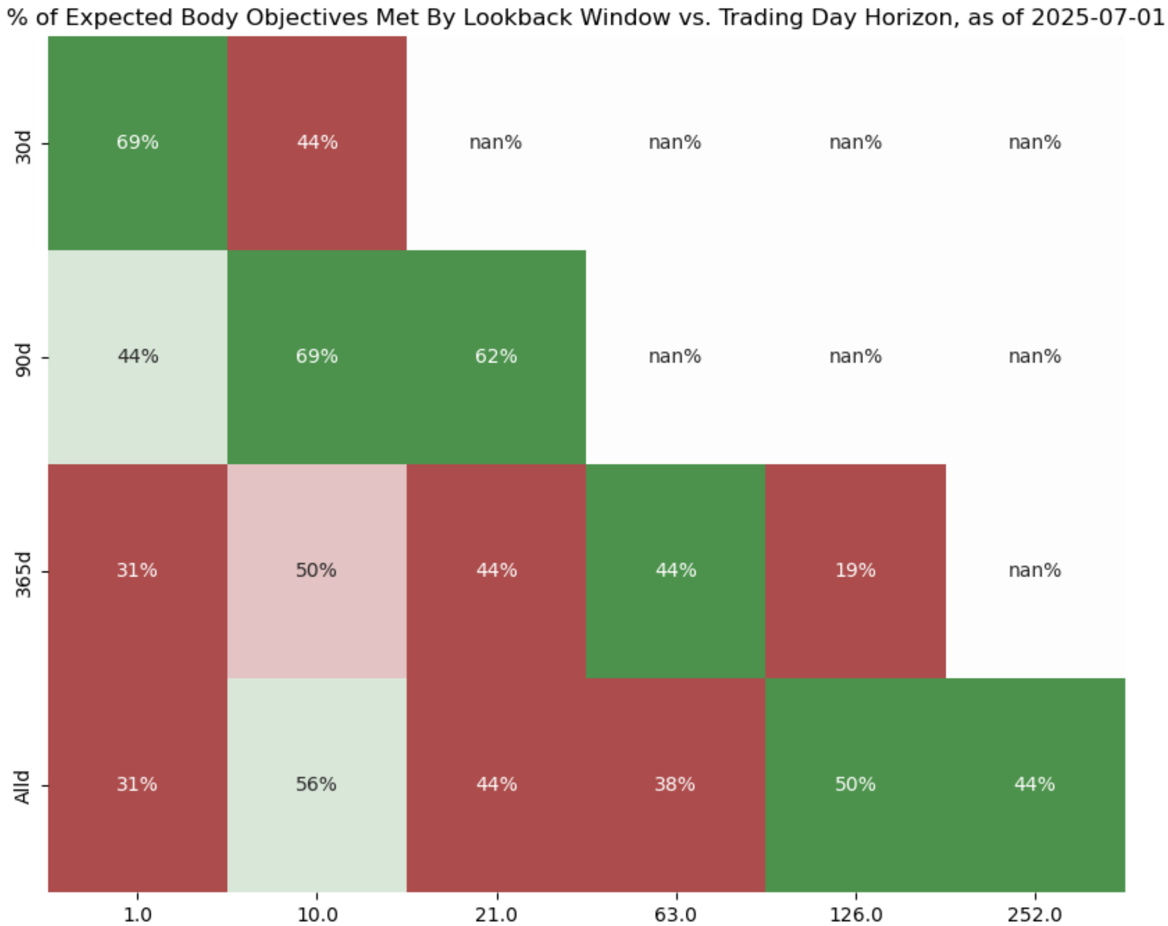
6) We are not considering transaction costs. The turnover and therefore transaction costs experienced by Vector Model ROEUB or ROEDB based investors resulting in the change in the ratio between Vector Model and Sigma ROEUB or ROEDB is completely ignored.

7) We are not incorporating any financing charges or margin-related costs for implied "levered" ROEUB or ROEDB positions.

Thus, in summary, all metrics presented in this report are presented and are to be considered on a comparative basis. Are Vector Model breakage rates closer to target than Sigma's? Does Vector Model ROEUB or ROEDB outperform Sigma ROEUB or ROEDB? Is the relative performance driven by alpha or beta? By timing or ticker selection? What tickers contribute or detract the most from the relative performance? These are the questions this report is structured to answer.

Expected Body Objectives "Report Card"

Period examined: AllD = 2022-01-31 through 2025-06-27 while 365D /90D/ 30D include the 365/90/30 days ended 2025-06-27, respectively.



EB Criteria	Average Score(%)
1. Smaller EUB MAE (mean absolute error)	0
2. Smaller EUB MAE after 95%tile adjustment	0
3. Less adjusted EUB MAE Variability across dates	18.75
4. Less adjusted EUB MAE Variability across tickers	18.75
5. Smaller EDB MAE	37.5
6. Smaller EDB MAE after 95%tile adjustment	50
7. Less adjusted EDB MAE Variability across dates	43.75
8. Less adjusted EDB MAE Variability across tickers	43.75
9. Greater ROEUB	75

EB Criteria	Average Score(%)
10. Greater ROEUB after adjusting for EUB magnitude	81.25
11. ROEUB alpha across tickers and dates > 0	93.75
12. ROEUB alpha across dates > 0	0
13. Greater ROEDB	75
14. Greater ROEDB after adjusting for EDB magnitude	75
15. ROEDB alpha across tickers and dates > 0	75
16. ROEDB alpha across dates > 0	50
Overall Average	46.09

EB and ROEB Criteria by Fwd Hzn	1D	10D	21D	63D	126D	252D
1. Smaller EUB MAE (mean absolute error)	0	0	0	0	0	0
2. Smaller EUB MAE after 95%tile adjustment	0	0	0	0	0	0
3. Less adjusted EUB MAE Variability across dates	50	25	0	0	0	0
4. Less adjusted EUB MAE Variability across tickers	0	25	33.33	50	0	0
5. Smaller EDB MAE	0	50	33.33	50	50	100
6. Smaller EDB MAE after 95%tile adjustment	50	50	33.33	50	50	100
7. Less adjusted EDB MAE Variability across dates	25	50	66.67	0	50	100
8. Less adjusted EDB MAE Variability across tickers	75	75	33.33	0	0	0
9. Greater ROEUB	100	50	66.67	100	50	100
10. Greater ROEUB after adjusting for EUB magnitude	100	75	100	100	50	0
11. ROEUB alpha across tickers and dates > 0	100	75	100	100	100	100
12. ROEUB alpha across dates > 0	0	0	0	0	0	0
13. Greater ROEDB	25	100	100	100	50	100
14. Greater ROEDB after adjusting for EDB magnitude	25	100	100	50	100	100
15. ROEDB alpha across tickers and dates > 0	75	100	100	50	50	0
16. ROEDB alpha across dates > 0	75	100	33.33	0	0	0
TotalScore	43.75	54.69	50	40.62	34.38	43.75

EB and ROEB Criteria by Lookback Window	30D	90D	365D	AllD
1. Smaller EUB MAE (mean absolute error)	0	0	0	0
2. Smaller EUB MAE after 95%tile adjustment	0	0	0	0
3. Less adjusted EUB MAE Variability across dates	50	33.33	0	16.67
4. Less adjusted EUB MAE Variability across tickers	0	66.67	20	0
5. Smaller EDB MAE	50	66.67	0	50
6. Smaller EDB MAE after 95%tile adjustment	100	100	0	50
7. Less adjusted EDB MAE Variability across dates	50	66.67	0	66.67
8. Less adjusted EDB MAE Variability across tickers	100	100	40	0
9. Greater ROEUB	50	33.33	80	100
10. Greater ROEUB after adjusting for EUB magnitude	50	100	80	83.33
11. ROEUB alpha across tickers and dates > 0	50	100	100	100
12. ROEUB alpha across dates > 0	0	0	0	0
13. Greater ROEDB	100	66.67	60	83.33
14. Greater ROEDB after adjusting for EDB magnitude	100	66.67	80	66.67
15. ROEDB alpha across tickers and dates > 0	100	100	80	50
16. ROEDB alpha across dates > 0	100	33.33	60	33.33
TotalScore	56.25	58.33	37.5	43.75

See the prior page for associated definitions of the criteria.

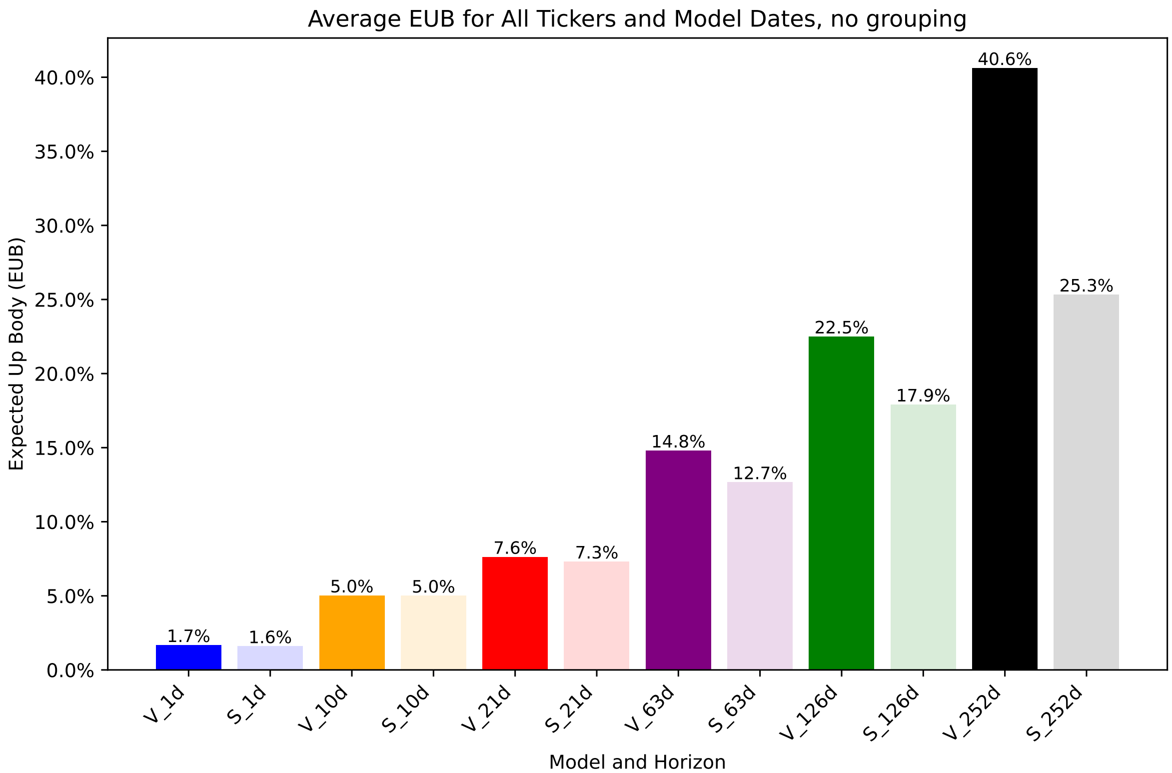
Expected Up Body (EUB)

Historic Average Levels

Here we compare Vector Model ("V", dark shading) and Sigma ("S", light shading) EUB levels by horizon, on average across all ticker-model dates for the lookback window indicated.

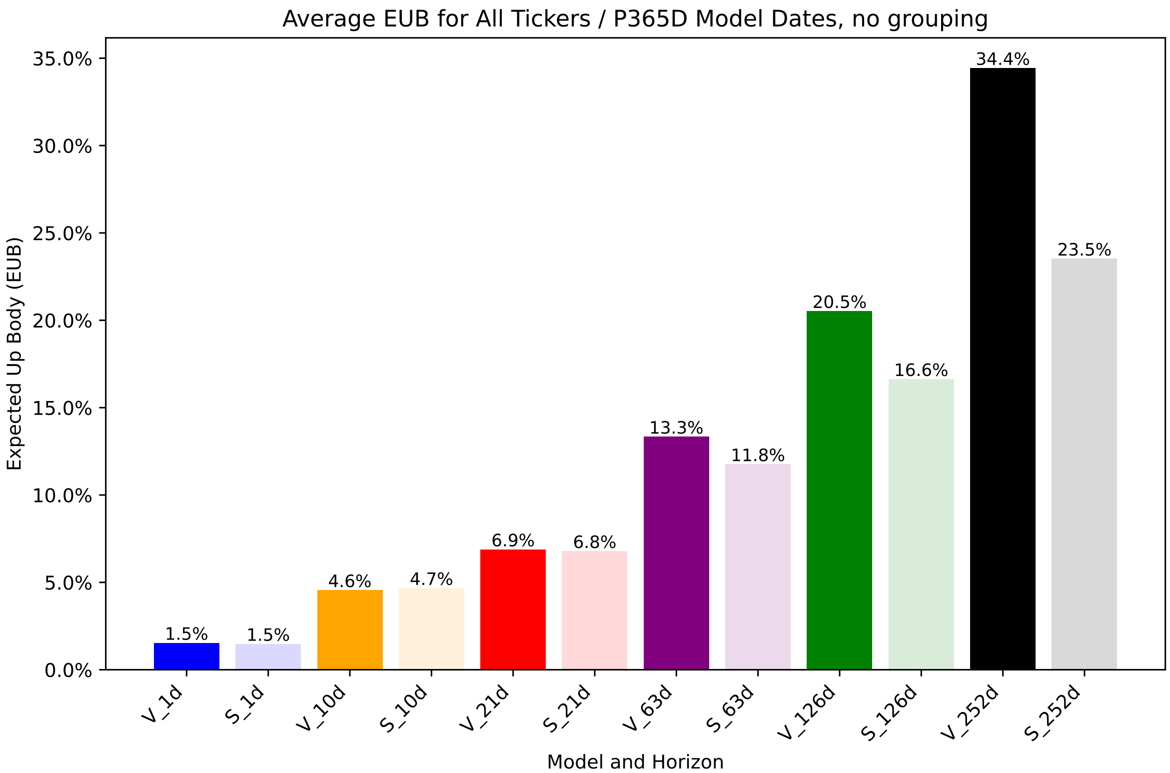
All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-06-27



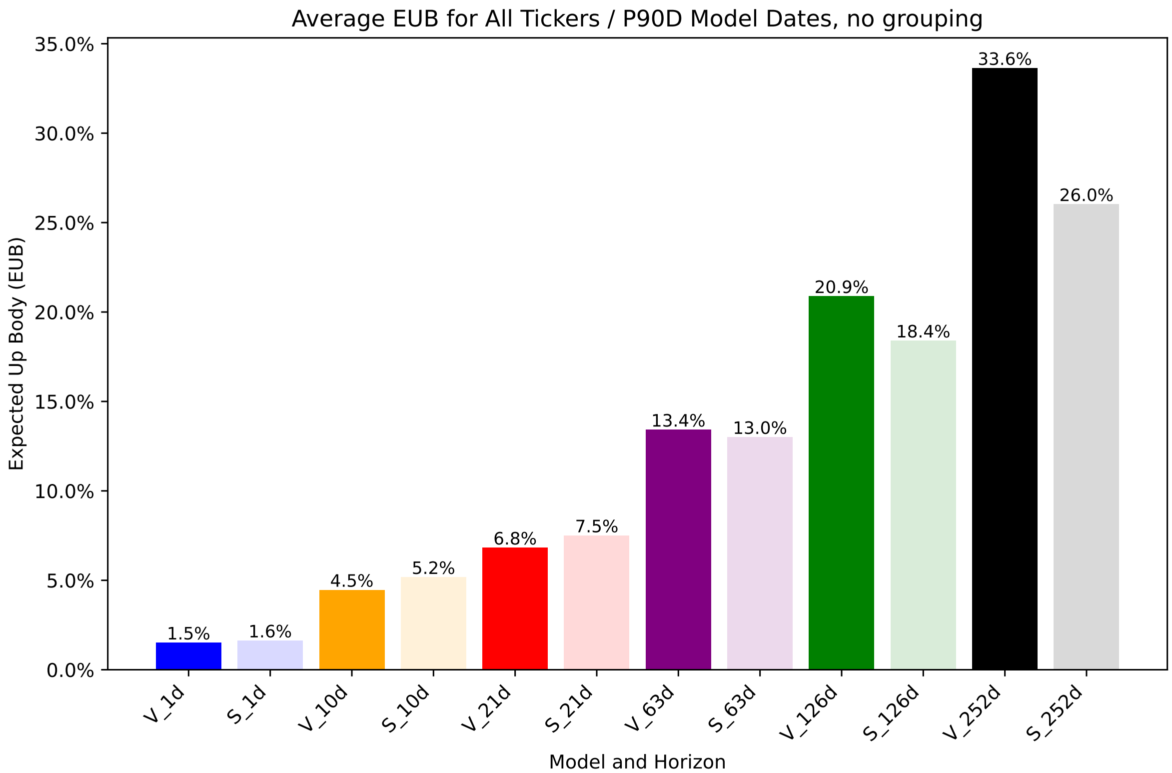
Prior 365 Calendar Days (P365D)

Period examined: All model dates from 2024-07-02 through 2025-06-27



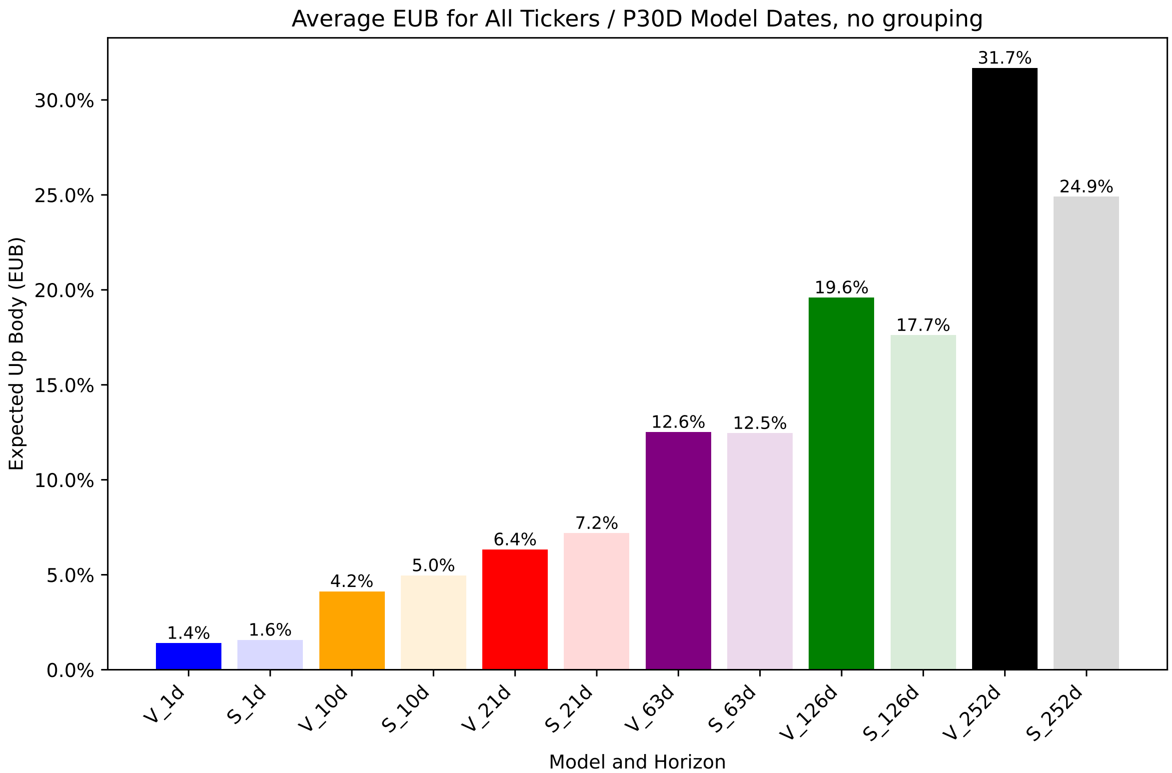
Prior 90 Calendar Days (P90D)

Period examined: All model dates from 2025-04-03 through 2025-06-27



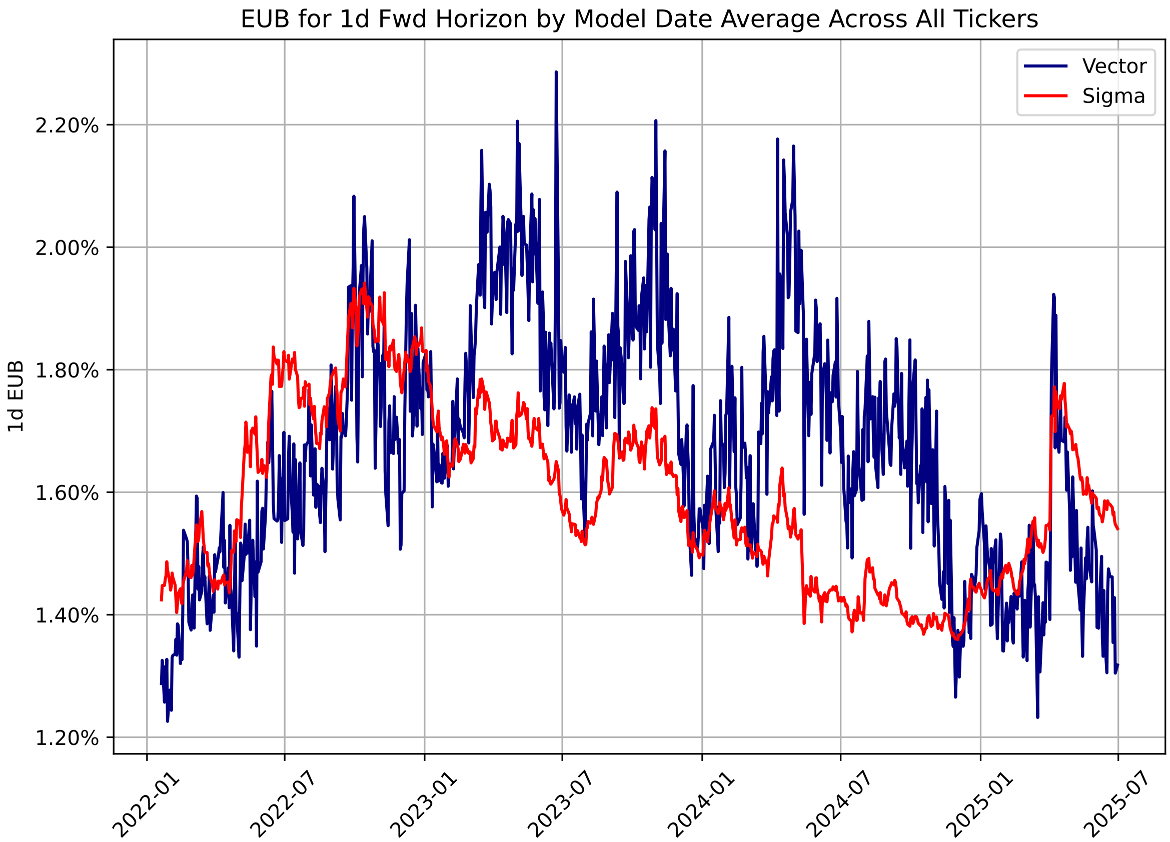
Prior 30 Calendar Days (P30D)

Period examined: All model dates from 2025-06-02 through 2025-06-27

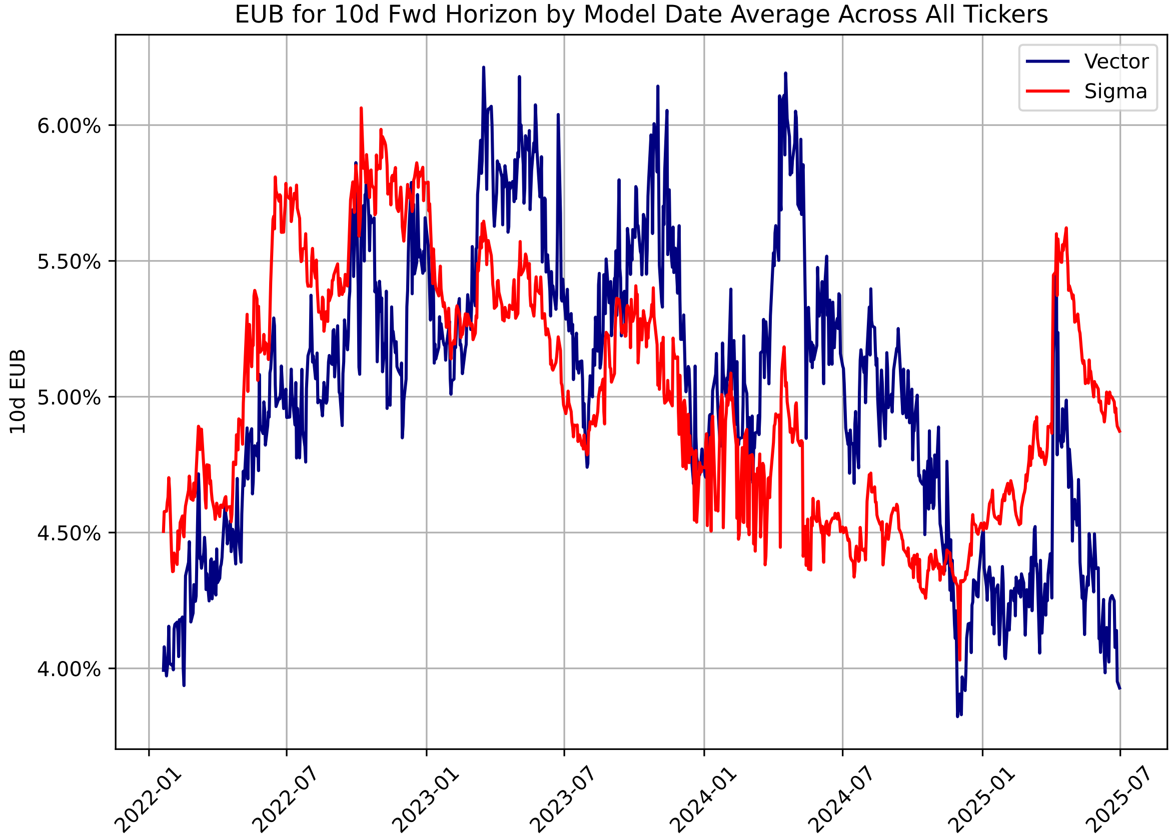


EUB by Model Date Detail

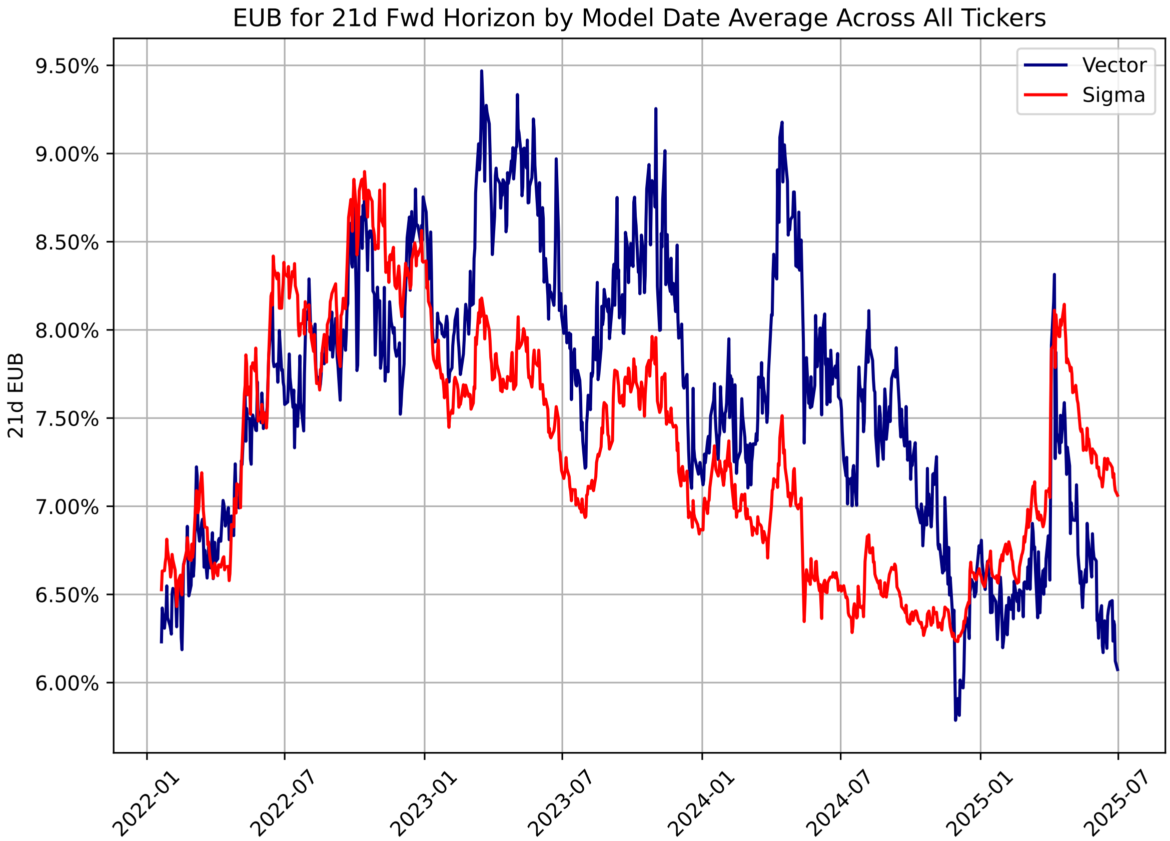
1d Horizon



10d Horizon

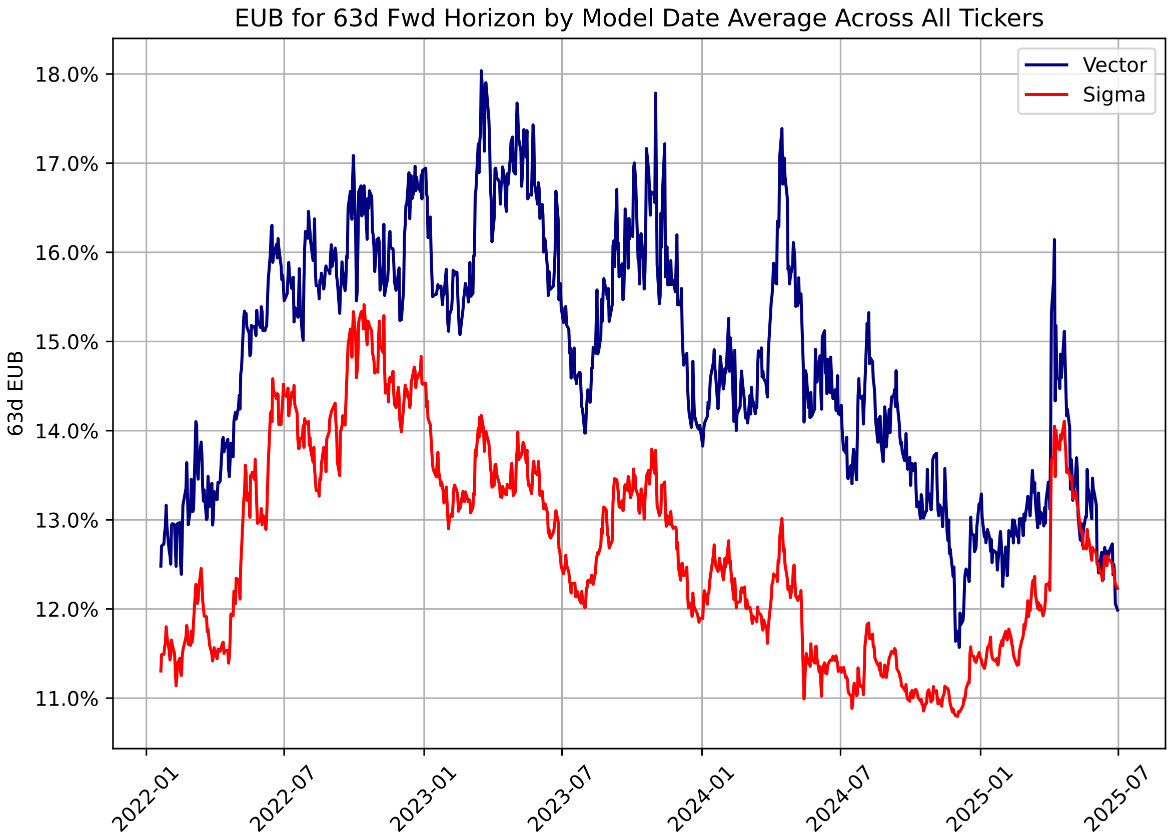

EUB for 10d Fwd Horizon by Model Date Average Across All Tickers
Vector
Sigma
10d EUB
6.00%
5.50%
5.00%
4.50%
4.00%
2022-01
2022-07
2023-01
2023-07
2024-01
2024-07
2025-01
2025-07

21d Horizon



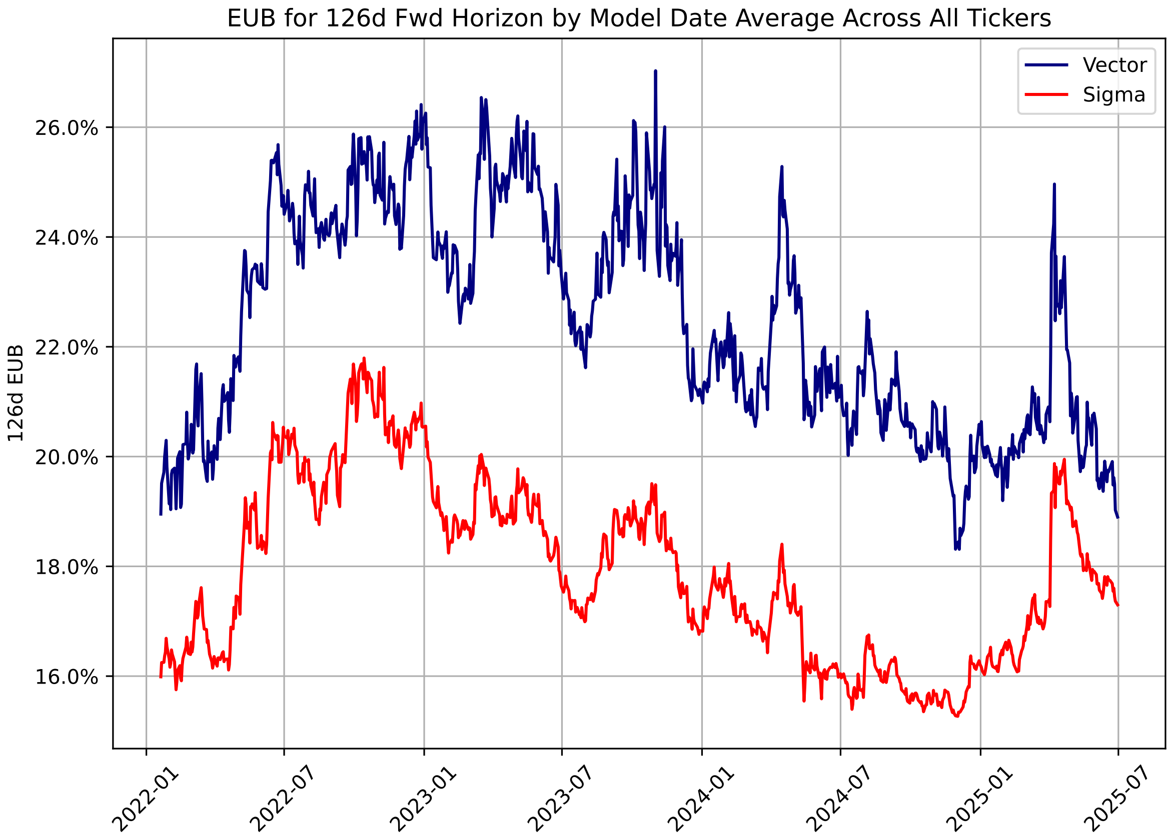
EUB for 21d Fwd Horizon by Model Date Average Across All Tickers
Vector
Sigma
21d EUB
9.50%
9.00%
8.50%
8.00%
7.50%
7.00%
6.50%
6.00%
2022-01
2022-07
2023-01
2023-07
2024-01
2024-07
2025-01
2025-07

63d Horizon

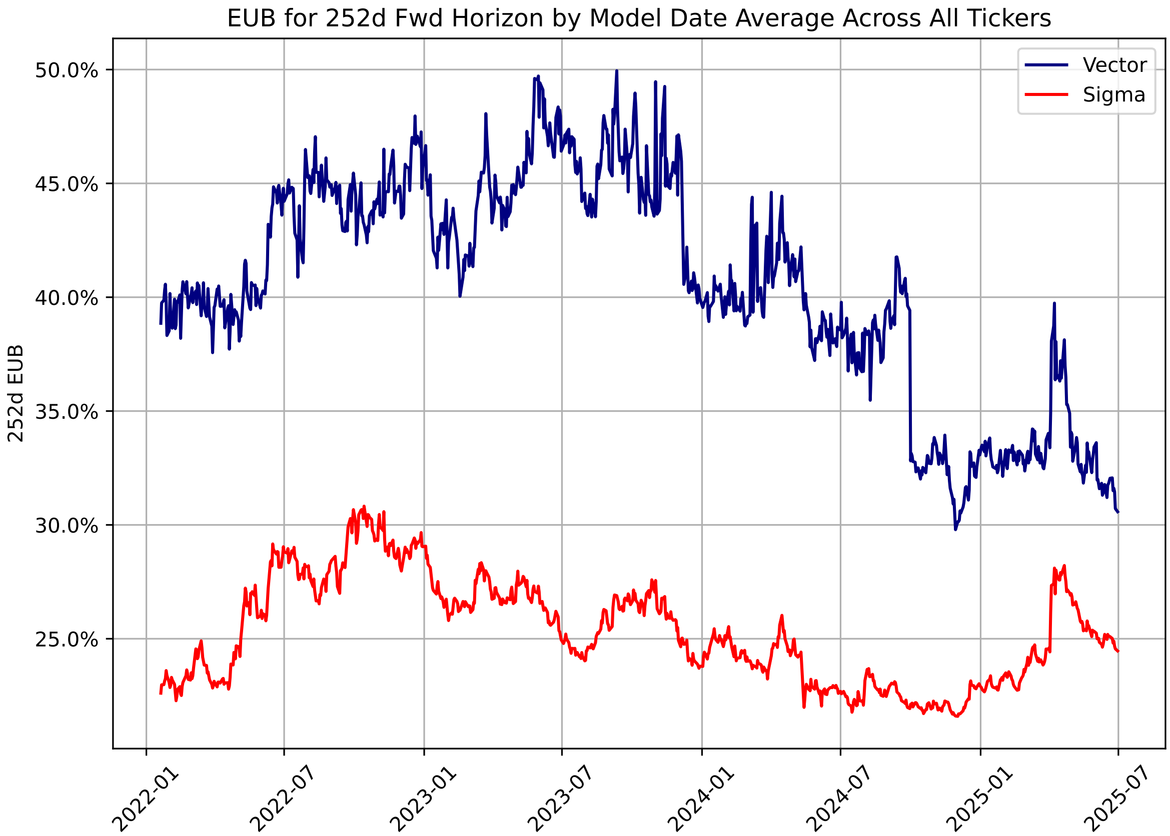


EUB for 63d Fwd Horizon by Model Date Average Across All Tickers
Vector
Sigma
63d EUB
18.0%
17.0%
16.0%
15.0%
14.0%
13.0%
12.0%
11.0%
2022-01
2022-07
2023-01
2023-07
2024-01
2024-07
2025-01
2025-07

126d Horizon



252d Horizon



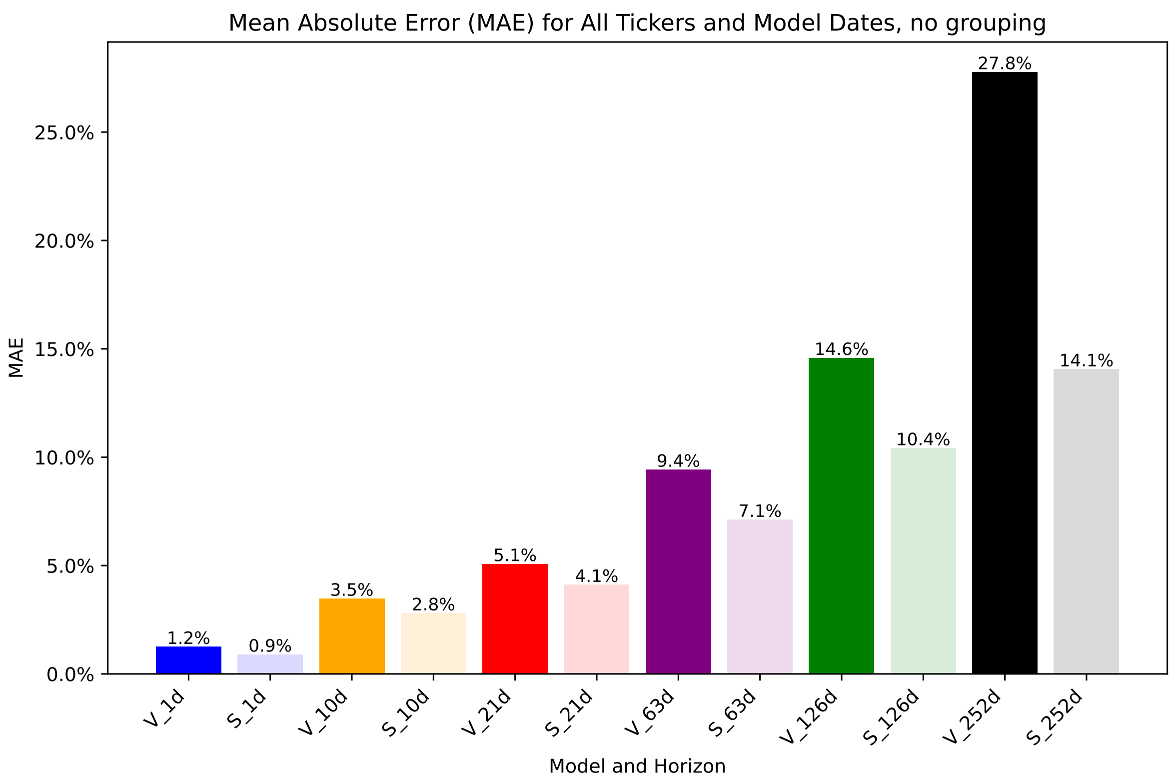
Performance Summary - MAE of EUB vs. Actual Fwd Returns

We use Mean Absolute Error (MAE) to assess how accurate Vector Model EB metrics are relative to those based upon Sigma.

Performance includes only those ticker - model dates whose foward performance is directionally "up" but inside of the 95th %tile forecasted for given model. Thus, these statistics are not perfectly comparable across models, or even horizons. Consider them alongside each model's breakage rates for the 95U percentile (i.e., OaR breakage rates).

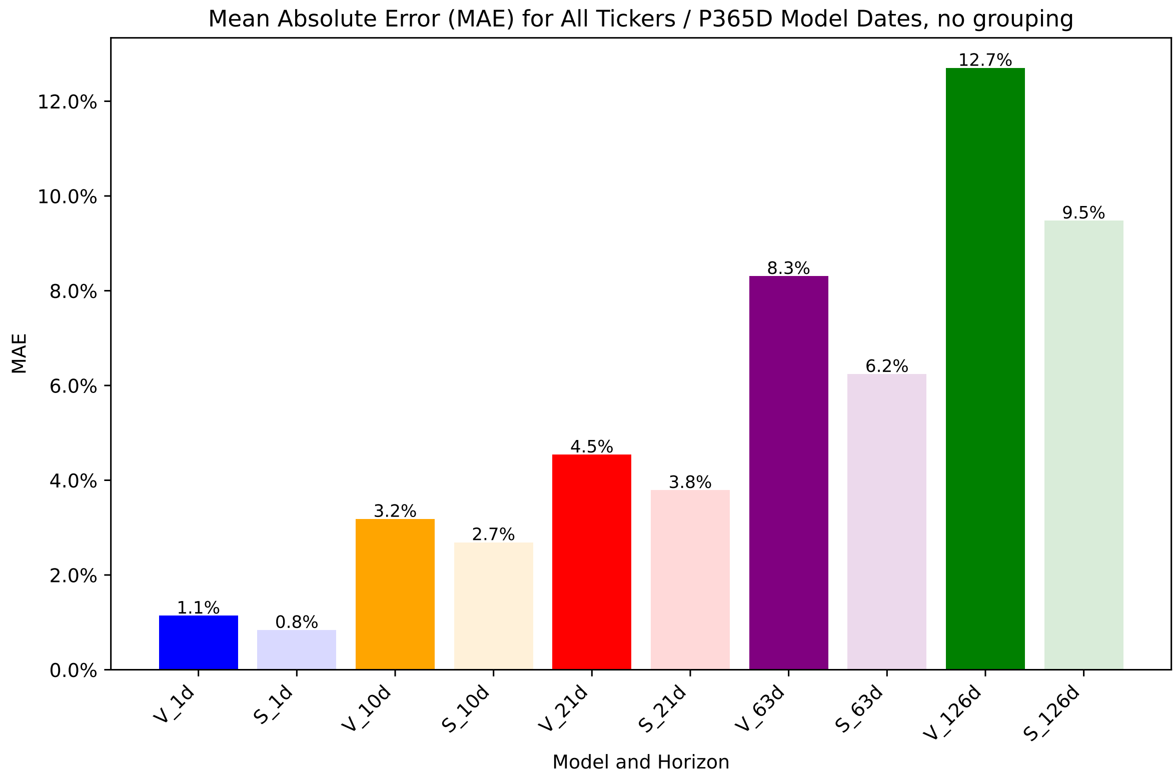
All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-06-27



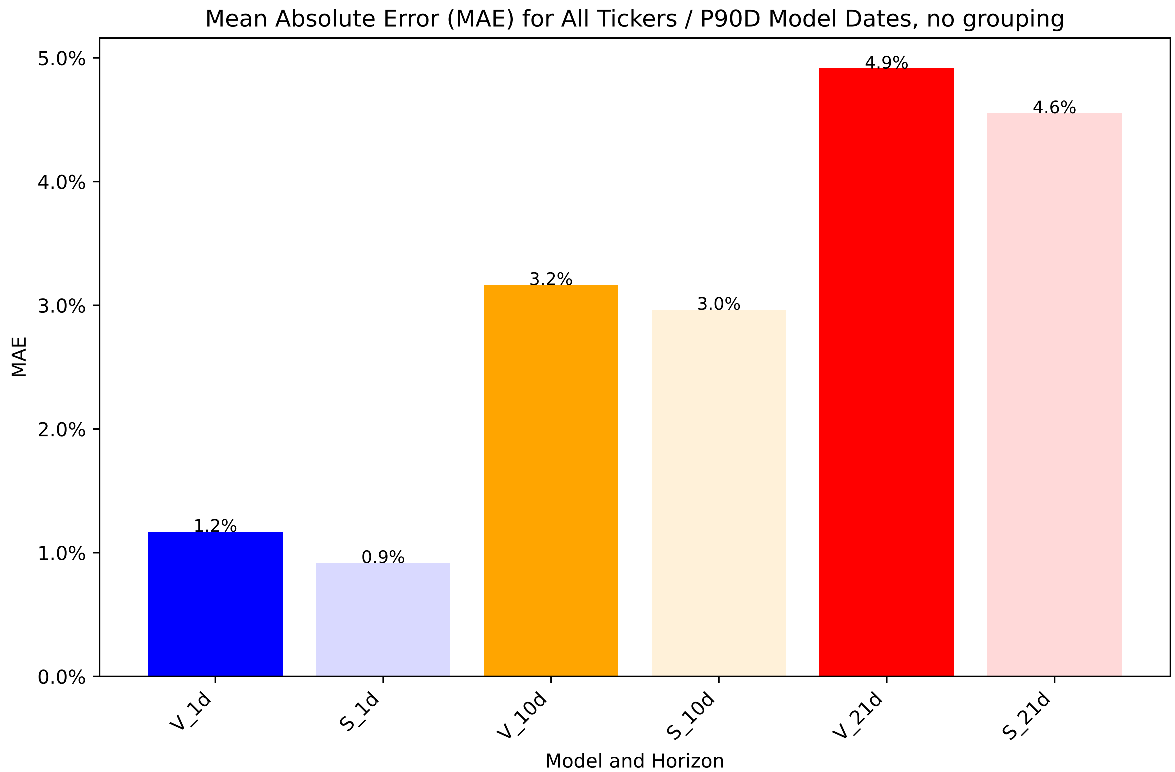
Prior 365 Calendar Days (P365D)

Period examined: All model dates from 2024-07-02 through 2025-06-27



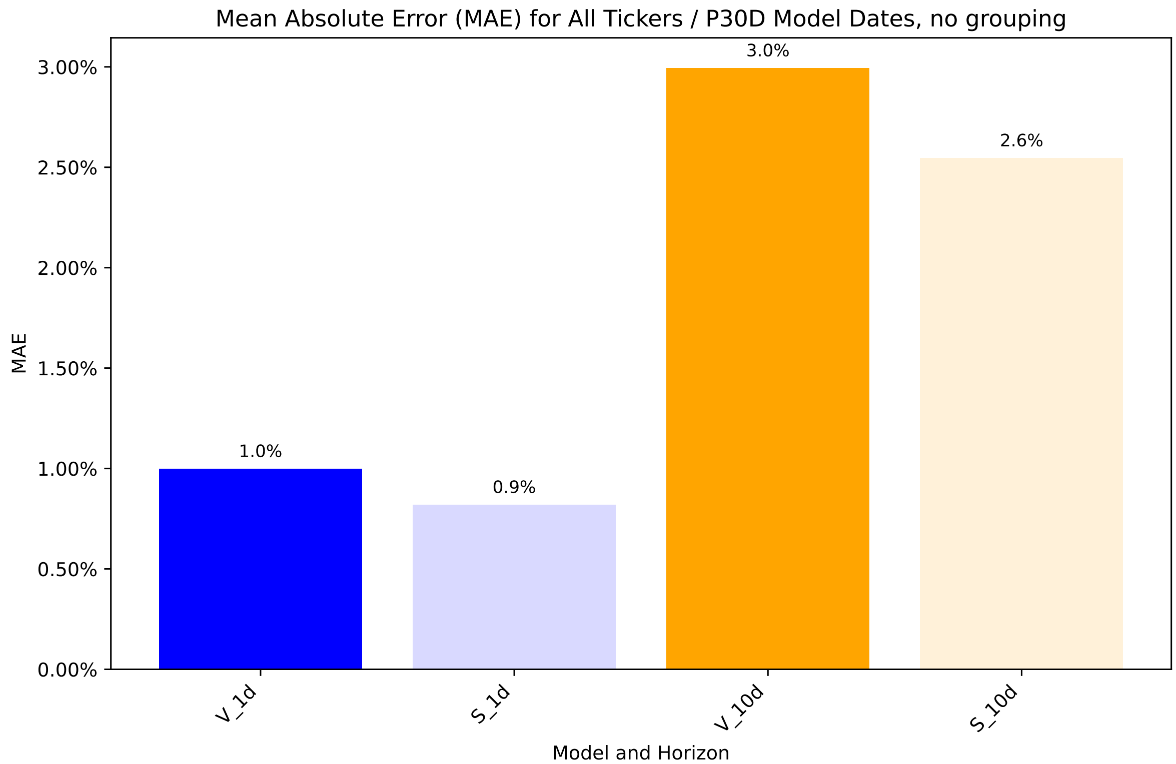
Prior 90 Calendar Days (P90D)

Period examined: All model dates from 2025-04-03 through 2025-06-27



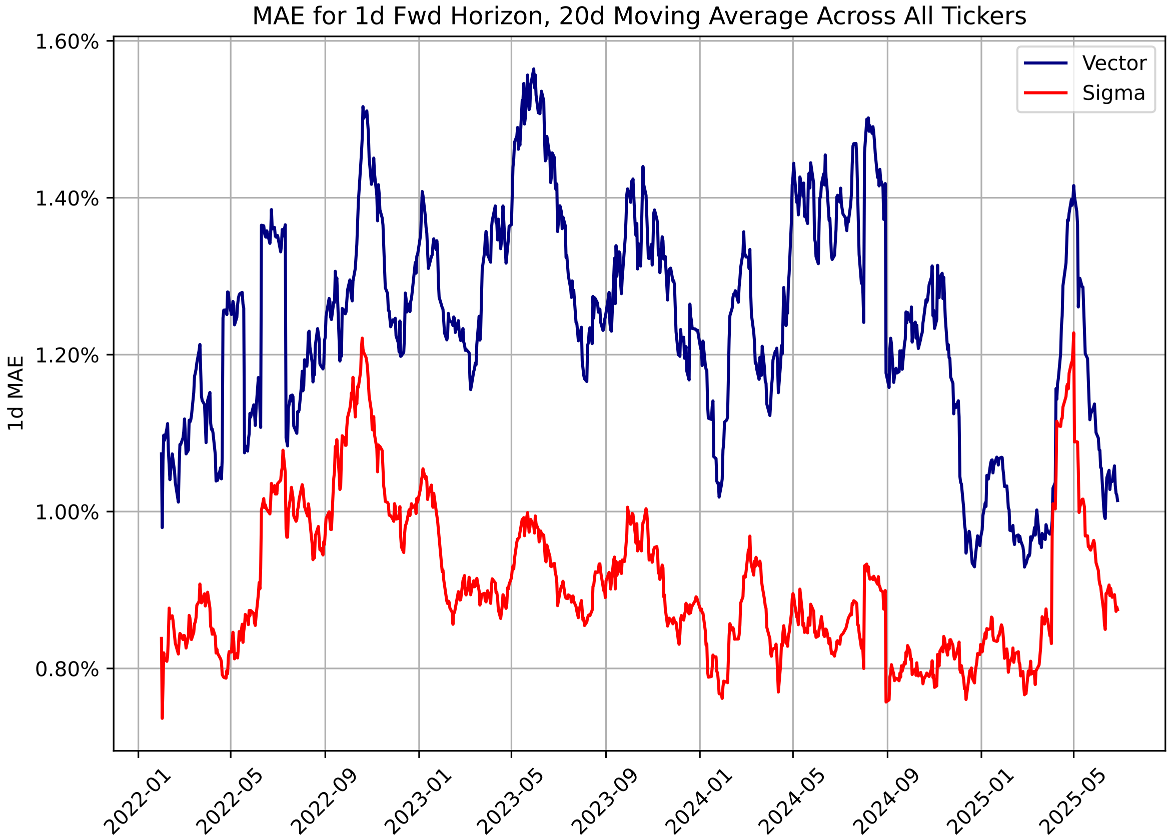
Prior 30 Calendar Days (P30D)

Period examined: All model dates from 2025-06-02 through 2025-06-27

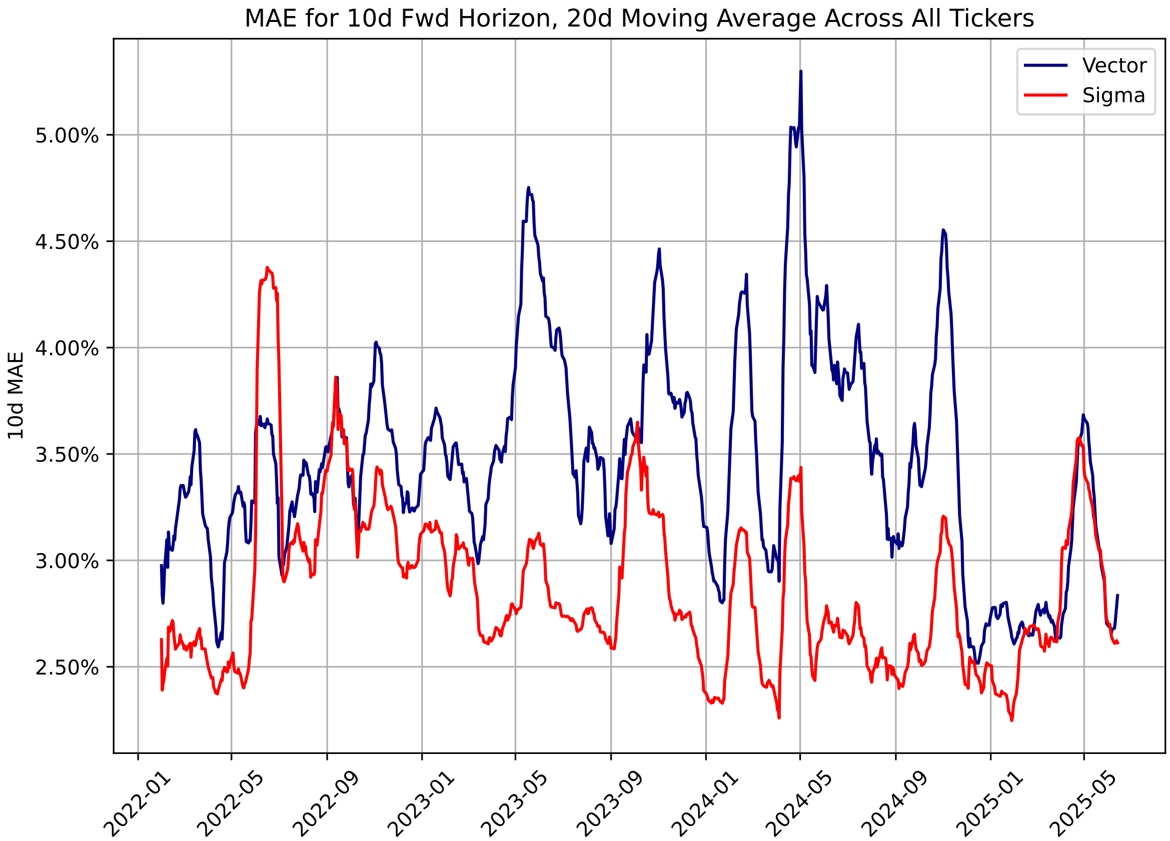


MAE by Model Date Detail

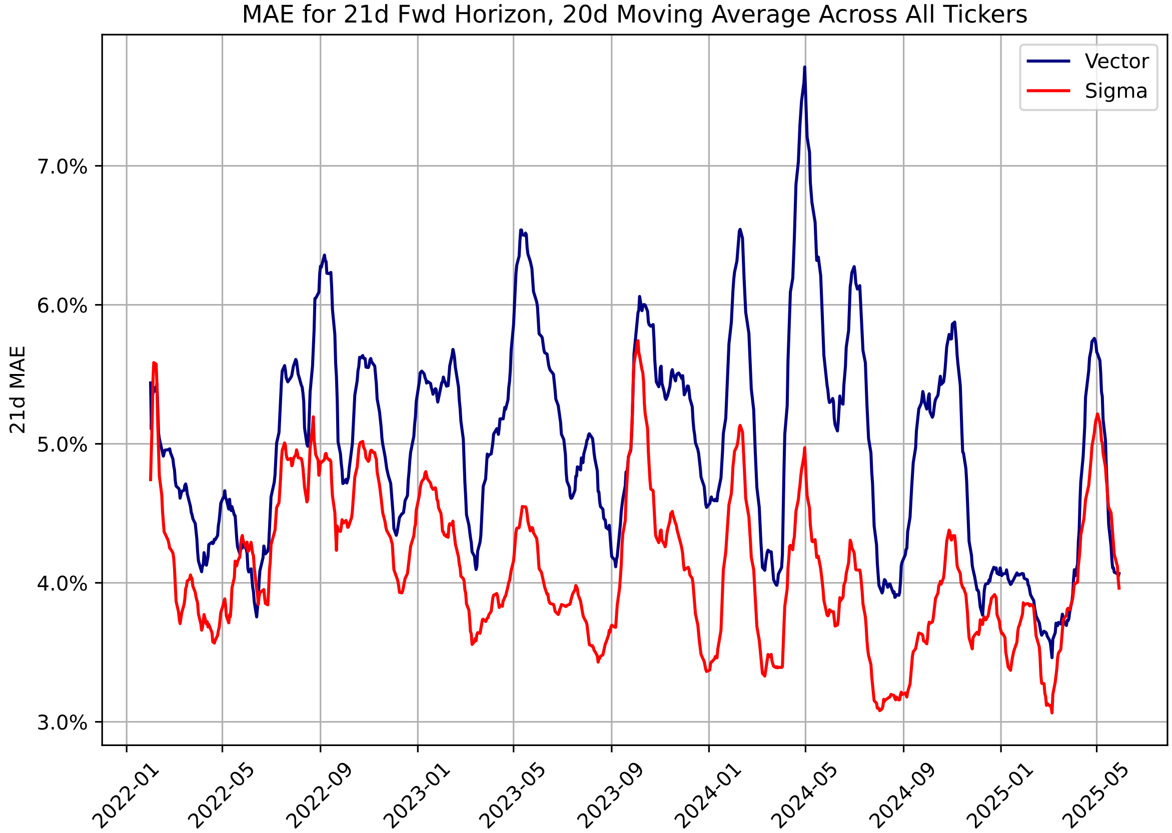
1d Horizon



10d Horizon

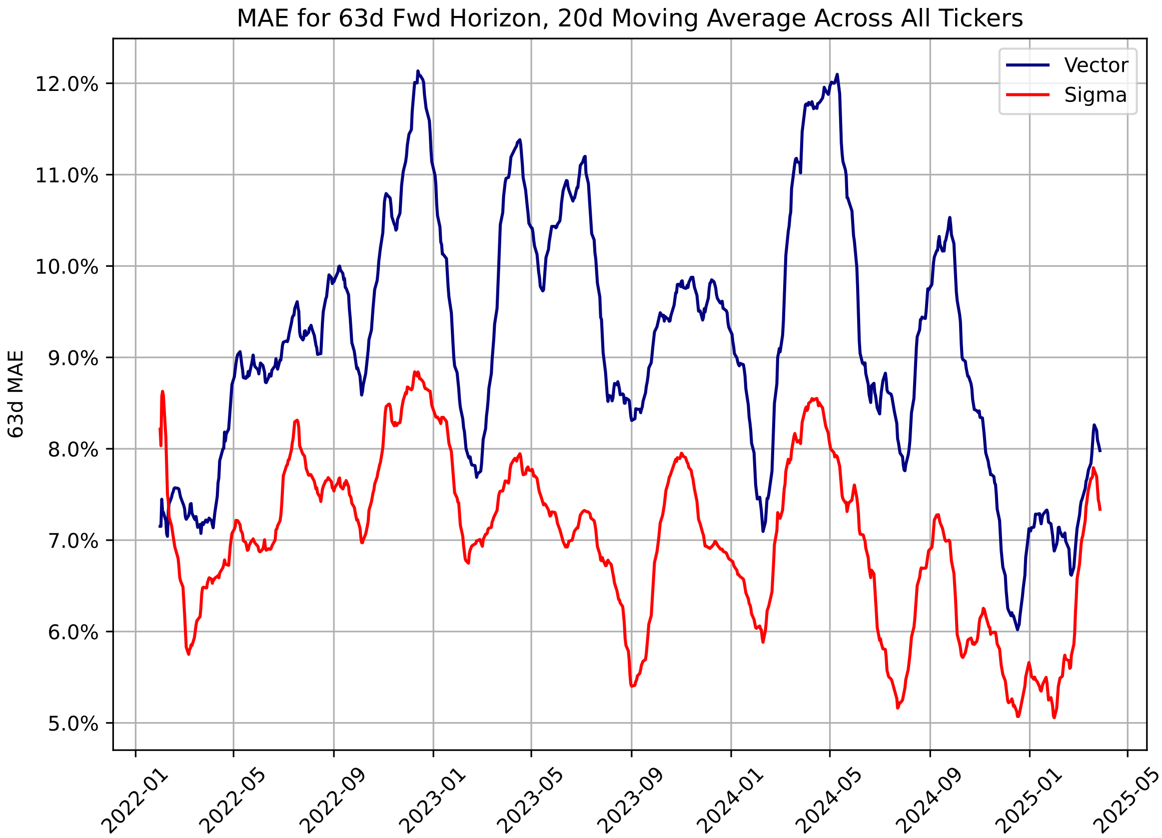

MAE for 10d Fwd Horizon, 20d Moving Average Across All Tickers
Vector
Sigma
10d MAE
5.00%
4.50%
4.00%
3.50%
3.00%
2.50%
2022-01
2022-05
2022-09
2023-01
2023-05
2023-09
2024-01
2024-05
2024-09
2025-01
2025-05

21d Horizon



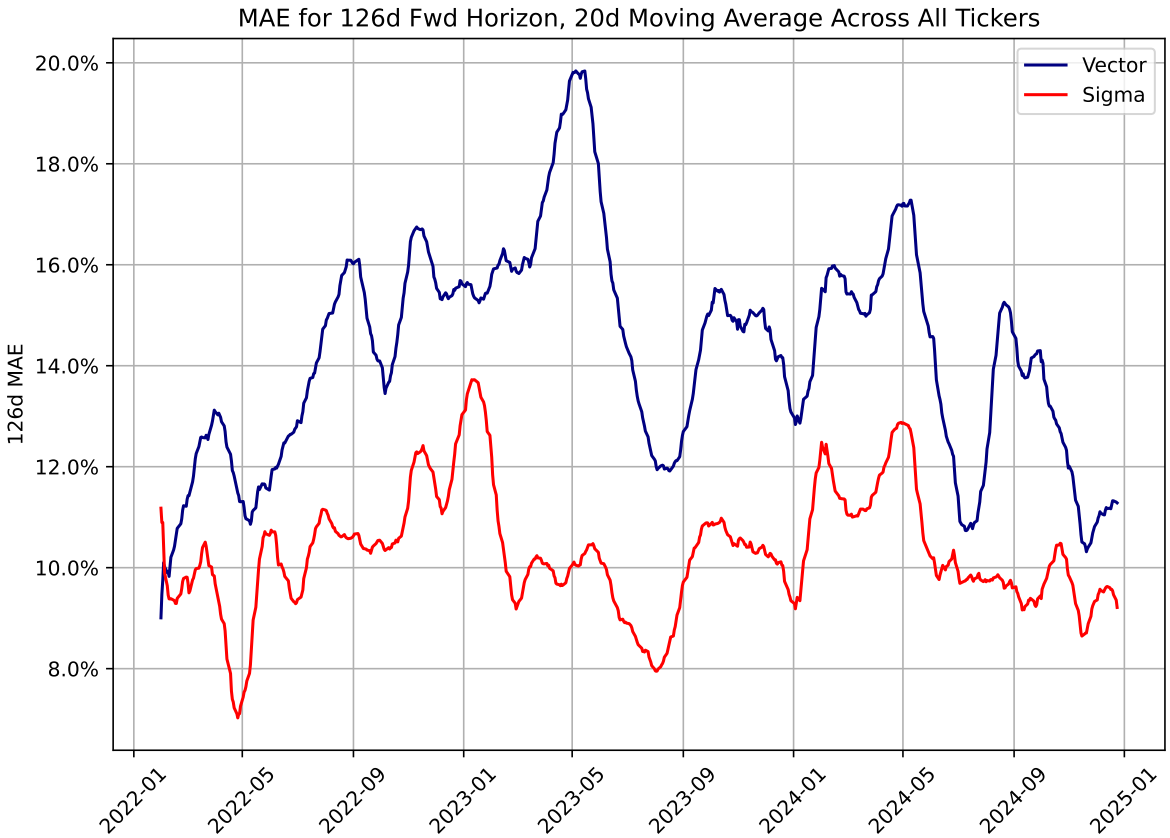
MAE for 21d Fwd Horizon, 20d Moving Average Across All Tickers
Vector
Sigma
21d MAE
7.0%
6.0%
5.0%
4.0%
3.0%
2022-01
2022-05
2022-09
2023-01
2023-05
2023-09
2024-01
2024-05
2024-09
2025-01
2025-05

63d Horizon

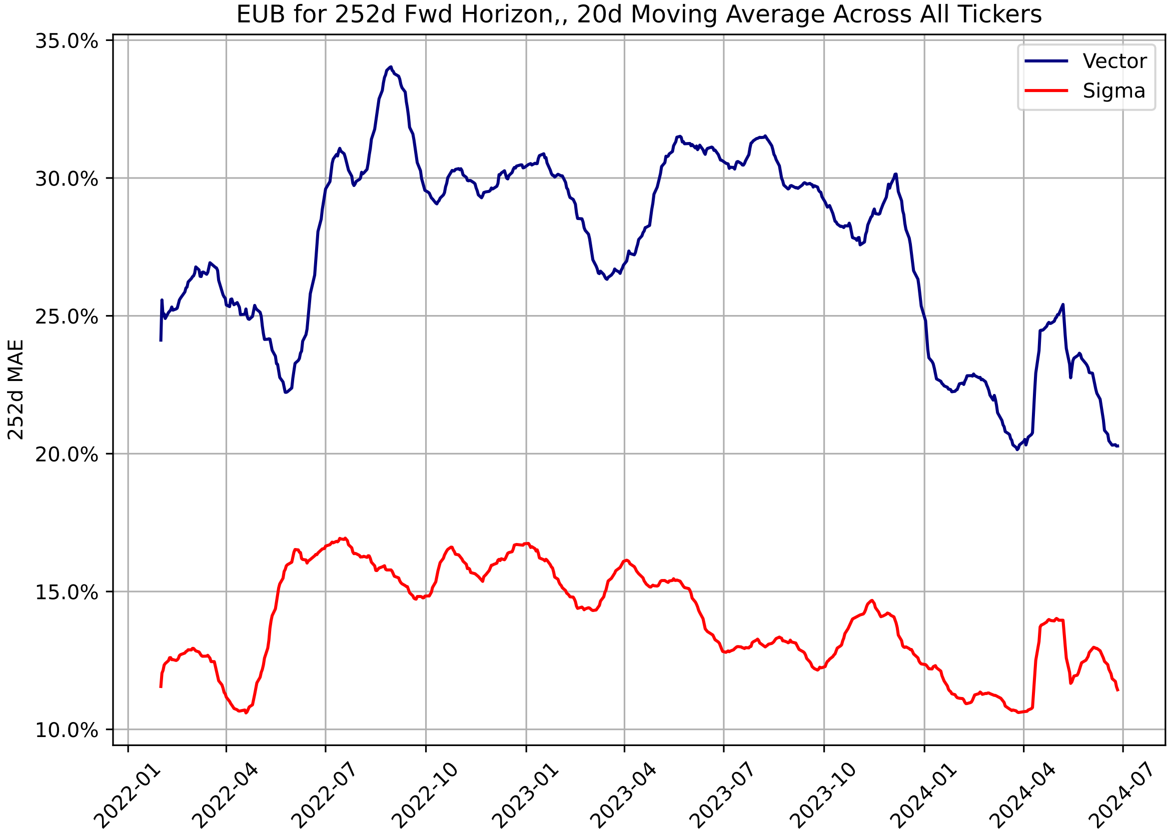


MAE for 63d Fwd Horizon, 20d Moving Average Across All Tickers
Vector
Sigma
63d MAE
12.0%
11.0%
10.0%
9.0%
8.0%
7.0%
6.0%
5.0%
2022-01
2022-05
2022-09
2023-01
2023-05
2023-09
2024-01
2024-05
2024-09
2025-01
2025-05

126d Horizon



252d Horizon



Top 30 Tickers By EUB MAE

All TMD: 1d

Results reflect ticker level average EUB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EUB" metric - positive performance within the expected 95%tile.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EUB-MAE_V	Ticker_S	EUB-MAE_S
1.0	AMC	12.16%	AMC	10.65%
1.0	LUMN	8.06%	GME	3.4%
1.0	IEP	7.41%	CYH	2.92%
1.0	TSLA	4.65%	LUMN	2.48%
1.0	ELAN	4.64%	MSTR	2.26%
1.0	CYH	4.2%	GBTC	2.14%
1.0	BHC	3.14%	BHC	1.86%
1.0	NWL	2.96%	IEP	1.56%
1.0	CCL	2.81%	CTLT	1.49%
1.0	GBTC	2.78%	TSLA	1.48%
1.0	GNRC	2.45%	UAA	1.47%
1.0	VNO	2.4%	AA	1.42%
1.0	CZR	2.37%	CCL	1.4%
1.0	BXP	2.17%	VFC	1.38%
1.0	T	2.14%	SIVBQ	1.36%
1.0	MSTR	2.1%	CLF	1.36%
1.0	NVDA	1.96%	GT	1.34%
1.0	GT	1.95%	CZR	1.34%
1.0	LNC	1.91%	GNRC	1.33%
1.0	UAA	1.81%	NWL	1.3%
1.0	MOS	1.64%	AAP	1.23%
1.0	MSFT	1.63%	SBNY	1.22%
1.0	X	1.57%	AMD	1.21%
1.0	AMD	1.55%	LNC	1.19%
1.0	ON	1.51%	NVDA	1.17%
1.0	AMAT	1.47%	ELAN	1.17%
1.0	AA	1.47%	ON	1.15%
1.0	INTC	1.45%	MU	1.09%
1.0	ETRN	1.43%	X	1.09%
1.0	QQQ	1.42%	WDC	1.07%

All TMD: 10d

Results reflect ticker level average EUB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EUB" metric - positive performance within the expected 95%tile.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EUB-MAE_V	Ticker_S	EUB-MAE_S
10.0	AMC	46.77%	AMC	32.59%
10.0	LUMN	22.45%	GME	10.66%
10.0	IEP	16.23%	LUMN	8.87%
10.0	ELAN	12.2%	CYH	7.91%
10.0	TSLA	11.45%	MSTR	7.23%
10.0	BHC	9.2%	BHC	6.43%
10.0	CYH	8.75%	GBTC	6.11%
10.0	GBTC	8.46%	IEP	4.78%
10.0	NWL	8.36%	SIVBQ	4.75%
10.0	CZR	7.06%	AA	4.75%
10.0	GNRC	6.64%	UAA	4.59%
10.0	CCL	6.61%	GT	4.5%
10.0	NVDA	6.31%	TSLA	4.5%
10.0	GT	6.05%	CZR	4.36%
10.0	LNC	5.77%	CCL	4.35%
10.0	MSTR	5.52%	GNRC	4.24%
10.0	BXP	5.01%	NWL	4.16%
10.0	MSFT	5.01%	CLF	4.15%
10.0	AMD	5.0%	SBNY	4.11%
10.0	VNO	4.88%	VFC	4.1%
10.0	UAA	4.83%	AMD	4.08%
10.0	X	4.81%	LNC	4.05%
10.0	MOS	4.69%	CTLT	3.94%
10.0	INTC	4.46%	ELAN	3.94%
10.0	T	4.43%	ON	3.85%
10.0	AA	4.14%	AAP	3.74%
10.0	ON	4.14%	NVDA	3.74%
10.0	CLF	4.05%	INTC	3.7%
10.0	AMAT	3.9%	X	3.56%
10.0	QQQ	3.9%	MU	3.5%

All TMD: 21d

Results reflect ticker level average EUB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EUB" metric - positive performance within the expected 95%tile.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EUB-MAE_V	Ticker_S	EUB-MAE_S
21.0	AMC	66.35%	AMC	48.7%
21.0	LUMN	26.29%	GME	15.5%
21.0	IEP	23.17%	CYH	12.28%
21.0	ELAN	19.34%	LUMN	11.59%
21.0	TSLA	15.82%	MSTR	10.06%
21.0	BHC	13.11%	GBTC	8.47%
21.0	CCL	11.91%	BHC	8.2%
21.0	CYH	11.64%	CCL	7.71%
21.0	NWL	11.17%	IEP	7.36%
21.0	CZR	10.73%	UAA	7.17%
21.0	GBTC	10.56%	TSLA	7.05%
21.0	MSTR	9.72%	SIVBQ	7.04%
21.0	NVDA	9.34%	NWL	6.45%
21.0	GNRC	9.22%	AA	6.44%
21.0	GT	9.16%	VFC	6.44%
21.0	LNC	8.12%	GT	6.41%
21.0	MOS	7.87%	AMD	6.24%
21.0	VNO	7.46%	CZR	6.21%
21.0	BXP	7.44%	CLF	6.16%
21.0	MSFT	7.42%	ELAN	6.01%
21.0	AMD	7.4%	GNRC	5.95%
21.0	UAA	7.38%	ON	5.88%
21.0	AMAT	7.0%	NVDA	5.81%
21.0	ON	6.9%	CTLT	5.63%
21.0	X	6.83%	AAP	5.42%
21.0	INTC	6.44%	SBNY	5.33%
21.0	AA	6.23%	LNC	5.26%
21.0	T	6.2%	X	5.22%
21.0	SIVBQ	6.2%	MU	5.18%
21.0	CLF	6.18%	VNO	5.16%

All TMD: 63d

Results reflect ticker level average EUB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EUB" metric - positive performance within the expected 95%tile.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EUB-MAE_V	Ticker_S	EUB-MAE_S
63.0	AMC	171.75%	AMC	111.31%
63.0	LUMN	66.34%	LUMN	32.19%
63.0	IEP	34.84%	GME	30.68%
63.0	BHC	34.61%	CYH	24.54%
63.0	CZR	34.21%	BHC	17.58%
63.0	ELAN	33.6%	GBTC	15.65%
63.0	TSLA	33.16%	MSTR	15.63%
63.0	CCL	24.97%	SBNY	14.24%
63.0	GBTC	24.82%	UAA	13.18%
63.0	SIVBQ	22.95%	CCL	13.13%
63.0	CYH	22.15%	IEP	12.71%
63.0	NWL	21.45%	CTLT	12.36%
63.0	GT	20.92%	TSLA	11.9%
63.0	MSTR	20.81%	X	11.87%
63.0	VNO	17.79%	AA	11.64%
63.0	LNC	17.73%	GT	11.4%
63.0	NVDA	16.98%	CZR	11.22%
63.0	AMD	15.89%	SIVBQ	10.74%
63.0	MOS	15.41%	NVDA	10.57%
63.0	UAA	15.02%	AMD	10.53%
63.0	FSUGY	14.77%	MOS	10.49%
63.0	MSFT	13.91%	CLF	10.42%
63.0	INTC	13.45%	VFC	10.34%
63.0	VFC	13.29%	NWL	10.17%
63.0	BXP	13.16%	AAP	10.13%
63.0	X	13.0%	ELAN	10.04%
63.0	AMAT	12.18%	GNRC	9.97%
63.0	MU	11.88%	META	9.68%
63.0	AA	11.87%	VNO	9.6%
63.0	CLF	11.17%	CMA	9.37%

All TMD: 126d

Results reflect ticker level average EUB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EUB" metric - positive performance within the expected 95%tile.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EUB-MAE_V	Ticker_S	EUB-MAE_S
126.0	AMC	320.05%	AMC	212.77%
126.0	LUMN	85.95%	LUMN	59.95%
126.0	CZR	69.94%	GME	45.72%
126.0	ELAN	59.78%	CYH	40.84%
126.0	BHC	53.72%	BHC	28.69%
126.0	TSLA	45.74%	MSTR	26.84%
126.0	CCL	43.06%	NWL	22.45%
126.0	GT	39.07%	VFC	21.96%
126.0	NWL	38.74%	CZR	21.64%
126.0	CYH	35.84%	GBTC	20.16%
126.0	MSTR	35.06%	CCL	19.6%
126.0	GBTC	33.58%	UAA	19.21%
126.0	IEP	33.11%	CLF	17.08%
126.0	NVDA	32.18%	AA	16.82%
126.0	LNC	30.83%	LNC	16.29%
126.0	VNO	29.58%	CTLT	16.25%
126.0	BXP	25.93%	GT	15.76%
126.0	UAA	24.26%	MOS	15.71%
126.0	VFC	23.24%	AMD	15.67%
126.0	MOS	22.27%	ETRN	15.56%
126.0	NFLX	21.89%	THC	15.46%
126.0	GME	21.26%	BIIB	15.37%
126.0	THC	20.22%	TSLA	15.23%
126.0	CLF	19.74%	IEP	14.94%
126.0	X	19.46%	ELAN	14.94%
126.0	META	19.32%	KALU	14.66%
126.0	AMD	19.07%	VNO	14.45%
126.0	ADBE	18.97%	WRK	14.14%
126.0	INTC	18.84%	AAP	13.92%
126.0	MU	18.79%	EXPE	13.78%

All TMD: 252d

Results reflect ticker level average EUB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EUB" metric - positive performance within the expected 95%tile.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EUB-MAE_V	Ticker_S	EUB-MAE_S
252.0	AMC	848.37%	AMC	549.03%
252.0	LUMN	143.74%	CYH	81.13%
252.0	CZR	106.08%	BHC	56.23%
252.0	ELAN	105.27%	AAP	48.4%
252.0	BHC	98.48%	GBTC	46.18%
252.0	GBTC	86.35%	MSTR	42.9%
252.0	NVDA	83.23%	LUMN	39.87%
252.0	CYH	82.06%	GME	37.47%
252.0	CDNS	77.53%	CZR	36.03%
252.0	CCL	76.54%	CLF	32.15%
252.0	INTU	70.52%	GT	28.93%
252.0	AMZN	68.6%	NFLX	28.44%
252.0	TSLA	65.16%	UAA	27.97%
252.0	NWL	61.15%	TSLA	27.37%
252.0	MSFT	51.03%	AA	26.06%
252.0	AAP	50.39%	GNRC	25.62%
252.0	VNO	49.67%	VFC	24.79%
252.0	COST	47.86%	META	23.8%
252.0	LNC	46.97%	NWL	22.7%
252.0	AMD	46.01%	OXY	22.43%
252.0	CMG	45.47%	AMD	20.54%
252.0	GT	44.39%	X	20.5%
252.0	ORLY	44.16%	VNO	20.43%
252.0	UAA	43.44%	PRGO	20.07%
252.0	AZO	43.41%	CTLT	20.02%
252.0	MS	42.98%	AMZN	19.96%
252.0	DHI	42.51%	CCL	19.63%
252.0	CLF	41.03%	WRK	19.59%
252.0	BBY	40.9%	DHI	19.5%
252.0	AVGO	39.07%	ELAN	19.21%

Bottom 30 Tickers By EUB MAE

All TMD: 1d

Results reflect ticker level average EUB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EUB" metric - positive performance within the expected 95%tile.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EUB-MAE_V	Ticker_S	EUB-MAE_S
1.0	MUB	0.15%	VCSH	0.07%
1.0	VCSH	0.16%	MUB	0.1%
1.0	LQD	0.29%	HYG	0.18%
1.0	FRA	0.34%	LQD	0.21%
1.0	HYG	0.35%	EMB	0.23%
1.0	GLD	0.44%	FRA	0.29%
1.0	PEP	0.47%	GLD	0.33%
1.0	NVS	0.48%	TLT	0.39%
1.0	MRK	0.5%	SPY	0.39%
1.0	MSI	0.51%	NVS	0.4%
1.0	HON	0.52%	PEP	0.42%
1.0	POST	0.53%	HON	0.46%
1.0	TMUS	0.54%	MRK	0.46%
1.0	SNY	0.55%	TMUS	0.48%
1.0	HD	0.55%	POST	0.48%
1.0	GILD	0.56%	ABBV	0.48%
1.0	KHC	0.57%	KHC	0.49%
1.0	BUD	0.58%	MSI	0.49%
1.0	TLT	0.58%	VZ	0.5%
1.0	AMGN	0.6%	AMGN	0.51%
1.0	MNST	0.6%	VICI	0.51%
1.0	ABBV	0.6%	BMY	0.51%
1.0	SLV	0.61%	HSBC	0.51%
1.0	SBUX	0.61%	AZO	0.52%
1.0	ORLY	0.61%	CSCO	0.52%
1.0	XOM	0.61%	GILD	0.52%
1.0	ZTS	0.62%	MNST	0.52%
1.0	HCA	0.62%	AZN	0.52%
1.0	BALL	0.63%	COST	0.52%
1.0	VICI	0.63%	ORLY	0.53%

All TMD: 10d

Results reflect ticker level average EUB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EUB" metric - positive performance within the expected 95%tile.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EUB-MAE_V	Ticker_S	EUB-MAE_S
10.0	VCSH	0.42%	VCSH	0.23%
10.0	MUB	0.54%	MUB	0.33%
10.0	LQD	0.8%	HYG	0.61%
10.0	FRA	0.93%	LQD	0.73%
10.0	HYG	1.02%	EMB	0.79%
10.0	GLD	1.24%	FRA	0.9%
10.0	PEP	1.32%	SPY	1.16%
10.0	POST	1.46%	GLD	1.18%
10.0	NVS	1.49%	PEP	1.24%
10.0	GILD	1.52%	TLT	1.35%
10.0	TLT	1.53%	NVS	1.44%
10.0	HD	1.55%	POST	1.47%
10.0	MSI	1.56%	HON	1.49%
10.0	HON	1.56%	MRK	1.52%
10.0	SNY	1.56%	VZ	1.54%
10.0	SPY	1.63%	CSCO	1.58%
10.0	HCA	1.66%	TMUS	1.59%
10.0	AMGN	1.69%	QQQ	1.59%
10.0	ZTS	1.69%	ORLY	1.6%
10.0	MRK	1.7%	ACGL	1.6%
10.0	VICI	1.71%	BMY	1.61%
10.0	TMUS	1.71%	ABBV	1.63%
10.0	XOM	1.71%	VICI	1.63%
10.0	ABBV	1.73%	AMGN	1.64%
10.0	BALL	1.73%	MSI	1.65%
10.0	BUD	1.74%	UNH	1.66%
10.0	ORLY	1.78%	GILD	1.67%
10.0	GWW	1.78%	COST	1.68%
10.0	ACGL	1.79%	KHC	1.7%
10.0	VZ	1.82%	CPRT	1.71%

All TMD: 21d

Results reflect ticker level average EUB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EUB" metric - positive performance within the expected 95%tile.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EUB-MAE_V	Ticker_S	EUB-MAE_S
21.0	VCSH	0.63%	VCSH	0.35%
21.0	MUB	0.78%	MUB	0.42%
21.0	LQD	1.17%	HYG	0.86%
21.0	FRA	1.37%	LQD	0.97%
21.0	HYG	1.74%	EMB	1.1%
21.0	PEP	1.76%	FRA	1.33%
21.0	GLD	2.0%	GLD	1.51%
21.0	NVS	2.11%	SPY	1.61%
21.0	GILD	2.29%	PEP	1.71%
21.0	HD	2.3%	TLT	1.92%
21.0	POST	2.32%	NVS	1.99%
21.0	MSI	2.34%	HSBC	2.14%
21.0	BUD	2.37%	HON	2.19%
21.0	SNY	2.45%	BMY	2.28%
21.0	HSBC	2.49%	QQQ	2.28%
21.0	HON	2.49%	TMUS	2.29%
21.0	TLT	2.52%	POST	2.33%
21.0	ACGL	2.52%	MSI	2.33%
21.0	XOM	2.52%	VZ	2.35%
21.0	SPY	2.54%	MRK	2.35%
21.0	VZ	2.66%	CAH	2.37%
21.0	ZTS	2.66%	GILD	2.38%
21.0	KHC	2.66%	KHC	2.41%
21.0	NAVI	2.67%	ACGL	2.41%
21.0	VICI	2.67%	PCG	2.43%
21.0	CMCSA	2.68%	ABBV	2.49%
21.0	TMUS	2.69%	CSCO	2.49%
21.0	MRK	2.69%	ORLY	2.53%
21.0	GWW	2.75%	VICI	2.54%
21.0	FRCB	2.77%	T	2.56%

All TMD: 63d

Results reflect ticker level average EUB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EUB" metric - positive performance within the expected 95%tile.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EUB-MAE_V	Ticker_S	EUB-MAE_S
63.0	VCSH	1.15%	VCSH	0.66%
63.0	MUB	1.25%	MUB	0.76%
63.0	LQD	2.12%	HYG	1.64%
63.0	FRA	2.5%	LQD	1.97%
63.0	PEP	2.85%	FRA	2.15%
63.0	GLD	3.19%	EMB	2.3%
63.0	BUD	3.94%	GLD	2.62%
63.0	HYG	4.0%	PEP	2.72%
63.0	VZ	4.21%	SPY	2.72%
63.0	ZTS	4.24%	COST	3.32%
63.0	NVS	4.24%	TLT	3.46%
63.0	CAH	4.26%	HON	3.51%
63.0	POST	4.3%	NVS	3.63%
63.0	JAZZ	4.31%	MRK	3.67%
63.0	MSI	4.33%	VZ	3.76%
63.0	SNY	4.35%	VICI	3.95%
63.0	HON	4.42%	AZO	4.09%
63.0	ORLY	4.45%	POST	4.24%
63.0	TMUS	4.56%	ORLY	4.29%
63.0	CMCSA	4.61%	QQQ	4.31%
63.0	AMGN	4.64%	AMGN	4.34%
63.0	GILD	4.65%	TMUS	4.39%
63.0	HD	4.66%	HSBC	4.44%
63.0	TLT	4.66%	ACGL	4.47%
63.0	IRM	4.68%	UNH	4.47%
63.0	CHTR	4.72%	MSI	4.48%
63.0	MRK	4.78%	ZTS	4.52%
63.0	XOM	4.81%	JPM	4.52%
63.0	VICI	4.84%	HD	4.53%
63.0	BMY	4.84%	GSK	4.54%

All TMD: 126d

Results reflect ticker level average EUB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EUB" metric - positive performance within the expected 95%tile.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EUB-MAE_V	Ticker_S	EUB-MAE_S
126.0	VCSH	1.17%	VCSH	0.81%
126.0	MUB	1.58%	MUB	1.29%
126.0	LQD	1.95%	HYG	1.88%
126.0	FRA	3.44%	LQD	2.1%
126.0	PEP	3.73%	EMB	2.59%
126.0	ABBV	5.14%	FRA	3.06%
126.0	TMUS	5.32%	PEP	3.81%
126.0	ZTS	5.33%	MNST	4.23%
126.0	AMGN	5.44%	GLD	4.26%
126.0	SPY	5.44%	SPY	4.57%
126.0	NVS	5.46%	ABBV	4.63%
126.0	NAVI	5.6%	AMGN	4.86%
126.0	IRM	5.65%	HON	4.92%
126.0	GLD	5.79%	TLT	4.92%
126.0	MNST	5.84%	BUD	5.02%
126.0	BALL	5.84%	NVS	5.24%
126.0	VICI	6.31%	KHC	5.37%
126.0	BUD	6.33%	UNH	5.38%
126.0	XOM	6.34%	AZO	5.42%
126.0	ORLY	6.36%	ORLY	5.59%
126.0	SNY	6.42%	CSCO	5.62%
126.0	CAH	6.49%	TMUS	5.66%
126.0	POST	6.59%	VICI	5.75%
126.0	BMY	6.82%	QQQ	5.84%
126.0	HLT	6.83%	JPM	5.93%
126.0	JAZZ	6.84%	ZTS	6.01%
126.0	VZ	6.9%	CVS	6.04%
126.0	MSI	6.94%	VZ	6.09%
126.0	TFC	7.12%	SNY	6.1%
126.0	JPM	7.15%	BMY	6.18%

All TMD: 252d

Results reflect ticker level average EUB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EUB" metric - positive performance within the expected 95%tile.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EUB-MAE_V	Ticker_S	EUB-MAE_S
252.0	VCSH	1.76%	VCSH	1.04%
252.0	MUB	3.18%	MUB	1.57%
252.0	LQD	4.79%	HYG	3.41%
252.0	NVS	5.11%	FRA	4.2%
252.0	FRA	5.48%	LQD	4.5%
252.0	PEP	6.09%	EMB	4.78%
252.0	BUD	6.84%	BMY	4.97%
252.0	VICI	8.21%	PEP	5.0%
252.0	MRK	8.22%	GLD	5.2%
252.0	ZTS	8.22%	NVS	5.75%
252.0	POST	8.38%	VICI	5.97%
252.0	GLD	8.52%	AZN	6.95%
252.0	IRM	8.77%	TLT	7.32%
252.0	CMCSA	8.92%	AMGN	7.36%
252.0	MSI	9.13%	ABBV	7.37%
252.0	SLV	9.17%	HON	7.39%
252.0	GILD	9.28%	SPY	7.4%
252.0	BALL	9.79%	AZO	7.87%
252.0	CVS	9.95%	MRK	7.98%
252.0	XOM	10.23%	GSK	8.01%
252.0	HYG	10.45%	VZ	8.08%
252.0	AMGN	10.79%	MNST	8.12%
252.0	CSTM	10.81%	CSCO	8.14%
252.0	EMB	10.81%	TMUS	8.36%
252.0	SNY	10.83%	HD	8.5%
252.0	NAVI	11.02%	HSBC	8.51%
252.0	LW	11.19%	POST	8.61%
252.0	VZ	11.23%	MSI	8.65%
252.0	GNRC	11.69%	BIIB	8.67%
252.0	CNC	11.82%	UNH	8.91%

Performance Summary - Returns on EUB based exposures (ROEUB)

Here we compare ROEUB, or price return performance of ticker-model date (TMD) exposures based upon EUB, for Vector Mdel EUB to the Sigma Model's EUB ("S", presented with light shading).

Vector Model EUB is denoted by a "V" and presented with dark shading in the bar charts comparison of EUB that follow, whereas Sigma EUB is denoted by "S" and presented with light shading.

Sigma based ticker exposure performance reflects equal TMD weighting and the price returns of the underlying TMD for the given horizon.

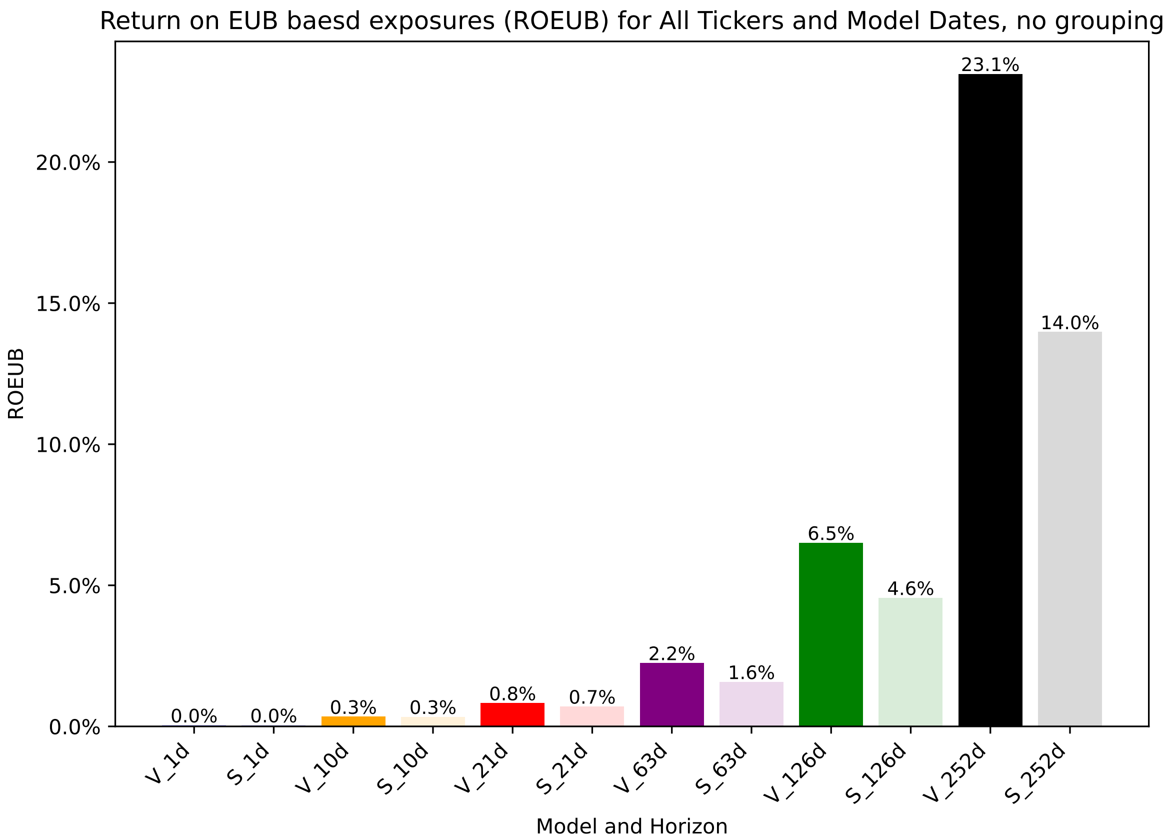
Vector Model based TMD exposures reflect each TMD's underlying horizon price return multiplied by the ratio of Vector Model EUB to Sigma model based EUB for the given horizon. This ratio is capped of 3.0x and floored of 0.333x.

Following each bar chart comparison of ROEUB is a table detailing the alpha (intercept) and slope (beta) of Vector Model EUB based exposure performance to Sigma EUB exposure based performance. The beta arguably provides some indication of the leverage of the Vector Model based exposures and the alpha is an indication of Vector Model EUB's ability to generate performance indepdendent of the ticker's returns. See the Introduction for further discussion of alpha and beta.

Note that time horizons are denominated in trading days, where 10d is ~ 2 weeks in calendar terms, 21d is ~ 1 month, 63d is ~ 1 quarter, 126d is ~ half year, 252d is ~1 year. Model estimates for all horizons are made on each Model Date, so p-Values for horizons beyond 1d are not valid.

All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-06-27



Alpha (intercept) and Beta (slope) of Vector Model ROEUB regressed upon corresponding horizon actual ticker-model date returns:

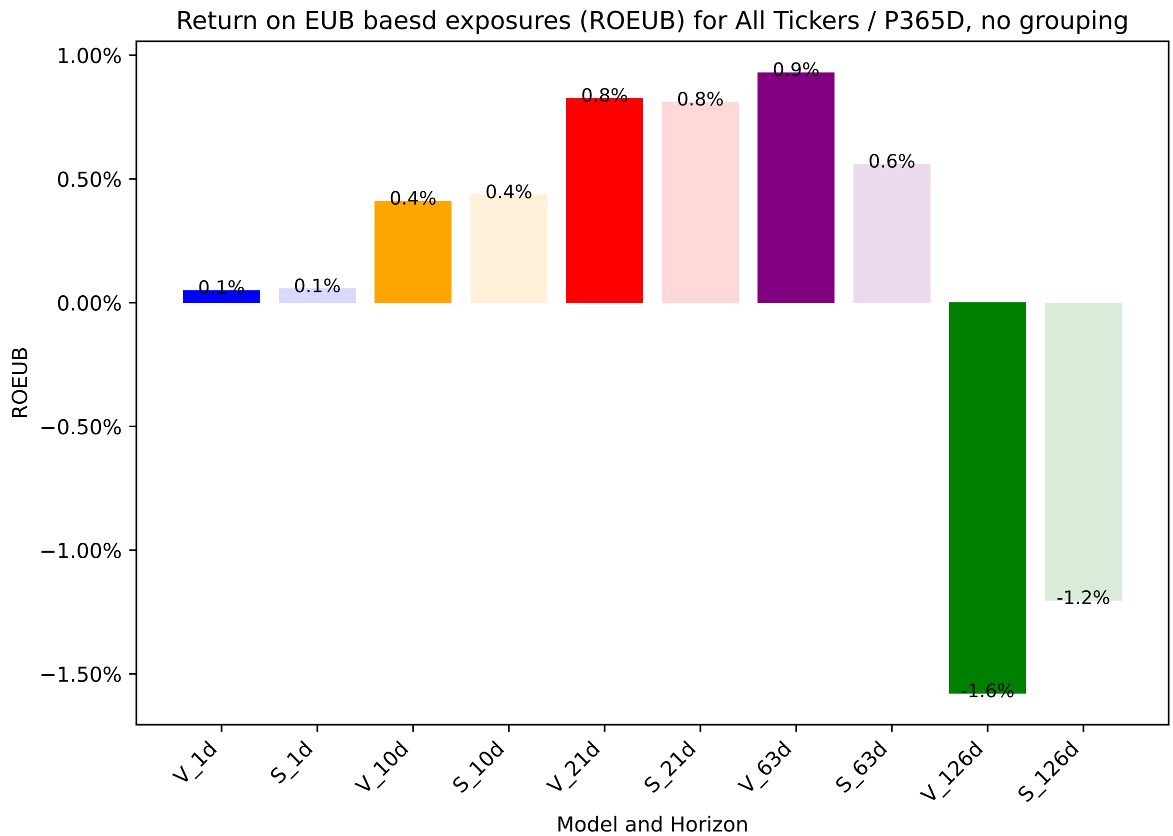
	1d	10d	21d	63d	126d	252d
intercept	-0.00%	0.01%	0.10%	0.37%	0.83%	3.38%
intercept_p_value	67.46%	35.14%	0.00%	0.00%	0.00%	0.00%
slope	99.83%	97.13%	102.15%	118.82%	124.68%	141.25%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Same as above, but averaged by Ticker across Model Dates:

	1d	10d	21d	63d	126d	252d
intercept	-0.00%	-0.00%	0.03%	-0.07%	-0.79%	-2.81%
intercept_p_value	46.68%	22.41%	16.79%	5.23%	8.38%	11.18%
slope	100.86%	99.97%	106.10%	120.59%	130.12%	150.79%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.36%

Prior 365 Calendar Days (P365D)

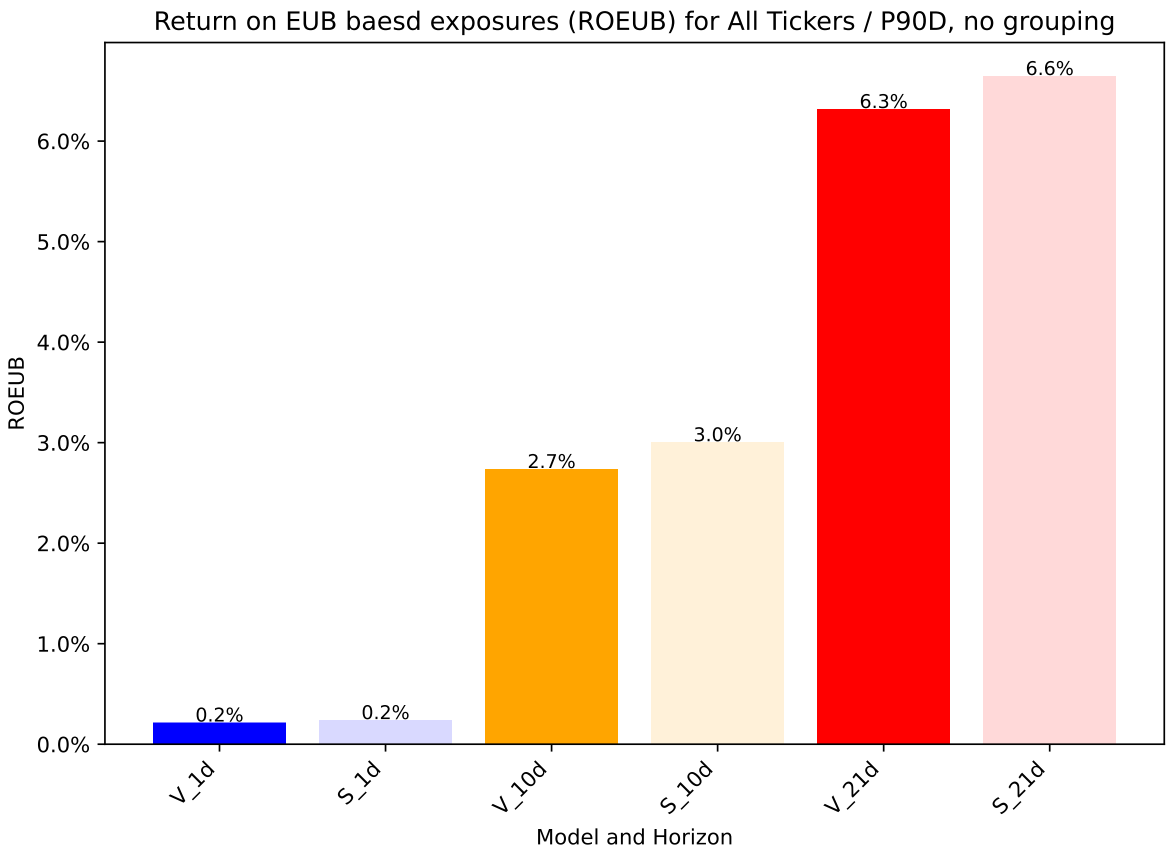
Period examined: All model dates from 2024-07-02 through 2025-06-27




```
Alpha (intercept) and Beta (slope) of Vector Model ROEUB regressed upon
corresponding horizon actual ticker-model date returns:
                        1d       10d       21d       63d      126d
intercept           -0.01%    -0.04%    -0.03%     0.23%     0.02%
intercept_p_value   37.27%    12.38%    32.77%     0.02%    80.52%
slope              101.52%   102.23%   105.76%   125.53%   133.26%
slope_p_value        0.00%     0.00%     0.00%     0.00%     0.00%

Same as above, but averaged by Ticker across Model Dates:
                        1d       10d       21d       63d      126d
intercept           -0.02%     0.00%     0.03%     0.16%    -0.55%
intercept_p_value   45.75%    22.12%    14.08%    10.21%    15.85%
slope              103.34%   103.31%   108.73%   125.36%   137.58%
slope_p_value        0.00%     0.00%     0.00%     0.00%     0.02%
```

Prior 90 Calendar Days (P90D)

Period examined: All model dates from 2025-04-03 through 2025-06-27



Alpha (intercept) and Beta (slope) of Vector Model ROEUB regressed upon corresponding horizon actual ticker-model date returns:

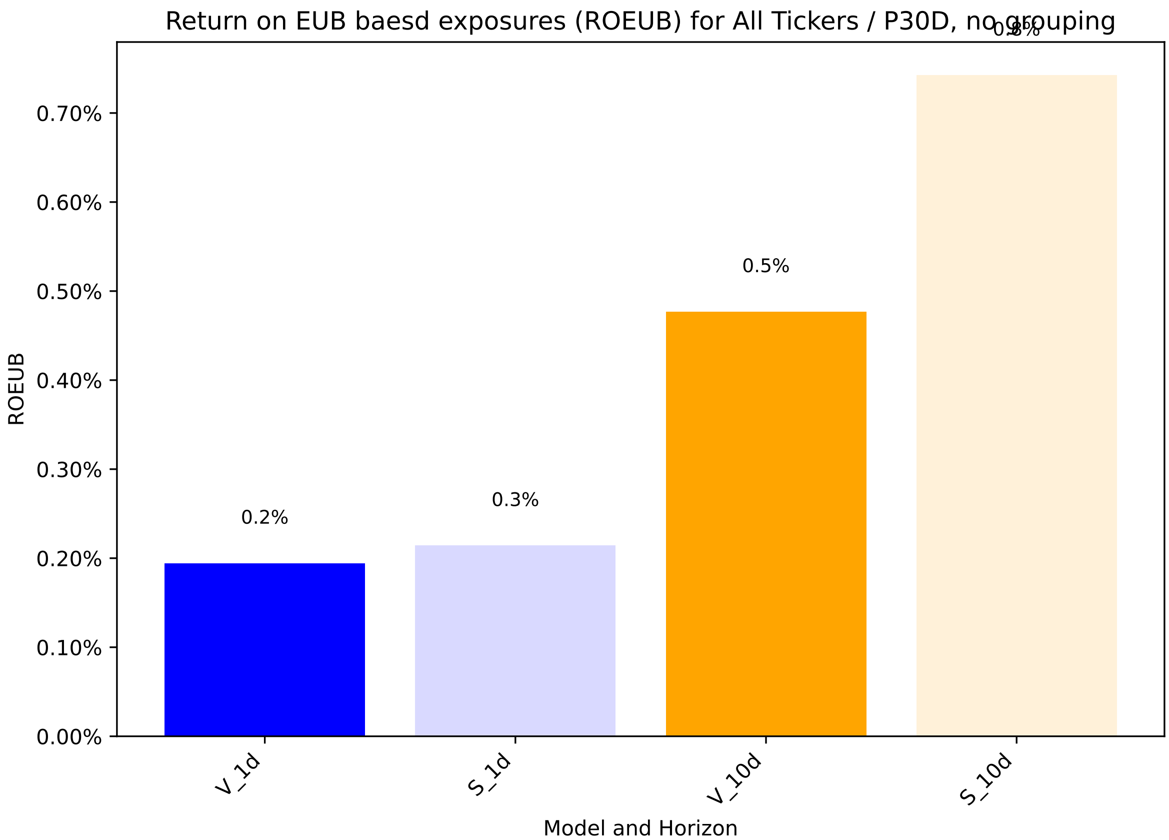
	1d	10d	21d
intercept	-0.02%	-0.01%	0.15%
intercept_p_value	30.18%	90.33%	13.42%
slope	98.61%	91.33%	92.88%
slope_p_value	0.00%	0.00%	0.00%

Same as above, but averaged by Ticker across Model Dates:

	1d	10d	21d
intercept	-0.01%	-0.00%	-0.38%
intercept_p_value	44.09%	32.84%	27.82%
slope	99.27%	95.02%	102.30%
slope_p_value	0.00%	0.00%	0.00%

Prior 30 Calendar Days (P30D)

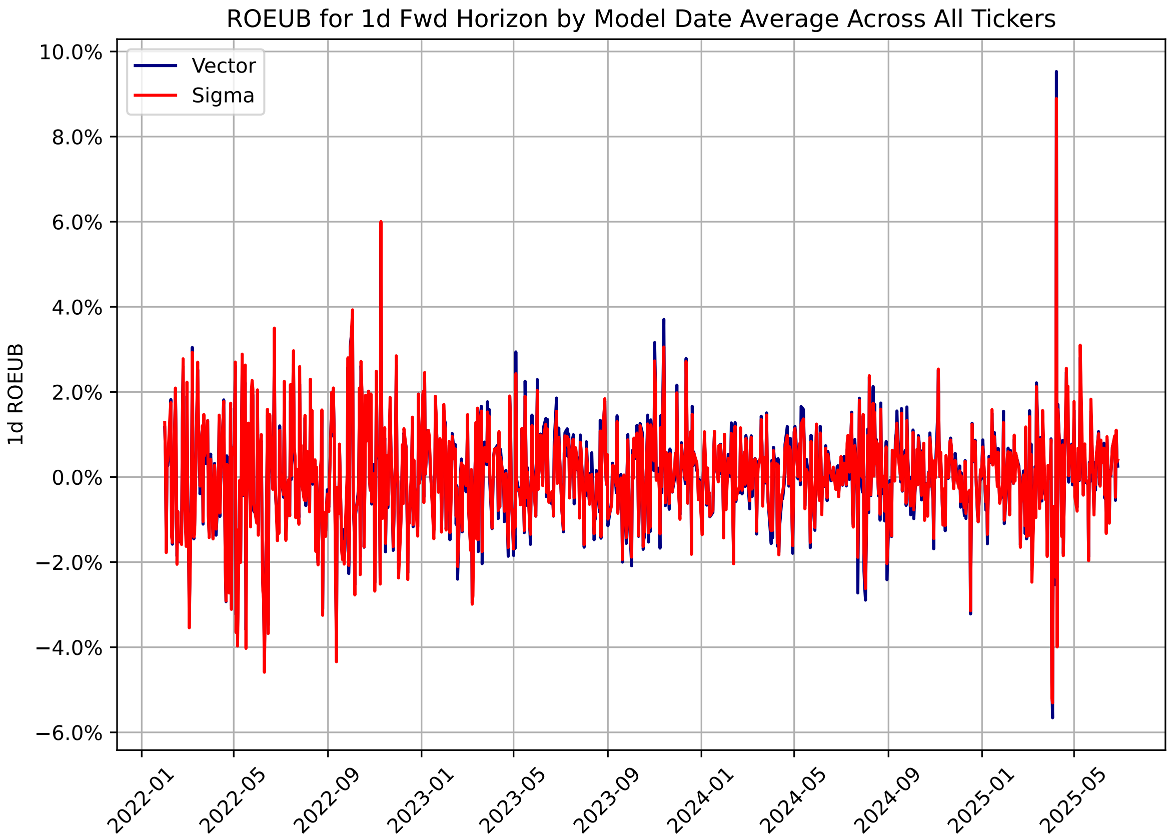
Period examined: All model dates from 2025-06-02 through 2025-06-27



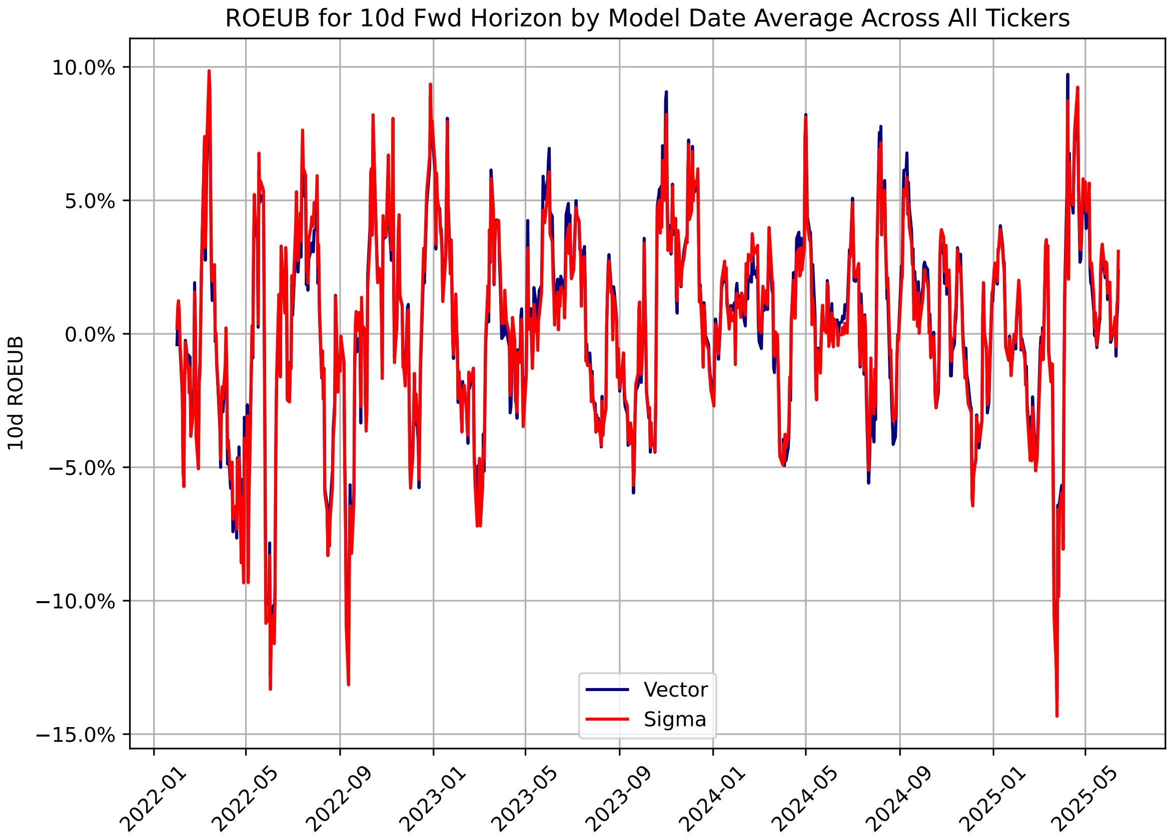

```
Alpha (intercept) and Beta (slope) of Vector Model ROEUB regressed upon
corresponding horizon actual ticker-model date returns:
                        1d      10d
intercept           -0.01%  -0.08%
intercept_p_value   63.25%  17.05%
slope               96.04%  75.57%
slope_p_value        0.00%   0.00%

Same as above, but averaged by Ticker across Model Dates:
                        1d      10d
intercept           -0.00%  -0.01%
intercept_p_value   48.78%  48.48%
slope               93.77%  89.55%
slope_p_value        0.00%   0.18%
```

ROEUB by Model Date Detail

1d Horizon

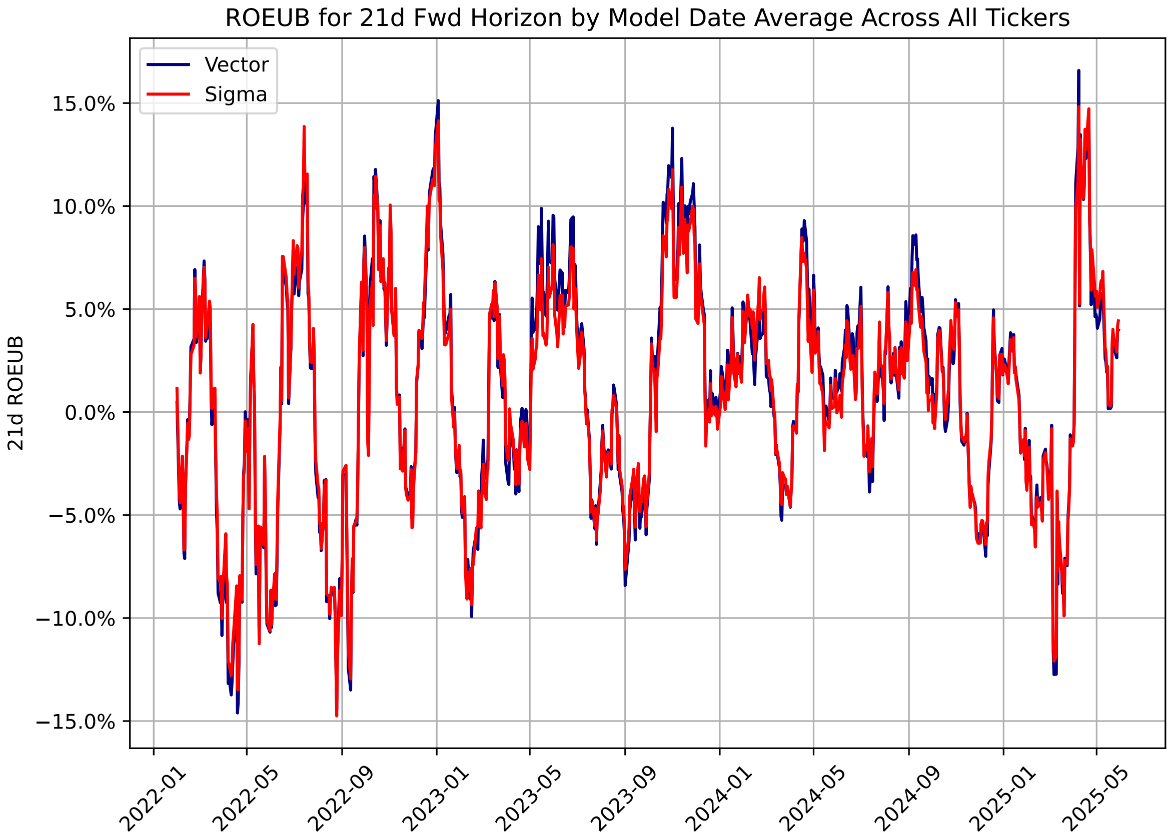


10d Horizon

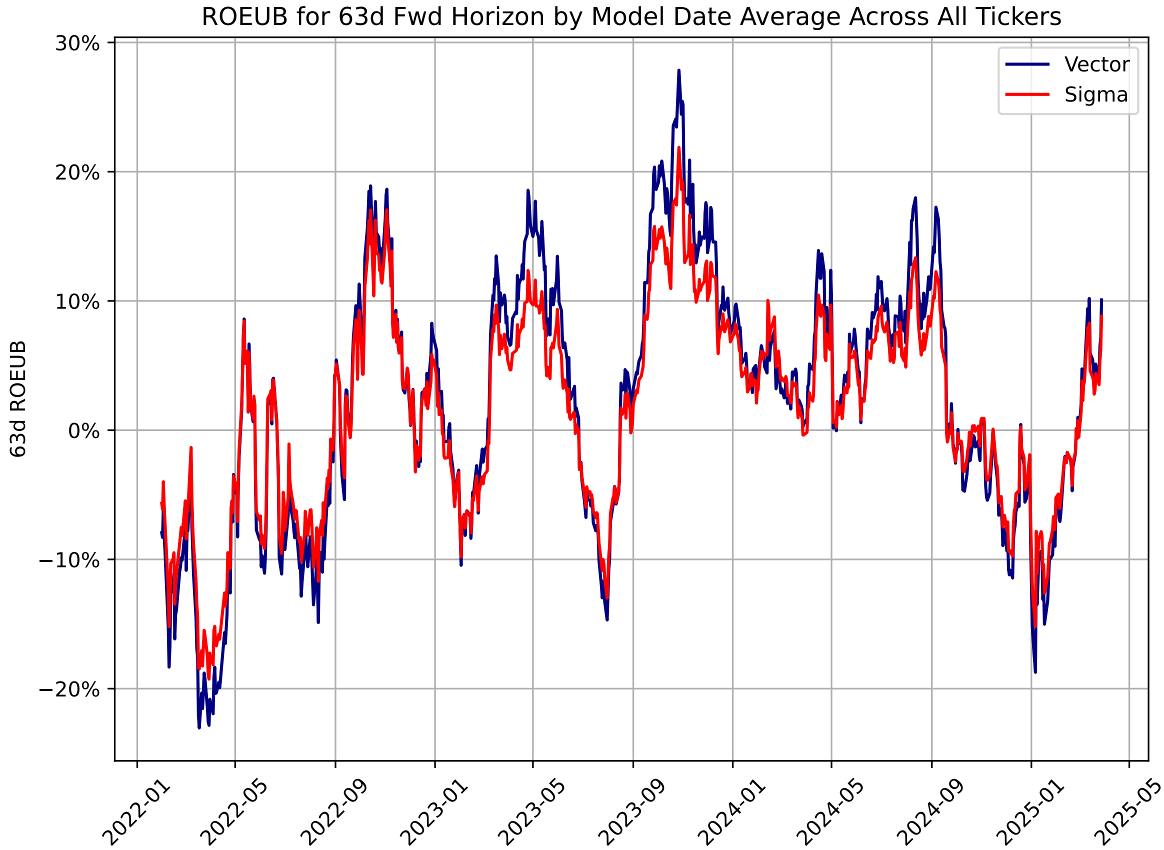


ROEUB for 10d Fwd Horizon by Model Date Average Across All Tickers
10.0%
5.0%
0.0%
−5.0%
−10.0%
−15.0%
10d ROEUB
2022-01
2022-05
2022-09
2023-01
2023-05
2023-09
2024-01
2024-05
2024-09
2025-01
2025-05
Vector
Sigma

21d Horizon

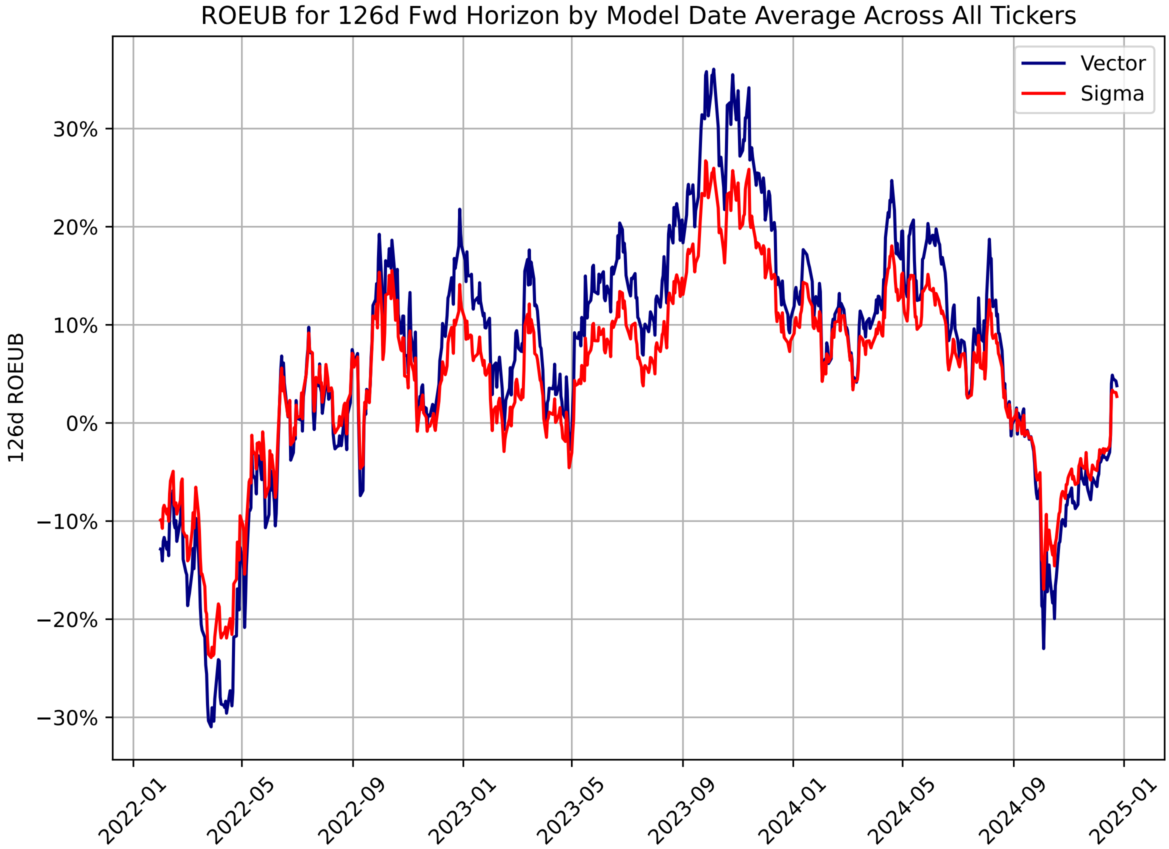

ROEUB for 21d Fwd Horizon by Model Date Average Across All Tickers
Vector
Sigma
21d ROEUB
15.0%
10.0%
5.0%
0.0%
−5.0%
−10.0%
−15.0%
2022-01
2022-05
2022-09
2023-01
2023-05
2023-09
2024-01
2024-05
2024-09
2025-01
2025-05

63d Horizon

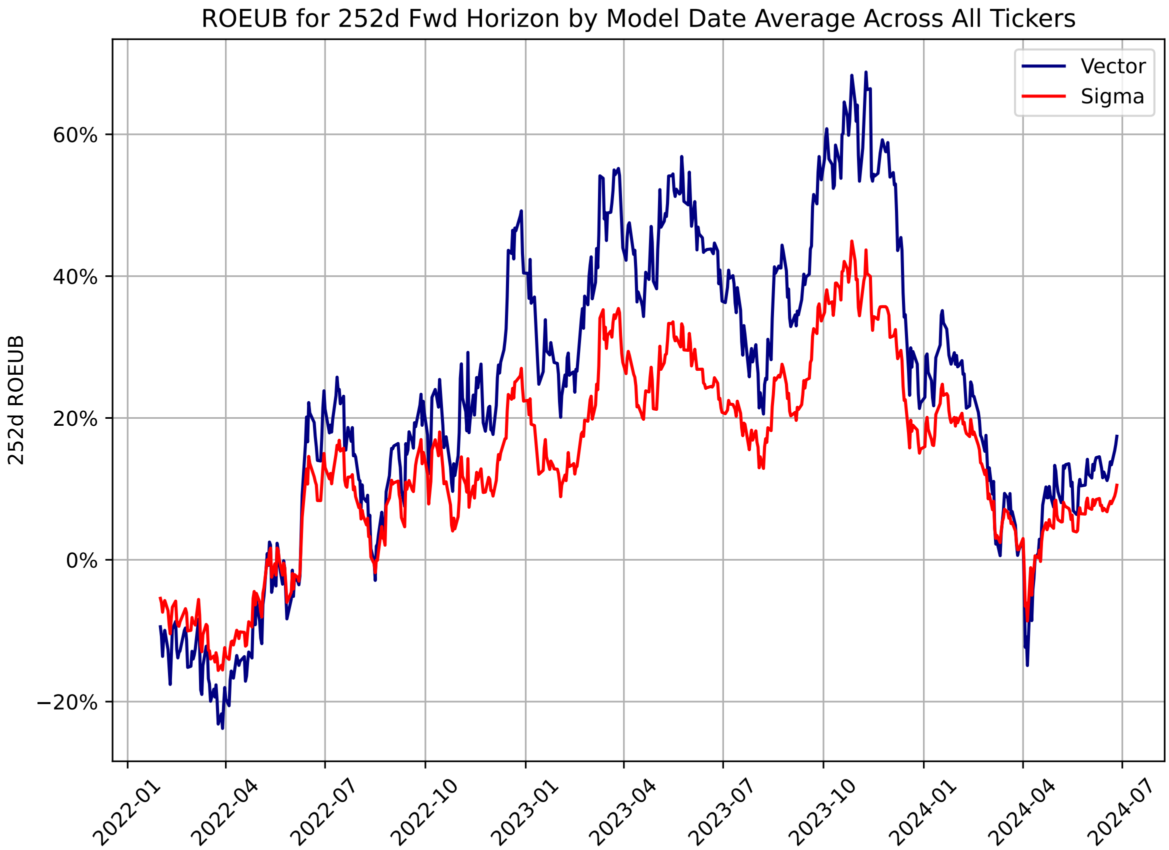


ROEUB for 63d Fwd Horizon by Model Date Average Across All Tickers
Vector
Sigma
63d ROEUB
30%
20%
10%
0%
−10%
−20%
2022-01
2022-05
2022-09
2023-01
2023-05
2023-09
2024-01
2024-05
2024-09
2025-01
2025-05

126d Horizon



252d Horizon



Top 30 Tickers By ROEUB

All TMD: 1d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
1.0	TSLA	0.35%	MSTR	0.47%
1.0	CCL	0.31%	VST	0.31%
1.0	NVDA	0.3%	NVDA	0.28%
1.0	GBTC	0.29%	AVGO	0.22%
1.0	AVGO	0.28%	GBTC	0.22%
1.0	VST	0.26%	GME	0.2%
1.0	GE	0.23%	PWR	0.18%
1.0	X	0.22%	NFLX	0.18%
1.0	LLY	0.2%	GE	0.17%
1.0	MSTR	0.19%	X	0.17%
1.0	MSFT	0.17%	LLY	0.15%
1.0	PWR	0.15%	CAH	0.15%
1.0	TRGP	0.15%	TRGP	0.15%
1.0	TDG	0.14%	META	0.15%
1.0	THC	0.14%	THC	0.15%
1.0	PHM	0.13%	ORCL	0.14%
1.0	AMD	0.13%	TDG	0.12%
1.0	B	0.13%	TEVA	0.12%
1.0	AMC	0.12%	ETRN	0.12%
1.0	CAH	0.12%	IRM	0.11%
1.0	VNO	0.12%	CCL	0.11%
1.0	CMG	0.12%	CDNS	0.11%
1.0	IRM	0.11%	PHM	0.11%
1.0	GME	0.11%	TMUS	0.1%
1.0	CDNS	0.11%	ISRG	0.1%
1.0	WYNN	0.11%	GWW	0.1%
1.0	COST	0.1%	GS	0.1%
1.0	JPM	0.1%	ORLY	0.1%
1.0	LVS	0.1%	MU	0.1%
1.0	DHI	0.1%	CMG	0.1%

All TMD: 10d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
10.0	NVDA	4.12%	MSTR	4.71%
10.0	TSLA	3.63%	VST	3.03%
10.0	VST	3.04%	NVDA	2.72%
10.0	AVGO	2.75%	AVGO	2.12%
10.0	MSTR	2.69%	GBTC	2.07%
10.0	CCL	2.49%	NFLX	1.8%
10.0	GBTC	2.48%	PWR	1.73%
10.0	LLY	2.17%	GME	1.68%
10.0	GE	1.75%	META	1.63%
10.0	MSFT	1.61%	GE	1.6%
10.0	PWR	1.59%	LLY	1.6%
10.0	X	1.5%	X	1.58%
10.0	CAH	1.42%	CAH	1.48%
10.0	ETRN	1.32%	TRGP	1.42%
10.0	CDNS	1.3%	ETRN	1.41%
10.0	GME	1.29%	ORCL	1.37%
10.0	TDG	1.22%	THC	1.33%
10.0	AZO	1.16%	TEVA	1.28%
10.0	THC	1.14%	IRM	1.15%
10.0	JPM	1.11%	TDG	1.13%
10.0	CMG	1.1%	CDNS	1.05%
10.0	GS	1.09%	PHM	1.04%
10.0	HLT	1.08%	GWW	1.03%
10.0	TRGP	1.01%	TSLA	0.97%
10.0	ORLY	0.96%	ORLY	0.94%
10.0	COST	0.95%	MU	0.93%
10.0	IRM	0.93%	ISRG	0.92%
10.0	QQQ	0.92%	CCL	0.91%
10.0	PHM	0.9%	COST	0.88%
10.0	AMD	0.86%	CMG	0.88%

All TMD: 21d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
21.0	NVDA	9.77%	MSTR	10.57%
21.0	TSLA	8.69%	VST	6.47%
21.0	MSTR	7.18%	NVDA	5.86%
21.0	VST	7.05%	GBTC	4.56%
21.0	GBTC	6.22%	AVGO	4.44%
21.0	CCL	6.01%	NFLX	3.93%
21.0	AVGO	5.64%	PWR	3.65%
21.0	LLY	4.31%	META	3.63%
21.0	PWR	4.06%	GE	3.53%
21.0	GE	4.03%	ETRN	3.5%
21.0	ETRN	3.92%	LLY	3.34%
21.0	MSFT	3.36%	X	3.17%
21.0	CAH	3.31%	CAH	3.06%
21.0	AZO	3.28%	TRGP	2.92%
21.0	X	3.17%	GME	2.85%
21.0	CDNS	3.06%	TEVA	2.81%
21.0	TDG	2.71%	ORCL	2.8%
21.0	ORLY	2.55%	THC	2.79%
21.0	DHI	2.53%	IRM	2.42%
21.0	COST	2.52%	TDG	2.34%
21.0	HLT	2.46%	TSLA	2.33%
21.0	JPM	2.46%	GWW	2.31%
21.0	THC	2.41%	PHM	2.24%
21.0	PHM	2.38%	CDNS	2.21%
21.0	QQQ	2.28%	ISRG	2.07%
21.0	GS	2.27%	ORLY	2.01%
21.0	TRGP	2.25%	CCL	2.0%
21.0	CMG	2.25%	COST	1.97%
21.0	GWW	2.14%	ACGL	1.92%
21.0	IRM	2.08%	TMUS	1.82%

All TMD: 63d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
63.0	MSTR	33.71%	MSTR	30.78%
63.0	NVDA	30.71%	VST	19.34%
63.0	VST	21.0%	NVDA	18.55%
63.0	GBTC	19.92%	GBTC	14.94%
63.0	CCL	17.82%	NFLX	12.64%
63.0	TSLA	16.69%	AVGO	12.24%
63.0	GE	14.6%	META	11.79%
63.0	AVGO	14.33%	GE	10.4%
63.0	PWR	12.6%	ETRN	10.28%
63.0	LLY	12.5%	LLY	9.69%
63.0	DHI	12.06%	PWR	9.17%
63.0	NFLX	10.64%	CAH	8.56%
63.0	AZO	10.17%	TRGP	8.3%
63.0	CAH	9.76%	PHM	7.9%
63.0	ETRN	9.47%	THC	7.82%
63.0	MSFT	9.42%	TDG	7.01%
63.0	TDG	9.33%	TEVA	6.81%
63.0	PHM	9.3%	ORCL	6.75%
63.0	COST	8.69%	GWW	6.63%
63.0	THC	8.68%	ISRG	6.41%
63.0	ORLY	8.6%	ACGL	6.13%
63.0	CDNS	8.31%	ORLY	6.04%
63.0	ACGL	7.88%	CDNS	6.03%
63.0	TRGP	7.71%	IRM	5.99%
63.0	QQQ	7.71%	X	5.91%
63.0	CPRT	7.67%	TMUS	5.74%
63.0	X	7.66%	JPM	5.5%
63.0	GWW	7.65%	CMG	5.44%
63.0	JPM	7.49%	CPRT	5.42%
63.0	ORCL	7.27%	CCL	5.41%

All TMD: 126d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
126.0	NVDA	75.64%	MSTR	73.94%
126.0	MSTR	64.88%	NVDA	49.33%
126.0	GBTC	55.96%	VST	43.95%
126.0	VST	51.53%	GBTC	40.42%
126.0	NFLX	39.1%	NFLX	30.16%
126.0	GE	35.99%	META	29.78%
126.0	CCL	35.84%	AVGO	28.09%
126.0	TSLA	34.42%	GE	25.18%
126.0	AVGO	32.55%	LLY	21.09%
126.0	PHM	27.81%	TRGP	20.47%
126.0	DHI	27.23%	PHM	19.21%
126.0	COST	24.66%	THC	19.07%
126.0	AMZN	24.09%	ETRN	18.49%
126.0	LLY	23.96%	PWR	18.21%
126.0	PWR	23.7%	CAH	17.57%
126.0	ISRG	23.56%	TDG	16.22%
126.0	AZO	23.54%	ISRG	16.07%
126.0	THC	22.43%	TEVA	15.91%
126.0	VNO	22.17%	ORCL	15.87%
126.0	QQQ	21.69%	GWW	14.82%
126.0	AMAT	21.63%	ACGL	14.14%
126.0	TDG	21.46%	IRM	13.86%
126.0	MU	21.44%	CCL	13.67%
126.0	ORCL	21.39%	JPM	13.33%
126.0	CAH	20.76%	ORLY	13.28%
126.0	MSFT	20.53%	MSI	13.07%
126.0	ORLY	20.49%	CMG	13.0%
126.0	CPRT	20.14%	CPRT	12.76%
126.0	JPM	19.99%	COST	12.64%
126.0	TRGP	19.63%	TMUS	12.35%

All TMD: 252d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
252.0	NVDA	291.18%	MSTR	226.72%
252.0	MSTR	228.04%	NVDA	146.81%
252.0	GBTC	194.71%	VST	126.5%
252.0	NFLX	131.79%	GBTC	120.3%
252.0	VST	118.77%	META	81.19%
252.0	GE	109.9%	AVGO	73.18%
252.0	AVGO	103.03%	NFLX	68.62%
252.0	PWR	96.23%	GE	61.22%
252.0	LLY	94.65%	PHM	56.37%
252.0	PHM	93.45%	LLY	54.67%
252.0	CCL	91.12%	THC	52.11%
252.0	AMZN	88.23%	TRGP	50.35%
252.0	DHI	86.79%	PWR	42.1%
252.0	CDNS	85.42%	TDG	40.67%
252.0	META	82.17%	ISRG	39.69%
252.0	COST	79.74%	TEVA	39.08%
252.0	ISRG	74.15%	ORCL	38.06%
252.0	QQQ	67.9%	IRM	37.42%
252.0	ORLY	67.8%	CCL	36.24%
252.0	THC	66.67%	ETRN	35.78%
252.0	LEN	64.94%	DHI	35.23%
252.0	MSFT	64.51%	ACGL	34.67%
252.0	AMAT	63.3%	GWW	34.43%
252.0	VNO	63.12%	CMG	32.73%
252.0	ACGL	61.52%	CAH	32.53%
252.0	AMD	58.03%	COST	31.56%
252.0	TDG	57.16%	JPM	31.22%
252.0	ORCL	55.8%	CPRT	31.0%
252.0	JPM	54.64%	MSI	30.54%
252.0	AZO	54.06%	LEN	30.04%

P365D: 1d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
1.0	WRK	2.26%	WRK	2.75%
1.0	LUMN	0.68%	MSTR	0.63%
1.0	CCL	0.51%	LUMN	0.47%
1.0	AVGO	0.49%	VST	0.43%
1.0	VST	0.47%	NFLX	0.29%
1.0	MOS	0.37%	AVGO	0.28%
1.0	GT	0.36%	CCL	0.24%
1.0	T	0.31%	TSLA	0.23%
1.0	TSLA	0.31%	CAH	0.23%
1.0	VNO	0.3%	GBTC	0.23%
1.0	GBTC	0.28%	GE	0.21%
1.0	ETRN	0.27%	X	0.21%
1.0	LVS	0.25%	GILD	0.21%
1.0	NVDA	0.25%	ORCL	0.21%
1.0	WYNN	0.24%	PWR	0.21%
1.0	CAH	0.24%	GS	0.19%
1.0	GE	0.24%	VNO	0.19%
1.0	NFLX	0.23%	T	0.18%
1.0	BMY	0.23%	META	0.18%
1.0	TRGP	0.22%	NVDA	0.17%
1.0	MS	0.22%	CSCO	0.17%
1.0	PRGO	0.2%	EXPE	0.17%
1.0	AAP	0.2%	NEM	0.16%
1.0	TDG	0.19%	MS	0.16%
1.0	ELAN	0.18%	ETRN	0.16%
1.0	B	0.17%	CHTR	0.15%
1.0	VICI	0.16%	JPM	0.15%
1.0	JPM	0.16%	THC	0.15%
1.0	NEM	0.16%	GLD	0.15%
1.0	PWR	0.14%	HSBC	0.14%

P365D: 10d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
10.0	LUMN	9.23%	MSTR	5.86%
10.0	VST	5.31%	LUMN	5.74%
10.0	MSTR	4.57%	VST	4.14%
10.0	AVGO	3.13%	NFLX	2.92%
10.0	MOS	3.11%	GBTC	2.44%
10.0	CCL	3.08%	AVGO	2.4%
10.0	NFLX	2.86%	CAH	2.4%
10.0	CAH	2.82%	TSLA	2.07%
10.0	T	2.68%	GILD	2.04%
10.0	NVDA	2.44%	ORCL	2.0%
10.0	GT	2.16%	GE	1.99%
10.0	CSCO	2.15%	CCL	1.94%
10.0	LVS	1.95%	X	1.91%
10.0	VNO	1.88%	PWR	1.81%
10.0	GBTC	1.86%	T	1.76%
10.0	BMY	1.83%	VNO	1.73%
10.0	GLD	1.65%	CSCO	1.63%
10.0	CYH	1.62%	META	1.62%
10.0	WYNN	1.59%	GS	1.59%
10.0	AAP	1.57%	HSBC	1.47%
10.0	COST	1.47%	GLD	1.44%
10.0	JPM	1.46%	EXPE	1.42%
10.0	GE	1.44%	MS	1.41%
10.0	MS	1.33%	JPM	1.4%
10.0	GILD	1.28%	MOS	1.37%
10.0	TDG	1.27%	THC	1.37%
10.0	HSBC	1.27%	NEM	1.36%
10.0	TRGP	1.19%	WFC	1.34%
10.0	WFC	1.19%	TRGP	1.33%
10.0	ORCL	1.17%	CHTR	1.33%

P365D: 21d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
21.0	VST	13.63%	MSTR	12.07%
21.0	LUMN	13.28%	VST	9.63%
21.0	MSTR	10.82%	LUMN	9.28%
21.0	NVDA	7.54%	NFLX	6.54%
21.0	AVGO	6.93%	AVGO	5.54%
21.0	NFLX	6.81%	TSLA	4.97%
21.0	CAH	6.63%	CAH	4.92%
21.0	T	6.43%	GBTC	4.89%
21.0	MOS	5.76%	GE	4.32%
21.0	CCL	5.11%	GILD	4.18%
21.0	COST	4.68%	CCL	4.06%
21.0	CSCO	4.53%	META	3.84%
21.0	GLD	4.26%	T	3.84%
21.0	LVS	4.23%	PWR	3.82%
21.0	GBTC	3.75%	ORCL	3.78%
21.0	GE	3.62%	VNO	3.54%
21.0	VNO	3.57%	X	3.33%
21.0	TSLA	3.48%	CSCO	3.29%
21.0	BMY	3.38%	HSBC	3.18%
21.0	HSBC	3.32%	GLD	3.16%
21.0	SBUX	3.27%	EXPE	3.0%
21.0	WFC	3.06%	GS	2.9%
21.0	WYNN	3.02%	MS	2.83%
21.0	ORCL	3.02%	TMUS	2.81%
21.0	HLT	2.95%	WFC	2.75%
21.0	MS	2.94%	JPM	2.72%
21.0	GWW	2.87%	TRGP	2.6%
21.0	GILD	2.83%	MOS	2.58%
21.0	AAP	2.82%	THC	2.55%
21.0	JPM	2.79%	SBUX	2.46%

P365D: 63d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
63.0	MSTR	76.26%	MSTR	50.84%
63.0	VST	46.71%	VST	26.69%
63.0	NFLX	25.33%	NFLX	19.65%
63.0	CCL	23.83%	GBTC	19.25%
63.0	T	21.92%	TSLA	17.67%
63.0	GBTC	18.88%	CAH	12.67%
63.0	GLD	16.71%	AVGO	12.4%
63.0	CAH	16.47%	GILD	12.34%
63.0	MOS	15.67%	CCL	11.92%
63.0	CSCO	14.89%	T	11.89%
63.0	GT	13.32%	GLD	10.04%
63.0	TSLA	13.13%	HSBC	9.86%
63.0	NVDA	12.66%	WFC	9.63%
63.0	AVGO	12.64%	GE	9.32%
63.0	MNST	11.96%	TMUS	9.24%
63.0	HSBC	11.79%	EXPE	8.86%
63.0	WFC	11.67%	PWR	8.57%
63.0	COST	11.21%	CSCO	8.54%
63.0	TRGP	10.81%	TRGP	8.1%
63.0	GOOGL	10.71%	MS	7.99%
63.0	GILD	10.16%	MNST	7.87%
63.0	JPM	9.63%	GME	7.74%
63.0	AZO	9.24%	ORLY	7.72%
63.0	AMZN	8.87%	X	7.29%
63.0	GWW	8.79%	VNO	7.24%
63.0	MS	8.33%	JPM	7.01%
63.0	TMUS	8.22%	META	7.0%
63.0	LUMN	7.98%	AZO	6.51%
63.0	GE	7.96%	GS	6.5%
63.0	ORLY	7.8%	MOS	6.05%

P365D: 126d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
126.0	VST	93.04%	MSTR	78.08%
126.0	MSTR	74.39%	VST	44.13%
126.0	NFLX	56.31%	NFLX	40.82%
126.0	T	46.98%	GBTC	34.65%
126.0	GBTC	38.4%	GILD	26.97%
126.0	CCL	37.69%	AVGO	26.92%
126.0	CAH	36.25%	CAH	24.89%
126.0	AVGO	33.8%	HSBC	24.71%
126.0	CSCO	33.07%	T	24.58%
126.0	HSBC	30.74%	TSLA	23.37%
126.0	GLD	28.75%	WFC	19.91%
126.0	TSLA	28.69%	GE	19.65%
126.0	AZO	27.67%	GLD	19.33%
126.0	GILD	27.47%	TMUS	18.15%
126.0	MOS	24.89%	TRGP	18.12%
126.0	COST	24.8%	CSCO	17.49%
126.0	WFC	24.78%	CCL	17.29%
126.0	JPM	24.33%	EXPE	16.83%
126.0	TRGP	24.27%	ORLY	15.74%
126.0	GT	23.9%	META	15.68%
126.0	BA	21.93%	JPM	15.52%
126.0	MNST	21.49%	AZO	14.48%
126.0	MS	18.94%	MS	14.21%
126.0	ORLY	18.65%	GS	13.6%
126.0	AMZN	18.26%	GME	11.84%
126.0	GE	17.5%	BA	11.58%
126.0	BMY	14.91%	CTLT	10.62%
126.0	GS	14.45%	MNST	10.46%
126.0	ISRG	13.45%	COST	9.96%
126.0	TMUS	12.76%	ISRG	9.87%

P90D: 1d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-04-03 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
1.0	LUMN	1.53%	WDC	1.12%
1.0	MOS	1.25%	VST	1.06%
1.0	VST	1.16%	AVGO	1.05%
1.0	NVDA	1.14%	MU	0.94%
1.0	ELAN	1.09%	CCL	0.9%
1.0	AMD	0.99%	ORCL	0.85%
1.0	CCL	0.98%	NVDA	0.81%
1.0	WYNN	0.95%	AMD	0.8%
1.0	LVS	0.93%	ON	0.77%
1.0	CLF	0.88%	X	0.76%
1.0	UAA	0.8%	ELAN	0.75%
1.0	WDC	0.78%	MSTR	0.72%
1.0	BA	0.77%	KALU	0.72%
1.0	AVGO	0.76%	PWR	0.72%
1.0	CSTM	0.73%	CSTM	0.71%
1.0	CYH	0.7%	AAP	0.67%
1.0	BHC	0.69%	NFLX	0.67%
1.0	KALU	0.63%	MOS	0.61%
1.0	AAP	0.59%	CYH	0.61%
1.0	TSLA	0.59%	BA	0.6%
1.0	GBTC	0.57%	META	0.6%
1.0	MSFT	0.53%	GS	0.58%
1.0	GE	0.51%	GE	0.57%
1.0	GOOGL	0.49%	AMAT	0.57%
1.0	NFLX	0.46%	THC	0.53%
1.0	PWR	0.46%	MSFT	0.51%
1.0	IRM	0.45%	FCX	0.5%
1.0	B	0.45%	INTU	0.5%
1.0	ORCL	0.43%	GBTC	0.49%
1.0	FCX	0.42%	MS	0.48%

P90D: 10d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-04-03 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
10.0	MOS	17.14%	WDC	12.53%
10.0	CSTM	15.19%	MU	12.3%
10.0	VST	14.8%	VST	11.37%
10.0	NVDA	12.9%	ELAN	10.18%
10.0	AAP	11.61%	ORCL	10.14%
10.0	LVS	11.13%	CSTM	10.12%
10.0	AMD	8.64%	AAP	9.83%
10.0	CYH	8.61%	AVGO	9.33%
10.0	LUMN	8.03%	ON	9.02%
10.0	BA	7.91%	AMD	8.72%
10.0	ELAN	7.61%	KALU	8.04%
10.0	WYNN	7.58%	MOS	7.74%
10.0	X	7.43%	CCL	7.68%
10.0	ORCL	7.38%	CYH	7.68%
10.0	WDC	6.79%	NVDA	7.56%
10.0	MU	6.58%	PWR	7.46%
10.0	CCL	6.25%	THC	6.95%
10.0	NFLX	5.78%	X	6.95%
10.0	AMAT	5.66%	NFLX	6.91%
10.0	HLT	5.55%	GE	6.64%
10.0	NWL	5.36%	MSTR	6.44%
10.0	GBTC	5.27%	BHC	6.4%
10.0	AVGO	5.2%	BA	6.37%
10.0	MSFT	5.14%	TSLA	6.3%
10.0	GE	5.07%	META	6.26%
10.0	THC	5.0%	GS	6.12%
10.0	CAH	4.92%	INTU	5.89%
10.0	IRM	4.83%	TXN	5.89%
10.0	ON	4.82%	LVS	5.72%
10.0	QQQ	4.69%	FCX	5.72%

P90D: 21d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-04-03 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
21.0	NVDA	37.75%	AAP	28.29%
21.0	VST	36.15%	MU	28.28%
21.0	MOS	35.96%	WDC	27.21%
21.0	CSTM	34.22%	ELAN	27.09%
21.0	AAP	28.69%	VST	25.51%
21.0	LVS	23.1%	CSTM	24.36%
21.0	AMD	21.26%	AVGO	22.29%
21.0	ELAN	20.36%	CYH	22.11%
21.0	BA	19.76%	ORCL	21.73%
21.0	LUMN	18.68%	ON	19.86%
21.0	ORCL	17.95%	NVDA	18.97%
21.0	CYH	17.08%	AMD	18.81%
21.0	MU	16.71%	CCL	18.12%
21.0	QQQ	16.33%	KALU	18.0%
21.0	MSFT	15.61%	THC	17.66%
21.0	THC	15.12%	MOS	16.92%
21.0	HLT	14.98%	PWR	16.76%
21.0	WYNN	14.61%	GE	16.08%
21.0	X	14.41%	META	15.65%
21.0	WDC	13.93%	X	14.98%
21.0	GE	13.68%	TSLA	14.73%
21.0	CCL	13.11%	INTU	14.67%
21.0	NFLX	12.9%	BA	14.35%
21.0	AVGO	12.68%	TXN	14.16%
21.0	ON	12.24%	MSFT	12.92%
21.0	IRM	11.71%	NFLX	12.85%
21.0	GBTC	11.71%	LVS	12.38%
21.0	CAH	11.24%	GS	11.9%
21.0	PWR	11.03%	FCX	11.51%
21.0	AMAT	10.9%	LUMN	11.25%

P30D: 1d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-06-02 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
1.0	BHC	2.61%	BHC	2.15%
1.0	LUMN	2.25%	ORCL	1.51%
1.0	CCL	1.43%	MU	1.22%
1.0	NVDA	1.15%	AMD	1.17%
1.0	AMD	1.02%	ON	1.17%
1.0	ORCL	0.96%	WDC	1.09%
1.0	GNRC	0.92%	CCL	0.98%
1.0	WDC	0.91%	GNRC	0.93%
1.0	ON	0.9%	GS	0.89%
1.0	ELAN	0.87%	AMAT	0.82%
1.0	LVS	0.82%	VST	0.79%
1.0	DHI	0.79%	NVDA	0.75%
1.0	MU	0.78%	LUMN	0.74%
1.0	AMAT	0.78%	INTC	0.72%
1.0	CLF	0.77%	CMG	0.65%
1.0	NWL	0.72%	TXN	0.64%
1.0	GS	0.67%	AA	0.58%
1.0	AA	0.67%	AVGO	0.57%
1.0	AVGO	0.6%	ZION	0.55%
1.0	PHM	0.56%	DHI	0.54%
1.0	UAA	0.56%	KEY	0.52%
1.0	CMG	0.54%	META	0.52%
1.0	BALL	0.54%	NFLX	0.5%
1.0	ZION	0.47%	MS	0.49%
1.0	VST	0.43%	TFC	0.49%
1.0	TXN	0.41%	CZR	0.49%
1.0	CSCO	0.4%	JPM	0.48%
1.0	KEY	0.37%	PWR	0.48%
1.0	QCOM	0.37%	MSTR	0.46%
1.0	KALU	0.36%	QCOM	0.45%

P30D: 10d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-06-02 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
10.0	BHC	15.4%	BHC	25.34%
10.0	ORCL	12.17%	ORCL	18.18%
10.0	AMD	10.29%	AMD	14.01%
10.0	NVDA	9.22%	MU	13.58%
10.0	WDC	8.51%	WDC	10.73%
10.0	MU	8.46%	VST	8.84%
10.0	CZR	7.46%	GS	7.83%
10.0	LUMN	6.72%	NEM	6.87%
10.0	AMAT	6.55%	INTC	6.47%
10.0	WYNN	5.77%	ON	6.46%
10.0	BALL	5.73%	AMAT	6.27%
10.0	LVS	5.55%	CAH	6.0%
10.0	GS	5.35%	CZR	5.91%
10.0	CMG	5.26%	CCL	5.65%
10.0	XOM	5.22%	WYNN	5.46%
10.0	GNRC	5.03%	NVDA	5.39%
10.0	VST	4.87%	GNRC	5.37%
10.0	CAH	4.65%	JPM	5.21%
10.0	ON	4.6%	CMG	5.07%
10.0	CCL	4.48%	XOM	5.02%
10.0	JPM	3.65%	CVS	4.6%
10.0	DHI	3.26%	TXN	4.43%
10.0	PHM	3.09%	BALL	4.37%
10.0	CSCO	3.0%	CSCO	3.98%
10.0	FITB	2.78%	MS	3.86%
10.0	CVS	2.76%	MSFT	3.77%
10.0	MS	2.76%	PWR	3.76%
10.0	INTC	2.71%	NFLX	3.57%
10.0	BAC	2.62%	LUMN	3.4%
10.0	NEM	2.37%	BAC	3.38%

Bottom 30 Tickers By ROEUB

All TMD: 1d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
1.0	SIVBQ	-0.53%	SIVBQ	-0.78%
1.0	LUMN	-0.44%	SBNY	-0.45%
1.0	IEP	-0.33%	FRCB	-0.23%
1.0	SBNY	-0.24%	IEP	-0.18%
1.0	CZR	-0.23%	AMC	-0.14%
1.0	NWL	-0.2%	VFC	-0.13%
1.0	GNRC	-0.12%	AAP	-0.13%
1.0	BIIB	-0.11%	NWL	-0.11%
1.0	FRCB	-0.1%	LUMN	-0.08%
1.0	AA	-0.09%	UAA	-0.06%
1.0	UAA	-0.08%	BHC	-0.06%
1.0	UNH	-0.08%	CZR	-0.06%
1.0	BXP	-0.06%	TLT	-0.05%
1.0	VFC	-0.06%	BIIB	-0.05%
1.0	AAP	-0.06%	INTC	-0.05%
1.0	TLT	-0.06%	BALL	-0.04%
1.0	BALL	-0.05%	LNC	-0.04%
1.0	GSK	-0.04%	BXP	-0.04%
1.0	BHP	-0.04%	GSK	-0.03%
1.0	CHTR	-0.04%	CVS	-0.03%
1.0	PEP	-0.04%	CLF	-0.03%
1.0	RIO	-0.04%	UNH	-0.03%
1.0	LNC	-0.04%	KHC	-0.03%
1.0	CMA	-0.04%	BMY	-0.03%
1.0	CYH	-0.04%	PEP	-0.03%
1.0	VZ	-0.03%	CMCSA	-0.03%
1.0	CTLT	-0.03%	ELAN	-0.02%
1.0	NAVI	-0.03%	GT	-0.02%
1.0	OXY	-0.03%	CNC	-0.02%
1.0	FSUGY	-0.03%	GNRC	-0.02%

All TMD: 10d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
10.0	SIVBQ	-3.66%	SBNY	-4.05%
10.0	IEP	-3.05%	SIVBQ	-3.9%
10.0	LUMN	-2.84%	FRCB	-2.19%
10.0	CZR	-2.66%	IEP	-1.67%
10.0	NWL	-1.81%	AMC	-1.56%
10.0	SBNY	-1.64%	VFC	-1.42%
10.0	GNRC	-1.38%	AAP	-1.21%
10.0	FRCB	-1.18%	NWL	-1.18%
10.0	VFC	-0.98%	CZR	-0.78%
10.0	UAA	-0.91%	UAA	-0.77%
10.0	BIIB	-0.91%	LUMN	-0.69%
10.0	AMC	-0.81%	BHC	-0.55%
10.0	BXP	-0.69%	CLF	-0.51%
10.0	AA	-0.66%	TLT	-0.51%
10.0	CLF	-0.65%	BIIB	-0.49%
10.0	UNH	-0.62%	INTC	-0.49%
10.0	LNC	-0.59%	LNC	-0.48%
10.0	INTC	-0.58%	BALL	-0.42%
10.0	AAP	-0.58%	BXP	-0.37%
10.0	BALL	-0.51%	AA	-0.35%
10.0	TLT	-0.45%	GNRC	-0.35%
10.0	FSUGY	-0.42%	ZION	-0.35%
10.0	KHC	-0.4%	CNC	-0.34%
10.0	CMA	-0.36%	ELAN	-0.34%
10.0	CMCSA	-0.32%	CYH	-0.34%
10.0	VZ	-0.32%	CVS	-0.34%
10.0	BHP	-0.3%	UNH	-0.33%
10.0	CVS	-0.28%	TFC	-0.29%
10.0	PEP	-0.27%	GSK	-0.29%
10.0	CYH	-0.26%	CMCSA	-0.29%

All TMD: 21d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
21.0	SIVBQ	-8.0%	SBNY	-11.16%
21.0	IEP	-7.27%	SIVBQ	-9.37%
21.0	CZR	-5.85%	FRCB	-6.02%
21.0	SBNY	-4.88%	AMC	-3.67%
21.0	LUMN	-4.8%	IEP	-3.6%
21.0	NWL	-3.45%	VFC	-2.92%
21.0	FRCB	-3.24%	NWL	-2.58%
21.0	GNRC	-3.05%	AAP	-2.35%
21.0	VFC	-2.39%	CZR	-1.81%
21.0	CLF	-1.87%	BHC	-1.77%
21.0	UAA	-1.72%	UAA	-1.46%
21.0	AMC	-1.38%	LUMN	-1.27%
21.0	AAP	-1.31%	INTC	-1.23%
21.0	INTC	-1.3%	CLF	-1.23%
21.0	AA	-1.28%	LNC	-1.13%
21.0	BIIB	-1.27%	AA	-1.09%
21.0	BXP	-1.26%	TLT	-1.07%
21.0	LNC	-1.16%	BALL	-0.93%
21.0	TLT	-1.09%	BIIB	-0.91%
21.0	BALL	-1.02%	GNRC	-0.87%
21.0	FSUGY	-1.02%	BXP	-0.8%
21.0	UNH	-0.95%	CNC	-0.74%
21.0	KHC	-0.91%	CVS	-0.73%
21.0	VZ	-0.83%	UNH	-0.67%
21.0	CVS	-0.77%	KHC	-0.65%
21.0	CMA	-0.76%	TFC	-0.63%
21.0	BHC	-0.74%	BMY	-0.6%
21.0	BHP	-0.72%	ZION	-0.58%
21.0	PEP	-0.62%	CMCSA	-0.57%
21.0	RIO	-0.62%	PEP	-0.54%

All TMD: 63d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
63.0	SIVBQ	-30.27%	SBNY	-37.59%
63.0	IEP	-24.87%	SIVBQ	-33.73%
63.0	SBNY	-19.01%	FRCB	-24.04%
63.0	FRCB	-15.74%	AMC	-15.47%
63.0	NWL	-14.05%	IEP	-11.93%
63.0	GNRC	-13.38%	AAP	-10.04%
63.0	LUMN	-13.31%	VFC	-8.68%
63.0	VFC	-10.74%	NWL	-8.45%
63.0	CZR	-9.81%	CLF	-6.76%
63.0	AAP	-8.6%	BHC	-6.32%
63.0	CLF	-8.59%	CZR	-6.09%
63.0	AMC	-8.23%	AA	-5.47%
63.0	UAA	-6.96%	UAA	-4.84%
63.0	BALL	-5.3%	INTC	-4.54%
63.0	BHC	-5.06%	LUMN	-3.95%
63.0	AA	-4.98%	ELAN	-3.68%
63.0	INTC	-4.49%	LNC	-3.6%
63.0	FSUGY	-3.76%	MOS	-3.53%
63.0	BXP	-3.7%	GNRC	-3.34%
63.0	BIIB	-3.61%	BALL	-3.2%
63.0	BHP	-3.61%	BXP	-3.14%
63.0	CYH	-3.49%	BIIB	-3.07%
63.0	TLT	-3.23%	TLT	-2.94%
63.0	VZ	-3.15%	CVS	-2.67%
63.0	CVS	-3.11%	CNC	-2.3%
63.0	KHC	-2.99%	BHP	-2.28%
63.0	LNC	-2.96%	KHC	-2.23%
63.0	ON	-2.71%	JAZZ	-2.17%
63.0	OXY	-2.6%	BMY	-2.15%
63.0	CSTM	-2.52%	PRGO	-2.14%

All TMD: 126d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
126.0	SIVBQ	-64.31%	SIVBQ	-65.15%
126.0	IEP	-50.1%	SBNY	-64.8%
126.0	FRCB	-39.92%	FRCB	-51.17%
126.0	SBNY	-33.47%	AMC	-29.49%
126.0	NWL	-32.66%	IEP	-22.85%
126.0	GNRC	-24.86%	AAP	-19.78%
126.0	LUMN	-23.21%	NWL	-15.88%
126.0	VFC	-20.33%	VFC	-13.17%
126.0	AAP	-18.54%	CLF	-10.97%
126.0	AMC	-17.49%	MOS	-9.58%
126.0	CLF	-13.31%	CZR	-8.98%
126.0	CZR	-12.21%	AA	-8.06%
126.0	MOS	-9.99%	INTC	-7.41%
126.0	UAA	-9.02%	BHC	-7.36%
126.0	CVS	-9.0%	ELAN	-7.07%
126.0	BALL	-8.78%	CVS	-6.72%
126.0	BHC	-7.15%	UAA	-6.57%
126.0	AA	-7.09%	PRGO	-5.75%
126.0	VZ	-6.46%	CTLT	-5.69%
126.0	BHP	-6.33%	LUMN	-5.58%
126.0	TLT	-6.19%	GNRC	-5.57%
126.0	CTLT	-6.16%	LNC	-5.42%
126.0	LNC	-6.06%	TLT	-5.32%
126.0	PRGO	-6.03%	BXP	-5.32%
126.0	KHC	-5.83%	BIIB	-4.99%
126.0	INTC	-5.68%	BALL	-4.96%
126.0	BXP	-5.52%	CNC	-4.94%
126.0	CNC	-5.34%	KHC	-4.49%
126.0	ON	-4.98%	BMY	-4.01%
126.0	CYH	-4.82%	GSK	-3.91%

All TMD: 252d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
252.0	SIVBQ	-165.64%	SBNY	-95.75%
252.0	FRCB	-122.39%	SIVBQ	-95.29%
252.0	IEP	-88.97%	FRCB	-91.61%
252.0	SBNY	-81.71%	AMC	-56.89%
252.0	NWL	-64.24%	IEP	-44.6%
252.0	AAP	-42.54%	AAP	-42.05%
252.0	CVS	-38.78%	NWL	-28.61%
252.0	VFC	-35.98%	VFC	-23.96%
252.0	AMC	-34.73%	MOS	-22.15%
252.0	GNRC	-32.99%	CVS	-17.93%
252.0	MOS	-32.4%	CLF	-16.91%
252.0	CLF	-30.06%	CZR	-13.9%
252.0	LUMN	-26.55%	PRGO	-12.91%
252.0	CZR	-22.91%	UAA	-12.11%
252.0	GT	-17.71%	AA	-11.72%
252.0	UAA	-16.92%	BMY	-11.5%
252.0	AA	-16.84%	INTC	-10.36%
252.0	PRGO	-16.66%	BIIB	-9.93%
252.0	JAZZ	-14.04%	JAZZ	-9.79%
252.0	BMY	-12.66%	CNC	-9.77%
252.0	KHC	-12.37%	BHC	-9.3%
252.0	CMA	-12.26%	TLT	-8.46%
252.0	BHC	-11.32%	KHC	-7.93%
252.0	TLT	-11.27%	GT	-7.69%
252.0	CNC	-10.77%	LUMN	-7.09%
252.0	BALL	-8.85%	OXY	-7.0%
252.0	CHTR	-8.63%	CTLT	-6.24%
252.0	BHP	-8.57%	BHP	-5.72%
252.0	INTC	-8.16%	LNC	-5.39%
252.0	CYH	-7.39%	CHTR	-5.11%

P365D: 1d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
1.0	IEP	-0.48%	IEP	-0.25%
1.0	BIIB	-0.43%	BIIB	-0.23%
1.0	AMAT	-0.25%	CLF	-0.19%
1.0	OXY	-0.21%	MRK	-0.18%
1.0	PCG	-0.19%	AMC	-0.15%
1.0	FSUGY	-0.16%	UNH	-0.15%
1.0	UNH	-0.16%	OXY	-0.14%
1.0	TEVA	-0.14%	LW	-0.13%
1.0	BHP	-0.14%	ADBE	-0.13%
1.0	ADBE	-0.13%	FSUGY	-0.12%
1.0	LEN	-0.13%	LEN	-0.08%
1.0	PEP	-0.12%	PEP	-0.08%
1.0	UAA	-0.12%	KHC	-0.08%
1.0	ON	-0.12%	AA	-0.08%
1.0	LW	-0.11%	CSTM	-0.08%
1.0	AMC	-0.11%	PCG	-0.07%
1.0	CZR	-0.11%	CZR	-0.07%
1.0	BBY	-0.1%	ON	-0.06%
1.0	AA	-0.1%	AMAT	-0.06%
1.0	CSTM	-0.09%	BHP	-0.06%
1.0	BHC	-0.09%	CNC	-0.06%
1.0	MRK	-0.08%	QCOM	-0.06%
1.0	AMZN	-0.08%	INTC	-0.05%
1.0	CMCSA	-0.08%	BBY	-0.04%
1.0	NWL	-0.07%	RIO	-0.04%
1.0	RIO	-0.07%	ZTS	-0.03%
1.0	KHC	-0.06%	LLY	-0.03%
1.0	AZN	-0.06%	AMGN	-0.03%
1.0	QQQ	-0.05%	CPRT	-0.03%
1.0	ACGL	-0.05%	AZN	-0.03%

P365D: 10d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
10.0	IEP	-5.39%	CLF	-2.51%
10.0	BIIB	-3.98%	IEP	-2.41%
10.0	INTC	-2.26%	BIIB	-2.29%
10.0	OXY	-1.63%	AMC	-1.89%
10.0	ADBE	-1.62%	MRK	-1.8%
10.0	AMAT	-1.57%	UNH	-1.57%
10.0	UNH	-1.54%	ADBE	-1.39%
10.0	MRK	-1.51%	FSUGY	-1.39%
10.0	FSUGY	-1.44%	LW	-1.25%
10.0	ON	-1.43%	OXY	-1.17%
10.0	KHC	-1.31%	LEN	-1.16%
10.0	CLF	-1.25%	AMAT	-1.01%
10.0	AMC	-1.23%	ON	-0.99%
10.0	LEN	-1.18%	QCOM	-0.94%
10.0	BHP	-1.0%	PEP	-0.91%
10.0	AMD	-0.98%	CZR	-0.9%
10.0	QCOM	-0.98%	INTC	-0.9%
10.0	GOOGL	-0.96%	KHC	-0.85%
10.0	PEP	-0.94%	AA	-0.81%
10.0	PCG	-0.91%	CSTM	-0.78%
10.0	RIO	-0.9%	PCG	-0.77%
10.0	CZR	-0.81%	BHP	-0.71%
10.0	BHC	-0.77%	CNC	-0.69%
10.0	CNC	-0.74%	BBY	-0.62%
10.0	LNC	-0.69%	AMD	-0.61%
10.0	LW	-0.69%	RIO	-0.54%
10.0	CMCSA	-0.67%	AMGN	-0.41%
10.0	AA	-0.63%	AAPL	-0.4%
10.0	PHM	-0.56%	FCX	-0.39%
10.0	WDC	-0.52%	LLY	-0.38%

P365D: 21d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
21.0	IEP	-13.45%	CLF	-5.84%
21.0	BIIB	-7.63%	IEP	-5.47%
21.0	INTC	-5.25%	BIIB	-4.68%
21.0	CLF	-4.18%	UNH	-3.95%
21.0	ON	-4.16%	MRK	-3.9%
21.0	UNH	-4.04%	AMC	-3.71%
21.0	MRK	-3.69%	LEN	-3.23%
21.0	OXY	-3.68%	OXY	-2.83%
21.0	ADBE	-3.44%	FSUGY	-2.68%
21.0	LEN	-3.43%	INTC	-2.62%
21.0	AMAT	-3.21%	ON	-2.58%
21.0	FSUGY	-2.94%	ADBE	-2.52%
21.0	DHI	-2.62%	PEP	-2.16%
21.0	PEP	-2.47%	CZR	-2.03%
21.0	KHC	-2.39%	AMAT	-1.99%
21.0	AMD	-2.32%	KHC	-1.92%
21.0	AMC	-2.32%	DHI	-1.89%
21.0	CZR	-2.24%	LW	-1.78%
21.0	WDC	-2.22%	QCOM	-1.76%
21.0	BHC	-1.95%	CNC	-1.63%
21.0	RIO	-1.88%	BBY	-1.43%
21.0	BHP	-1.77%	CSTM	-1.39%
21.0	QCOM	-1.73%	PCG	-1.38%
21.0	PHM	-1.69%	AMD	-1.37%
21.0	CNC	-1.64%	AA	-1.27%
21.0	CMCSA	-1.41%	BHP	-1.2%
21.0	AA	-1.35%	PHM	-1.02%
21.0	BBY	-1.29%	AMGN	-0.94%
21.0	LNC	-1.17%	RIO	-0.93%
21.0	PCG	-1.04%	CMCSA	-0.86%

P365D: 63d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
63.0	IEP	-40.84%	CLF	-17.47%
63.0	ON	-26.83%	IEP	-16.49%
63.0	BIIB	-25.14%	BIIB	-15.78%
63.0	AMD	-20.72%	AMC	-15.25%
63.0	ADBE	-17.0%	ON	-14.68%
63.0	LEN	-16.55%	LEN	-13.69%
63.0	MRK	-16.14%	MRK	-12.54%
63.0	OXY	-15.41%	CSTM	-11.53%
63.0	CLF	-15.21%	UNH	-11.52%
63.0	CSTM	-15.16%	ADBE	-11.13%
63.0	DHI	-14.34%	DHI	-10.4%
63.0	AMAT	-14.07%	OXY	-9.58%
63.0	CZR	-12.47%	AMD	-9.44%
63.0	AMC	-12.38%	CYH	-9.43%
63.0	WDC	-11.91%	CZR	-9.11%
63.0	UNH	-11.46%	BBY	-8.34%
63.0	PHM	-9.93%	WDC	-8.15%
63.0	PEP	-9.92%	AMAT	-7.75%
63.0	BBY	-9.6%	PEP	-7.73%
63.0	PCG	-9.6%	FSUGY	-7.43%
63.0	FSUGY	-8.67%	CNC	-6.75%
63.0	INTC	-8.52%	KHC	-6.73%
63.0	CYH	-8.32%	PHM	-6.7%
63.0	BHP	-7.71%	BALL	-5.99%
63.0	KHC	-7.58%	NAVI	-5.76%
63.0	QCOM	-5.85%	QCOM	-5.54%
63.0	CNC	-5.77%	AAP	-5.33%
63.0	BHC	-5.69%	ELAN	-4.97%
63.0	NWL	-5.66%	FCX	-4.93%
63.0	VFC	-5.57%	ZTS	-4.79%

P365D: 126d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
126.0	IEP	-87.3%	ON	-33.83%
126.0	ON	-66.49%	AMC	-33.44%
126.0	AMD	-53.54%	IEP	-32.07%
126.0	ADBE	-40.54%	CLF	-31.61%
126.0	DHI	-39.79%	LEN	-31.38%
126.0	AMC	-36.96%	BIIB	-28.83%
126.0	CZR	-36.31%	CYH	-27.23%
126.0	LEN	-36.26%	AMD	-24.85%
126.0	BIIB	-35.25%	DHI	-24.73%
126.0	PCG	-35.21%	MRK	-22.29%
126.0	PHM	-32.17%	ADBE	-22.22%
126.0	MRK	-31.63%	CSTM	-22.18%
126.0	WDC	-31.45%	CZR	-21.98%
126.0	UNH	-31.24%	WDC	-21.71%
126.0	CSTM	-29.47%	UNH	-21.39%
126.0	CLF	-29.27%	LW	-20.43%
126.0	CYH	-26.84%	PHM	-18.61%
126.0	AMAT	-24.8%	BBY	-16.58%
126.0	NWL	-24.63%	GNRC	-16.29%
126.0	BBY	-23.27%	BALL	-16.03%
126.0	OXY	-22.65%	FSUGY	-15.97%
126.0	BHP	-21.25%	PEP	-15.83%
126.0	FSUGY	-20.95%	OXY	-15.74%
126.0	PEP	-20.89%	PCG	-15.39%
126.0	IRM	-20.19%	AA	-15.37%
126.0	BHC	-17.97%	UAA	-14.97%
126.0	KHC	-17.22%	AMAT	-14.93%
126.0	ELAN	-16.63%	FCX	-14.76%
126.0	FCX	-16.46%	KHC	-14.4%
126.0	INTC	-16.44%	IRM	-14.35%

P90D: 1d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-04-03 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
1.0	UNH	-0.81%	UNH	-0.81%
1.0	PCG	-0.61%	BMY	-0.36%
1.0	KHC	-0.42%	PCG	-0.34%
1.0	PEP	-0.35%	KHC	-0.29%
1.0	JAZZ	-0.34%	CNC	-0.26%
1.0	LLY	-0.34%	PEP	-0.22%
1.0	TMUS	-0.3%	CPRT	-0.22%
1.0	CNC	-0.29%	LW	-0.21%
1.0	BMY	-0.29%	SNY	-0.19%
1.0	OXY	-0.23%	JAZZ	-0.18%
1.0	T	-0.19%	TMUS	-0.17%
1.0	MSI	-0.19%	AMGN	-0.16%
1.0	LNC	-0.18%	IEP	-0.15%
1.0	CPRT	-0.17%	POST	-0.13%
1.0	POST	-0.15%	MRK	-0.12%
1.0	FIS	-0.13%	ABBV	-0.12%
1.0	CMCSA	-0.12%	ORLY	-0.1%
1.0	AZN	-0.11%	VZ	-0.08%
1.0	TRGP	-0.11%	AZN	-0.08%
1.0	TLT	-0.11%	ACGL	-0.07%
1.0	SNY	-0.09%	TLT	-0.06%
1.0	XOM	-0.09%	XOM	-0.05%
1.0	LW	-0.06%	MSI	-0.04%
1.0	AA	-0.06%	BIIB	-0.04%
1.0	TEVA	-0.06%	AZO	-0.04%
1.0	ABBV	-0.05%	OXY	-0.03%
1.0	VZ	-0.05%	TRGP	-0.02%
1.0	GLD	-0.05%	MUB	-0.02%
1.0	MRK	-0.04%	ZTS	-0.02%
1.0	ORLY	-0.03%	GSK	-0.01%

P90D: 10d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-04-03 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
10.0	UNH	-11.02%	UNH	-10.71%
10.0	KHC	-4.05%	PCG	-3.38%
10.0	PCG	-3.6%	CPRT	-3.12%
10.0	CPRT	-2.53%	CNC	-2.75%
10.0	PEP	-2.51%	KHC	-2.4%
10.0	CNC	-2.35%	TMUS	-2.2%
10.0	TMUS	-2.16%	BMY	-2.12%
10.0	BMY	-1.84%	PEP	-2.08%
10.0	SNY	-0.85%	SNY	-1.1%
10.0	POST	-0.69%	POST	-0.89%
10.0	VZ	-0.51%	LW	-0.61%
10.0	TLT	-0.47%	ORLY	-0.57%
10.0	AMGN	-0.44%	VZ	-0.57%
10.0	MSI	-0.32%	AMGN	-0.41%
10.0	LW	-0.3%	TLT	-0.39%
10.0	ORLY	-0.28%	GME	-0.17%
10.0	GME	-0.14%	MSI	-0.14%
10.0	MRK	0.07%	AZO	-0.0%
10.0	ACGL	0.12%	MRK	0.0%
10.0	CMCSA	0.14%	ACGL	0.0%
10.0	HD	0.17%	CVS	0.05%
10.0	MUB	0.2%	MUB	0.1%
10.0	VCSH	0.35%	VCSH	0.2%
10.0	GILD	0.37%	IEP	0.28%
10.0	CVS	0.39%	LQD	0.37%
10.0	ABBV	0.42%	HD	0.45%
10.0	LQD	0.43%	LEN	0.53%
10.0	JAZZ	0.45%	CMCSA	0.56%
10.0	AZO	0.47%	TRGP	0.57%
10.0	T	0.55%	JAZZ	0.61%

P90D: 21d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-04-03 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
21.0	UNH	-19.19%	UNH	-20.13%
21.0	KHC	-7.85%	CPRT	-8.51%
21.0	CPRT	-7.01%	PCG	-6.99%
21.0	CNC	-5.15%	KHC	-5.75%
21.0	PEP	-5.11%	CNC	-5.63%
21.0	TMUS	-4.32%	TMUS	-4.1%
21.0	PCG	-3.52%	PEP	-3.86%
21.0	SNY	-2.44%	SNY	-3.2%
21.0	BMY	-2.43%	BMY	-2.8%
21.0	POST	-1.72%	POST	-1.86%
21.0	MRK	-1.47%	TLT	-1.21%
21.0	MSI	-1.29%	ORLY	-1.13%
21.0	TLT	-1.21%	CLF	-1.13%
21.0	LLY	-0.86%	MSI	-0.95%
21.0	ORLY	-0.57%	MRK	-0.87%
21.0	VZ	-0.4%	IEP	-0.63%
21.0	TRGP	-0.25%	LLY	-0.61%
21.0	IEP	-0.21%	CVS	-0.58%
21.0	GME	-0.11%	VZ	-0.38%
21.0	CVS	0.04%	TRGP	-0.34%
21.0	JAZZ	0.06%	MUB	0.03%
21.0	AMGN	0.12%	VCSH	0.27%
21.0	MUB	0.12%	AZO	0.37%
21.0	CLF	0.29%	AMGN	0.42%
21.0	AAPL	0.38%	AAPL	0.44%
21.0	VCSH	0.43%	ACGL	0.55%
21.0	RIO	0.48%	JAZZ	0.55%
21.0	LQD	0.52%	RIO	0.55%
21.0	ACGL	0.78%	LQD	0.57%
21.0	HD	0.79%	DHI	0.72%

P30D: 1d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-06-02 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
1.0	PCG	-2.11%	GME	-1.02%
1.0	CYH	-0.87%	PCG	-0.9%
1.0	GT	-0.63%	CYH	-0.57%
1.0	GME	-0.61%	AMC	-0.53%
1.0	COST	-0.53%	ZTS	-0.42%
1.0	BIIB	-0.37%	GSK	-0.42%
1.0	TEVA	-0.37%	GT	-0.35%
1.0	GSK	-0.36%	COST	-0.34%
1.0	BMY	-0.32%	AAP	-0.31%
1.0	LW	-0.32%	TSLA	-0.29%
1.0	KHC	-0.3%	LW	-0.29%
1.0	AAP	-0.25%	ACGL	-0.28%
1.0	ACGL	-0.22%	BMY	-0.27%
1.0	BBY	-0.2%	IEP	-0.24%
1.0	BUD	-0.2%	BIIB	-0.22%
1.0	JAZZ	-0.19%	ADBE	-0.2%
1.0	AMC	-0.19%	BUD	-0.19%
1.0	ZTS	-0.14%	CPRT	-0.18%
1.0	MOS	-0.14%	VFC	-0.17%
1.0	ADBE	-0.13%	GWW	-0.16%
1.0	TMUS	-0.12%	KHC	-0.16%
1.0	CPRT	-0.12%	AMGN	-0.16%
1.0	PRGO	-0.11%	AZN	-0.15%
1.0	GWW	-0.09%	TEVA	-0.13%
1.0	VZ	-0.07%	BHP	-0.13%
1.0	AZO	-0.06%	GLD	-0.11%
1.0	AZN	-0.06%	RIO	-0.1%
1.0	BHP	-0.05%	JAZZ	-0.1%
1.0	GLD	-0.05%	VZ	-0.09%
1.0	MSI	-0.04%	MNST	-0.09%

P30D: 10d

Results reflect ticker level average ROEUB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-06-02 through 2025-06-27

Horizon	Ticker_V	ROEUB_V	Ticker_S	ROEUB_S
10.0	PCG	-14.04%	GME	-15.72%
10.0	GT	-6.95%	AMC	-8.66%
10.0	BIIB	-6.87%	PCG	-8.52%
10.0	GME	-6.83%	GT	-7.22%
10.0	BHP	-6.46%	AAP	-6.49%
10.0	GSK	-5.88%	ADBE	-6.41%
10.0	KHC	-5.78%	VFC	-6.26%
10.0	COST	-5.77%	GSK	-5.98%
10.0	BMY	-5.49%	ZTS	-5.94%
10.0	FSUGY	-4.72%	CYH	-5.83%
10.0	BA	-4.44%	BMY	-4.26%
10.0	TMUS	-4.21%	BBY	-4.22%
10.0	AZN	-4.0%	BIIB	-4.2%
10.0	CPRT	-3.84%	BHP	-4.04%
10.0	AZO	-3.75%	CPRT	-3.91%
10.0	LW	-3.63%	GWW	-3.89%
10.0	ACGL	-3.62%	TMUS	-3.85%
10.0	ADBE	-3.59%	BA	-3.78%
10.0	GWW	-3.55%	AZN	-3.53%
10.0	VNO	-3.46%	LW	-3.51%
10.0	BBY	-2.96%	EXPE	-3.22%
10.0	AMC	-2.94%	SNY	-3.18%
10.0	ZTS	-2.58%	COST	-3.12%
10.0	AMGN	-2.48%	VZ	-3.08%
10.0	VFC	-2.46%	FSUGY	-2.98%
10.0	JAZZ	-2.42%	TEVA	-2.91%
10.0	AAP	-2.39%	KHC	-2.85%
10.0	CYH	-2.35%	ISRG	-2.8%
10.0	CLF	-2.31%	ACGL	-2.8%
10.0	RIO	-2.31%	AMGN	-2.72%

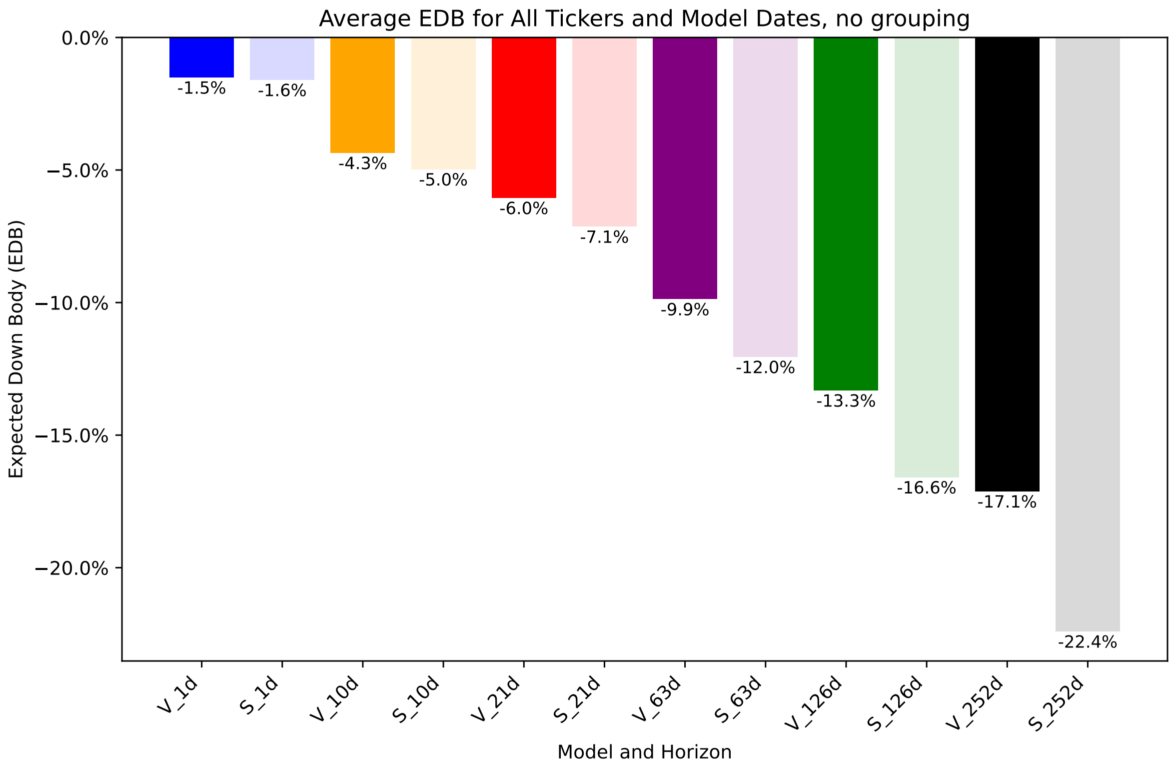
Expected Down Body (EDB)

Historic Average Levels

Here we compare Vector Model (“V”, dark shading) and Sigma (“S”, light shading) EDB levels by horizon, on average across all ticker-model dates for the lookback window indicated.

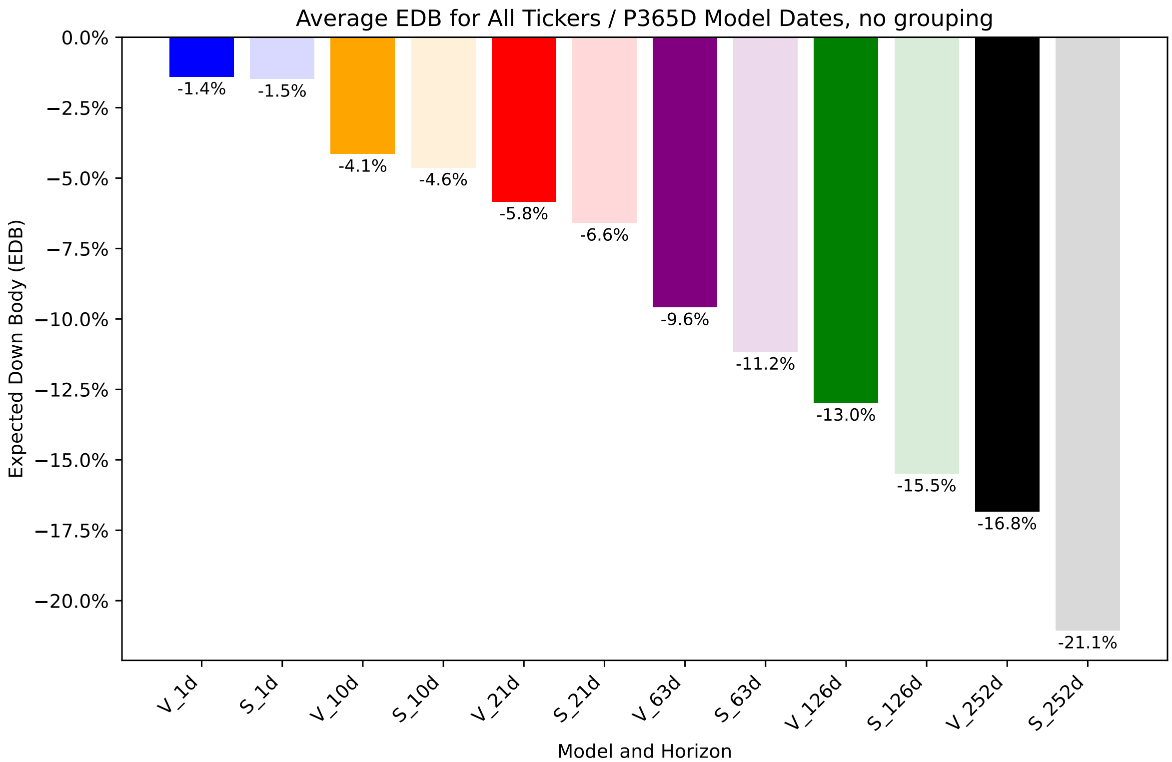
All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-06-27



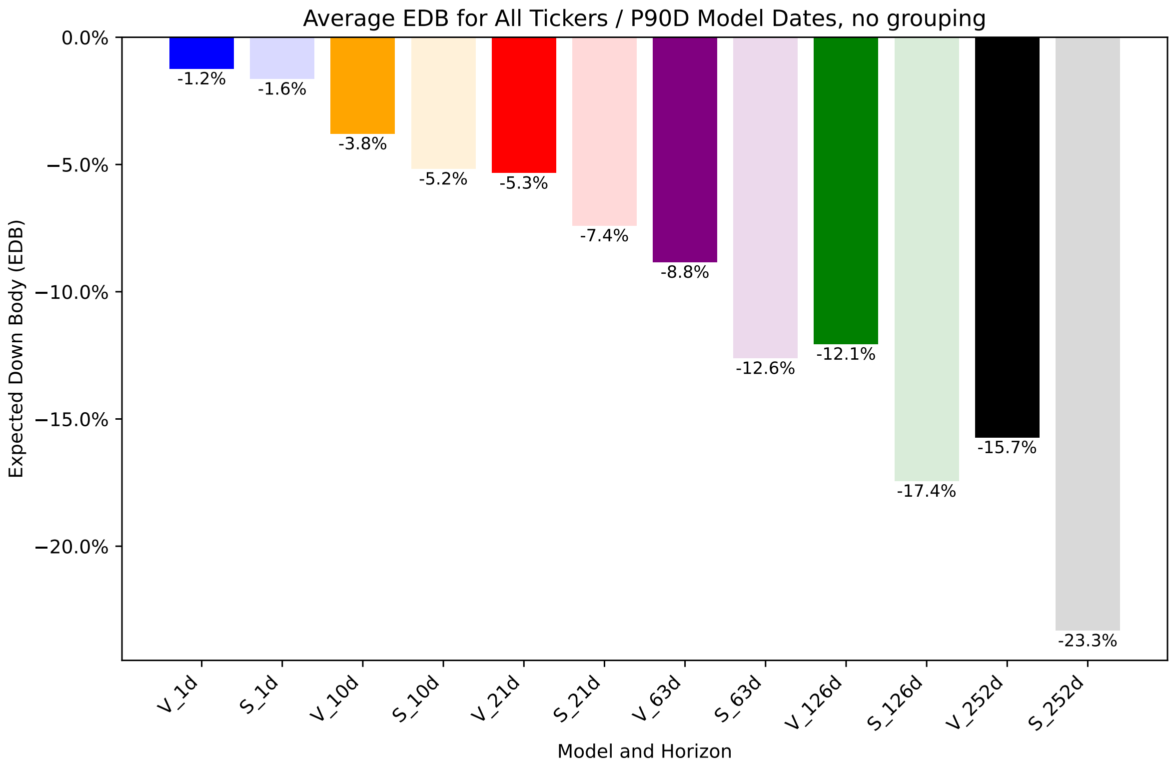
Prior 365 Calendar Days (P365D)

Period examined: All model dates from 2024-07-02 through 2025-06-27



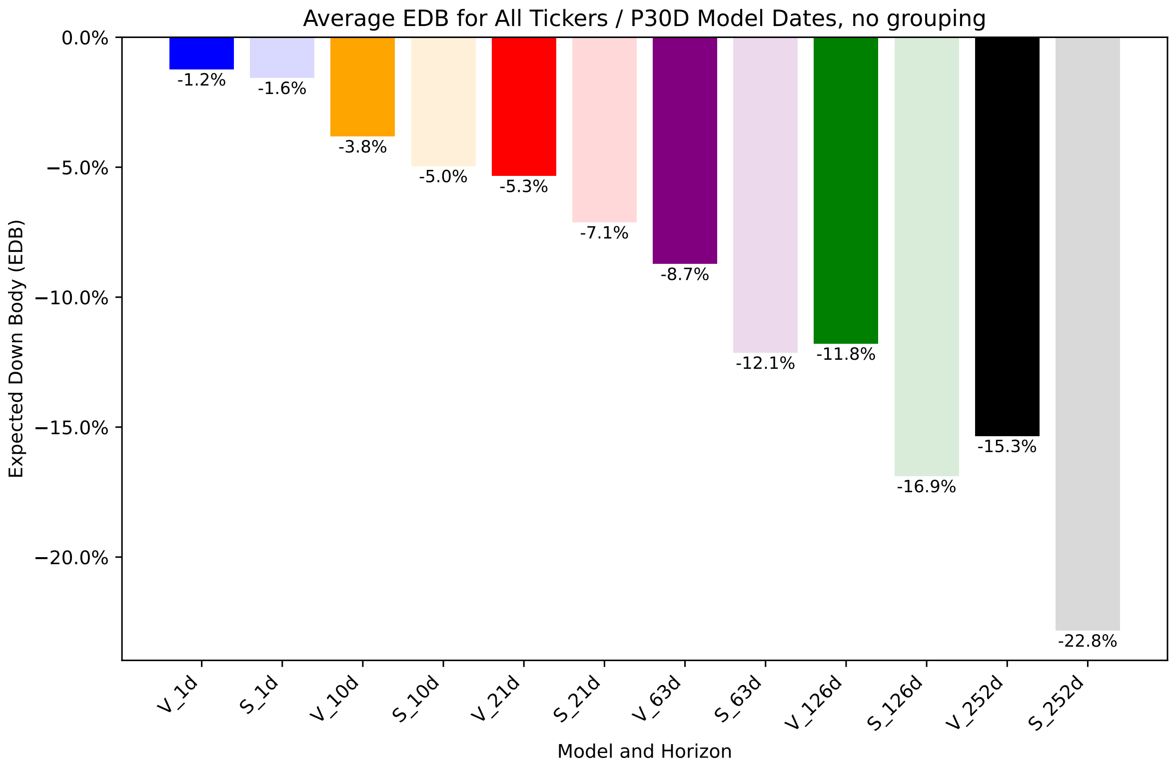
Prior 90 Calendar Days (P90D)

Period examined: All model dates from 2025-04-03 through 2025-06-27



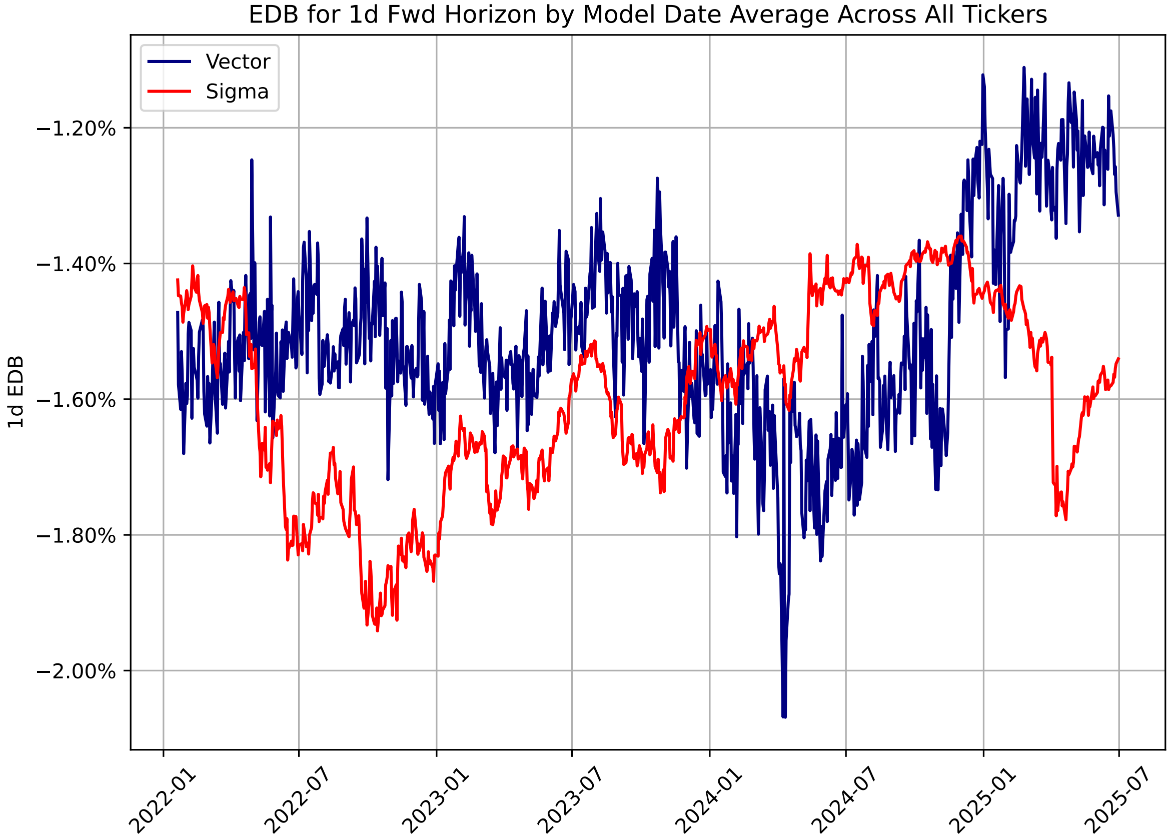
Prior 30 Calendar Days (P30D)

Period examined: All model dates from 2025-06-02 through 2025-06-27

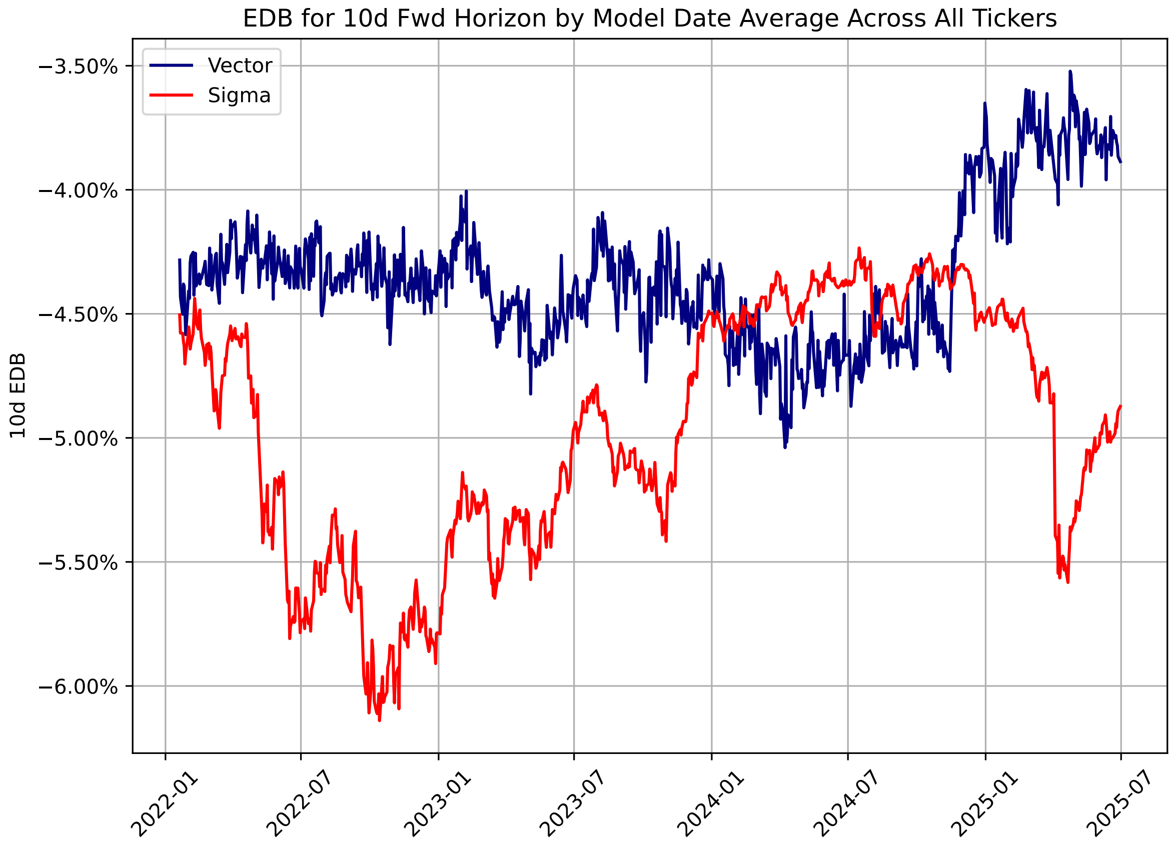


EDB by Model Date Detail

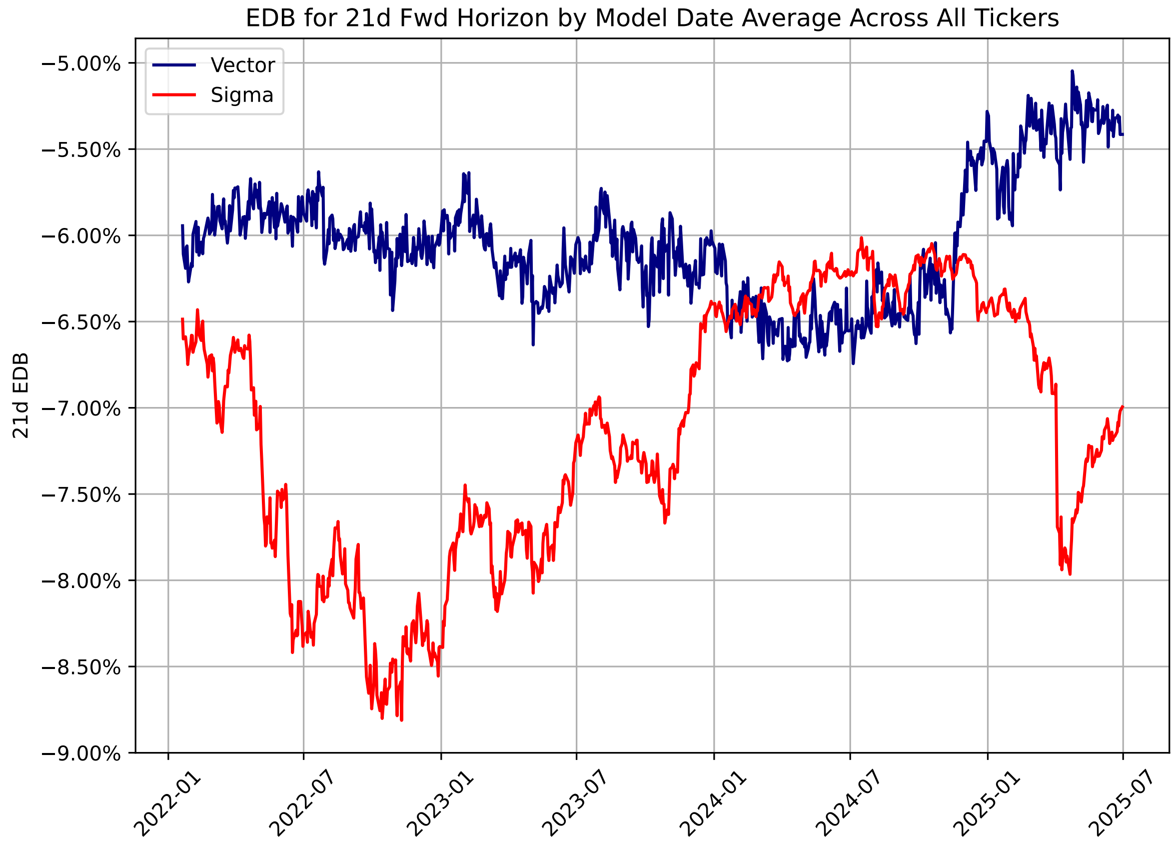
1d Horizon



10d Horizon

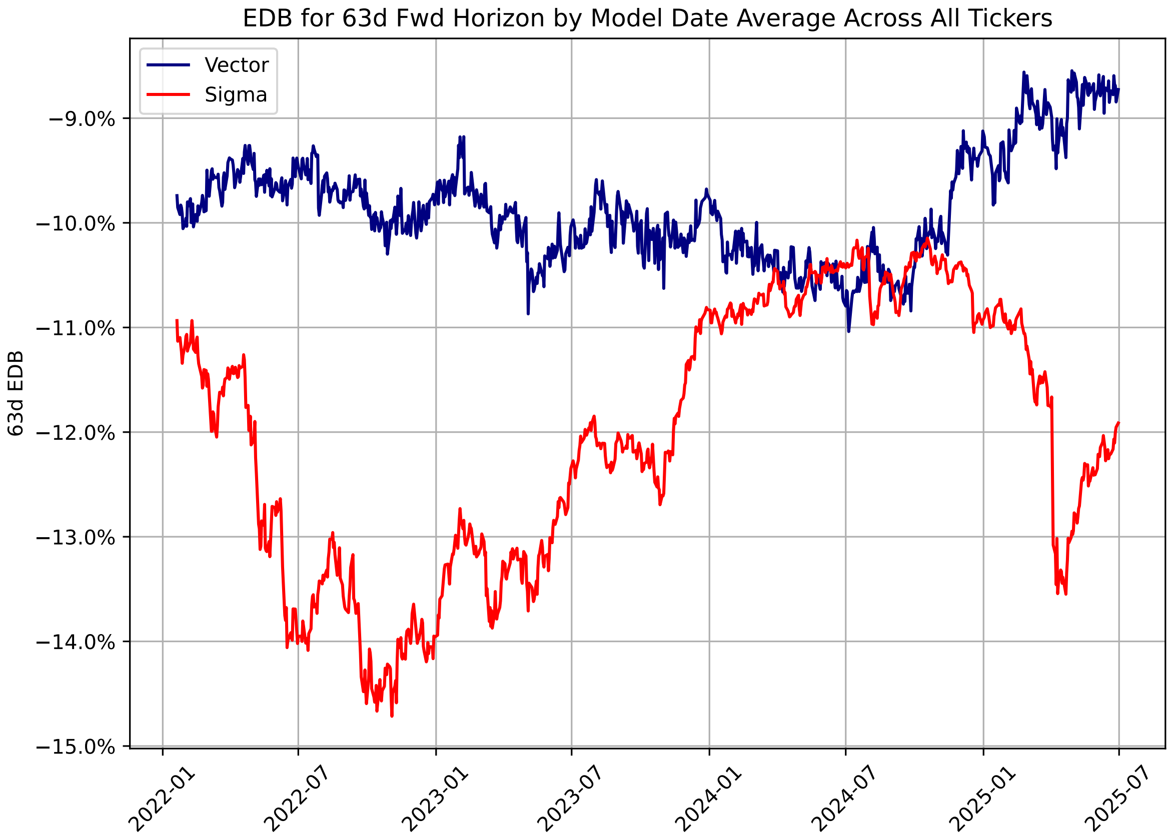

EDB for 10d Fwd Horizon by Model Date Average Across All Tickers
Vector
Sigma
10d EDB
−3.50%
−4.00%
−4.50%
−5.00%
−5.50%
−6.00%
2022-01
2022-07
2023-01
2023-07
2024-01
2024-07
2025-01
2025-07

21d Horizon



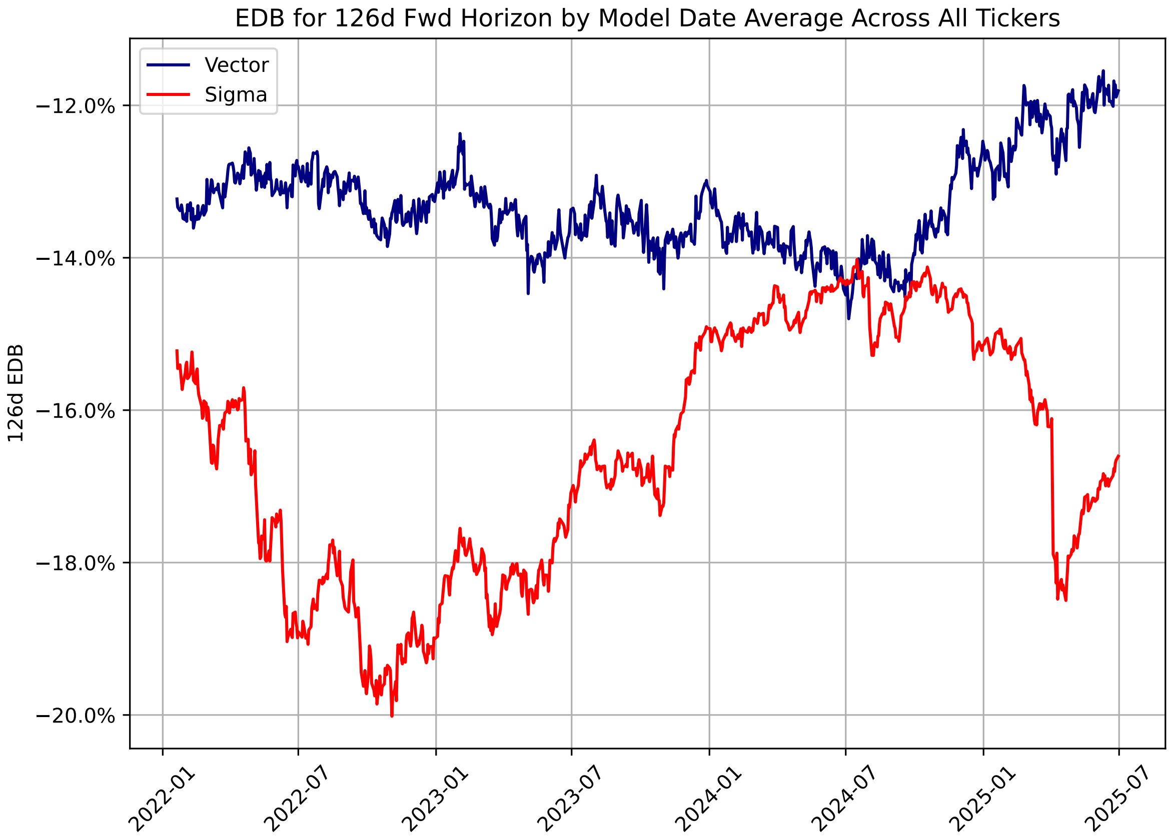
EDB for 21d Fwd Horizon by Model Date Average Across All Tickers
Vector
Sigma
21d EDB
−5.00%
−5.50%
−6.00%
−6.50%
−7.00%
−7.50%
−8.00%
−8.50%
−9.00%
2022-01
2022-07
2023-01
2023-07
2024-01
2024-07
2025-01
2025-07

63d Horizon

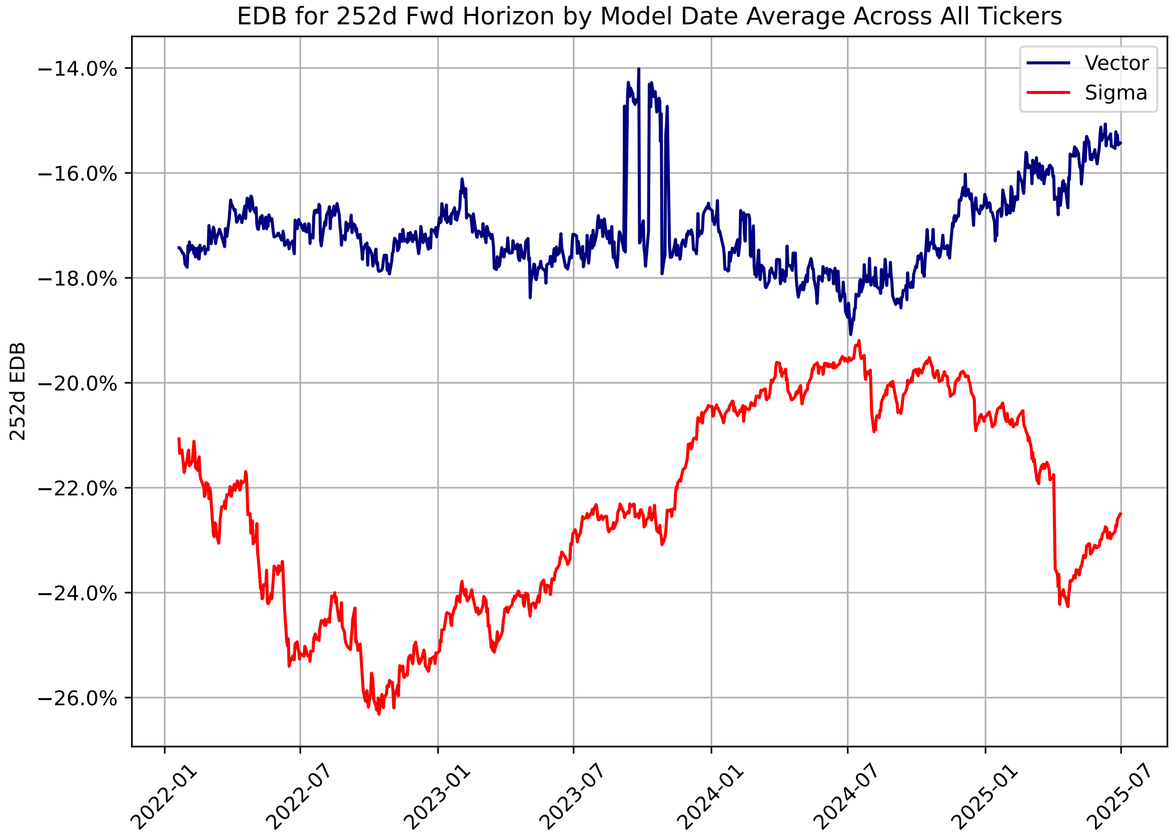


EDB for 63d Fwd Horizon by Model Date Average Across All Tickers
Vector
Sigma
63d EDB
−9.0%
−10.0%
−11.0%
−12.0%
−13.0%
−14.0%
−15.0%
2022-01
2022-07
2023-01
2023-07
2024-01
2024-07
2025-01
2025-07

126d Horizon



252d Horizon



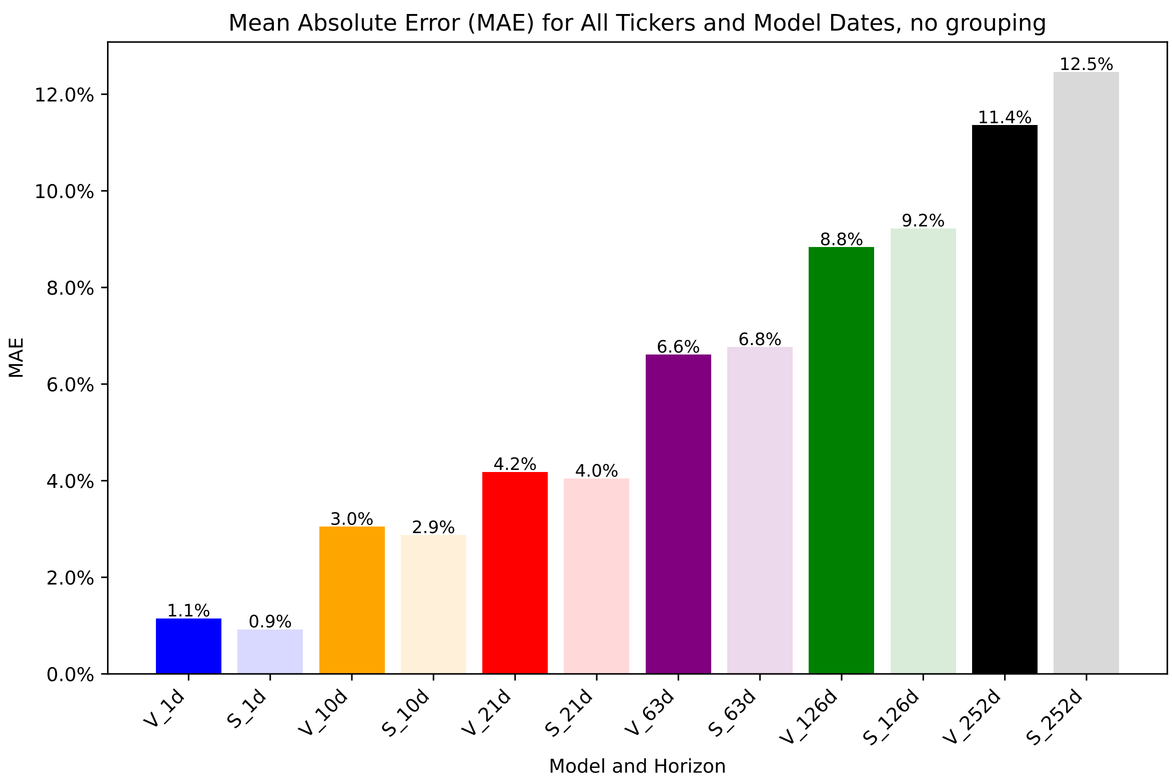
Performance Summary - MAE of EDB vs. Actual Fwd Returns

We use Mean Absolute Error (MAE) to assess how accurate Vector Model EB metrics are relative to those based upon Sigma.

Performance includes only those ticker - model dates whose foward performance is directionally "down" but inside of the 95th %tile forecasted for given model. Thus, these statistics are not perfectly comparable across models, or even horizons. Consider them alongside each model's breakage rates for the 95D percentile (i.e., VaR breakage rates).

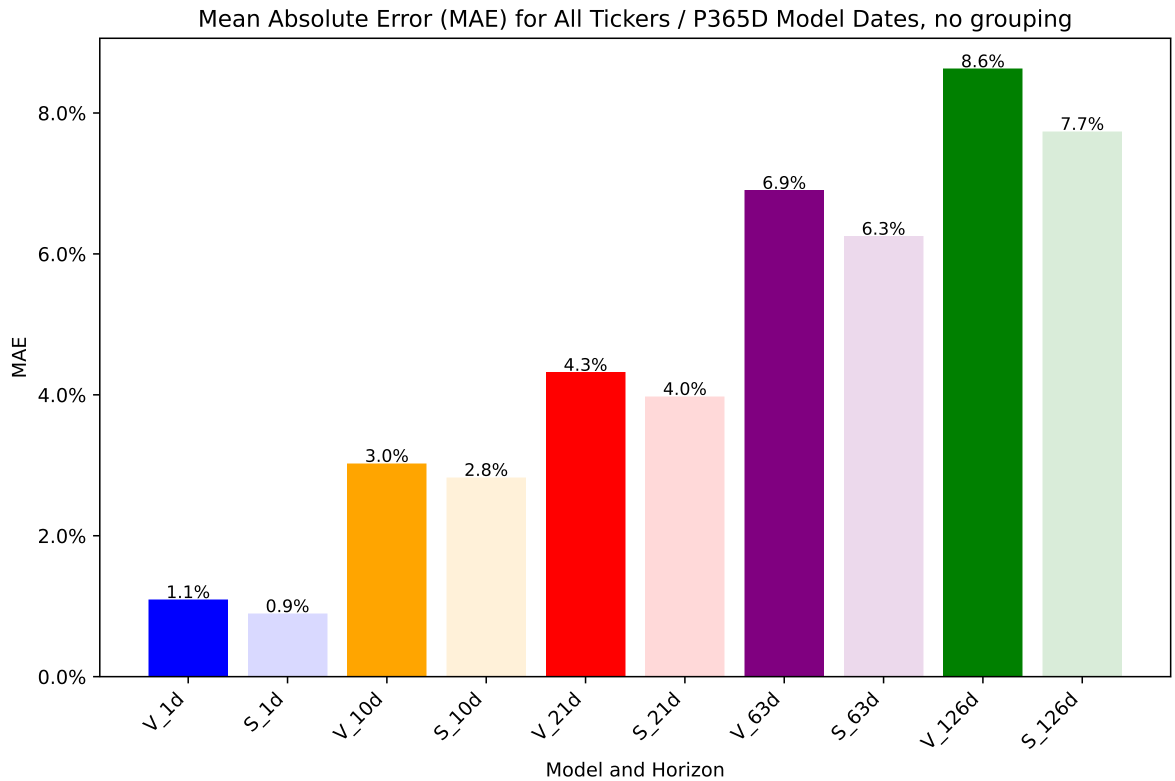
All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-06-27



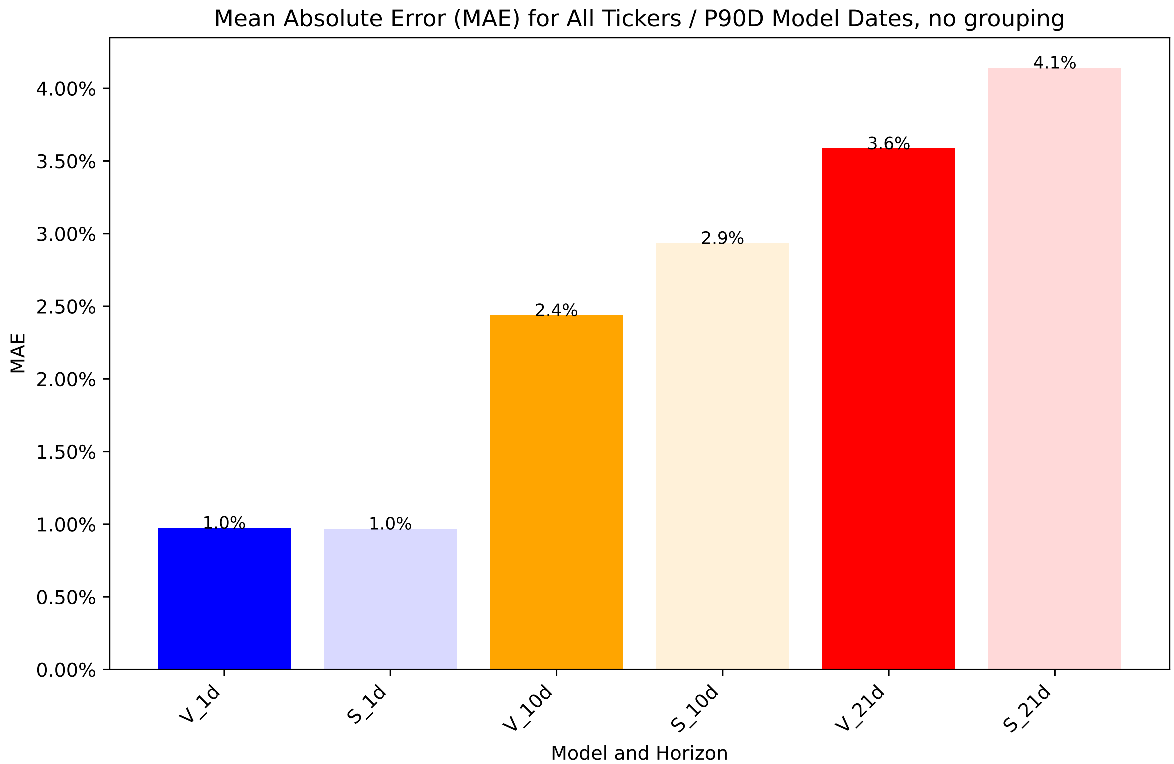
Prior 365 Calendar Days (P365D)

Period examined: All model dates from 2024-07-02 through 2025-06-27



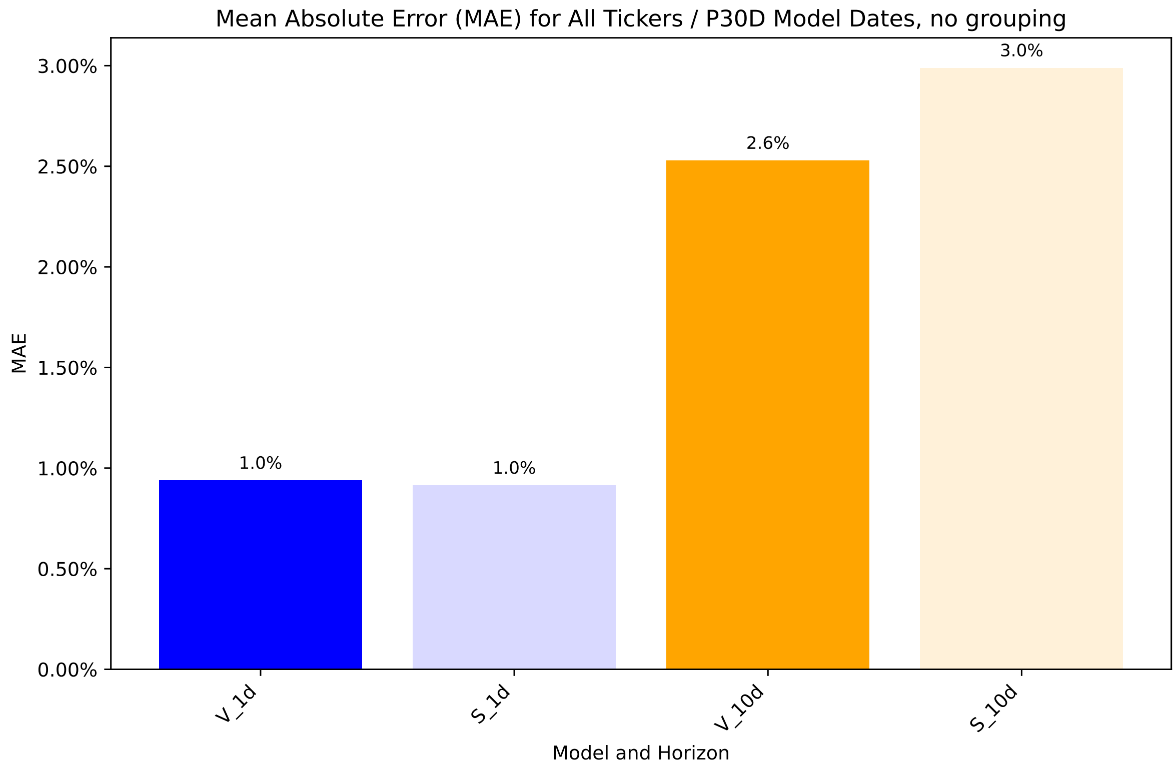
Prior 90 Calendar Days (P90D)

Period examined: All model dates from 2025-04-03 through 2025-06-27



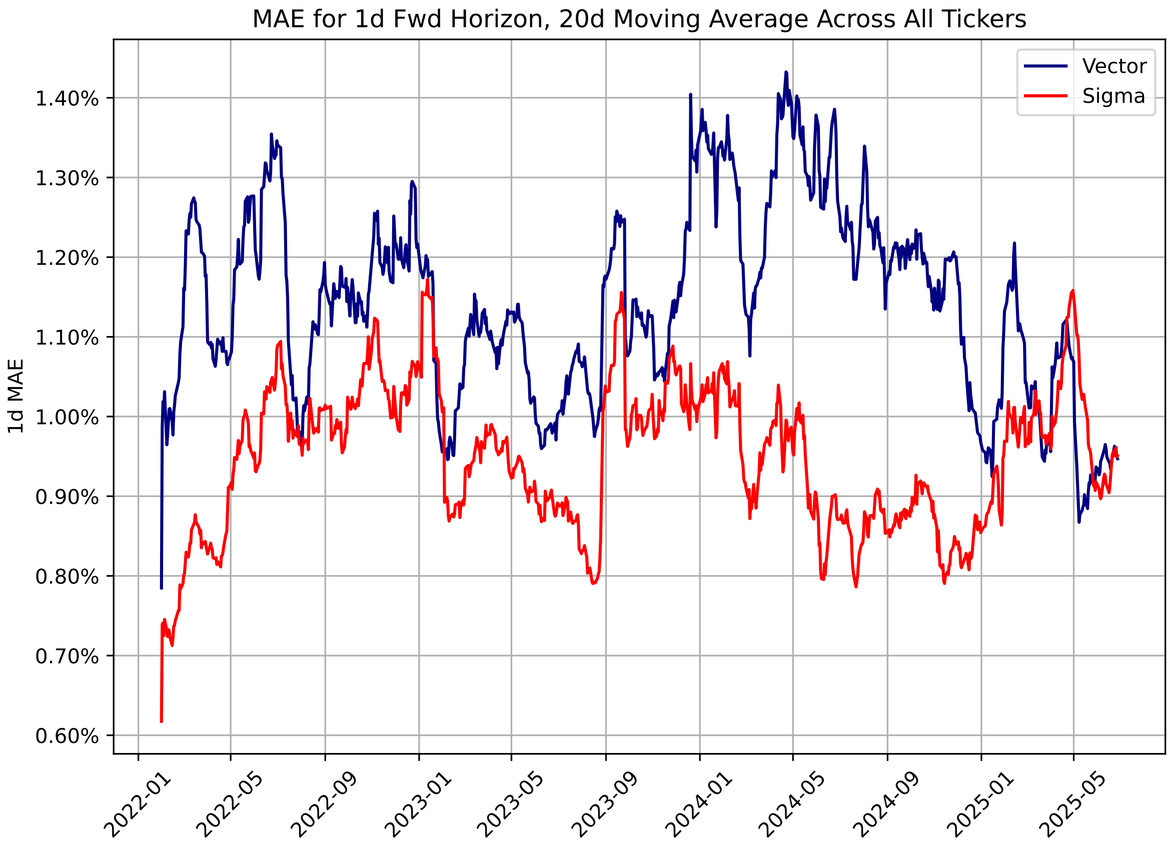
Prior 30 Calendar Days (P30D)

Period examined: All model dates from 2025-06-02 through 2025-06-27

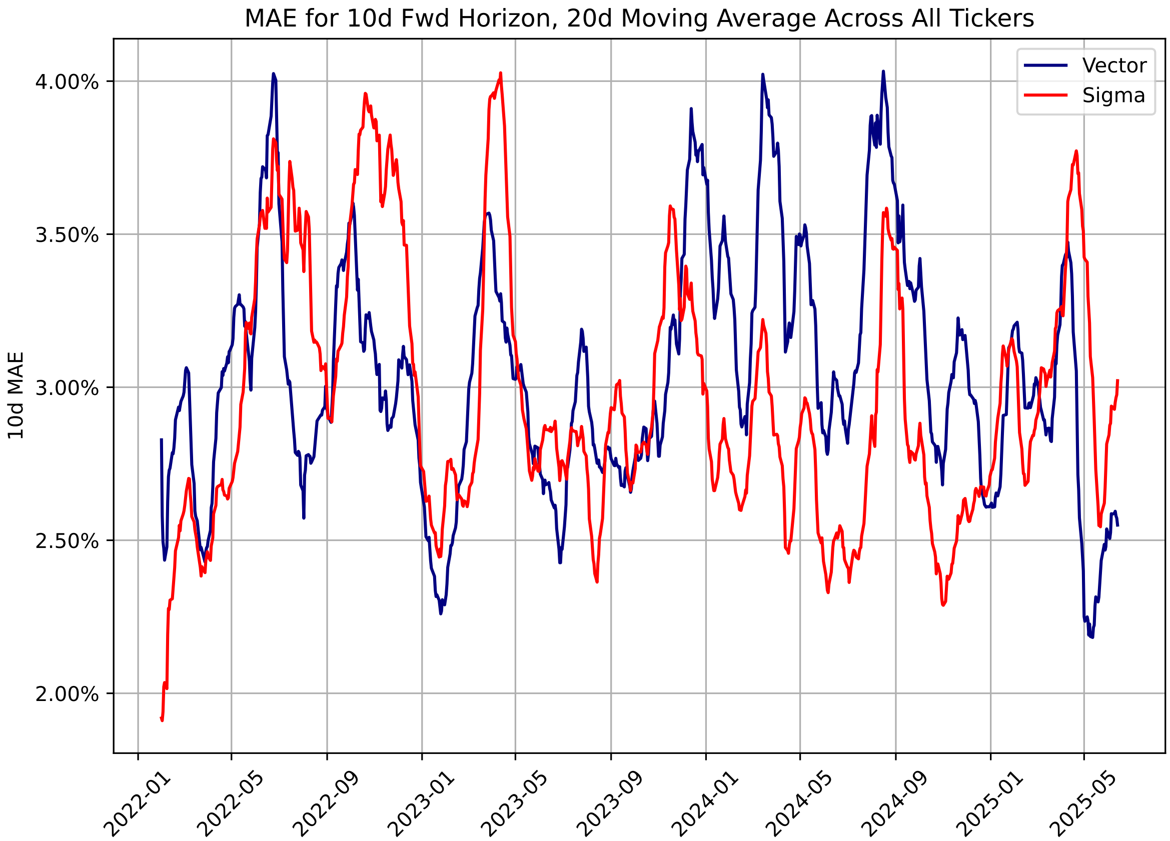


MAE by Model Date Detail

1d Horizon

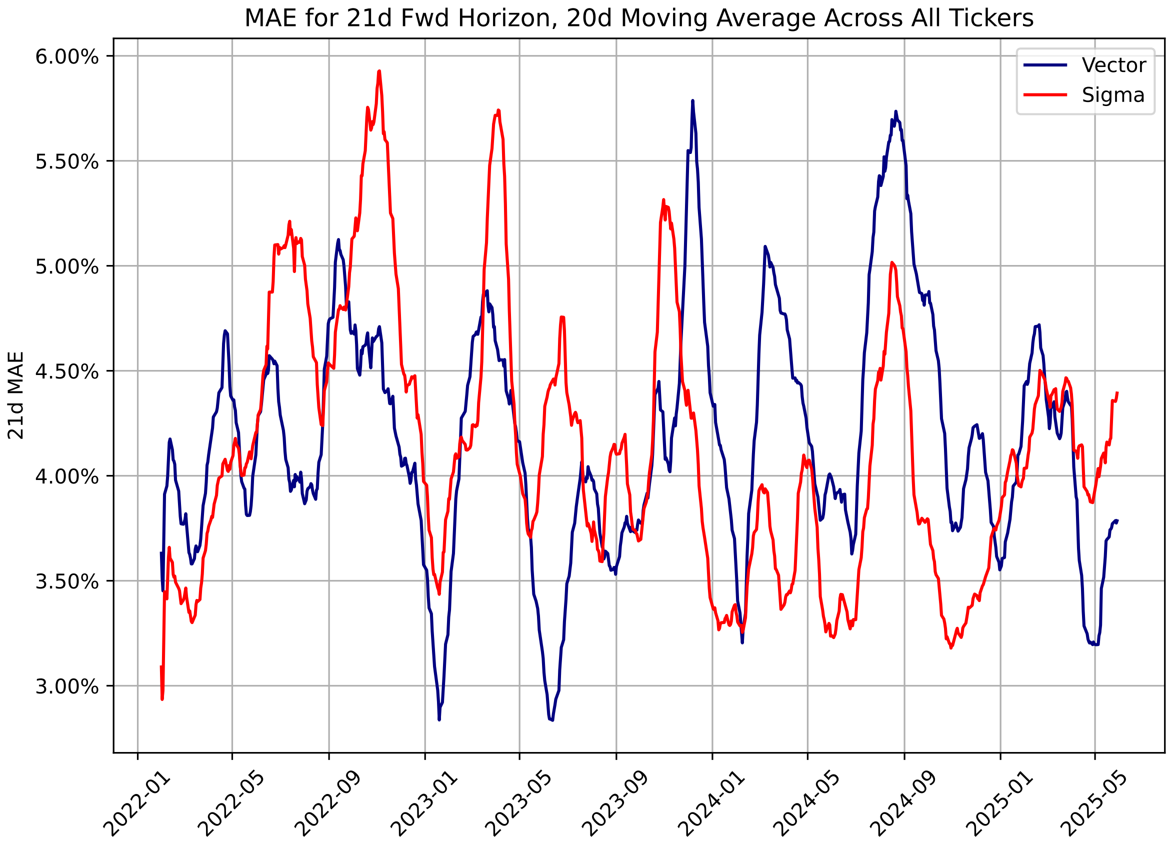


10d Horizon



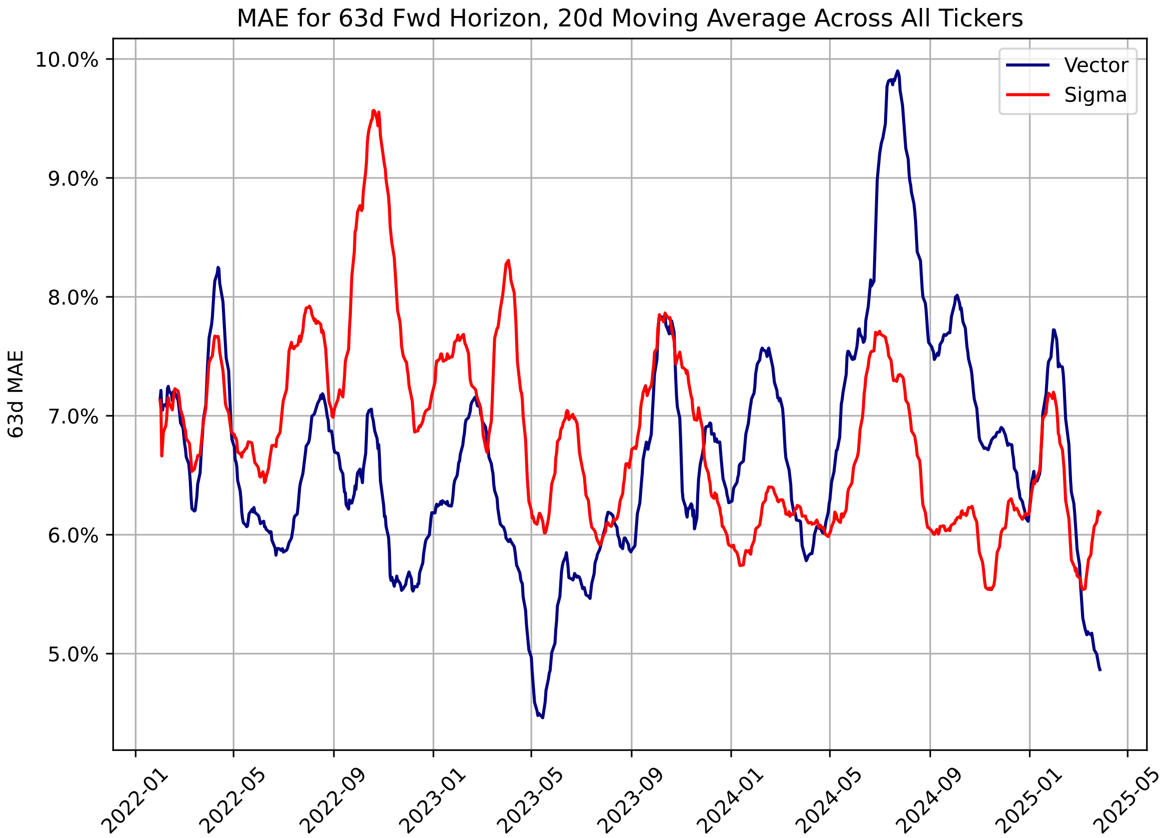
MAE for 10d Fwd Horizon, 20d Moving Average Across All Tickers
Vector
Sigma
10d MAE
4.00%
3.50%
3.00%
2.50%
2.00%
2022-01
2022-05
2022-09
2023-01
2023-05
2023-09
2024-01
2024-05
2024-09
2025-01
2025-05

21d Horizon

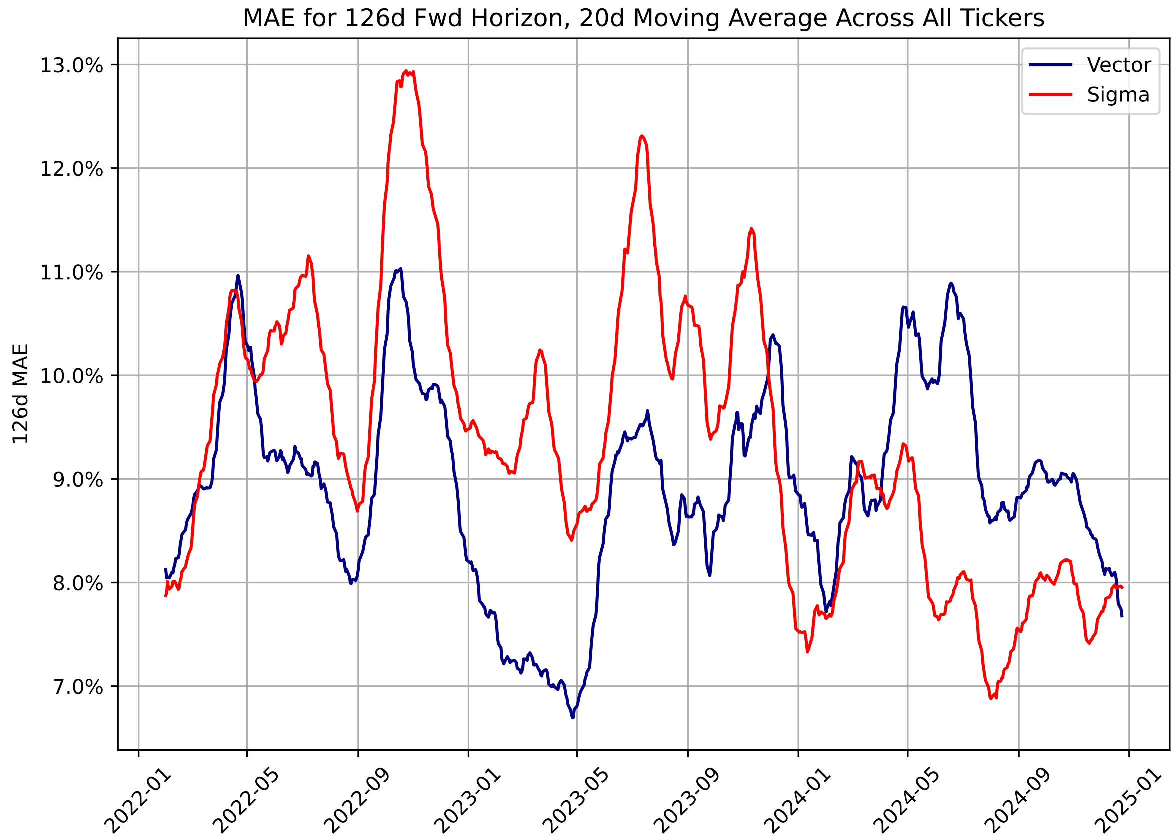


MAE for 21d Fwd Horizon, 20d Moving Average Across All Tickers
Vector
Sigma
21d MAE
6.00%
5.50%
5.00%
4.50%
4.00%
3.50%
3.00%
2022-01
2022-05
2022-09
2023-01
2023-05
2023-09
2024-01
2024-05
2024-09
2025-01
2025-05

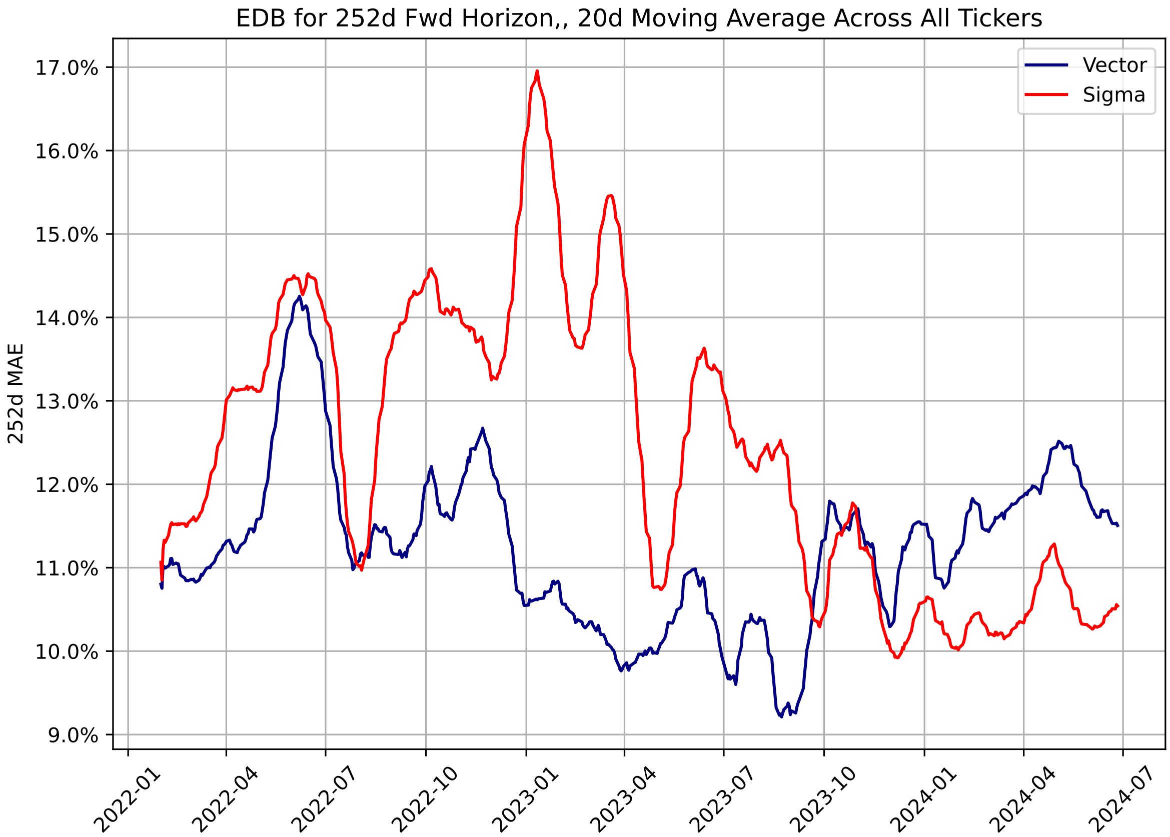
63d Horizon


MAE for 63d Fwd Horizon, 20d Moving Average Across All Tickers
Vector
Sigma
63d MAE
10.0%
9.0%
8.0%
7.0%
6.0%
5.0%
2022-01
2022-05
2022-09
2023-01
2023-05
2023-09
2024-01
2024-05
2024-09
2025-01
2025-05

126d Horizon



252d Horizon



Top 30 Tickers By EDB MAE

All TMD: 1d

Results reflect ticker level average EDB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EDB" metric - negative performance within the expected 95%tile .

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EDB-MAE_V	Ticker_S	EDB-MAE_S
1.0	AMC	11.79%	AMC	10.45%
1.0	CZR	3.74%	GME	3.0%
1.0	CYH	3.49%	CYH	2.88%
1.0	GBTC	3.36%	LUMN	2.42%
1.0	LUMN	3.19%	MSTR	2.0%
1.0	AMAT	2.91%	GBTC	1.94%
1.0	TSLA	2.69%	BHC	1.82%
1.0	NVDA	2.33%	IEP	1.65%
1.0	PHM	2.3%	TSLA	1.4%
1.0	CCL	2.23%	CTLT	1.4%
1.0	VNO	1.9%	UAA	1.38%
1.0	MSFT	1.86%	CCL	1.37%
1.0	GT	1.81%	AA	1.35%
1.0	IEP	1.81%	SIVBQ	1.34%
1.0	ELAN	1.8%	GNRC	1.34%
1.0	BHC	1.78%	CLF	1.31%
1.0	GNRC	1.78%	VFC	1.31%
1.0	MSTR	1.73%	SBNY	1.27%
1.0	THC	1.68%	CZR	1.27%
1.0	CLF	1.58%	GT	1.23%
1.0	AMD	1.57%	NWL	1.22%
1.0	NWL	1.54%	AAP	1.21%
1.0	MS	1.53%	AMD	1.18%
1.0	MOS	1.53%	LNC	1.17%
1.0	X	1.52%	NVDA	1.15%
1.0	PWR	1.52%	ON	1.11%
1.0	VST	1.5%	KALU	1.09%
1.0	AVGO	1.49%	ELAN	1.09%
1.0	GME	1.41%	X	1.09%
1.0	ETRN	1.39%	META	1.07%

All TMD: 10d

Results reflect ticker level average EDB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EDB" metric - negative performance within the expected 95%tile .

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EDB-MAE_V	Ticker_S	EDB-MAE_S
10.0	AMC	24.96%	AMC	20.57%
10.0	GBTC	9.89%	CYH	9.3%
10.0	CYH	8.89%	GME	9.2%
10.0	LUMN	7.45%	LUMN	7.97%
10.0	CZR	6.09%	GBTC	6.92%
10.0	GT	5.7%	MSTR	6.49%
10.0	CCL	5.58%	BHC	5.63%
10.0	NVDA	5.58%	IEP	4.8%
10.0	IEP	5.22%	UAA	4.6%
10.0	AMAT	5.11%	GNRC	4.5%
10.0	VNO	5.0%	AA	4.45%
10.0	PHM	4.96%	TSLA	4.44%
10.0	LNC	4.73%	CCL	4.4%
10.0	BHC	4.68%	CTLT	4.36%
10.0	X	4.54%	GT	4.29%
10.0	TSLA	4.48%	NWL	4.28%
10.0	MSTR	4.45%	CLF	4.28%
10.0	NWL	4.35%	LNC	4.26%
10.0	MU	4.2%	VFC	4.24%
10.0	CLF	4.18%	SBNY	4.13%
10.0	SIVBQ	4.01%	CZR	3.96%
10.0	THC	3.96%	NVDA	3.84%
10.0	AA	3.91%	SIVBQ	3.83%
10.0	GME	3.89%	AAP	3.82%
10.0	ELAN	3.87%	INTC	3.58%
10.0	AMD	3.86%	ELAN	3.51%
10.0	MSFT	3.85%	AMD	3.49%
10.0	VST	3.79%	EXPE	3.45%
10.0	TEVA	3.78%	ON	3.44%
10.0	ON	3.77%	X	3.37%

All TMD: 21d

Results reflect ticker level average EDB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EDB" metric - negative performance within the expected 95%tile .

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EDB-MAE_V	Ticker_S	EDB-MAE_S
21.0	AMC	31.97%	AMC	20.5%
21.0	GBTC	11.96%	GME	12.28%
21.0	CYH	9.92%	LUMN	12.11%
21.0	LUMN	9.65%	CYH	10.36%
21.0	NVDA	8.1%	GBTC	9.72%
21.0	CZR	7.17%	MSTR	8.71%
21.0	CCL	7.11%	BHC	8.33%
21.0	GT	7.07%	CTLT	6.81%
21.0	AMAT	6.97%	CCL	6.59%
21.0	IEP	6.96%	IEP	6.48%
21.0	BHC	6.69%	NWL	6.48%
21.0	PHM	6.48%	LNC	6.28%
21.0	VNO	6.46%	CLF	6.25%
21.0	NWL	6.46%	AA	6.18%
21.0	TSLA	6.45%	GNRC	6.17%
21.0	LNC	6.31%	UAA	6.1%
21.0	CLF	6.24%	GT	6.03%
21.0	ELAN	6.12%	TSLA	5.94%
21.0	MSTR	6.01%	VFC	5.92%
21.0	GME	5.91%	ELAN	5.83%
21.0	TEVA	5.72%	SIVBQ	5.75%
21.0	X	5.58%	CZR	5.67%
21.0	MOS	5.32%	X	5.59%
21.0	UAA	5.3%	NVDA	5.44%
21.0	ETRN	5.26%	NFLX	5.37%
21.0	AVGO	5.25%	INTC	5.27%
21.0	ON	5.25%	AMD	5.09%
21.0	THC	5.24%	ON	5.0%
21.0	MU	5.15%	AAP	4.96%
21.0	MSFT	5.11%	ETRN	4.89%

All TMD: 63d

Results reflect ticker level average EDB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EDB" metric - negative performance within the expected 95%tile .

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EDB-MAE_V	Ticker_S	EDB-MAE_S
63.0	AMC	37.13%	AMC	20.83%
63.0	CYH	15.91%	GME	17.88%
63.0	LUMN	14.89%	MSTR	17.53%
63.0	IEP	14.69%	CYH	15.58%
63.0	GBTC	14.37%	LUMN	14.92%
63.0	PHM	11.05%	BHC	13.98%
63.0	AMAT	10.97%	CCL	13.46%
63.0	CCL	10.49%	IEP	13.03%
63.0	TSLA	10.47%	CTLT	12.64%
63.0	GME	10.4%	GBTC	12.31%
63.0	NVDA	10.26%	GNRC	12.21%
63.0	X	10.15%	UAA	11.72%
63.0	UAA	9.87%	TSLA	10.99%
63.0	CTLT	9.82%	INTC	10.3%
63.0	VNO	9.81%	GT	10.3%
63.0	MU	9.81%	CZR	9.99%
63.0	ELAN	9.64%	SIVBQ	9.95%
63.0	GT	9.31%	NFLX	9.73%
63.0	SIVBQ	9.14%	LNC	9.73%
63.0	CZR	9.06%	AA	9.32%
63.0	BHC	8.9%	CLF	9.15%
63.0	INTC	8.88%	NWL	9.15%
63.0	THC	8.75%	ON	9.07%
63.0	MSFT	8.69%	X	8.7%
63.0	MOS	8.58%	AMZN	8.65%
63.0	LNC	8.55%	VFC	8.62%
63.0	ON	8.46%	MU	8.5%
63.0	NWL	8.41%	SBNY	8.42%
63.0	CLF	8.27%	KALU	8.37%
63.0	WDC	8.23%	THC	8.36%

All TMD: 126d

Results reflect ticker level average EDB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EDB" metric - negative performance within the expected 95%tile .

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EDB-MAE_V	Ticker_S	EDB-MAE_S
126.0	AMC	38.51%	CYH	21.27%
126.0	CYH	26.87%	MSTR	20.78%
126.0	LUMN	24.11%	AMC	20.69%
126.0	IEP	23.06%	BHC	20.3%
126.0	NFLX	20.75%	GNRC	19.81%
126.0	GBTC	18.85%	LUMN	19.03%
126.0	SIVBQ	18.52%	NFLX	16.37%
126.0	ETRN	15.25%	IEP	15.86%
126.0	AMAT	14.9%	UAA	15.85%
126.0	CSTM	14.33%	CCL	15.47%
126.0	ELAN	14.3%	SBNY	15.33%
126.0	LNC	14.3%	GT	15.23%
126.0	TSLA	14.03%	ETRN	15.13%
126.0	NWL	13.59%	GME	14.97%
126.0	NVDA	13.42%	SIVBQ	14.87%
126.0	VNO	13.2%	CZR	14.61%
126.0	PWR	12.85%	GBTC	14.43%
126.0	UAA	12.67%	EXPE	14.41%
126.0	GME	12.65%	LNC	14.3%
126.0	BHC	12.64%	NVDA	14.24%
126.0	AA	12.52%	CTLT	14.12%
126.0	INTC	12.52%	AA	13.75%
126.0	MU	12.43%	AAP	13.57%
126.0	CLF	12.33%	VFC	13.25%
126.0	AZO	12.13%	CLF	13.09%
126.0	BBY	11.71%	INTC	12.74%
126.0	ISRG	11.7%	KEY	12.44%
126.0	X	11.35%	NWL	12.34%
126.0	CTLT	11.22%	CSTM	12.01%
126.0	PHM	10.98%	THC	11.64%

All TMD: 252d

Results reflect ticker level average EDB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EDB" metric - negative performance within the expected 95%tile .

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EDB-MAE_V	Ticker_S	EDB-MAE_S
252.0	AMC	47.49%	SBNY	53.5%
252.0	CYH	37.21%	AMC	27.69%
252.0	NVDA	36.82%	LUMN	25.71%
252.0	LUMN	32.64%	BHC	23.69%
252.0	LNC	26.54%	SIVBQ	23.37%
252.0	PHM	26.32%	CTLT	22.33%
252.0	SIVBQ	24.89%	META	21.76%
252.0	AMAT	22.38%	LNC	21.73%
252.0	CPRT	21.07%	CLF	21.67%
252.0	CCL	20.37%	TSLA	21.64%
252.0	GBTC	20.03%	NVDA	21.3%
252.0	ORCL	19.87%	UAA	21.07%
252.0	AVGO	19.63%	EXPE	20.7%
252.0	AZO	19.46%	TEVA	20.19%
252.0	IEP	18.36%	VFC	20.01%
252.0	EXPE	18.27%	VNO	19.62%
252.0	TXN	18.26%	AVGO	19.62%
252.0	NWL	17.6%	GNRC	19.54%
252.0	VFC	17.51%	CYH	19.09%
252.0	ELAN	17.42%	AAP	18.91%
252.0	PWR	16.74%	ORCL	18.82%
252.0	TRGP	16.72%	NFLX	18.57%
252.0	LLY	16.39%	FIS	17.43%
252.0	INTC	16.36%	FSUGY	17.28%
252.0	ETRN	16.26%	AZO	17.06%
252.0	CSTM	16.23%	CSTM	16.81%
252.0	TDG	16.03%	ELAN	16.73%
252.0	AA	15.97%	CMA	16.1%
252.0	HCA	15.95%	AMZN	16.1%
252.0	ACGL	15.91%	NWL	15.97%

Bottom 30 Tickers By EDB MAE

All TMD: 1d

Results reflect ticker level average EDB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EDB" metric - negative performance within the expected 95%tile .

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EDB-MAE_V	Ticker_S	EDB-MAE_S
1.0	VCSH	0.08%	VCSH	0.07%
1.0	MUB	0.11%	MUB	0.1%
1.0	LQD	0.18%	HYG	0.2%
1.0	HYG	0.27%	LQD	0.23%
1.0	EMB	0.31%	EMB	0.25%
1.0	FRA	0.36%	FRA	0.29%
1.0	TLT	0.43%	GLD	0.32%
1.0	VZ	0.49%	TLT	0.39%
1.0	NVS	0.49%	PEP	0.39%
1.0	AMGN	0.49%	SPY	0.41%
1.0	PEP	0.5%	NVS	0.43%
1.0	SNY	0.51%	POST	0.44%
1.0	GILD	0.53%	ABBV	0.46%
1.0	POST	0.53%	MRK	0.48%
1.0	HD	0.53%	HON	0.48%
1.0	GSK	0.54%	BMY	0.49%
1.0	SBUX	0.54%	AMGN	0.49%
1.0	CHTR	0.54%	KHC	0.49%
1.0	BMY	0.56%	AZN	0.51%
1.0	BUD	0.57%	ORLY	0.51%
1.0	HON	0.57%	VZ	0.51%
1.0	ABBV	0.58%	CSCO	0.51%
1.0	ZTS	0.59%	TMUS	0.51%
1.0	XOM	0.59%	MNST	0.52%
1.0	SLV	0.6%	MSI	0.52%
1.0	CMCSA	0.6%	COST	0.52%
1.0	JAZZ	0.6%	VICI	0.52%
1.0	GLD	0.6%	CAH	0.52%
1.0	ORLY	0.6%	GILD	0.52%
1.0	VICI	0.6%	AZO	0.55%

All TMD: 10d

Results reflect ticker level average EDB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EDB" metric - negative performance within the expected 95%tile .

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EDB-MAE_V	Ticker_S	EDB-MAE_S
10.0	VCSH	0.22%	VCSH	0.24%
10.0	MUB	0.41%	MUB	0.32%
10.0	HYG	0.64%	HYG	0.66%
10.0	LQD	0.66%	LQD	0.7%
10.0	EMB	0.91%	EMB	0.77%
10.0	FRA	1.03%	GLD	0.97%
10.0	TLT	1.15%	FRA	0.97%
10.0	GLD	1.38%	TLT	1.25%
10.0	NVS	1.43%	SPY	1.32%
10.0	POST	1.46%	POST	1.36%
10.0	GILD	1.49%	PEP	1.36%
10.0	SNY	1.51%	NVS	1.44%
10.0	BUD	1.52%	ABBV	1.45%
10.0	BMY	1.53%	ORLY	1.46%
10.0	VZ	1.55%	HON	1.52%
10.0	ZTS	1.58%	BMY	1.54%
10.0	PEP	1.6%	KHC	1.55%
10.0	CHTR	1.63%	MRK	1.55%
10.0	TMUS	1.66%	VICI	1.56%
10.0	GSK	1.67%	TMUS	1.56%
10.0	XOM	1.68%	VZ	1.57%
10.0	AMGN	1.72%	GILD	1.61%
10.0	SLV	1.74%	CAH	1.65%
10.0	JAZZ	1.75%	CSCO	1.65%
10.0	MSI	1.76%	AMGN	1.66%
10.0	ABBV	1.78%	AZO	1.66%
10.0	ORLY	1.78%	UNH	1.68%
10.0	VICI	1.8%	MSI	1.69%
10.0	OXY	1.81%	COST	1.69%
10.0	TDG	1.81%	GSK	1.71%

All TMD: 21d

Results reflect ticker level average EDB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EDB" metric - negative performance within the expected 95%tile .

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EDB-MAE_V	Ticker_S	EDB-MAE_S
21.0	VCSH	0.28%	VCSH	0.35%
21.0	MUB	0.69%	MUB	0.47%
21.0	HYG	0.95%	HYG	0.9%
21.0	LQD	0.95%	LQD	1.04%
21.0	EMB	1.45%	EMB	1.24%
21.0	FRA	1.58%	FRA	1.46%
21.0	TLT	1.74%	GLD	1.49%
21.0	GLD	1.88%	SPY	1.91%
21.0	BUD	1.96%	PEP	1.96%
21.0	GILD	2.0%	TLT	1.97%
21.0	NVS	2.02%	POST	2.05%
21.0	SNY	2.08%	NVS	2.06%
21.0	POST	2.1%	MRK	2.09%
21.0	BMY	2.11%	BMY	2.1%
21.0	CHTR	2.15%	VICI	2.18%
21.0	GSK	2.2%	ACGL	2.2%
21.0	MSI	2.24%	HON	2.2%
21.0	PEP	2.27%	ORLY	2.24%
21.0	CVS	2.29%	MSI	2.3%
21.0	VICI	2.29%	TMUS	2.32%
21.0	ZTS	2.32%	MNST	2.33%
21.0	XOM	2.39%	UNH	2.33%
21.0	BIIB	2.39%	GILD	2.35%
21.0	HON	2.4%	KHC	2.36%
21.0	TMUS	2.42%	ABBV	2.37%
21.0	AMGN	2.43%	AMGN	2.38%
21.0	SLV	2.48%	CAH	2.41%
21.0	MRK	2.48%	BUD	2.41%
21.0	JAZZ	2.49%	GWW	2.44%
21.0	GWW	2.5%	QQQ	2.47%

All TMD: 63d

Results reflect ticker level average EDB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EDB" metric - negative performance within the expected 95%tile .

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EDB-MAE_V	Ticker_S	EDB-MAE_S
63.0	VCSH	0.42%	VCSH	0.63%
63.0	MUB	0.93%	MUB	0.74%
63.0	LQD	1.18%	LQD	1.76%
63.0	HYG	1.58%	HYG	1.82%
63.0	EMB	2.23%	EMB	2.19%
63.0	TLT	2.39%	GLD	2.36%
63.0	FRA	2.54%	FRA	2.47%
63.0	POST	2.61%	TLT	3.18%
63.0	GLD	2.72%	SPY	3.19%
63.0	TMUS	2.75%	PEP	3.23%
63.0	GSK	2.95%	POST	3.24%
63.0	CHTR	3.19%	ABBV	3.27%
63.0	ABBV	3.2%	HON	3.39%
63.0	VICI	3.23%	NVS	3.48%
63.0	GILD	3.28%	VICI	3.49%
63.0	BUD	3.31%	CPRT	3.7%
63.0	SPY	3.52%	VZ	3.73%
63.0	NVS	3.56%	BUD	3.74%
63.0	PEP	3.66%	GILD	3.76%
63.0	HON	3.66%	BMY	3.77%
63.0	CAH	3.69%	AMGN	3.85%
63.0	HD	3.74%	ORLY	3.87%
63.0	BMY	3.75%	AZN	3.94%
63.0	ORLY	3.76%	HD	3.97%
63.0	XOM	3.84%	MNST	3.97%
63.0	SBNY	3.89%	CAH	4.01%
63.0	MSI	3.92%	ACGL	4.04%
63.0	OXY	3.96%	MRK	4.06%
63.0	AMGN	4.03%	GWW	4.07%
63.0	BHP	4.06%	XOM	4.19%

All TMD: 126d

Results reflect ticker level average EDB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EDB" metric - negative performance within the expected 95%tile .

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EDB-MAE_V	Ticker_S	EDB-MAE_S
126.0	VCSH	0.68%	VCSH	0.9%
126.0	MUB	1.61%	MUB	1.3%
126.0	LQD	2.02%	LQD	2.49%
126.0	HYG	2.03%	HYG	2.77%
126.0	NVS	2.93%	EMB	3.52%
126.0	TLT	3.15%	CAH	3.99%
126.0	FRA	3.41%	NVS	4.03%
126.0	SNY	3.74%	UNH	4.21%
126.0	HON	3.78%	FRA	4.22%
126.0	ZTS	4.14%	GLD	4.4%
126.0	EMB	4.15%	TLT	4.44%
126.0	GSK	4.23%	PEP	4.71%
126.0	HD	4.28%	KHC	4.71%
126.0	BUD	4.31%	MNST	4.79%
126.0	GLD	4.46%	GILD	4.87%
126.0	GILD	4.54%	GWW	4.91%
126.0	GWW	4.6%	ABBV	5.16%
126.0	VST	4.65%	SPY	5.17%
126.0	AZN	4.77%	HON	5.21%
126.0	KHC	4.79%	POST	5.29%
126.0	MSI	4.86%	JAZZ	5.35%
126.0	BHP	4.96%	FRCB	5.39%
126.0	COST	4.98%	AMGN	5.44%
126.0	OXY	4.99%	CSCO	5.45%
126.0	GS	5.02%	VICI	5.46%
126.0	TMUS	5.05%	AZN	5.67%
126.0	POST	5.06%	CMCSA	5.68%
126.0	CHTR	5.08%	MSI	5.78%
126.0	JAZZ	5.11%	MSFT	5.82%
126.0	B	5.13%	ZTS	5.84%

All TMD: 252d

Results reflect ticker level average EDB MAE across all model dates for which actual results for the stated horizon are known and for which the actual results fit the contingencies of the "EDB" metric - negative performance within the expected 95%tile .

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	EDB-MAE_V	Ticker_S	EDB-MAE_S
252.0	VCSH	1.04%	VCSH	1.12%
252.0	LQD	2.84%	MUB	1.56%
252.0	MUB	3.09%	HYG	3.65%
252.0	HYG	3.46%	FRA	4.0%
252.0	FRA	3.61%	SPY	4.18%
252.0	QQQ	3.88%	LQD	4.4%
252.0	ISRG	3.93%	QQQ	4.72%
252.0	GLD	4.02%	TLT	4.86%
252.0	ZTS	4.06%	EMB	4.98%
252.0	BHP	4.41%	GLD	5.17%
252.0	GILD	4.47%	PEP	5.47%
252.0	TLT	4.5%	GILD	5.64%
252.0	VICI	4.51%	MNST	5.71%
252.0	COST	4.86%	CMG	5.96%
252.0	SPY	5.14%	CMCSA	6.14%
252.0	SNY	5.26%	DHI	6.33%
252.0	CNC	5.28%	FRCB	6.47%
252.0	OXY	5.31%	JAZZ	6.64%
252.0	CHTR	5.4%	COST	6.88%
252.0	NVS	5.41%	CNC	6.94%
252.0	T	5.68%	VICI	6.99%
252.0	META	5.85%	CDNS	7.0%
252.0	KHC	5.98%	CPRT	7.05%
252.0	CMCSA	6.04%	GSK	7.13%
252.0	XOM	6.15%	ISRG	7.24%
252.0	DHI	6.22%	PHM	7.26%
252.0	RIO	6.37%	AMGN	7.36%
252.0	AMGN	6.41%	ABBV	7.6%
252.0	BUD	6.47%	MSFT	7.64%
252.0	POST	6.72%	KHC	7.65%

Performance Summary - Returns on EDB based exposures (ROEDB)

Here we compare ROEDB, or price return performance of ticker-model date (TMD) exposures based upon EDB, for Vector Mdel EDB to the Sigma Model's EDB ("S", presented with light shading).

Vector Model EDB is denoted by a "V" and presented with dark shading in the bar charts comparison of EDB that follow, whereas Sigma EDB is denoted by "S" and presented with light shading.

Sigma based ticker exposure performance reflects equal TMD weighting and the price returns of the underlying TMD for the given horizon.

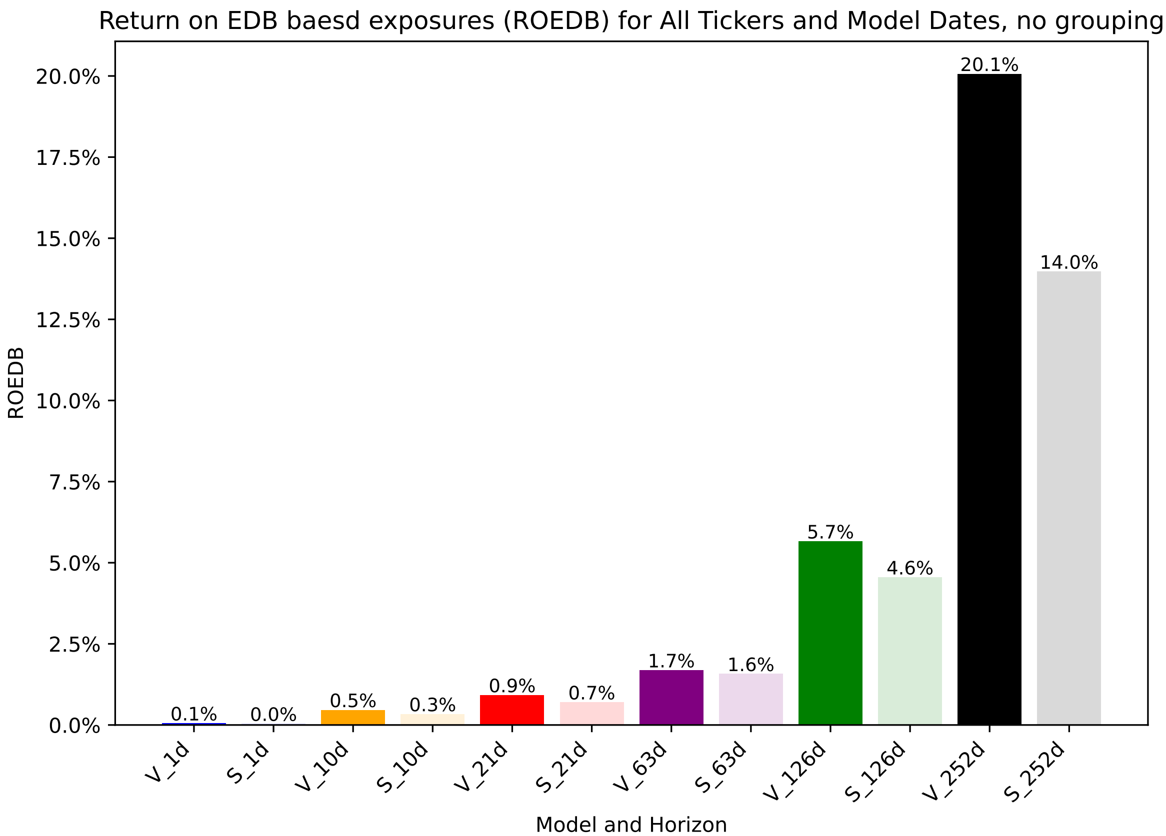
Vector Model based TMD exposures reflect each TMD's underlying horizon price return multiplied by the ratio of Sigma model based EDB to Vector Model EDB for the given horizon. This ratio is capped of 3.0x and floored of 0.333x.

Following each bar chart comparison of ROEDB is a table detailing the alpha (intercept) and slope (beta) of Vector Model EDB based exposure performance to Sigma EDB exposure based performance. The beta arguably provides some indication of the leverage of the Vector Model based exposures and the alpha is an indication of Vector Model EDB's ability to generate performance indepdendent of the ticker's returns.

Note that time horizons are denominated in trading days, where 10d is ~ 2 weeks in calendar terms, 21d is ~ 1 month, 63d is ~ 1 quarter, 126d is ~ half year, 252d is ~1 year. Model estimates for all horizons are made on each Model Date, so p-Values for horizons beyond 1d are not valid.

All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-06-27



Alpha (intercept) and Beta (slope) of Vector Model ROEDB regressed upon corresponding horizon actual ticker-model date returns:

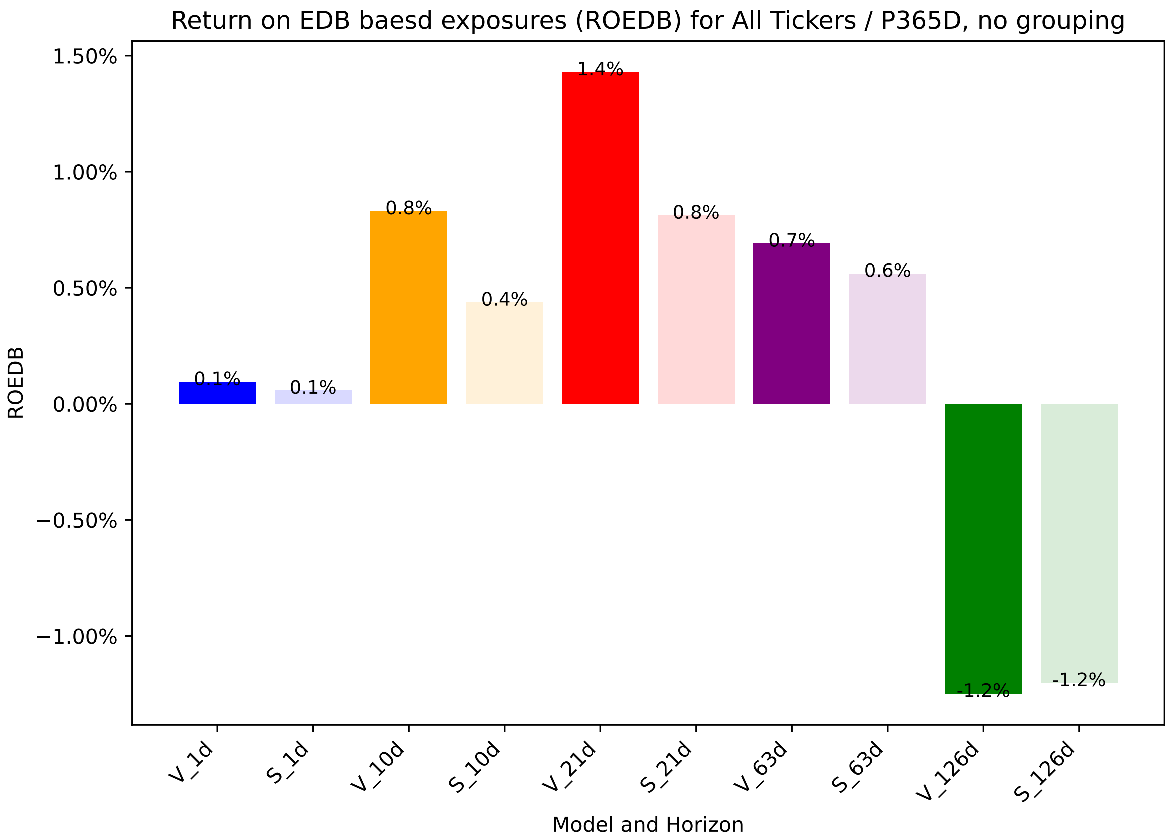
	1d	10d	21d	63d	126d	252d
intercept	-0.01%	-0.07%	-0.20%	-0.75%	-1.37%	-2.59%
intercept_p_value	16.19%	0.01%	0.00%	0.00%	0.00%	0.00%
slope	165.05%	159.91%	160.28%	155.25%	154.47%	162.16%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Same as above, but averaged by Ticker across Model Dates:

	1d	10d	21d	63d	126d	252d
intercept	0.01%	0.12%	0.24%	0.67%	1.64%	2.63%
intercept_p_value	48.40%	18.91%	13.81%	11.47%	8.28%	12.02%
slope	153.40%	145.02%	146.62%	145.61%	148.63%	162.41%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Prior 365 Calendar Days (P365D)

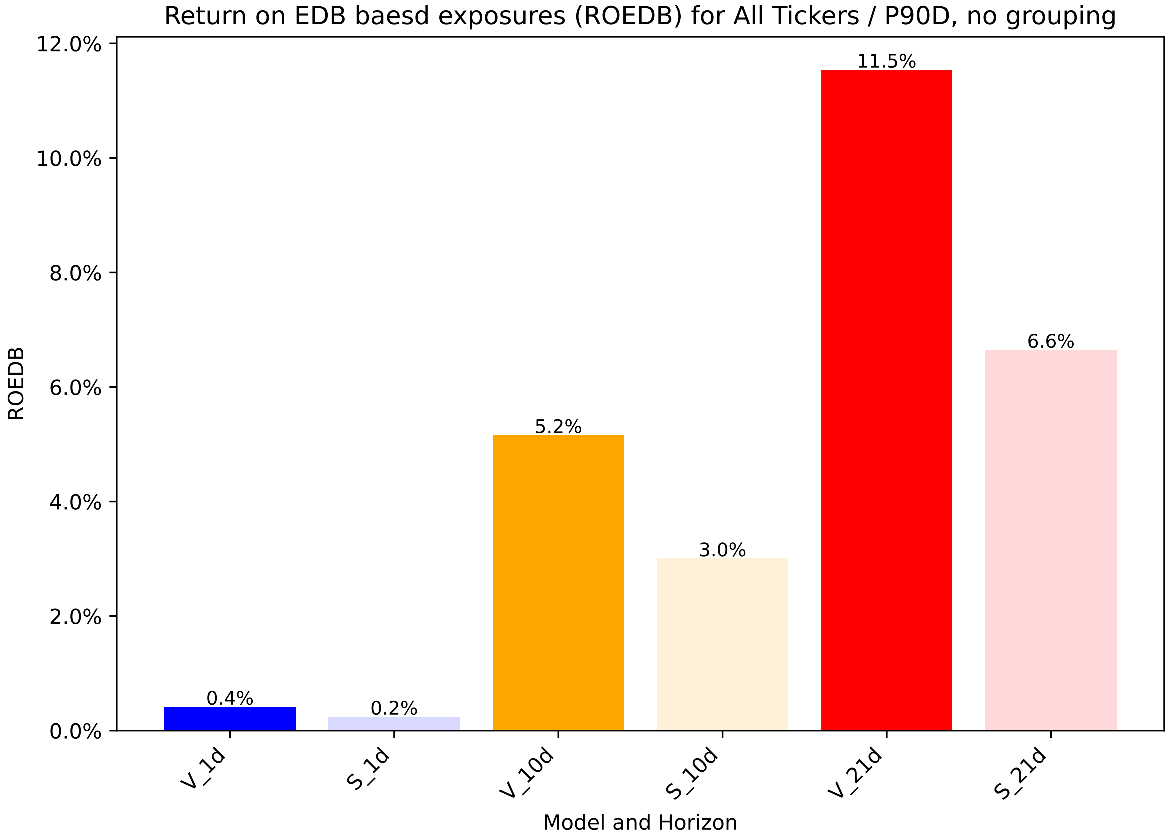
Period examined: All model dates from 2024-07-02 through 2025-06-27




```
Alpha (intercept) and Beta (slope) of Vector Model ROEDB regressed upon
corresponding horizon actual ticker-model date returns:
                         1d      10d      21d      63d     126d
intercept             0.01%    0.20%    0.24%   -0.11%    0.40%
intercept_p_value    63.90%    0.00%    0.00%   13.52%    0.05%
slope               155.16%  143.25%  147.07%  142.72%  136.97%
slope_p_value         0.00%    0.00%    0.00%    0.00%    0.00%

Same as above, but averaged by Ticker across Model Dates:
                         1d      10d      21d      63d     126d
intercept             0.02%    0.32%    0.41%    0.45%   -0.02%
intercept_p_value    47.78%   20.45%   14.28%   13.75%   19.43%
slope               145.28%  135.04%  135.05%  128.77%  126.50%
slope_p_value         0.00%    0.00%    0.00%    0.00%    1.07%
```

Prior 90 Calendar Days (P90D)

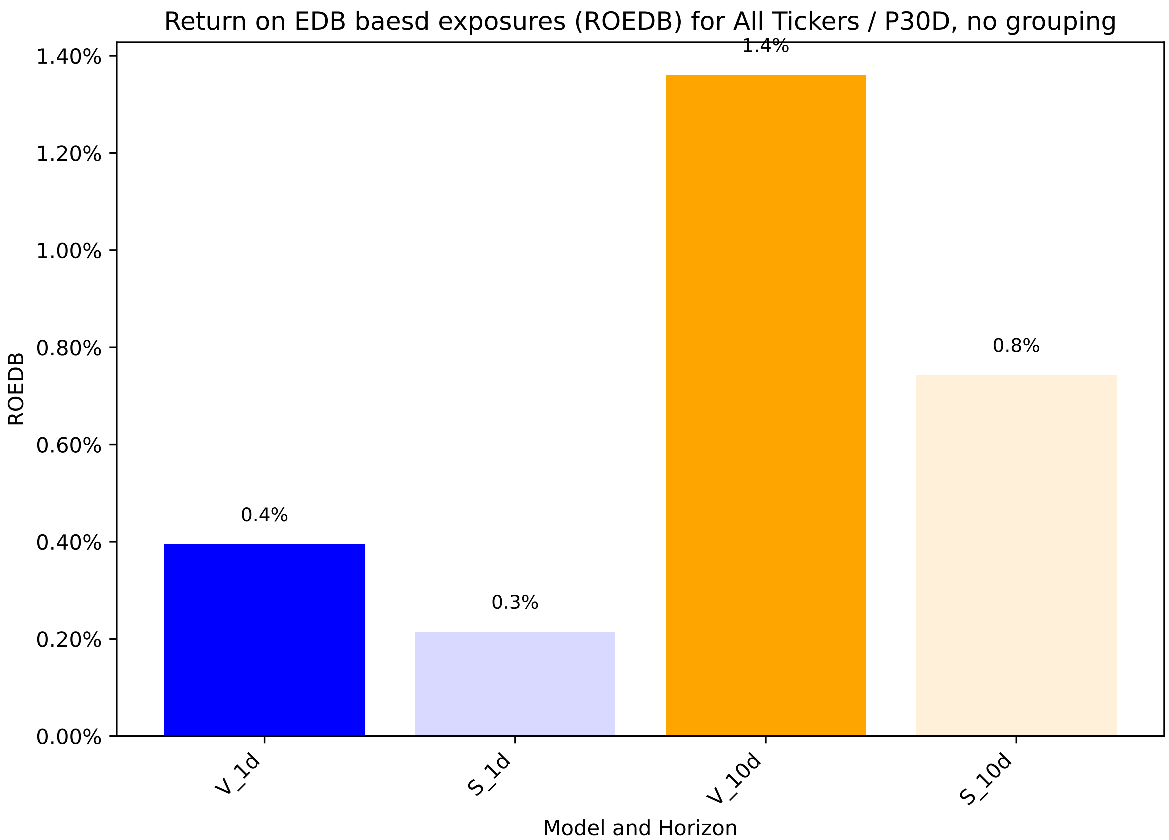
Period examined: All model dates from 2025-04-03 through 2025-06-27




```
Alpha (intercept) and Beta (slope) of Vector Model ROEDB regressed upon
corresponding horizon actual ticker-model date returns:
                        1d       10d       21d
intercept           -0.01%   -0.09%   -0.18%
intercept_p_value   60.86%   24.59%   25.80%
slope              178.46%  174.79%  176.24%
slope_p_value        0.00%    0.00%    0.00%

Same as above, but averaged by Ticker across Model Dates:
                        1d       10d       21d
intercept           -0.00%    0.06%   -0.56%
intercept_p_value   51.76%   34.02%   30.84%
slope              165.56%  159.39%  163.90%
slope_p_value        0.00%    0.01%    0.10%
```

Prior 30 Calendar Days (P30D)

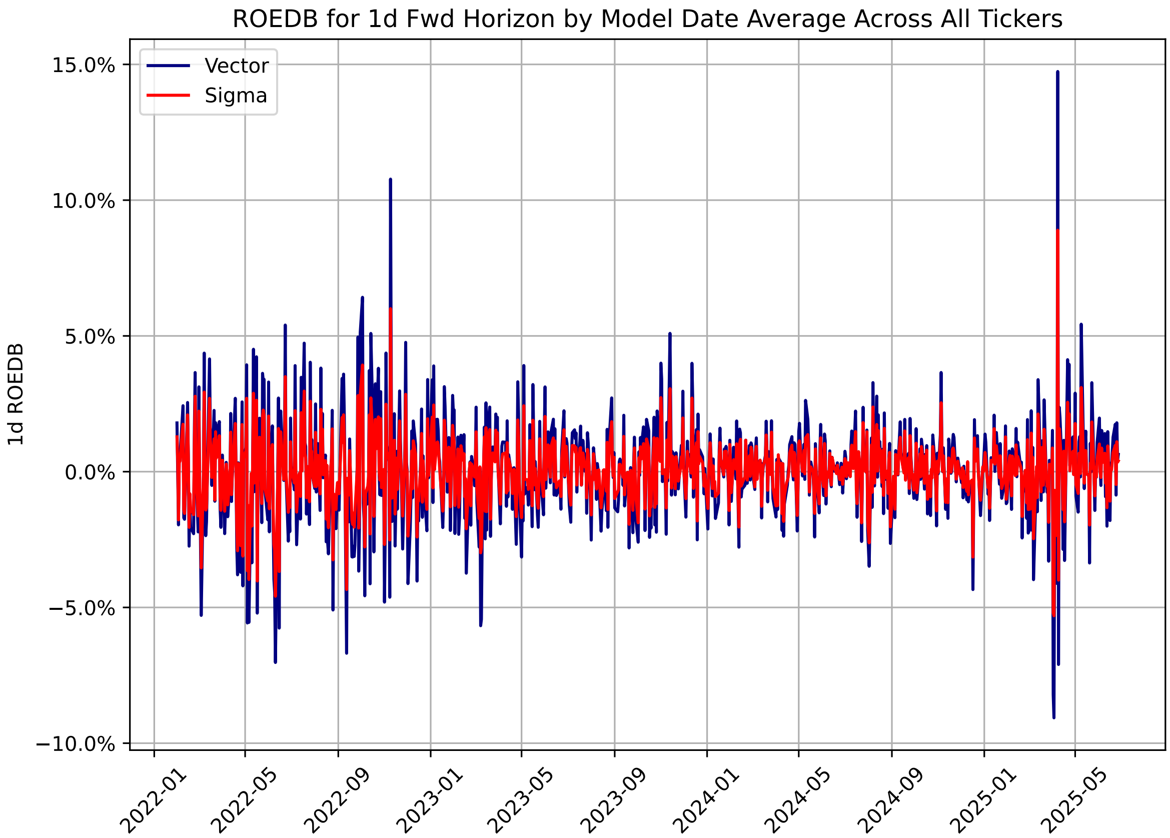
Period examined: All model dates from 2025-06-02 through 2025-06-27



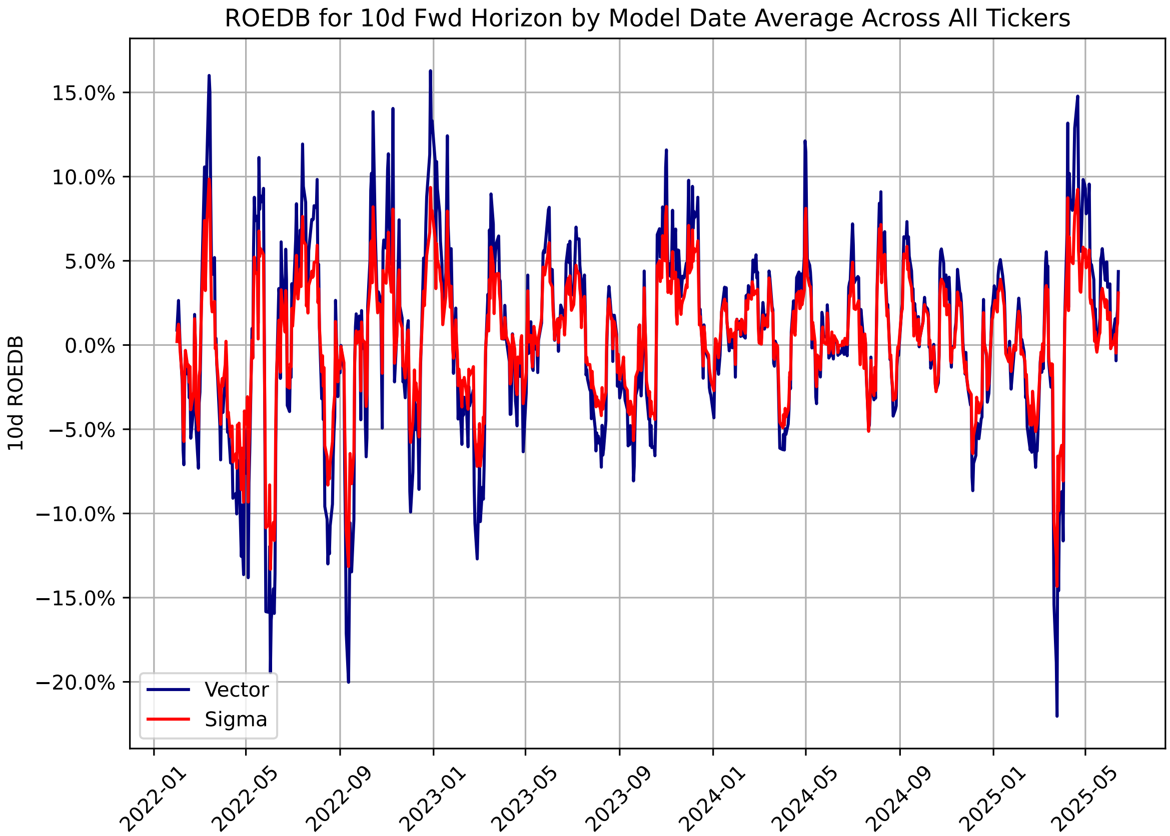

```
Alpha (intercept) and Beta (slope) of Vector Model ROEDB regressed upon
corresponding horizon actual ticker-model date returns:
                        1d      10d
intercept            0.02%    0.12%
intercept_p_value   49.05%   32.28%
slope              172.94%  167.58%
slope_p_value        0.00%    0.00%

Same as above, but averaged by Ticker across Model Dates:
                        1d      10d
intercept            0.01%    0.05%
intercept_p_value   49.10%   53.73%
slope              165.75%  153.90%
slope_p_value        0.00%    0.69%
```

ROEDB by Model Date Detail

1d Horizon

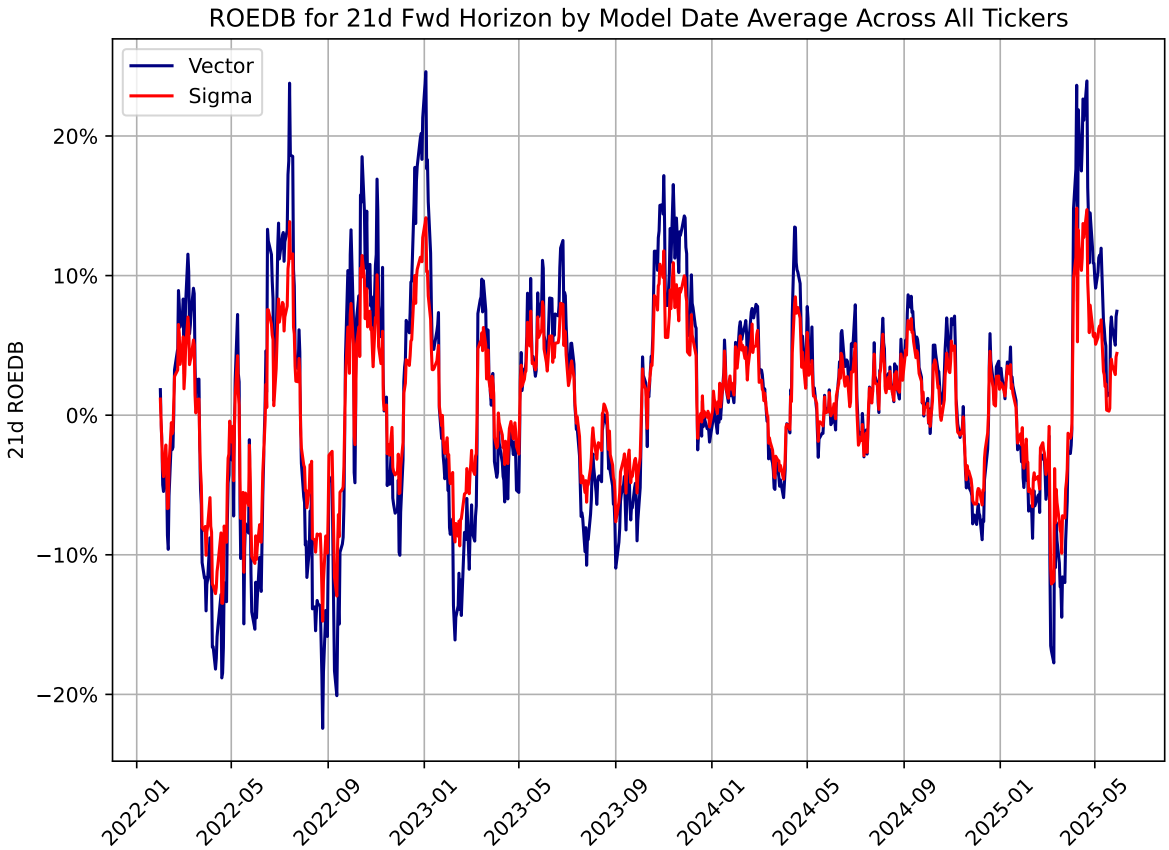


10d Horizon



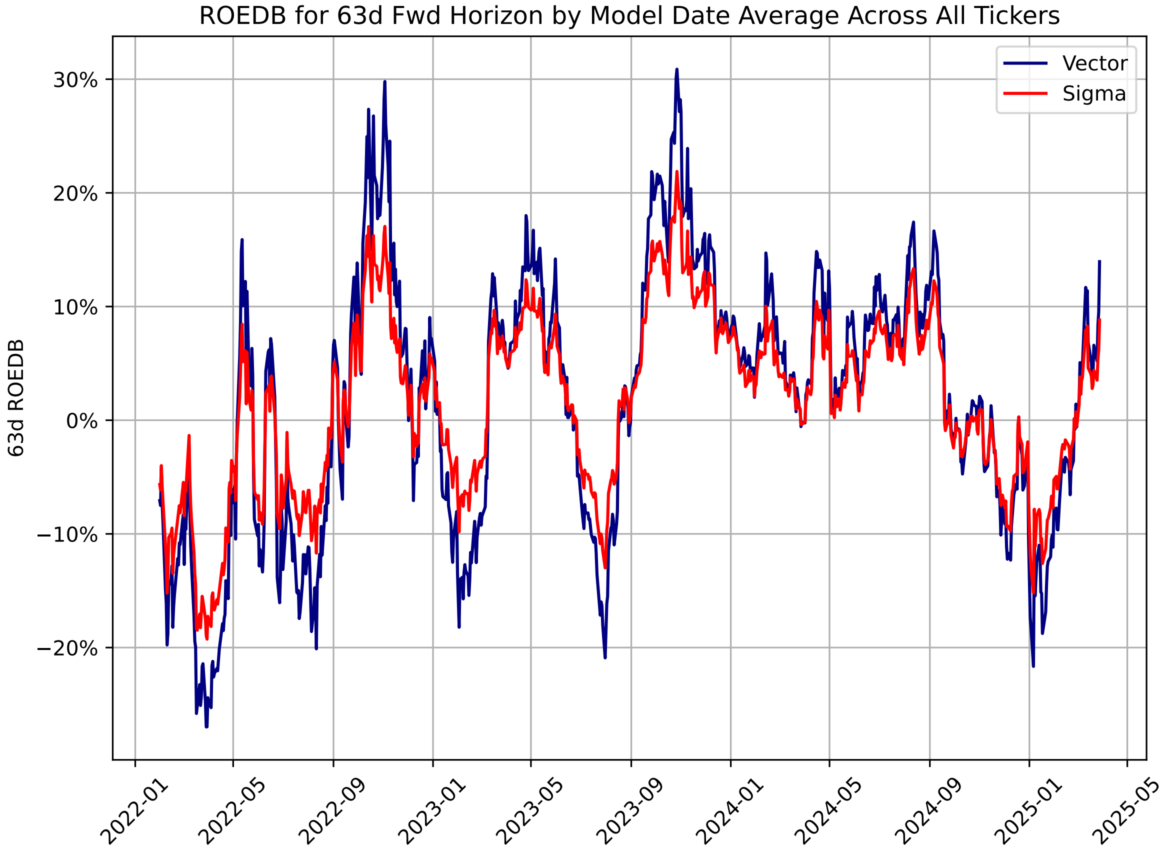
ROEDB for 10d Fwd Horizon by Model Date Average Across All Tickers
10d ROEDB
15.0%
10.0%
5.0%
0.0%
−5.0%
−10.0%
−15.0%
−20.0%
2022-01
2022-05
2022-09
2023-01
2023-05
2023-09
2024-01
2024-05
2024-09
2025-01
2025-05
Vector
Sigma

21d Horizon



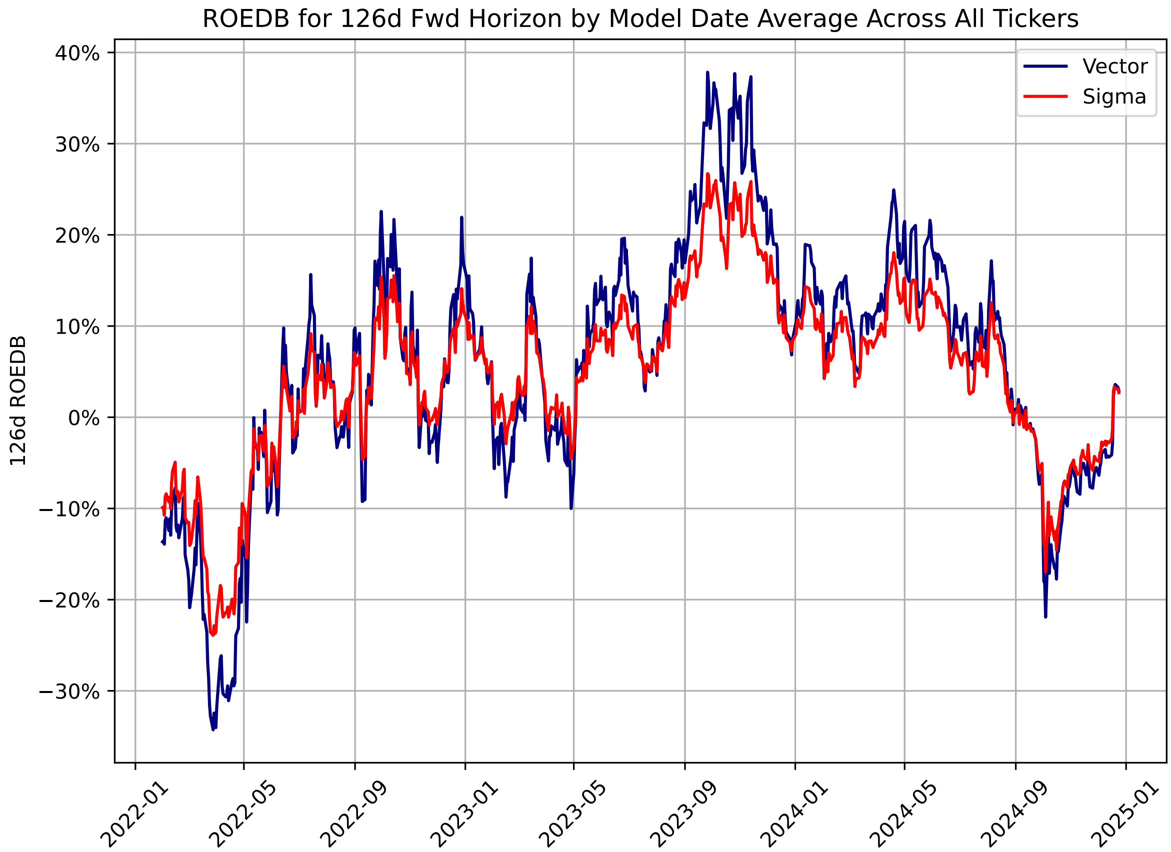
ROEDB for 21d Fwd Horizon by Model Date Average Across All Tickers
Vector
Sigma
21d ROEDB
20%
10%
0%
−10%
−20%
2022-01
2022-05
2022-09
2023-01
2023-05
2023-09
2024-01
2024-05
2024-09
2025-01
2025-05

63d Horizon

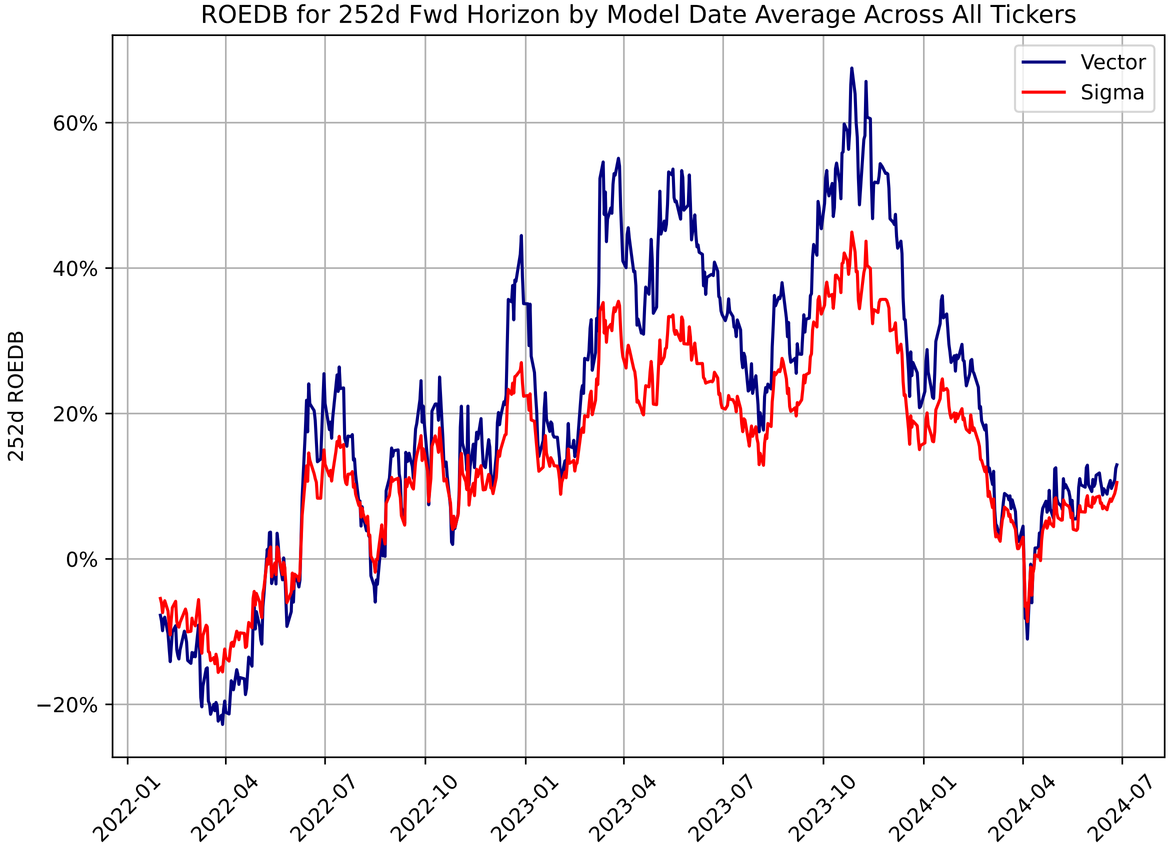


ROEDB for 63d Fwd Horizon by Model Date Average Across All Tickers
Vector
Sigma
63d ROEDB
30%
20%
10%
0%
−10%
−20%
2022-01
2022-05
2022-09
2023-01
2023-05
2023-09
2024-01
2024-05
2024-09
2025-01
2025-05

126d Horizon



252d Horizon



Top 30 Tickers By ROEDB

All TMD: 1d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
1.0	MSTR	1.0%	MSTR	0.47%
1.0	GME	0.64%	VST	0.31%
1.0	NFLX	0.47%	NVDA	0.28%
1.0	META	0.41%	AVGO	0.22%
1.0	AVGO	0.33%	GBTC	0.22%
1.0	ORCL	0.29%	GME	0.2%
1.0	PWR	0.24%	PWR	0.18%
1.0	NVDA	0.23%	NFLX	0.18%
1.0	VST	0.23%	GE	0.17%
1.0	XOM	0.21%	X	0.17%
1.0	CDNS	0.21%	LLY	0.15%
1.0	GWW	0.2%	CAH	0.15%
1.0	INTU	0.2%	TRGP	0.15%
1.0	MU	0.19%	META	0.15%
1.0	ORLY	0.19%	THC	0.15%
1.0	AMZN	0.17%	ORCL	0.14%
1.0	LLY	0.17%	TDG	0.12%
1.0	MSI	0.16%	TEVA	0.12%
1.0	ISRG	0.16%	ETRN	0.12%
1.0	WDC	0.16%	IRM	0.11%
1.0	JPM	0.16%	CCL	0.11%
1.0	AMD	0.16%	CDNS	0.11%
1.0	AZO	0.16%	PHM	0.11%
1.0	X	0.16%	TMUS	0.1%
1.0	GOOGL	0.15%	ISRG	0.1%
1.0	TDG	0.15%	GWW	0.1%
1.0	CMG	0.14%	GS	0.1%
1.0	CAH	0.14%	ORLY	0.1%
1.0	AAPL	0.14%	MU	0.1%
1.0	IRM	0.14%	CMG	0.1%

All TMD: 10d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
10.0	MSTR	10.94%	MSTR	4.71%
10.0	GME	5.63%	VST	3.03%
10.0	META	3.93%	NVDA	2.72%
10.0	NFLX	3.69%	AVGO	2.12%
10.0	ORCL	2.96%	GBTC	2.07%
10.0	VST	2.78%	NFLX	1.8%
10.0	AVGO	2.53%	PWR	1.73%
10.0	TEVA	2.46%	GME	1.68%
10.0	NVDA	2.19%	META	1.63%
10.0	PWR	1.85%	GE	1.6%
10.0	MU	1.82%	LLY	1.6%
10.0	GWW	1.71%	X	1.58%
10.0	SLV	1.7%	CAH	1.48%
10.0	CAH	1.64%	TRGP	1.42%
10.0	WDC	1.62%	ETRN	1.41%
10.0	GE	1.61%	ORCL	1.37%
10.0	AMZN	1.58%	THC	1.33%
10.0	CDNS	1.51%	TEVA	1.28%
10.0	XOM	1.5%	IRM	1.15%
10.0	X	1.49%	TDG	1.13%
10.0	THC	1.43%	CDNS	1.05%
10.0	ETRN	1.4%	PHM	1.04%
10.0	INTU	1.38%	GWW	1.03%
10.0	GILD	1.37%	TSLA	0.97%
10.0	LLY	1.35%	ORLY	0.94%
10.0	MSI	1.33%	MU	0.93%
10.0	AMD	1.31%	ISRG	0.92%
10.0	HCA	1.31%	CCL	0.91%
10.0	AZO	1.27%	COST	0.88%
10.0	GS	1.24%	CMG	0.88%

All TMD: 21d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
21.0	MSTR	23.43%	MSTR	10.57%
21.0	GME	9.47%	VST	6.47%
21.0	META	9.0%	NVDA	5.86%
21.0	NFLX	7.41%	GBTC	4.56%
21.0	TEVA	6.09%	AVGO	4.44%
21.0	ORCL	5.5%	NFLX	3.93%
21.0	AVGO	5.48%	PWR	3.65%
21.0	VST	5.29%	META	3.63%
21.0	NVDA	4.64%	GE	3.53%
21.0	ETRN	4.25%	ETRN	3.5%
21.0	PWR	3.91%	LLY	3.34%
21.0	GE	3.89%	X	3.17%
21.0	GWW	3.61%	CAH	3.06%
21.0	CAH	3.55%	TRGP	2.92%
21.0	INTU	3.37%	GME	2.85%
21.0	SLV	3.32%	TEVA	2.81%
21.0	GILD	3.31%	ORCL	2.8%
21.0	MU	3.25%	THC	2.79%
21.0	WDC	3.24%	IRM	2.42%
21.0	AMZN	3.24%	TDG	2.34%
21.0	THC	3.17%	TSLA	2.33%
21.0	GBTC	3.16%	GWW	2.31%
21.0	XOM	3.06%	PHM	2.24%
21.0	CDNS	2.92%	CDNS	2.21%
21.0	X	2.92%	ISRG	2.07%
21.0	MSI	2.75%	ORLY	2.01%
21.0	CTLT	2.74%	CCL	2.0%
21.0	GS	2.69%	COST	1.97%
21.0	LLY	2.64%	ACGL	1.92%
21.0	AZO	2.63%	TMUS	1.82%

All TMD: 63d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
63.0	MSTR	58.75%	MSTR	30.78%
63.0	META	29.72%	VST	19.34%
63.0	NFLX	26.55%	NVDA	18.55%
63.0	VST	17.86%	GBTC	14.94%
63.0	NVDA	15.91%	NFLX	12.64%
63.0	AVGO	14.74%	AVGO	12.24%
63.0	TEVA	12.38%	META	11.79%
63.0	GE	11.92%	GE	10.4%
63.0	ORCL	11.49%	ETRN	10.28%
63.0	GME	11.15%	LLY	9.69%
63.0	GWW	11.1%	PWR	9.17%
63.0	GBTC	11.05%	CAH	8.56%
63.0	ETRN	10.51%	TRGP	8.3%
63.0	CTLT	10.48%	PHM	7.9%
63.0	CAH	10.41%	THC	7.82%
63.0	GILD	10.37%	TDG	7.01%
63.0	ISRG	9.51%	TEVA	6.81%
63.0	THC	8.66%	ORCL	6.75%
63.0	TDG	8.61%	GWW	6.63%
63.0	LLY	8.54%	ISRG	6.41%
63.0	MSI	8.53%	ACGL	6.13%
63.0	CDNS	8.33%	ORLY	6.04%
63.0	PWR	8.22%	CDNS	6.03%
63.0	INTU	8.15%	IRM	5.99%
63.0	TRGP	7.43%	X	5.91%
63.0	SLV	7.12%	TMUS	5.74%
63.0	ACGL	6.75%	JPM	5.5%
63.0	ORLY	6.71%	CMG	5.44%
63.0	TMUS	6.63%	CPRT	5.42%
63.0	AZO	6.63%	CCL	5.41%

All TMD: 126d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
126.0	MSTR	160.33%	MSTR	73.94%
126.0	META	78.66%	NVDA	49.33%
126.0	NFLX	64.74%	VST	43.95%
126.0	NVDA	48.91%	GBTC	40.42%
126.0	VST	46.71%	NFLX	30.16%
126.0	AVGO	40.08%	META	29.78%
126.0	GBTC	30.99%	AVGO	28.09%
126.0	ORCL	29.9%	GE	25.18%
126.0	GE	28.86%	LLY	21.09%
126.0	TEVA	28.64%	TRGP	20.47%
126.0	ISRG	27.03%	PHM	19.21%
126.0	CAH	24.96%	THC	19.07%
126.0	GILD	24.64%	ETRN	18.49%
126.0	TDG	22.5%	PWR	18.21%
126.0	GWW	22.39%	CAH	17.57%
126.0	LLY	21.66%	TDG	16.22%
126.0	MSI	21.38%	ISRG	16.07%
126.0	INTU	20.41%	TEVA	15.91%
126.0	ETRN	19.22%	ORCL	15.87%
126.0	THC	19.12%	GWW	14.82%
126.0	CDNS	18.73%	ACGL	14.14%
126.0	TRGP	18.62%	IRM	13.86%
126.0	AMZN	16.92%	CCL	13.67%
126.0	ORLY	16.88%	JPM	13.33%
126.0	LEN	16.41%	ORLY	13.28%
126.0	PHM	16.1%	MSI	13.07%
126.0	DHI	15.81%	CMG	13.0%
126.0	ACGL	15.62%	CPRT	12.76%
126.0	HCA	15.61%	COST	12.64%
126.0	GOOGL	15.6%	TMUS	12.35%

All TMD: 252d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
252.0	MSTR	472.77%	MSTR	226.72%
252.0	META	209.31%	NVDA	146.81%
252.0	VST	177.64%	VST	126.5%
252.0	NFLX	155.2%	GBTC	120.3%
252.0	NVDA	131.64%	META	81.19%
252.0	AVGO	116.02%	AVGO	73.18%
252.0	GBTC	96.73%	NFLX	68.62%
252.0	ORCL	76.37%	GE	61.22%
252.0	TEVA	75.21%	PHM	56.37%
252.0	ISRG	73.79%	LLY	54.67%
252.0	GE	72.6%	THC	52.11%
252.0	LLY	66.03%	TRGP	50.35%
252.0	AMZN	65.87%	PWR	42.1%
252.0	TDG	65.78%	TDG	40.67%
252.0	THC	63.54%	ISRG	39.69%
252.0	MSI	60.13%	TEVA	39.08%
252.0	INTU	58.78%	ORCL	38.06%
252.0	GWW	54.3%	IRM	37.42%
252.0	TRGP	53.45%	CCL	36.24%
252.0	LEN	52.02%	ETRN	35.78%
252.0	CAH	51.89%	DHI	35.23%
252.0	PHM	50.56%	ACGL	34.67%
252.0	DHI	49.76%	GWW	34.43%
252.0	COST	49.74%	CMG	32.73%
252.0	AMD	48.81%	CAH	32.53%
252.0	ACGL	48.71%	COST	31.56%
252.0	WDC	47.37%	JPM	31.22%
252.0	GOOGL	42.55%	CPRT	31.0%
252.0	GILD	41.85%	MSI	30.54%
252.0	IRM	41.21%	LEN	30.04%

P365D: 1d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
1.0	MSTR	1.47%	WRK	2.75%
1.0	WRK	1.07%	MSTR	0.63%
1.0	META	0.62%	LUMN	0.47%
1.0	PWR	0.55%	VST	0.43%
1.0	NEM	0.51%	NFLX	0.29%
1.0	ORCL	0.5%	AVGO	0.28%
1.0	NFLX	0.46%	CCL	0.24%
1.0	AAP	0.38%	TSLA	0.23%
1.0	GME	0.37%	CAH	0.23%
1.0	PRGO	0.37%	GBTC	0.23%
1.0	GILD	0.35%	GE	0.21%
1.0	LNC	0.34%	X	0.21%
1.0	CHTR	0.33%	GILD	0.21%
1.0	GBTC	0.33%	ORCL	0.21%
1.0	GS	0.33%	PWR	0.21%
1.0	TSLA	0.33%	GS	0.19%
1.0	MU	0.31%	VNO	0.19%
1.0	VFC	0.3%	T	0.18%
1.0	ELAN	0.3%	META	0.18%
1.0	AMZN	0.3%	NVDA	0.17%
1.0	NVDA	0.29%	CSCO	0.17%
1.0	GNRC	0.28%	EXPE	0.17%
1.0	SLV	0.28%	NEM	0.16%
1.0	BHC	0.26%	MS	0.16%
1.0	LUMN	0.25%	ETRN	0.16%
1.0	VST	0.25%	CHTR	0.15%
1.0	AZO	0.25%	JPM	0.15%
1.0	VICI	0.24%	THC	0.15%
1.0	X	0.24%	GLD	0.15%
1.0	B	0.23%	HSBC	0.14%

P365D: 10d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
10.0	MSTR	15.53%	MSTR	5.86%
10.0	META	4.97%	LUMN	5.74%
10.0	ORCL	4.73%	VST	4.14%
10.0	LUMN	4.73%	NFLX	2.92%
10.0	MU	4.3%	GBTC	2.44%
10.0	VFC	4.15%	AVGO	2.4%
10.0	PWR	4.09%	CAH	2.4%
10.0	GILD	3.51%	TSLA	2.07%
10.0	VST	3.4%	GILD	2.04%
10.0	NFLX	3.27%	ORCL	2.0%
10.0	NWL	3.03%	GE	1.99%
10.0	AMZN	2.97%	CCL	1.94%
10.0	TSLA	2.93%	X	1.91%
10.0	B	2.89%	PWR	1.81%
10.0	AVGO	2.76%	T	1.76%
10.0	EXPE	2.57%	VNO	1.73%
10.0	NEM	2.55%	CSCO	1.63%
10.0	WDC	2.32%	META	1.62%
10.0	CHTR	2.31%	GS	1.59%
10.0	GS	2.26%	HSBC	1.47%
10.0	GBTC	2.19%	GLD	1.44%
10.0	GME	2.18%	EXPE	1.42%
10.0	SLV	2.14%	MS	1.41%
10.0	X	2.12%	JPM	1.4%
10.0	GE	2.1%	MOS	1.37%
10.0	CCL	1.97%	THC	1.37%
10.0	CAH	1.93%	NEM	1.36%
10.0	JPM	1.84%	WFC	1.34%
10.0	TXN	1.83%	TRGP	1.33%
10.0	BHC	1.73%	CHTR	1.33%

P365D: 21d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
21.0	MSTR	28.63%	MSTR	12.07%
21.0	META	10.5%	VST	9.63%
21.0	TSLA	9.45%	LUMN	9.28%
21.0	LUMN	8.9%	NFLX	6.54%
21.0	PWR	8.27%	AVGO	5.54%
21.0	NFLX	8.08%	TSLA	4.97%
21.0	ORCL	7.59%	CAH	4.92%
21.0	MU	7.53%	GBTC	4.89%
21.0	GILD	7.07%	GE	4.32%
21.0	AVGO	6.5%	GILD	4.18%
21.0	GME	6.16%	CCL	4.06%
21.0	AMZN	5.79%	META	3.84%
21.0	EXPE	5.64%	T	3.84%
21.0	VST	5.55%	PWR	3.82%
21.0	WDC	5.52%	ORCL	3.78%
21.0	GE	5.36%	VNO	3.54%
21.0	VFC	5.19%	X	3.33%
21.0	CCL	4.94%	CSCO	3.29%
21.0	SLV	4.7%	HSBC	3.18%
21.0	CHTR	4.59%	GLD	3.16%
21.0	GBTC	4.58%	EXPE	3.0%
21.0	B	4.42%	GS	2.9%
21.0	GS	4.39%	MS	2.83%
21.0	CAH	4.3%	TMUS	2.81%
21.0	NEM	4.07%	WFC	2.75%
21.0	CVS	3.85%	JPM	2.72%
21.0	INTU	3.61%	TRGP	2.6%
21.0	X	3.56%	MOS	2.58%
21.0	JPM	3.54%	THC	2.55%
21.0	UAA	3.53%	SBUX	2.46%

P365D: 63d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
63.0	MSTR	97.15%	MSTR	50.84%
63.0	TSLA	36.12%	VST	26.69%
63.0	NFLX	26.59%	NFLX	19.65%
63.0	GME	21.61%	GBTC	19.25%
63.0	VST	19.99%	TSLA	17.67%
63.0	GILD	19.81%	CAH	12.67%
63.0	CCL	18.77%	AVGO	12.4%
63.0	GBTC	18.36%	GILD	12.34%
63.0	EXPE	17.17%	CCL	11.92%
63.0	CVS	15.28%	T	11.89%
63.0	GE	13.47%	GLD	10.04%
63.0	PWR	13.18%	HSBC	9.86%
63.0	META	12.14%	WFC	9.63%
63.0	CAH	11.46%	GE	9.32%
63.0	CHTR	11.04%	TMUS	9.24%
63.0	WFC	11.02%	EXPE	8.86%
63.0	B	10.6%	PWR	8.57%
63.0	AVGO	10.58%	CSCO	8.54%
63.0	SLV	9.1%	TRGP	8.1%
63.0	T	8.6%	MS	7.99%
63.0	GS	8.58%	MNST	7.87%
63.0	BUD	8.5%	GME	7.74%
63.0	ORLY	8.48%	ORLY	7.72%
63.0	NEM	8.39%	X	7.29%
63.0	AZO	8.16%	VNO	7.24%
63.0	HSBC	8.06%	JPM	7.01%
63.0	JPM	7.53%	META	7.0%
63.0	X	7.2%	AZO	6.51%
63.0	GLD	7.13%	GS	6.5%
63.0	BA	6.61%	MOS	6.05%

P365D: 126d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
126.0	MSTR	159.9%	MSTR	78.08%
126.0	TSLA	56.57%	VST	44.13%
126.0	GILD	51.66%	NFLX	40.82%
126.0	NFLX	50.63%	GBTC	34.65%
126.0	VST	42.18%	GILD	26.97%
126.0	EXPE	32.94%	AVGO	26.92%
126.0	GBTC	30.04%	CAH	24.89%
126.0	META	27.01%	HSBC	24.71%
126.0	GME	26.25%	T	24.58%
126.0	CCL	26.06%	TSLA	23.37%
126.0	CAH	25.03%	WFC	19.91%
126.0	AVGO	24.99%	GE	19.65%
126.0	AZO	23.27%	GLD	19.33%
126.0	GE	22.71%	TMUS	18.15%
126.0	HSBC	22.08%	TRGP	18.12%
126.0	WFC	21.26%	CSCO	17.49%
126.0	CVS	20.97%	CCL	17.29%
126.0	BA	18.9%	EXPE	16.83%
126.0	T	18.71%	ORLY	15.74%
126.0	ORLY	18.7%	META	15.68%
126.0	CHTR	17.18%	JPM	15.52%
126.0	GS	16.69%	AZO	14.48%
126.0	GLD	15.5%	MS	14.21%
126.0	JPM	14.15%	GS	13.6%
126.0	SLV	13.53%	GME	11.84%
126.0	BUD	11.86%	BA	11.58%
126.0	CTLT	11.84%	CTLT	10.62%
126.0	MNST	11.54%	MNST	10.46%
126.0	TRGP	11.17%	COST	9.96%
126.0	CSCO	10.45%	ISRG	9.87%

P90D: 1d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-04-03 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
1.0	MU	2.71%	WDC	1.12%
1.0	WDC	2.41%	VST	1.06%
1.0	AAP	2.4%	AVGO	1.05%
1.0	PWR	2.03%	MU	0.94%
1.0	META	1.95%	CCL	0.9%
1.0	ORCL	1.91%	ORCL	0.85%
1.0	ON	1.68%	NVDA	0.81%
1.0	AVGO	1.63%	AMD	0.8%
1.0	CLF	1.52%	ON	0.77%
1.0	TXN	1.49%	X	0.76%
1.0	ELAN	1.38%	ELAN	0.75%
1.0	MSTR	1.32%	MSTR	0.72%
1.0	CDNS	1.19%	KALU	0.72%
1.0	LUMN	1.19%	PWR	0.72%
1.0	NFLX	1.18%	CSTM	0.71%
1.0	MSFT	1.16%	AAP	0.67%
1.0	AMC	1.15%	NFLX	0.67%
1.0	KALU	1.13%	MOS	0.61%
1.0	CSTM	1.11%	CYH	0.61%
1.0	NVDA	1.08%	BA	0.6%
1.0	GS	1.07%	META	0.6%
1.0	VST	1.05%	GS	0.58%
1.0	BA	1.04%	GE	0.57%
1.0	GNRC	0.99%	AMAT	0.57%
1.0	AMZN	0.96%	THC	0.53%
1.0	BHC	0.95%	MSFT	0.51%
1.0	INTU	0.86%	FCX	0.5%
1.0	AMD	0.84%	INTU	0.5%
1.0	CCL	0.83%	GBTC	0.49%
1.0	BAC	0.81%	MS	0.48%

P90D: 10d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-04-03 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
10.0	MU	33.75%	WDC	12.53%
10.0	WDC	32.0%	MU	12.3%
10.0	AAP	24.49%	VST	11.37%
10.0	ORCL	23.55%	ELAN	10.18%
10.0	ELAN	22.15%	ORCL	10.14%
10.0	PWR	18.42%	CSTM	10.12%
10.0	CSTM	18.19%	AAP	9.83%
10.0	META	17.57%	AVGO	9.33%
10.0	MSTR	15.85%	ON	9.02%
10.0	TSLA	15.66%	AMD	8.72%
10.0	KALU	15.64%	KALU	8.04%
10.0	TXN	15.34%	MOS	7.74%
10.0	ON	14.5%	CCL	7.68%
10.0	AMD	13.22%	CYH	7.68%
10.0	AVGO	12.86%	NVDA	7.56%
10.0	VST	12.42%	PWR	7.46%
10.0	MSFT	12.4%	THC	6.95%
10.0	BHC	11.57%	X	6.95%
10.0	CYH	11.29%	NFLX	6.91%
10.0	GE	10.12%	GE	6.64%
10.0	CDNS	9.66%	MSTR	6.44%
10.0	TEVA	9.64%	BHC	6.4%
10.0	AMZN	9.46%	BA	6.37%
10.0	INTU	9.23%	TSLA	6.3%
10.0	NFLX	8.85%	META	6.26%
10.0	GS	8.71%	GS	6.12%
10.0	FCX	8.47%	INTU	5.89%
10.0	BA	8.45%	TXN	5.89%
10.0	THC	8.23%	LVS	5.72%
10.0	QQQ	8.22%	FCX	5.72%

P90D: 21d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-04-03 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
21.0	MU	78.33%	AAP	28.29%
21.0	WDC	74.37%	MU	28.28%
21.0	AAP	69.97%	WDC	27.21%
21.0	ELAN	67.07%	ELAN	27.09%
21.0	ORCL	47.12%	VST	25.51%
21.0	META	45.15%	CSTM	24.36%
21.0	PWR	40.27%	AVGO	22.29%
21.0	CSTM	39.86%	CYH	22.11%
21.0	TXN	38.12%	ORCL	21.73%
21.0	ON	36.09%	ON	19.86%
21.0	KALU	34.92%	NVDA	18.97%
21.0	TSLA	32.88%	AMD	18.81%
21.0	AVGO	30.88%	CCL	18.12%
21.0	MSFT	28.44%	KALU	18.0%
21.0	INTU	27.04%	THC	17.66%
21.0	AMC	26.69%	MOS	16.92%
21.0	GE	25.98%	PWR	16.76%
21.0	TEVA	25.78%	GE	16.08%
21.0	AMD	25.66%	META	15.65%
21.0	AMZN	22.38%	X	14.98%
21.0	VST	22.25%	TSLA	14.73%
21.0	MSTR	21.7%	INTU	14.67%
21.0	THC	21.32%	BA	14.35%
21.0	CCL	20.51%	TXN	14.16%
21.0	BA	20.14%	MSFT	12.92%
21.0	AMAT	20.09%	NFLX	12.85%
21.0	CYH	19.83%	LVS	12.38%
21.0	GNRC	19.34%	GS	11.9%
21.0	GS	19.29%	FCX	11.51%
21.0	AA	18.78%	LUMN	11.25%

P30D: 1d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-06-02 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
1.0	BHC	3.81%	BHC	2.15%
1.0	MU	3.33%	ORCL	1.51%
1.0	ON	3.14%	MU	1.22%
1.0	ORCL	2.81%	AMD	1.17%
1.0	AMD	2.33%	ON	1.17%
1.0	LUMN	2.07%	WDC	1.09%
1.0	TXN	1.99%	CCL	0.98%
1.0	VST	1.83%	GNRC	0.93%
1.0	META	1.83%	GS	0.89%
1.0	GNRC	1.81%	AMAT	0.82%
1.0	INTC	1.73%	VST	0.79%
1.0	CCL	1.62%	NVDA	0.75%
1.0	WDC	1.51%	LUMN	0.74%
1.0	AMAT	1.43%	INTC	0.72%
1.0	PWR	1.34%	CMG	0.65%
1.0	MSTR	1.23%	TXN	0.64%
1.0	SBUX	1.14%	AA	0.58%
1.0	ZION	1.1%	AVGO	0.57%
1.0	FCX	1.08%	ZION	0.55%
1.0	CMG	1.04%	DHI	0.54%
1.0	QCOM	0.99%	KEY	0.52%
1.0	MSFT	0.98%	META	0.52%
1.0	AA	0.95%	NFLX	0.5%
1.0	HLT	0.9%	MS	0.49%
1.0	CZR	0.88%	TFC	0.49%
1.0	WFC	0.87%	CZR	0.49%
1.0	AMZN	0.86%	JPM	0.48%
1.0	CVS	0.86%	PWR	0.48%
1.0	NEM	0.85%	MSTR	0.46%
1.0	QQQ	0.84%	QCOM	0.45%

P30D: 10d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-06-02 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
10.0	ORCL	44.08%	BHC	25.34%
10.0	BHC	39.24%	ORCL	18.18%
10.0	MU	30.9%	AMD	14.01%
10.0	VST	21.81%	MU	13.58%
10.0	AMD	21.26%	WDC	10.73%
10.0	WDC	18.2%	VST	8.84%
10.0	NEM	16.29%	GS	7.83%
10.0	INTC	14.38%	NEM	6.87%
10.0	ON	11.66%	INTC	6.47%
10.0	PWR	11.19%	ON	6.46%
10.0	TXN	10.35%	AMAT	6.27%
10.0	CZR	10.34%	CAH	6.0%
10.0	MSFT	10.09%	CZR	5.91%
10.0	XOM	9.1%	CCL	5.65%
10.0	AMAT	9.04%	WYNN	5.46%
10.0	GS	8.95%	NVDA	5.39%
10.0	GNRC	8.56%	GNRC	5.37%
10.0	TSLA	7.76%	JPM	5.21%
10.0	CVS	7.03%	CMG	5.07%
10.0	SBUX	6.92%	XOM	5.02%
10.0	META	6.32%	CVS	4.6%
10.0	CCL	6.17%	TXN	4.43%
10.0	JPM	5.92%	BALL	4.37%
10.0	WFC	5.91%	CSCO	3.98%
10.0	NVDA	5.79%	MS	3.86%
10.0	CMG	5.67%	MSFT	3.77%
10.0	WYNN	5.64%	PWR	3.76%
10.0	FITB	5.28%	NFLX	3.57%
10.0	B	4.87%	LUMN	3.4%
10.0	QQQ	4.86%	BAC	3.38%

Bottom 30 Tickers By ROEDB

All TMD: 1d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
1.0	SIVBQ	-2.09%	SIVBQ	-0.78%
1.0	SBNY	-1.16%	SBNY	-0.45%
1.0	FRCB	-0.4%	FRCB	-0.23%
1.0	IEP	-0.33%	IEP	-0.18%
1.0	LUMN	-0.3%	AMC	-0.14%
1.0	AAP	-0.19%	VFC	-0.13%
1.0	VFC	-0.17%	AAP	-0.13%
1.0	CYH	-0.17%	NWL	-0.11%
1.0	USB	-0.14%	LUMN	-0.08%
1.0	NWL	-0.14%	UAA	-0.06%
1.0	UAA	-0.12%	BHC	-0.06%
1.0	CHTR	-0.12%	CZR	-0.06%
1.0	TLT	-0.11%	TLT	-0.05%
1.0	GSK	-0.11%	BIIB	-0.05%
1.0	CSTM	-0.1%	INTC	-0.05%
1.0	FIS	-0.1%	BALL	-0.04%
1.0	AMC	-0.09%	LNC	-0.04%
1.0	T	-0.09%	BXP	-0.04%
1.0	PEP	-0.08%	GSK	-0.03%
1.0	ZION	-0.07%	CVS	-0.03%
1.0	VZ	-0.07%	CLF	-0.03%
1.0	GT	-0.06%	UNH	-0.03%
1.0	BBY	-0.05%	KHC	-0.03%
1.0	EMB	-0.05%	BMY	-0.03%
1.0	CVS	-0.05%	PEP	-0.03%
1.0	WRK	-0.05%	CMCSA	-0.03%
1.0	BMY	-0.05%	ELAN	-0.02%
1.0	CNC	-0.04%	GT	-0.02%
1.0	BXP	-0.04%	CNC	-0.02%
1.0	VNO	-0.04%	GNRC	-0.02%

All TMD: 10d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
10.0	SBNY	-11.81%	SBNY	-4.05%
10.0	SIVBQ	-8.56%	SIVBQ	-3.9%
10.0	FRCB	-4.1%	FRCB	-2.19%
10.0	AMC	-3.92%	IEP	-1.67%
10.0	IEP	-2.39%	AMC	-1.56%
10.0	AAP	-2.14%	VFC	-1.42%
10.0	VFC	-2.0%	AAP	-1.21%
10.0	LUMN	-1.54%	NWL	-1.18%
10.0	CHTR	-1.5%	CZR	-0.78%
10.0	NWL	-1.32%	UAA	-0.77%
10.0	ELAN	-1.12%	LUMN	-0.69%
10.0	PRGO	-1.05%	BHC	-0.55%
10.0	BHC	-1.0%	CLF	-0.51%
10.0	FIS	-0.97%	TLT	-0.51%
10.0	TLT	-0.95%	BIIB	-0.49%
10.0	GSK	-0.94%	INTC	-0.49%
10.0	GT	-0.83%	LNC	-0.48%
10.0	CYH	-0.81%	BALL	-0.42%
10.0	ZION	-0.79%	BXP	-0.37%
10.0	BIIB	-0.77%	AA	-0.35%
10.0	BXP	-0.75%	GNRC	-0.35%
10.0	LNC	-0.73%	ZION	-0.35%
10.0	UAA	-0.71%	CNC	-0.34%
10.0	BMY	-0.69%	ELAN	-0.34%
10.0	CVS	-0.68%	CYH	-0.34%
10.0	VZ	-0.62%	CVS	-0.34%
10.0	CLF	-0.52%	UNH	-0.33%
10.0	BALL	-0.52%	TFC	-0.29%
10.0	CMA	-0.47%	GSK	-0.29%
10.0	USB	-0.44%	CMCSA	-0.29%

All TMD: 21d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
21.0	SBNY	-32.56%	SBNY	-11.16%
21.0	SIVBQ	-21.2%	SIVBQ	-9.37%
21.0	FRCB	-13.47%	FRCB	-6.02%
21.0	AMC	-9.0%	AMC	-3.67%
21.0	AAP	-4.57%	IEP	-3.6%
21.0	IEP	-4.2%	VFC	-2.92%
21.0	VFC	-4.13%	NWL	-2.58%
21.0	NWL	-3.97%	AAP	-2.35%
21.0	BHC	-3.32%	CZR	-1.81%
21.0	LUMN	-2.73%	BHC	-1.77%
21.0	CHTR	-2.62%	UAA	-1.46%
21.0	TLT	-2.4%	LUMN	-1.27%
21.0	ELAN	-2.09%	INTC	-1.23%
21.0	LNC	-2.04%	CLF	-1.23%
21.0	FIS	-1.76%	LNC	-1.13%
21.0	BIIB	-1.75%	AA	-1.09%
21.0	PRGO	-1.75%	TLT	-1.07%
21.0	GSK	-1.71%	BALL	-0.93%
21.0	CVS	-1.67%	BIIB	-0.91%
21.0	BXP	-1.44%	GNRC	-0.87%
21.0	CYH	-1.38%	BXP	-0.8%
21.0	BMY	-1.33%	CNC	-0.74%
21.0	CLF	-1.13%	CVS	-0.73%
21.0	ZION	-1.12%	UNH	-0.67%
21.0	BALL	-0.97%	KHC	-0.65%
21.0	VZ	-0.96%	TFC	-0.63%
21.0	GT	-0.92%	BMY	-0.6%
21.0	VNO	-0.88%	ZION	-0.58%
21.0	CMA	-0.79%	CMCSA	-0.57%
21.0	UNH	-0.77%	PEP	-0.54%

All TMD: 63d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
63.0	SBNY	-111.62%	SBNY	-37.59%
63.0	SIVBQ	-84.01%	SIVBQ	-33.73%
63.0	FRCB	-59.55%	FRCB	-24.04%
63.0	AMC	-30.63%	AMC	-15.47%
63.0	AAP	-23.67%	IEP	-11.93%
63.0	VFC	-15.74%	AAP	-10.04%
63.0	IEP	-14.57%	VFC	-8.68%
63.0	NWL	-12.86%	NWL	-8.45%
63.0	BHC	-11.19%	CLF	-6.76%
63.0	CLF	-7.53%	BHC	-6.32%
63.0	ELAN	-6.62%	CZR	-6.09%
63.0	TLT	-6.49%	AA	-5.47%
63.0	LNC	-5.8%	UAA	-4.84%
63.0	ON	-5.7%	INTC	-4.54%
63.0	CHTR	-5.49%	LUMN	-3.95%
63.0	LUMN	-5.13%	ELAN	-3.68%
63.0	AA	-5.12%	LNC	-3.6%
63.0	JAZZ	-4.96%	MOS	-3.53%
63.0	BALL	-4.81%	GNRC	-3.34%
63.0	FIS	-4.75%	BALL	-3.2%
63.0	CZR	-4.61%	BXP	-3.14%
63.0	BIIB	-4.56%	BIIB	-3.07%
63.0	INTC	-4.51%	TLT	-2.94%
63.0	CYH	-4.37%	CVS	-2.67%
63.0	UNH	-4.36%	CNC	-2.3%
63.0	MOS	-4.29%	BHP	-2.28%
63.0	CNC	-4.13%	KHC	-2.23%
63.0	PRGO	-3.84%	JAZZ	-2.17%
63.0	GSK	-3.73%	BMY	-2.15%
63.0	BXP	-3.54%	PRGO	-2.14%

All TMD: 126d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
126.0	SBNY	-192.56%	SIVBQ	-65.15%
126.0	SIVBQ	-162.07%	SBNY	-64.8%
126.0	FRCB	-138.04%	FRCB	-51.17%
126.0	AMC	-51.66%	AMC	-29.49%
126.0	AAP	-42.94%	IEP	-22.85%
126.0	IEP	-30.14%	AAP	-19.78%
126.0	VFC	-28.72%	NWL	-15.88%
126.0	NWL	-22.95%	VFC	-13.17%
126.0	BHC	-16.91%	CLF	-10.97%
126.0	ELAN	-13.24%	MOS	-9.58%
126.0	MOS	-12.9%	CZR	-8.98%
126.0	CLF	-11.9%	AA	-8.06%
126.0	PRGO	-11.08%	INTC	-7.41%
126.0	AA	-11.02%	BHC	-7.36%
126.0	LNC	-10.75%	ELAN	-7.07%
126.0	TLT	-10.34%	CVS	-6.72%
126.0	CVS	-10.25%	UAA	-6.57%
126.0	CZR	-10.18%	PRGO	-5.75%
126.0	CHTR	-10.18%	CTLT	-5.69%
126.0	JAZZ	-9.49%	LUMN	-5.58%
126.0	GSK	-8.51%	GNRC	-5.57%
126.0	CYH	-8.45%	LNC	-5.42%
126.0	LUMN	-8.19%	TLT	-5.32%
126.0	INTC	-7.83%	BXP	-5.32%
126.0	CNC	-7.39%	BIIB	-4.99%
126.0	BIIB	-6.96%	BALL	-4.96%
126.0	BMY	-6.0%	CNC	-4.94%
126.0	FIS	-5.93%	KHC	-4.49%
126.0	BXP	-5.5%	BMY	-4.01%
126.0	BALL	-5.46%	GSK	-3.91%

All TMD: 252d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2022-01-31 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
252.0	SBNY	-283.27%	SBNY	-95.75%
252.0	SIVBQ	-231.16%	SIVBQ	-95.29%
252.0	FRCB	-206.23%	FRCB	-91.61%
252.0	AMC	-98.02%	AMC	-56.89%
252.0	AAP	-95.37%	IEP	-44.6%
252.0	IEP	-64.26%	AAP	-42.05%
252.0	VFC	-59.94%	NWL	-28.61%
252.0	NWL	-46.95%	VFC	-23.96%
252.0	MOS	-34.5%	MOS	-22.15%
252.0	CVS	-34.18%	CVS	-17.93%
252.0	PRGO	-26.19%	CLF	-16.91%
252.0	UAA	-25.11%	CZR	-13.9%
252.0	CLF	-24.35%	PRGO	-12.91%
252.0	BIIB	-22.63%	UAA	-12.11%
252.0	BHC	-22.62%	AA	-11.72%
252.0	JAZZ	-21.8%	BMY	-11.5%
252.0	AA	-21.79%	INTC	-10.36%
252.0	CZR	-18.97%	BIIB	-9.93%
252.0	TLT	-18.93%	JAZZ	-9.79%
252.0	LNC	-18.19%	CNC	-9.77%
252.0	CHTR	-16.36%	BHC	-9.3%
252.0	OXY	-14.96%	TLT	-8.46%
252.0	BMY	-12.49%	KHC	-7.93%
252.0	LUMN	-11.15%	GT	-7.69%
252.0	KHC	-10.7%	LUMN	-7.09%
252.0	ELAN	-10.48%	OXY	-7.0%
252.0	CNC	-10.32%	CTLT	-6.24%
252.0	GT	-10.13%	BHP	-5.72%
252.0	BHP	-9.32%	LNC	-5.39%
252.0	BXP	-7.99%	CHTR	-5.11%

P365D: 1d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
1.0	CSTM	-0.41%	IEP	-0.25%
1.0	AMC	-0.34%	BIIB	-0.23%
1.0	OXY	-0.29%	CLF	-0.19%
1.0	ON	-0.28%	MRK	-0.18%
1.0	BIIB	-0.28%	AMC	-0.15%
1.0	IEP	-0.26%	UNH	-0.15%
1.0	PEP	-0.26%	OXY	-0.14%
1.0	BBY	-0.22%	LW	-0.13%
1.0	LW	-0.2%	ADBE	-0.13%
1.0	UAA	-0.2%	FSUGY	-0.12%
1.0	UNH	-0.19%	LEN	-0.08%
1.0	NAVI	-0.19%	PEP	-0.08%
1.0	ACGL	-0.18%	KHC	-0.08%
1.0	CYH	-0.18%	AA	-0.08%
1.0	MRK	-0.17%	CSTM	-0.08%
1.0	BHP	-0.17%	PCG	-0.07%
1.0	CLF	-0.16%	CZR	-0.07%
1.0	AA	-0.15%	ON	-0.06%
1.0	KHC	-0.14%	AMAT	-0.06%
1.0	ADBE	-0.12%	BHP	-0.06%
1.0	JAZZ	-0.1%	CNC	-0.06%
1.0	LEN	-0.08%	QCOM	-0.06%
1.0	QCOM	-0.08%	INTC	-0.05%
1.0	AAPL	-0.07%	BBY	-0.04%
1.0	USB	-0.06%	RIO	-0.04%
1.0	FSUGY	-0.06%	ZTS	-0.03%
1.0	TLT	-0.06%	LLY	-0.03%
1.0	CPRT	-0.05%	AMGN	-0.03%
1.0	AZN	-0.05%	CPRT	-0.03%
1.0	KALU	-0.04%	AZN	-0.03%

P365D: 10d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
10.0	CLF	-4.73%	CLF	-2.51%
10.0	AMC	-4.67%	IEP	-2.41%
10.0	BIIB	-3.53%	BIIB	-2.29%
10.0	ON	-2.61%	AMC	-1.89%
10.0	IEP	-2.11%	MRK	-1.8%
10.0	LW	-1.62%	UNH	-1.57%
10.0	ADBE	-1.55%	ADBE	-1.39%
10.0	OXY	-1.53%	FSUGY	-1.39%
10.0	KHC	-1.51%	LW	-1.25%
10.0	CSTM	-1.49%	OXY	-1.17%
10.0	MRK	-1.43%	LEN	-1.16%
10.0	CZR	-1.32%	AMAT	-1.01%
10.0	PEP	-1.25%	ON	-0.99%
10.0	UNH	-1.2%	QCOM	-0.94%
10.0	BHP	-0.99%	PEP	-0.91%
10.0	LEN	-0.97%	CZR	-0.9%
10.0	FSUGY	-0.89%	INTC	-0.9%
10.0	LLY	-0.88%	KHC	-0.85%
10.0	BALL	-0.87%	AA	-0.81%
10.0	ZTS	-0.86%	CSTM	-0.78%
10.0	RIO	-0.74%	PCG	-0.77%
10.0	AA	-0.6%	BHP	-0.71%
10.0	BBY	-0.48%	CNC	-0.69%
10.0	CPRT	-0.44%	BBY	-0.62%
10.0	AAPL	-0.44%	AMD	-0.61%
10.0	DHI	-0.43%	RIO	-0.54%
10.0	ACGL	-0.43%	AMGN	-0.41%
10.0	CNC	-0.41%	AAPL	-0.4%
10.0	CMG	-0.4%	FCX	-0.39%
10.0	QCOM	-0.39%	LLY	-0.38%

P365D: 21d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
21.0	CLF	-10.5%	CLF	-5.84%
21.0	BIIB	-7.36%	IEP	-5.47%
21.0	AMC	-6.69%	BIIB	-4.68%
21.0	ON	-6.68%	UNH	-3.95%
21.0	UNH	-5.07%	MRK	-3.9%
21.0	IEP	-4.33%	AMC	-3.71%
21.0	OXY	-4.2%	LEN	-3.23%
21.0	MRK	-3.78%	OXY	-2.83%
21.0	CZR	-3.72%	FSUGY	-2.68%
21.0	KHC	-3.24%	INTC	-2.62%
21.0	ADBE	-2.96%	ON	-2.58%
21.0	CSTM	-2.94%	ADBE	-2.52%
21.0	PEP	-2.94%	PEP	-2.16%
21.0	LW	-2.73%	CZR	-2.03%
21.0	FSUGY	-2.42%	AMAT	-1.99%
21.0	LEN	-2.35%	KHC	-1.92%
21.0	DHI	-1.98%	DHI	-1.89%
21.0	BBY	-1.85%	LW	-1.78%
21.0	BALL	-1.85%	QCOM	-1.76%
21.0	ZTS	-1.81%	CNC	-1.63%
21.0	CNC	-1.65%	BBY	-1.43%
21.0	AMD	-1.59%	CSTM	-1.39%
21.0	LLY	-1.57%	PCG	-1.38%
21.0	RIO	-1.48%	AMD	-1.37%
21.0	NAVI	-1.32%	AA	-1.27%
21.0	GNRC	-1.29%	BHP	-1.2%
21.0	AAPL	-1.23%	PHM	-1.02%
21.0	BHP	-1.21%	AMGN	-0.94%
21.0	QCOM	-1.14%	RIO	-0.93%
21.0	TLT	-0.86%	CMCSA	-0.86%

P365D: 63d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
63.0	ON	-34.47%	CLF	-17.47%
63.0	CLF	-31.21%	IEP	-16.49%
63.0	BIIB	-24.9%	BIIB	-15.78%
63.0	UNH	-24.77%	AMC	-15.25%
63.0	CSTM	-17.7%	ON	-14.68%
63.0	AAP	-16.65%	LEN	-13.69%
63.0	CZR	-15.7%	MRK	-12.54%
63.0	MRK	-15.53%	CSTM	-11.53%
63.0	OXY	-14.31%	UNH	-11.52%
63.0	BBY	-14.14%	ADBE	-11.13%
63.0	IEP	-12.97%	DHI	-10.4%
63.0	ADBE	-12.34%	OXY	-9.58%
63.0	CNC	-11.89%	AMD	-9.44%
63.0	AMD	-11.16%	CYH	-9.43%
63.0	PEP	-10.83%	CZR	-9.11%
63.0	BALL	-10.79%	BBY	-8.34%
63.0	NAVI	-10.04%	WDC	-8.15%
63.0	DHI	-9.43%	AMAT	-7.75%
63.0	AMC	-9.36%	PEP	-7.73%
63.0	LEN	-9.24%	FSUGY	-7.43%
63.0	KHC	-9.17%	CNC	-6.75%
63.0	ZTS	-8.74%	KHC	-6.73%
63.0	GOOGL	-8.73%	PHM	-6.7%
63.0	BHC	-8.68%	BALL	-5.99%
63.0	CYH	-8.52%	NAVI	-5.76%
63.0	LW	-8.51%	QCOM	-5.54%
63.0	QCOM	-8.21%	AAP	-5.33%
63.0	NWL	-7.76%	ELAN	-4.97%
63.0	ELAN	-7.51%	FCX	-4.93%
63.0	FSUGY	-6.96%	ZTS	-4.79%

P365D: 126d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2024-07-02 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
126.0	CLF	-60.62%	ON	-33.83%
126.0	ON	-50.01%	AMC	-33.44%
126.0	BIIB	-45.95%	IEP	-32.07%
126.0	CZR	-41.26%	CLF	-31.61%
126.0	GNRC	-37.82%	LEN	-31.38%
126.0	CYH	-35.19%	BIIB	-28.83%
126.0	LW	-32.27%	CYH	-27.23%
126.0	MRK	-31.32%	AMD	-24.85%
126.0	AMD	-31.32%	DHI	-24.73%
126.0	CSTM	-26.15%	MRK	-22.29%
126.0	BHC	-26.04%	ADBE	-22.22%
126.0	UNH	-25.08%	CSTM	-22.18%
126.0	OXY	-24.88%	CZR	-21.98%
126.0	AA	-24.18%	WDC	-21.71%
126.0	ELAN	-24.12%	UNH	-21.39%
126.0	BALL	-23.65%	LW	-20.43%
126.0	AAP	-22.75%	PHM	-18.61%
126.0	DHI	-22.68%	BBY	-16.58%
126.0	PEP	-22.67%	GNRC	-16.29%
126.0	WDC	-22.63%	BALL	-16.03%
126.0	LEN	-22.62%	FSUGY	-15.97%
126.0	ADBE	-22.41%	PEP	-15.83%
126.0	UAA	-21.43%	OXY	-15.74%
126.0	IEP	-20.94%	PCG	-15.39%
126.0	BBY	-20.93%	AA	-15.37%
126.0	LUMN	-20.46%	UAA	-14.97%
126.0	NAVI	-19.74%	AMAT	-14.93%
126.0	CNC	-19.29%	FCX	-14.76%
126.0	KHC	-19.23%	KHC	-14.4%
126.0	NWL	-17.86%	IRM	-14.35%

P90D: 1d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-04-03 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
1.0	UNH	-1.34%	UNH	-0.81%
1.0	BMY	-0.88%	BMY	-0.36%
1.0	CNC	-0.8%	PCG	-0.34%
1.0	PEP	-0.67%	KHC	-0.29%
1.0	KHC	-0.64%	CNC	-0.26%
1.0	ACGL	-0.46%	PEP	-0.22%
1.0	PCG	-0.37%	CPRT	-0.22%
1.0	CPRT	-0.3%	LW	-0.21%
1.0	GILD	-0.29%	SNY	-0.19%
1.0	OXY	-0.25%	JAZZ	-0.18%
1.0	TMUS	-0.21%	TMUS	-0.17%
1.0	JAZZ	-0.2%	AMGN	-0.16%
1.0	SNY	-0.16%	IEP	-0.15%
1.0	POST	-0.15%	POST	-0.13%
1.0	AZN	-0.14%	MRK	-0.12%
1.0	TLT	-0.13%	ABBV	-0.12%
1.0	TSLA	-0.13%	ORLY	-0.1%
1.0	AAPL	-0.11%	VZ	-0.08%
1.0	CVS	-0.11%	AZN	-0.08%
1.0	ZTS	-0.1%	ACGL	-0.07%
1.0	GT	-0.08%	TLT	-0.06%
1.0	AMGN	-0.08%	XOM	-0.05%
1.0	NAVI	-0.08%	MSI	-0.04%
1.0	TRGP	-0.06%	BIIB	-0.04%
1.0	T	-0.03%	AZO	-0.04%
1.0	TEVA	-0.03%	OXY	-0.03%
1.0	VZ	-0.01%	TRGP	-0.02%
1.0	MSI	-0.01%	MUB	-0.02%
1.0	LQD	-0.0%	ZTS	-0.02%
1.0	MRK	0.0%	GSK	-0.01%

P90D: 10d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-04-03 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
10.0	UNH	-17.68%	UNH	-10.71%
10.0	KHC	-3.94%	PCG	-3.38%
10.0	BMY	-3.9%	CPRT	-3.12%
10.0	PCG	-3.8%	CNC	-2.75%
10.0	CNC	-3.49%	KHC	-2.4%
10.0	CPRT	-2.96%	TMUS	-2.2%
10.0	PEP	-2.95%	BMY	-2.12%
10.0	CVS	-1.97%	PEP	-2.08%
10.0	TMUS	-1.97%	SNY	-1.1%
10.0	POST	-1.51%	POST	-0.89%
10.0	SNY	-1.4%	LW	-0.61%
10.0	VZ	-1.15%	ORLY	-0.57%
10.0	AMGN	-0.92%	VZ	-0.57%
10.0	ORLY	-0.65%	AMGN	-0.41%
10.0	ACGL	-0.64%	TLT	-0.39%
10.0	TLT	-0.43%	GME	-0.17%
10.0	MSI	-0.11%	MSI	-0.14%
10.0	AZO	0.1%	AZO	-0.0%
10.0	RIO	0.18%	MRK	0.0%
10.0	MRK	0.22%	ACGL	0.0%
10.0	VCSH	0.25%	CVS	0.05%
10.0	LW	0.27%	MUB	0.1%
10.0	LEN	0.35%	VCSH	0.2%
10.0	MUB	0.37%	IEP	0.28%
10.0	GLD	0.39%	LQD	0.37%
10.0	TRGP	0.43%	HD	0.45%
10.0	LLY	0.58%	LEN	0.53%
10.0	EMB	0.58%	CMCSA	0.56%
10.0	IEP	0.7%	TRGP	0.57%
10.0	T	0.71%	JAZZ	0.61%

P90D: 21d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-04-03 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
21.0	UNH	-32.43%	UNH	-20.13%
21.0	KHC	-8.84%	CPRT	-8.51%
21.0	CNC	-8.11%	PCG	-6.99%
21.0	CPRT	-6.68%	KHC	-5.75%
21.0	PCG	-6.34%	CNC	-5.63%
21.0	BMY	-6.05%	TMUS	-4.1%
21.0	PEP	-5.78%	PEP	-3.86%
21.0	SNY	-4.6%	SNY	-3.2%
21.0	CVS	-4.35%	BMY	-2.8%
21.0	TMUS	-3.93%	POST	-1.86%
21.0	POST	-2.63%	TLT	-1.21%
21.0	TLT	-1.83%	ORLY	-1.13%
21.0	ORLY	-1.55%	CLF	-1.13%
21.0	LLY	-1.36%	MSI	-0.95%
21.0	MSI	-1.14%	MRK	-0.87%
21.0	CLF	-0.8%	IEP	-0.63%
21.0	MRK	-0.73%	LLY	-0.61%
21.0	RIO	-0.51%	CVS	-0.58%
21.0	VZ	-0.5%	VZ	-0.38%
21.0	ACGL	-0.21%	TRGP	-0.34%
21.0	TRGP	0.01%	MUB	0.03%
21.0	AAPL	0.13%	VCSH	0.27%
21.0	MUB	0.22%	AZO	0.37%
21.0	IEP	0.26%	AMGN	0.42%
21.0	VCSH	0.29%	AAPL	0.44%
21.0	GLD	0.68%	ACGL	0.55%
21.0	AZO	0.73%	JAZZ	0.55%
21.0	DHI	0.8%	RIO	0.55%
21.0	LEN	0.92%	LQD	0.57%
21.0	EMB	1.05%	DHI	0.72%

P30D: 1d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-06-02 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
1.0	GME	-3.23%	GME	-1.02%
1.0	AMC	-1.55%	PCG	-0.9%
1.0	TSLA	-1.34%	CYH	-0.57%
1.0	ZTS	-1.31%	AMC	-0.53%
1.0	PCG	-0.97%	ZTS	-0.42%
1.0	AAP	-0.65%	GSK	-0.42%
1.0	BBY	-0.64%	GT	-0.35%
1.0	BUD	-0.63%	COST	-0.34%
1.0	GT	-0.56%	AAP	-0.31%
1.0	ACGL	-0.46%	TSLA	-0.29%
1.0	TEVA	-0.45%	LW	-0.29%
1.0	COST	-0.44%	ACGL	-0.28%
1.0	GSK	-0.41%	BMY	-0.27%
1.0	BMY	-0.41%	IEP	-0.24%
1.0	CYH	-0.38%	BIIB	-0.22%
1.0	PRGO	-0.26%	ADBE	-0.2%
1.0	CPRT	-0.24%	BUD	-0.19%
1.0	JAZZ	-0.23%	CPRT	-0.18%
1.0	BIIB	-0.21%	VFC	-0.17%
1.0	GWW	-0.21%	GWW	-0.16%
1.0	LW	-0.18%	KHC	-0.16%
1.0	ABBV	-0.18%	AMGN	-0.16%
1.0	PEP	-0.18%	AZN	-0.15%
1.0	KHC	-0.17%	TEVA	-0.13%
1.0	VZ	-0.11%	BHP	-0.13%
1.0	AZN	-0.09%	GLD	-0.11%
1.0	SNY	-0.08%	RIO	-0.1%
1.0	ADBE	-0.06%	JAZZ	-0.1%
1.0	MOS	-0.06%	VZ	-0.09%
1.0	AMGN	-0.05%	MNST	-0.09%

P30D: 10d

Results reflect ticker level average ROEDB across all model dates for which actual results for the stated horizon are known.

Period examined: All model dates from 2025-06-02 through 2025-06-27

Horizon	Ticker_V	ROEDB_V	Ticker_S	ROEDB_S
10.0	GME	-27.84%	GME	-15.72%
10.0	AMC	-25.97%	AMC	-8.66%
10.0	AAP	-19.46%	PCG	-8.52%
10.0	ZTS	-17.05%	GT	-7.22%
10.0	ADBE	-13.92%	AAP	-6.49%
10.0	PCG	-10.67%	ADBE	-6.41%
10.0	VFC	-9.86%	VFC	-6.26%
10.0	GWW	-7.97%	GSK	-5.98%
10.0	BHP	-7.95%	ZTS	-5.94%
10.0	VZ	-6.82%	CYH	-5.83%
10.0	GSK	-6.47%	BMY	-4.26%
10.0	BBY	-6.27%	BBY	-4.22%
10.0	AMGN	-5.71%	BIIB	-4.2%
10.0	ACGL	-5.52%	BHP	-4.04%
10.0	ISRG	-5.51%	CPRT	-3.91%
10.0	EXPE	-5.27%	GWW	-3.89%
10.0	BMY	-5.26%	TMUS	-3.85%
10.0	BIIB	-5.0%	BA	-3.78%
10.0	JAZZ	-4.99%	AZN	-3.53%
10.0	LW	-4.86%	LW	-3.51%
10.0	CPRT	-4.86%	EXPE	-3.22%
10.0	SNY	-4.59%	SNY	-3.18%
10.0	GT	-4.49%	COST	-3.12%
10.0	COST	-4.4%	VZ	-3.08%
10.0	KHC	-3.89%	FSUGY	-2.98%
10.0	TMUS	-3.71%	TEVA	-2.91%
10.0	BXP	-3.59%	KHC	-2.85%
10.0	FSUGY	-3.55%	ISRG	-2.8%
10.0	BA	-3.01%	ACGL	-2.8%
10.0	AZN	-2.98%	AMGN	-2.72%

Appendix 1: Calculating "Expected Body" for Sigma

An expected value is a probabilty weighted average. An integral provides the sum of the values of a function of x between two values of x. The "Expected Body" is the expected value between the model date value and the 95%tile for the forecast horizon. "Sigma" is our term to refer to the probability density function of the standard normal distribution, N. We will assume the model date price is the 0 value of the standard normal distributiuon and we know the 95% tile occurs at 1.645 standard deviations (sigmas). Therefore, the Expected Body for Sigma is the integral of x*N between x=0 and x=1.645. Because the Expected Body is conditioned upon forward price residing between 0 and 1.645 sigmas, we then divide that integral by the integral of N between x=0 and x=1.645. See the Python code below, which yields the result "Probability-weighted average value of sigma: 0.6573812144320618"

from scipy.stats import norm from scipy.integrate import quad

def prod_integrand(x): return x * norm.pdf(x)

pwa_sigma, _ = quad(prod_integrand, 0, 1.645)

def integrand(x): return norm.pdf(x)

p_sigma, _ = quad(integrand, 0, 1.645)

ev=pwa_sigma/p_sigma

print("Probability-weighted average value of sigma:", ev)

If you don't do Python you can still easily check the veracity of the 0.657 expected value for Sigma for yourself by doing Riemann sums using excel's "NORMDIST" function. Here are the steps: 1) Make column A starting at 0 and going to 1.645 by 0.005 increments. This is your "x". 2) In column B refer to A as follows: "=NORMDIST(a,0,1,TRUE)". This is the cumulaive probability of the standard normal distribution up through x. 3) In column C take the differences betwene each value and its prior value in B. These are the probabilties between each value of x. 4) In column D take the average of each value in A and its prior value. This gives you the value of x at the center of each increment. 5) Multiply column D by column C up through A=1.645. This is your probabilty weighted average value of x. It should equal 0.295832. 6) Sum column C. This is your cumulative probabilty that x is between 0 and 1.645. It should equal 0.450002 7) Divide your probabilty weighted average value of x by your cumulative probabilty that x is between 0 and 1.645. You should get a value of 0.657383.

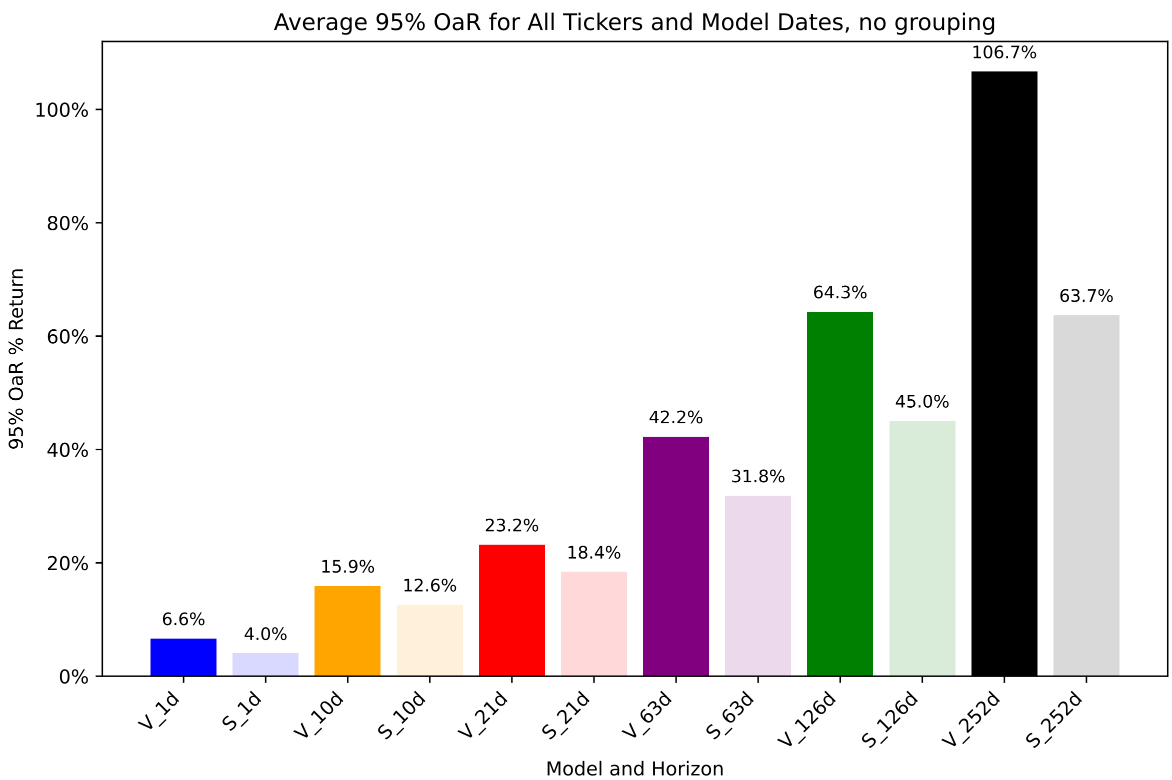
Appendix 2: 95% Opportunity at Risk (OaR)

Historic Average Levels

Here we compare Vector Model ("V", dark shading) and Sigma ("S", light shading) 95% OaR levels by horizon, on average across tickers. We make this comparison on average across tickers for select cohorts of model dates (ex: P30D), and forward horizons (ex: 21d) for all ticker model dates thru the present.

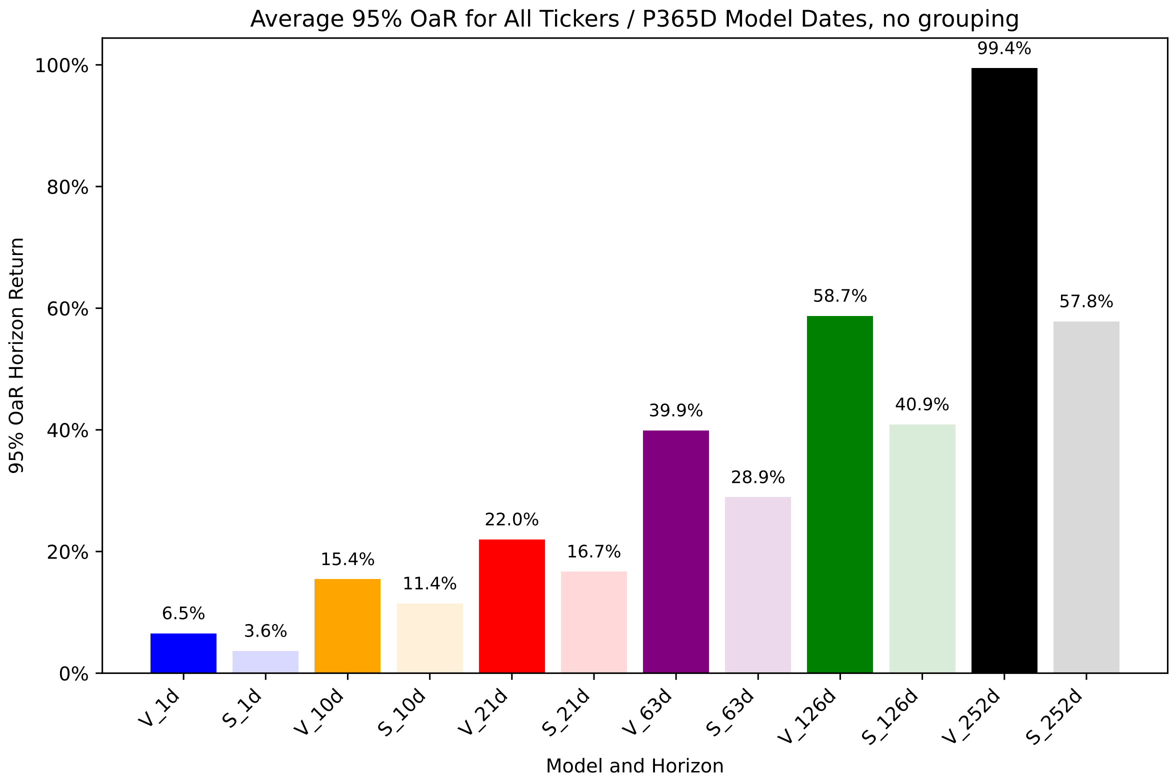
All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-06-27



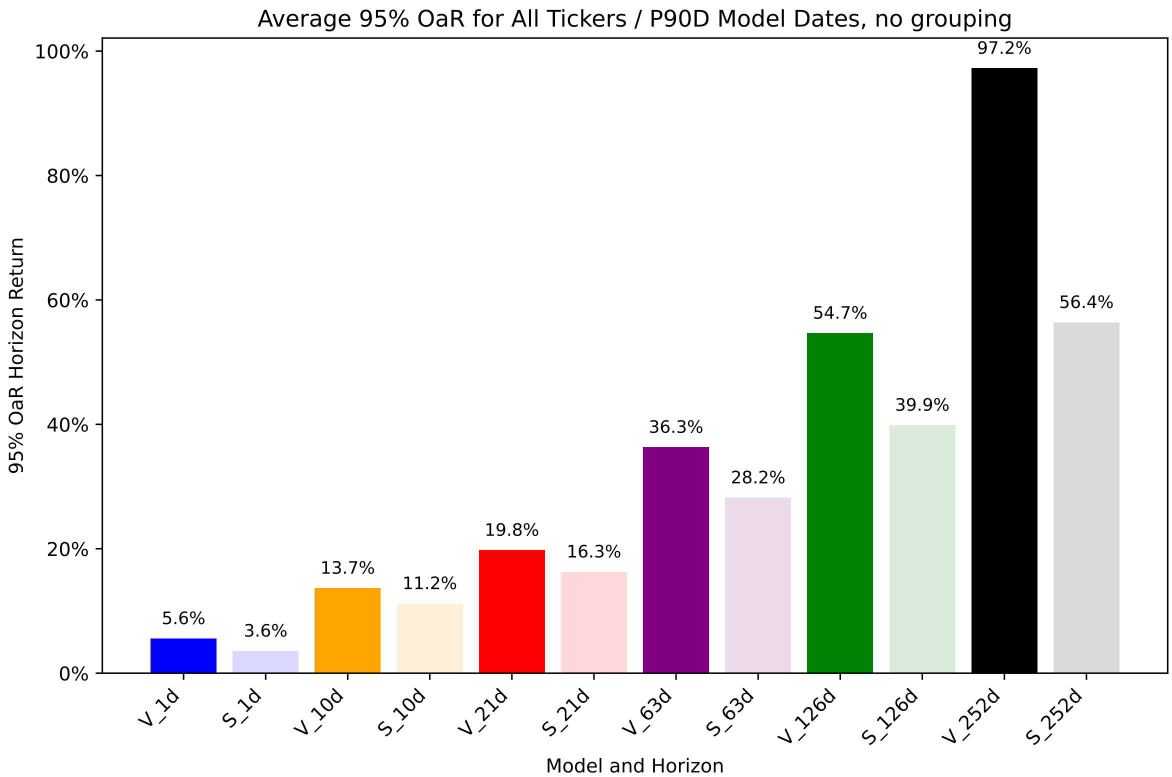
Prior 365 Calendar Days (P365D)

Period examined: All model dates from 2024-07-02 through 2025-06-27



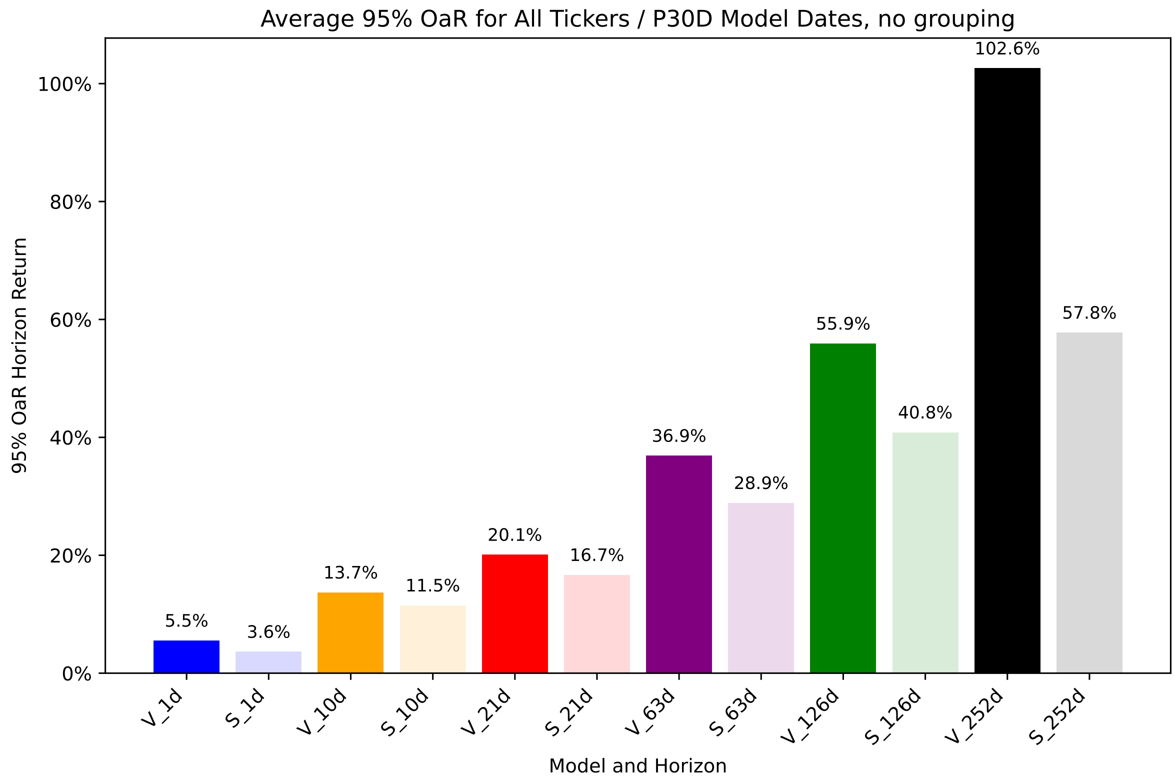
Prior 90 Calendar Days (P90D)

Period examined: All model dates from 2025-04-03 through 2025-06-27



Prior 30 Calendar Days (P30D)

Period examined: All model dates from 2025-06-02 through 2025-06-27



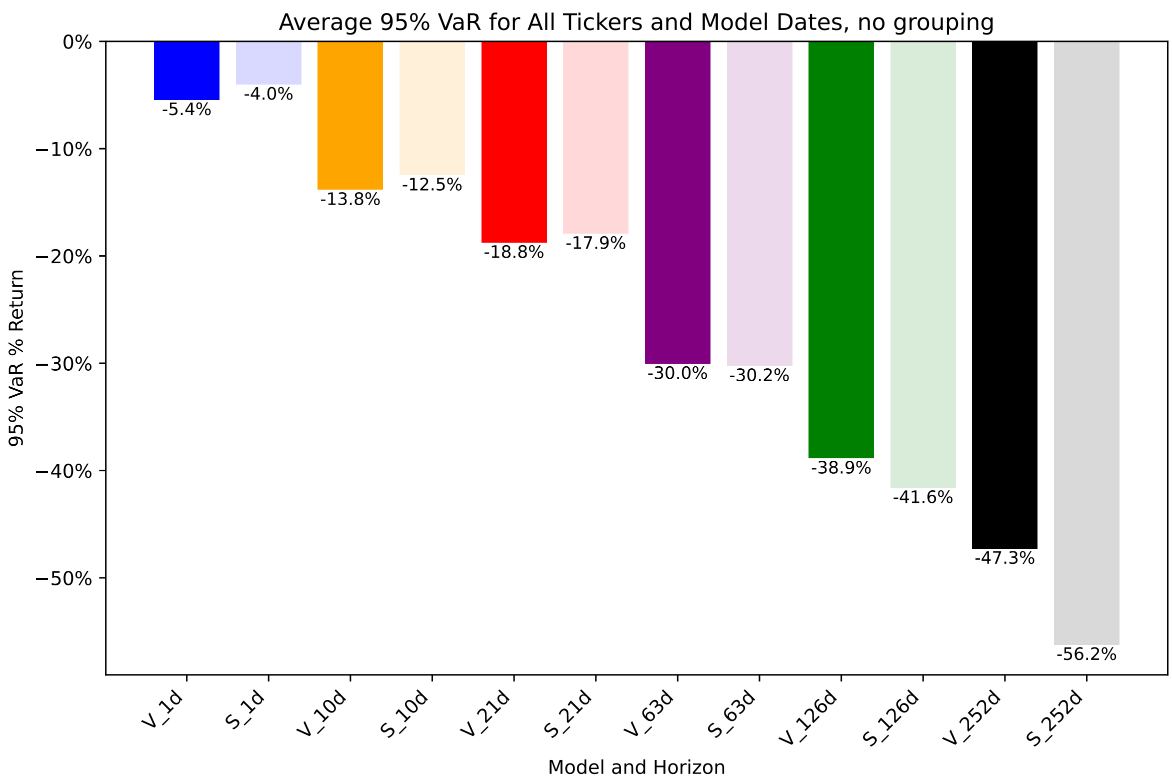
Appendix 3: 95% Value at Risk (VaR)

Historic Average Levels

Here we compare Vector Model ("V", dark shading) and Sigma ("S", light shading) 95% VaR levels by horizon, on average across tickers. We make this comparison on average across tickers for select cohorts of model dates (ex: P30D), and forward horizons (ex: 21d) for all ticker model dates thru the present.

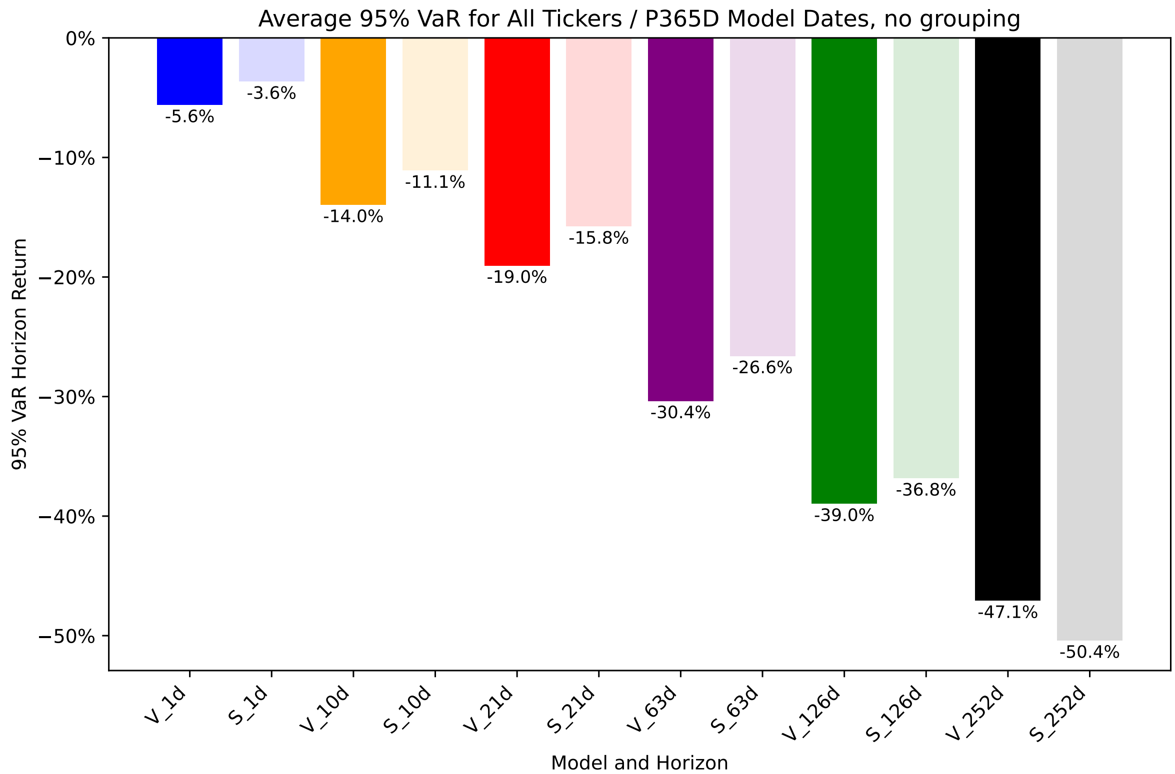
All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-06-27



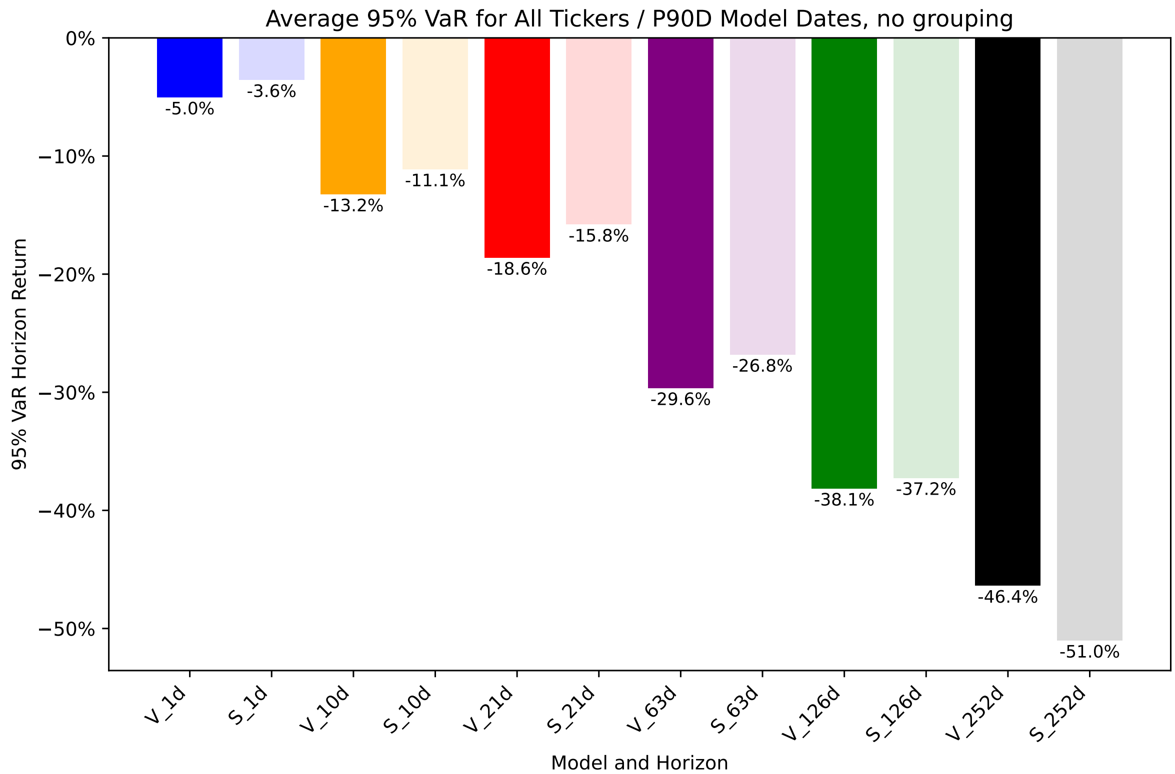
Prior 365 Calendar Days (P365D)

Period examined: All model dates from 2024-07-02 through 2025-06-27



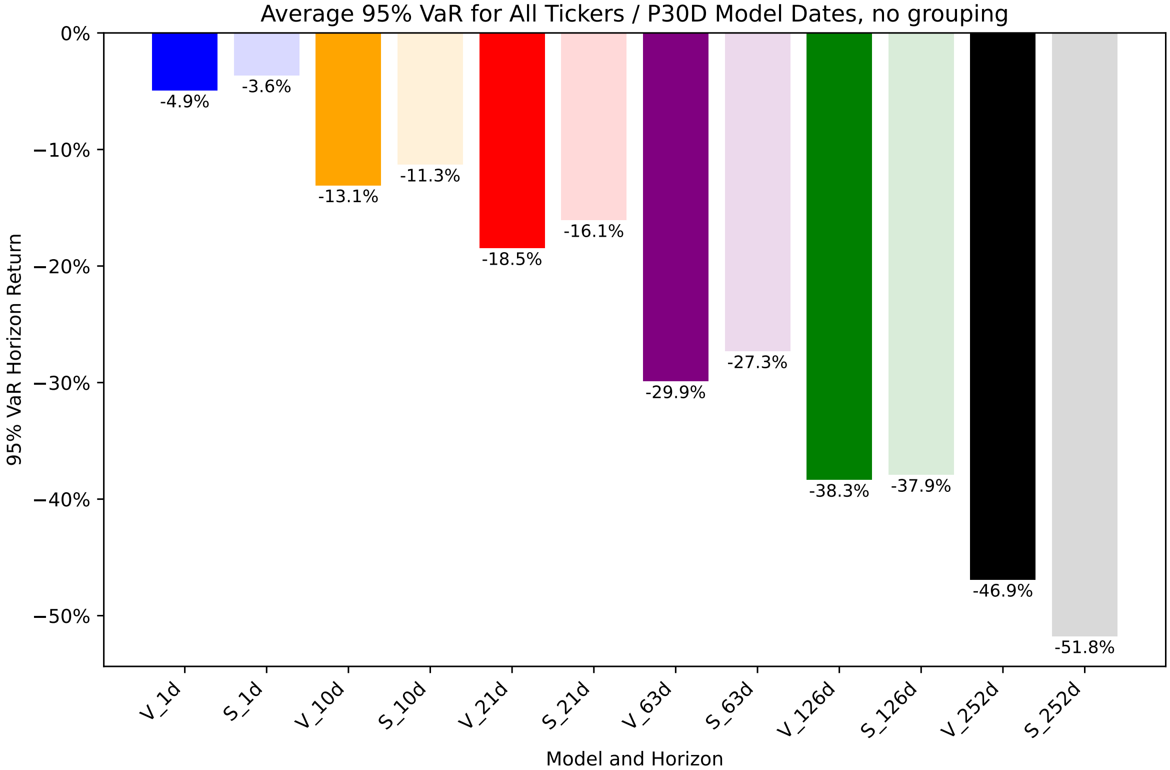
Prior 90 Calendar Days (P90D)

Period examined: All model dates from 2025-04-03 through 2025-06-27



Prior 30 Calendar Days (P30D)

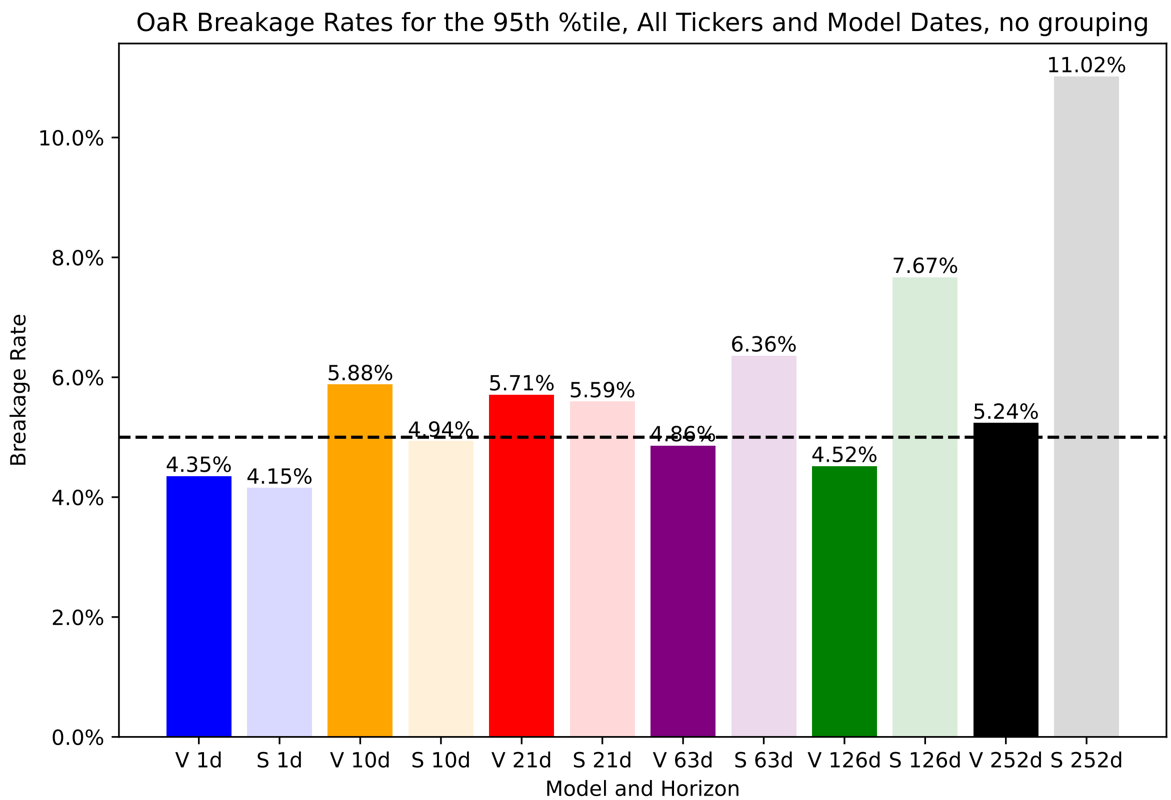
Period examined: All model dates from 2025-06-02 through 2025-06-27



Appendix 4: 95% OaR Breakage Rates

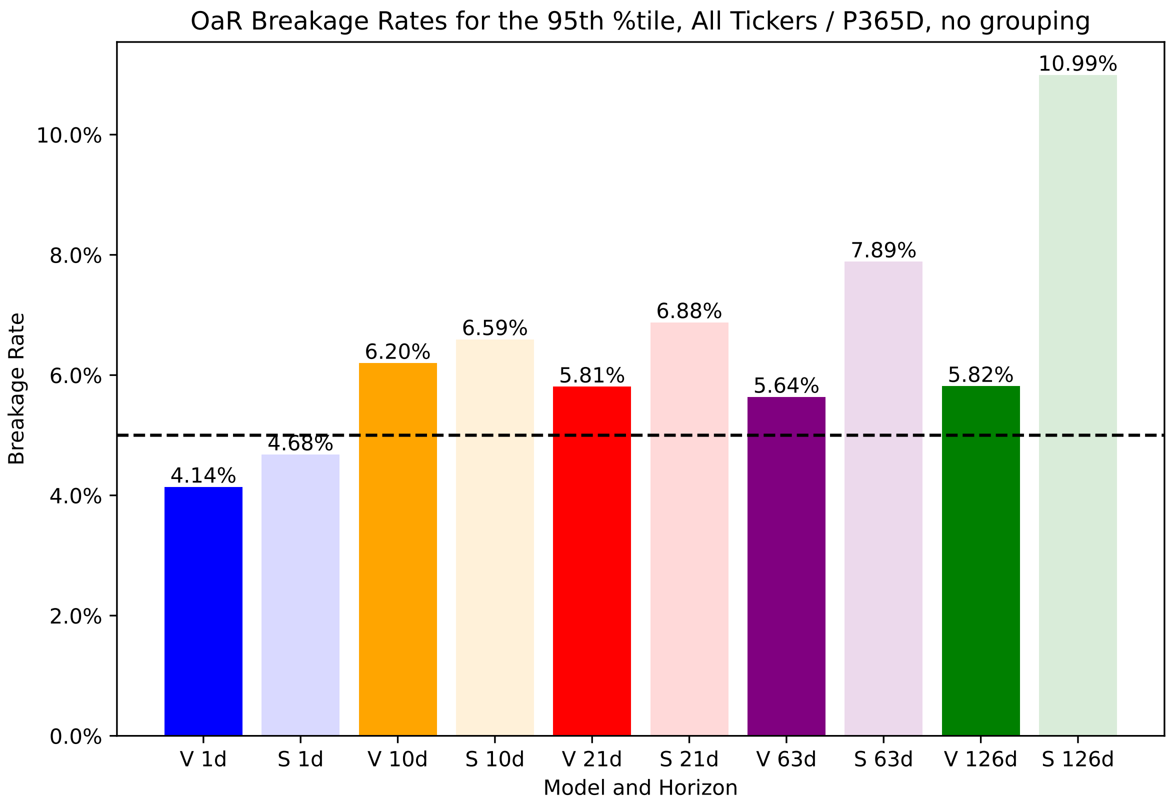
All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-06-27



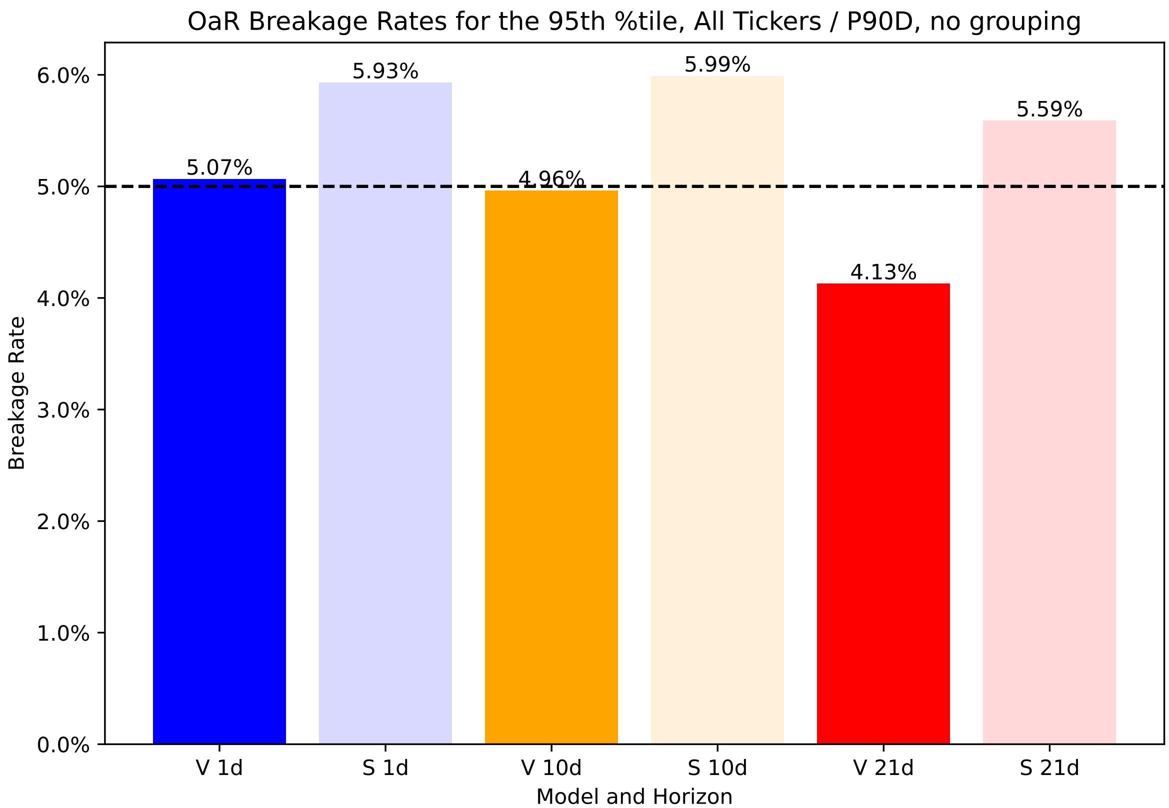
Prior 365 Calendar Days (P365D)

Period examined: All model dates from 2024-07-02 through 2025-06-27



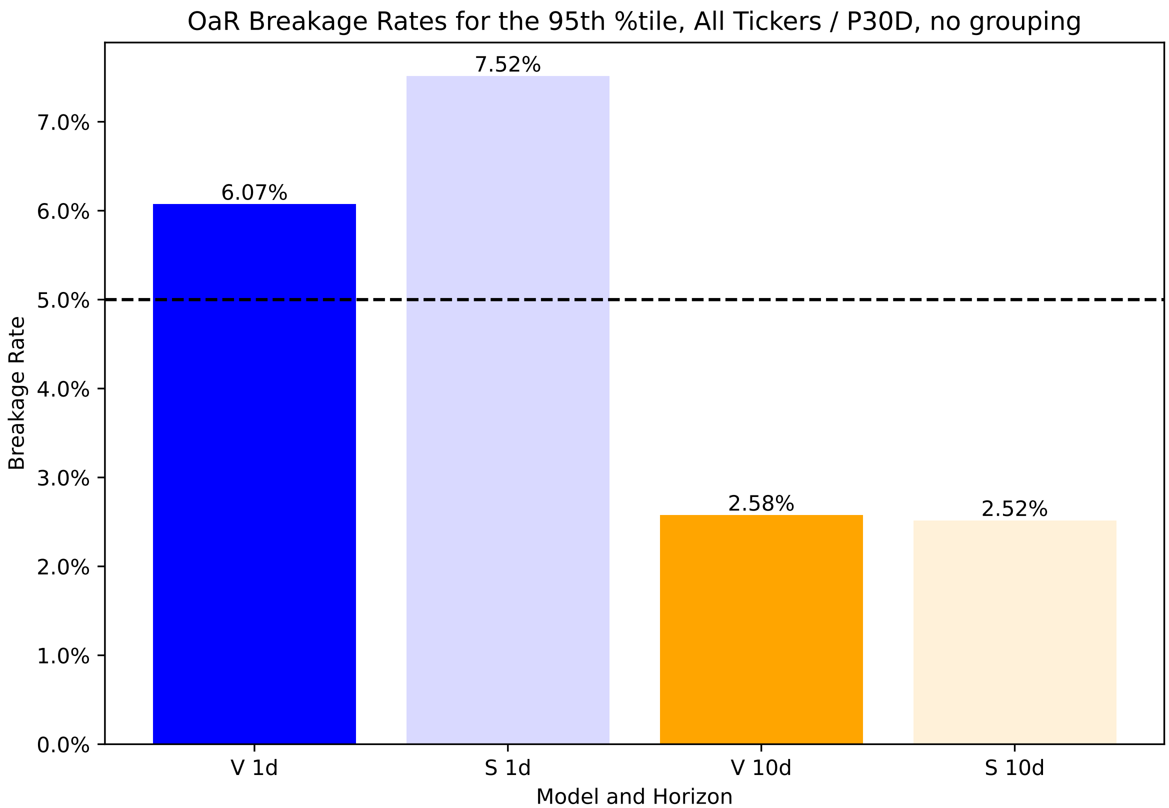
Prior 90 Calendar Days (P90D)

Period examined: All model dates from 2025-04-03 through 2025-06-27



Prior 30 Calendar Days (P30D)

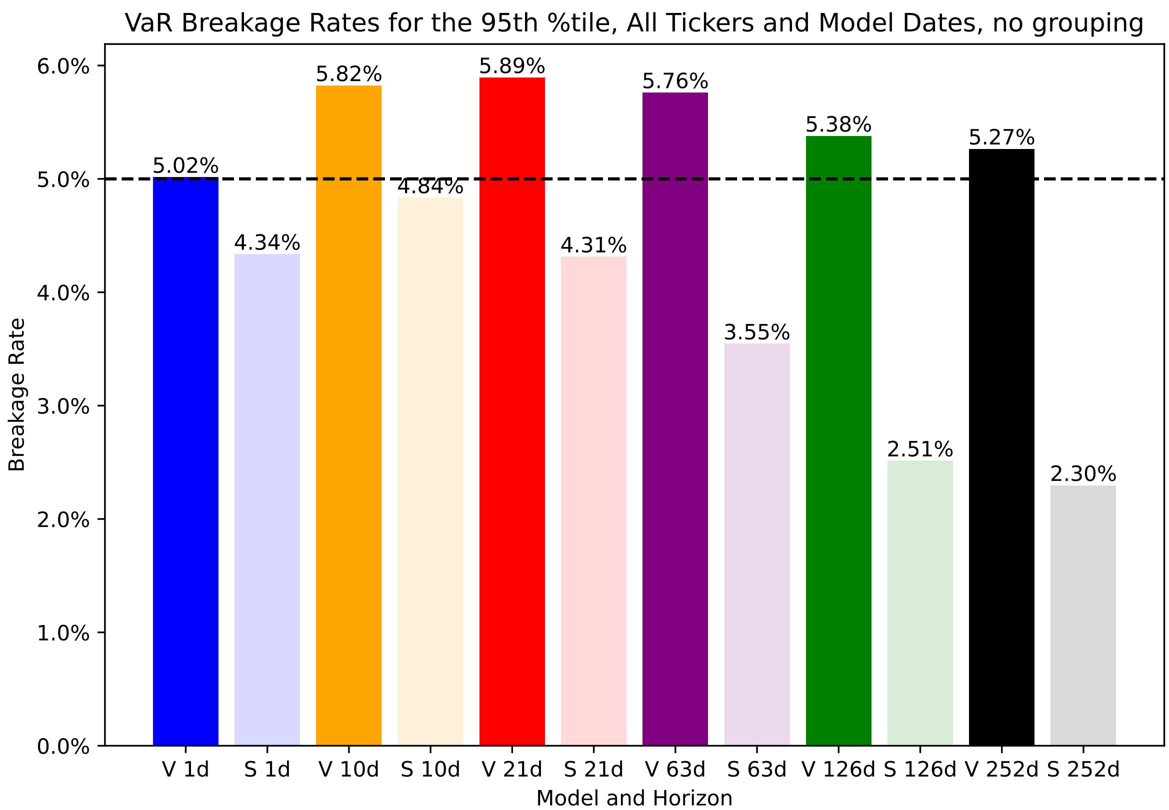
Period examined: All model dates from 2025-06-02 through 2025-06-27



Appendix 5: 95% VaR Breakage Rates

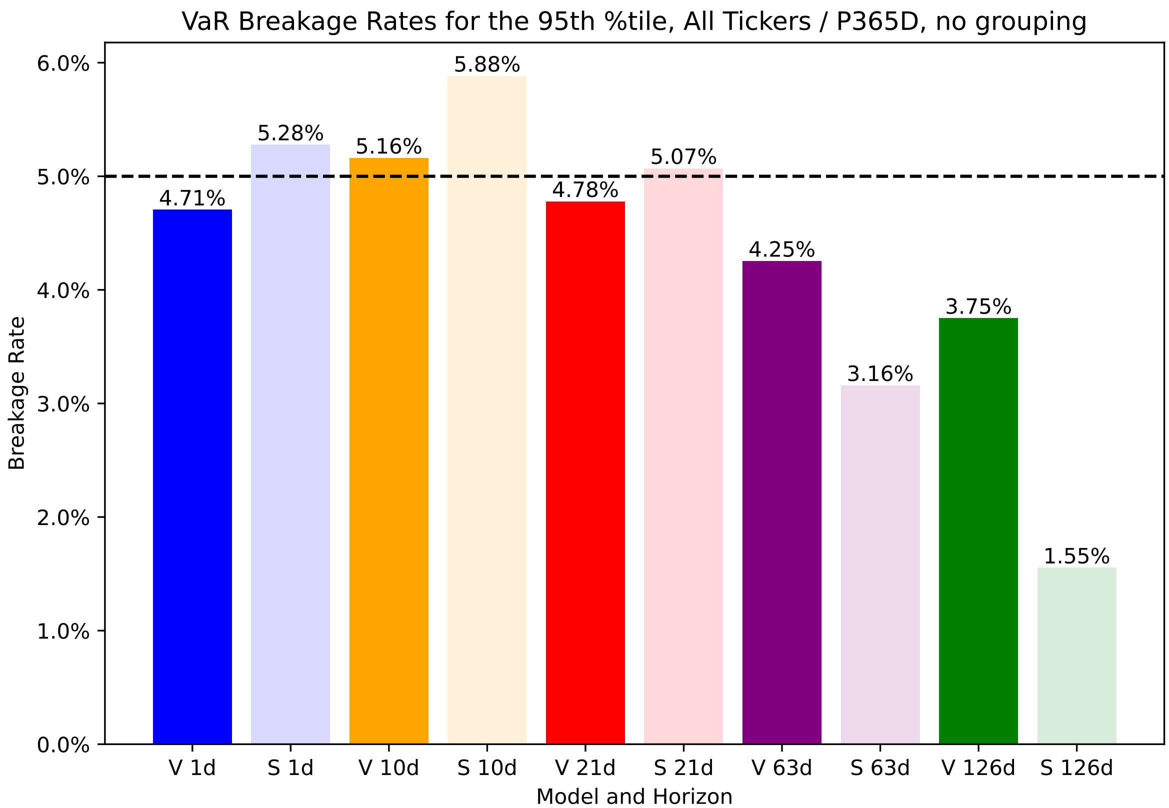
All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-06-27



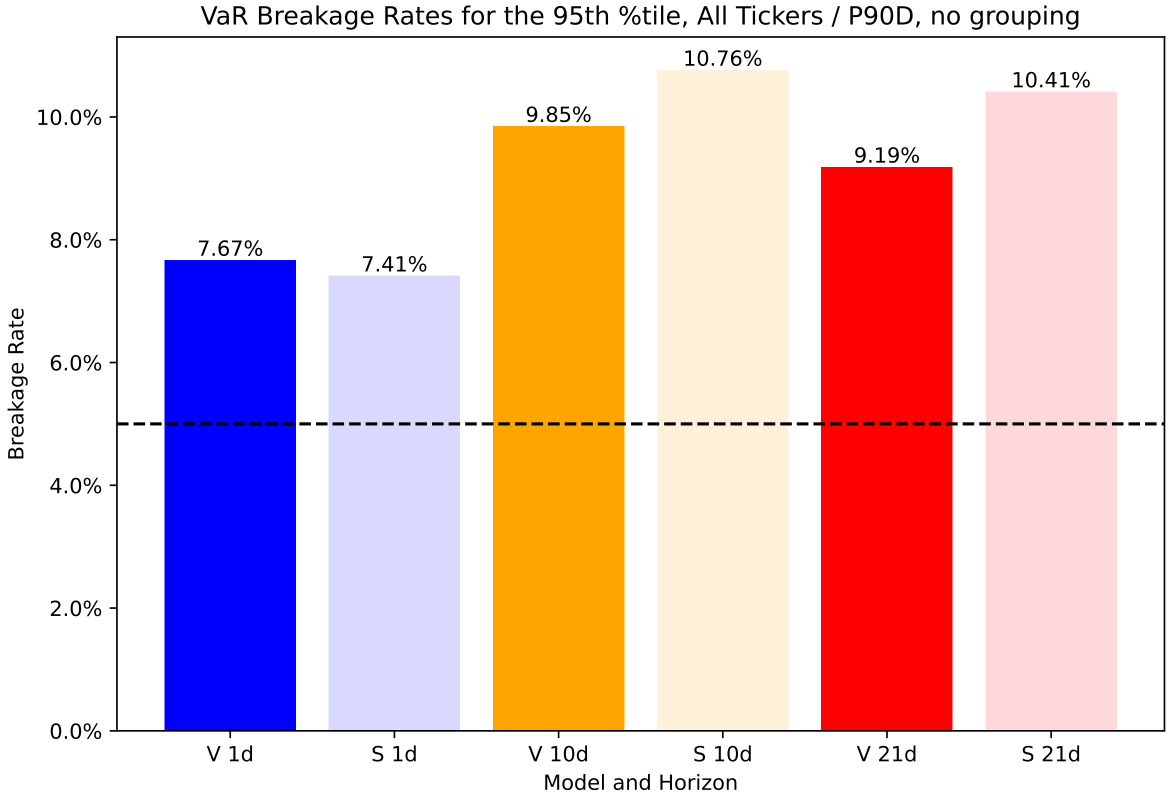
Prior 365 Calendar Days (P365D)

Period examined: All model dates from 2024-07-02 through 2025-06-27



Prior 90 Calendar Days (P90D)

Period examined: All model dates from 2025-04-03 through 2025-06-27



Prior 30 Calendar Days (P30D)

Period examined: All model dates from 2025-06-02 through 2025-06-27