

VecViz Value At Risk (VaR) Performance Report

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Introduction

Value at Risk, or VaR, as discussed in this report, is an estimate of the maximum amount an investor could lose by being long a ticker at the end of a specified forward time horizon, at a specified level of probability. An accurate VaR measure forecasts losses that are exceeded by actual losses in one minus the specified probability percent of all observations.

The aim of this report is to inform a broad spectrum of readers of the behavior and accuracy of VecViz's VaR 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 and on well-established statistical tests from the academic literature.

Please see the "Important Considerations" section of this report for disclosure of at least some of the many ways this report likely falls short of its objective, and other important disclosures.

Evaluation of VaR Estimates

The metrics used in this report to evaluate VaR performance via comparison to Sigma include the mean absolute error (MAE) of breakage rates to the specified probability, Return on VaR Based Capital (ROVBC), and the alpha of Vector Model ROVBC to underlying ticker returns. Substantial supporting detail in terms of influential tickers and model dates are provided for each metric and model. The results of this comparative analysis are summarized in the Vector Model VaR "Report Card" section of this report.

We supplement this comparative analysis with two additional tests of Vector Model VaR that are well established in the quantitative finance literature: the Kupiec Test of breakage consistency with the specified probability and the Christoferson test of breakage independence. Results of these tests are also summarized in the Report Card section.

VaR Breakage Ratios

VaR Breakage refers to forward returns being below the VaR estimate for the corresponding horizon date. Because the Vector Model delivers ticker level probability analytics, breakage is measured at the individual ticker-model date level. and we aggregate it in various ways for evaluation purposes.

For example, 100 tickers tracked over 10 days represents 1,000 ticker-model dates. An ideal estimate of 95% ticker level VaR would generate 50 breaks. Therefore, we compare Vector Model VaR breakage to Sigma's on the basis of MAE to the ideal number of breaks. The model with the smaller MAE is deemed preferable with regard to VaR breakage proximity to target.



However, an ideal VaR estimate wouldn't have all those breaks concentrated in just a couple days or just a few tickers. The breaks generated by an ideal VaR estimate would also be independent with respect to model dates and tickers. Therefore, we also compare the Vector Model's VaR breakage to Sigma's on the basis of variability over time (on average across tickers) and across tickers (on average across dates).

Sigma is known to have some significant shortcomings in measuring the volatility of security price returns. Thus, we supplement the comparison of Vector Model breakage rate MAE to Sigma's MAE with the aforementioned Kupiec test, which tells us whether Vector Model VaR breakage is consistent with targeted breakage with a high degree of confidence (95%). Further, we supplement the comparison of Vector Model breakage variability across model dates with the Christoferson test of date independence.

ROVBC and its drivers

The metric "ROVBC" requires some explanation. Return on VaR Based Capital, or ROVBC, attempts to capture the impact on investor returns of using the Vector Model VaR instead of Sigma VaR to size positions, assuming the investor has a fixed risk budget per ticker.

ROVBC assumes that Sigma earns the return of the underlying ticker and the Vector Model earns a return proportionate to that, where the proportion is the ratio of Sigma VaR / Vector VaR, subject to a cap and floor (we use 300% and 33.33%). So, for example, if Sigma said VaR for ticker XYZ was -2.00% and the Vector Model said VaR for XYZ was -4.00%, the Vector Model ROVBC for XYZ would be half of Sigma's. Likewise, if the Vector Model said VaR for XYZ was -1.00% the Vector Model's ROVBC for XYZ would be double Sigma's. No cost of borrowing or crediting for uninvested funds is incorporated in ROVBC.

For the Vector Model ROVBC to be higher than Sigma's it signifies that either (1) Vector Model VaR was more deeply negative than Sigma's VaR and the ticker traded lower, or (2) Sigma VaR was more deeply negative than the Vector Model's VaR and the ticker traded higher.

Addressing The Tradeoff Between VaR Breakage and ROVBC

All else equal, assuming a positive drift higher in average asset prices over time, the model with more deeply negative average VaR levels will have lower breakage rates but also lower ROVBC, and vice versa. Thus, relative ROVBC must be considered in the context of relative breakage rate MAE. In the Report Card we include a metric that directly addresses this concern: comparison of Vector Model ROVBC to Sigma ROVBC "Adj. for Avg. VM-Sigma VaR Diff." (adjusted for average Vector Model - Sigma VaR differentials). Specifically, we multiply average aggregate Sigma ROVBC by the ratio of average aggregate Sigma VaR to average aggregate Vector Model VaR. This multiplication almost entirely eliminates the influence of systematic VaR differentials on the relationship between Vector Model and Sigma ROVBC.



The bias that remains reflects only the aforementioned capping and flooring when calculating Vector Model ROVBC.

We also provide a more elegant, though less transparent metric that addresses this concern - the alpha of Vector Model ROVBC to Sigma ROVBC (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 ROVBC on the underlying ticker forward returns for corresponding TMD’s. It represents the expected Vector Model ROVBC when Sigma ROVBC, i.e., the underlying ticker return, is 0.00%.

Determining the drivers of ROVBC alpha

A ROVBC Alpha greater than 0.00 across TMD’s indicates that Vector Model VaR moved favorably from a market timing and / or ticker selection perspective. We present that statistic alongside an average ROVBC 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.

ROVBC Beta

ROVBC Beta represents the expected sensitivity of Vector Model ROVBC to Sigma ROVBC, i.e., the underlying ticker return. It is the slope of the aforementioned ordinary least squares regression of Vector Model ROVBC on Sigma ROVBC. Like outright ROVBC, it must be considered in the context of Breakage MAE, and like alpha it can be bifurcated to reveal additional insight.

We encourage readers to consider the Vector Model ROVBC beta to Sigma ROVBC in the context of how well each model’s VaR breakage rates compare to targeted levels. For example, if the Sigma model VaR breakage is well below target and the Vector Model’s VaR breakage is close to target, then Vector Model VaR levels are likely less deeply negative than Sigma’s and the beta of Vector Model ROVBC to Sigma ROVBC should be expected to be > 1.00 .

A ROVBC Beta greater than 1.00 across TMD’s indicates that Vector Model VaR was less negative than Sigma VaR 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 VaR was less deeply negative than Sigma VaR on more volatile days. If this second beta is less than the overall beta then it indicates that Vector Model VaR tended to be less deeply negative than Sigma VaR 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 VaR 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 VaR 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 VaR 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.

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-vecvzis-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 VaR outperforms Sigma VaR, you should not necessarily conclude that Vector Model VaR is the best volatility model for your purposes. See the discussion of some of the other types of volatility models in this blog for more detail: <https://vecviz.com/an-llms-comparison-of-vecviz-to-established-vol-models/>
- 4) All breakage rate and ROVBC performance statistics are as of the end of the horizon only. All interim price movement is ignored. In other words, a stock with a 10d VaR of -15% may have declined 99% the day after the VaR estimate of -15% was calculated, but if it reverts to being only down 14.99% on the 10th day then no breakage occurred as calculated in this report, and its ROVBC performance will be based on a -14.99% price return.
- 5) Clearly, all horizons $> 1d$ overlap when considered on a daily basis (except for those utilized in the Kupiec and Christoferson tests). 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 VaR breakage and ROVBC returns are calculated similarly.
- 6) We are not considering transaction costs. The turnover and therefore transaction costs experienced by Vector Model ROVBC based investors resulting in the change in the ratio between Vector Model and Sigma VaR is completely ignored.
- 7) We are not incorporating any financing charges or margin-related costs for implied “levered” ROVBC positions.
- 8) Note that VaR for both the Vector Model and Sigma as presented in this report assumes that prices are floored at \$0.01. Since the coverage universe for this report includes only



listed equities, that assumption is likely appropriate. However, if the Vector Model were applied to commodities or perhaps other potentially illiquid securities we would likely have to remove that floor for such tickers, and the resulting impact on model performance for such tickers has not yet been researched.

9) All analytics presented in this report assumes that prices are floored at \$0.01/share.

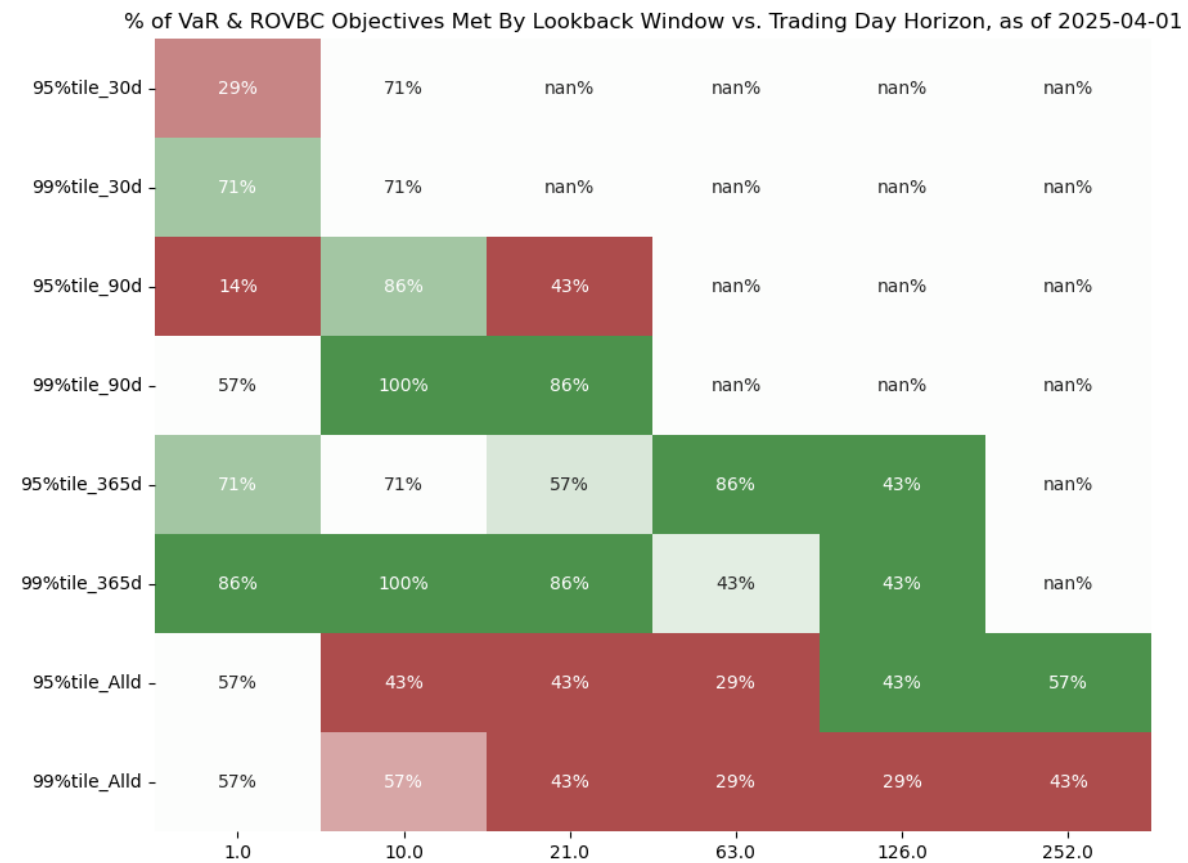
Thus, in summary, with the exception of the Kupiec and Christoferson tests, all metrics presented in this report are presented and are to be considered on a comparative basis. Are Vector Model VaR breakage rates closer to target than Sigma's? Does Vector Model ROVBC outperform Sigma ROVBC? Is the relative performance driven by alpha or beta? By timing or ticker selection? What tickers contributed or detracted the most from the relative performance? These are the questions this report is structured to answer.



Value at Risk (VaR) Report Cards

Period examined: AllD = 2022-01-31 through 2025-03-28 while 365D /90D/ 30D include the 365/90/30 days ended 2025-03-28, respectively.

Sigma Comparison Report Card:



Vector Model Statistical Testing Report Card:

The Kupiec Proportion of Failures test statistic (listed as VaR_kStat in the table below), and its probability (VaR_pValK) are used to test the null hypothesis that the Vector Model's VaR breakage rate is consistent with expectations. The test statistic is calculated by comparing the number of VaR breaks experienced to the expected number of breaks given the total number of observations and the specified probability level. Breakage is measured at the individual ticker-model date level. The probability of the Kupiec statistic occurring is obtained from the



chi-squared distribution. The lower the Kupiec statistic, the higher the p-Value, and the more likely that the Vector Model's VaR breakage rate is consistent with expectations.

The Christoferson VaR Violation Independence test statistic (listed as VaR_chrStat in the table below) and its probability (VaR_pValChr) are used to test the null hypothesis that the VaR model violations are independent. The test statistic focuses on consecutive breakages over time. We measure breakage at the portfolio level, with portfolio breakage for a given period defined as equally weighted ticker level breakage for that period being beyond expectation given the specified probability level. The probability of the Christoferson statistic occurring is obtained from the chi-squared distribution. The lower the Christoferson statistic, the higher the p-Value, and the more likely that the Vector Model's VaR breakage is independent.

Kupiec and Christoferson test results for Sigma VaR can be found in the Appendix.

Period examined: 2022-01-31 through 2025-03-28. Note that for horizon periods greater than 1d we exclude enough model dates to assure no overlap between observation periods.

Model	Pctile	Horizon	VaR_kStat	VaR_pValK	VaR_chrStat	VaR_pValChr
Vector	95	1	4.82	0.03	11.56	0
Vector	95	10	17.5	0	0.09	0.77
Vector	95	21	2.16	0.14	0.68	0.41
Vector	95	63	0.97	0.32	0.01	0.92
Vector	95	126	0.2	0.65	0.37	0.54
Vector	95	252	0.01	0.92	nan	0
Vector	99	1	38.46	0	19.16	0
Vector	99	10	16.82	0	0.17	0.68
Vector	99	21	5.93	0.01	0.12	0.73
Vector	99	63	1.25	0.26	0.01	0.92
Vector	99	126	0.64	0.42	nan	0
Vector	99	252	7.4	0.01	nan	0

Combined Summary Report Card By Objective:

Here we summarize the results by objective, starting with the Sigma comparison-based objectives, for which a sub-total is provided. Each lookback period, horizon and specified percentile receives equal weighting in these calculations.

Then summary results for the statistical tests are provided, with success defined as a p-value for the corresponding test statistic > 0.05, and each horizon and specified percentile receiving equal weighting.”)

Period examined: 2022-01-31 through 2025-03-28.



VaR and ROVBC Criteria	Average Score(%)
1. Closer to Target VaR Breakage Than Sigma (i.e., smaller MAE)	62.5
2. Less Volatile VaR Breakage Across Model Dates Than Sigma	68.75
3. Less Volatile VaR Breakage Across Tickers Than Sigma	28.12
4. Higher ROVBC Than Sigma	53.12
5. Higher ROVBC Than Sigma, Adj. for Avg. VM-Sigma VaR Diff.	81.25
6. Alpha of ROVBC vs Sigma >0, Across Tickers and Model Dates	40.62
7. Alpha of ROVBC vs Sigma >0, By Ticker, Across Model Dates	68.75
Overall Comparison to Sigma Average	57.59
Kupiec Test of VaR Proximity to Target	50
Christoferson Test of VaR Date Independence	58.3333

Observations as of 2025-03-28

1. The Vector Model compared favorably to Sigma in 58% of all VaR and ROVBC evaluation criteria, on average, across all 16 lookback periods and forward time horizons, supportive of investor consideration of Vector Model VaR alongside or perhaps in place of Sigma VaR.
2. With the exception of 95%tile for the 1d horizon, performance relative to Sigma has generally improved over time.
3. 99% VaR criteria scores have outperformed 95% VaR criteria stores over the last 30, 90, and 365 days.
4. Accuracy related (Breakage rate) scores were strong, but Return related (ROVBC) scores were even stronger. Inconsistency of breakage rates across tickers weighs on accuracy related scores.
5. ROVBC alpha across model dates was stronger than alpha across tickers and model dates, suggesting weakness at generating alpha from ticker selection relative to timing related selection.
6. The Kupiec Test indicates that Vector Model VaR breakage was consistent with expectations, with 95% certainty, in 50% of the horizon and percentile combinations studied. The 95th percentile VaR was well specified at horizons fom 21d to 252d, while the 99th percentile VaR was well specified for only the 63d and 126d horizons.
7. The Christoferson Test indicates that Vector Model VaR breakage was independent across model dates, with 95% certainty, in 58% of the horizon and percentile combinations studied. The 10d through 63d time horizons were found to have independent VaR breakage for both the 95th and 99th percentiles.



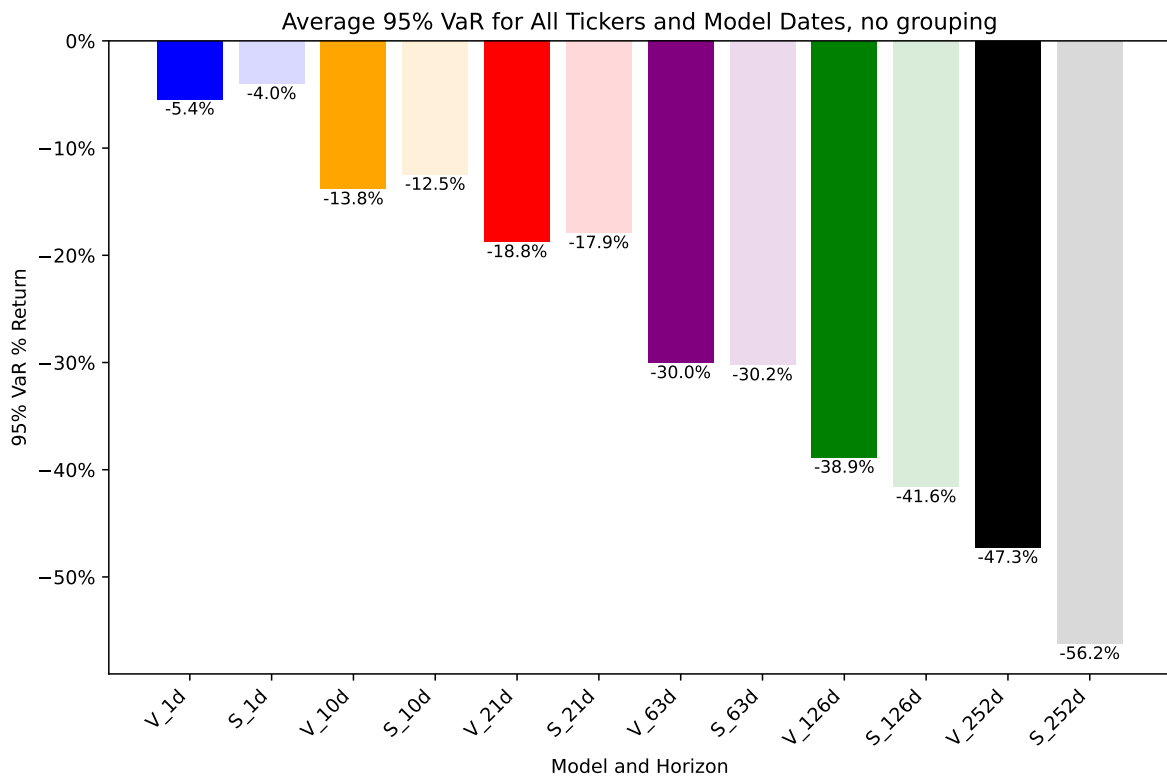
95% Value at Risk (VaR)

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.

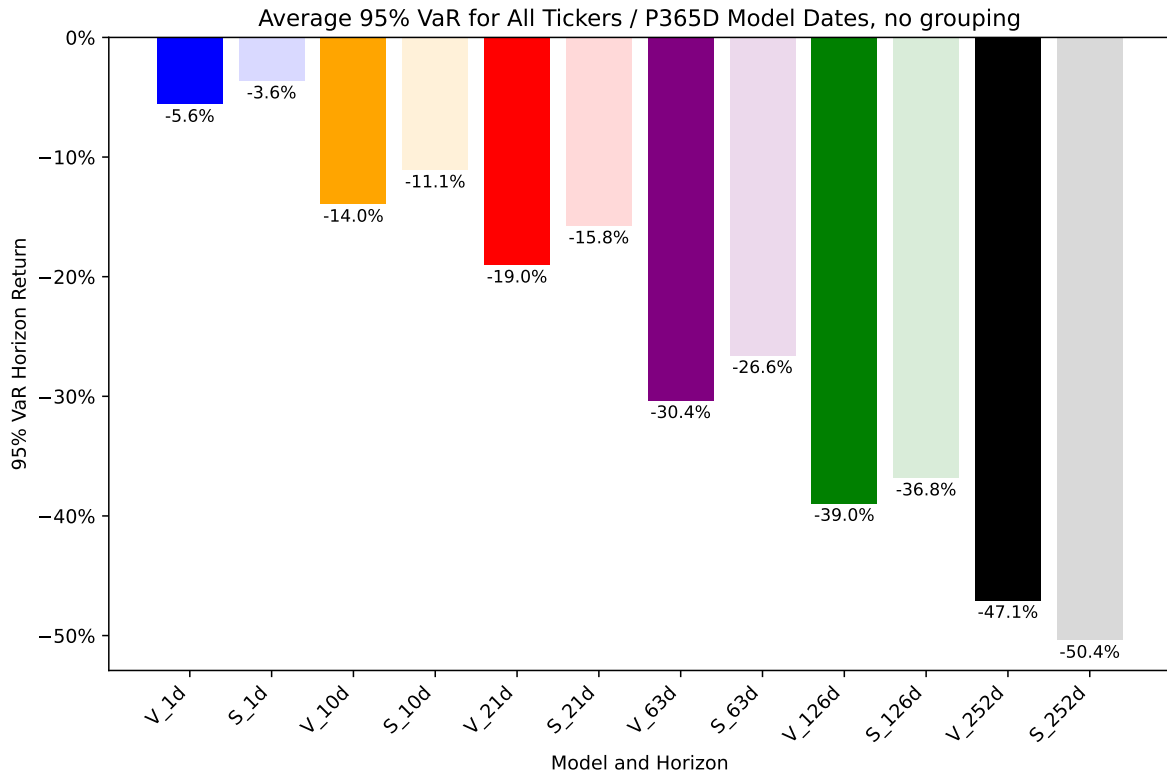
All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-03-28



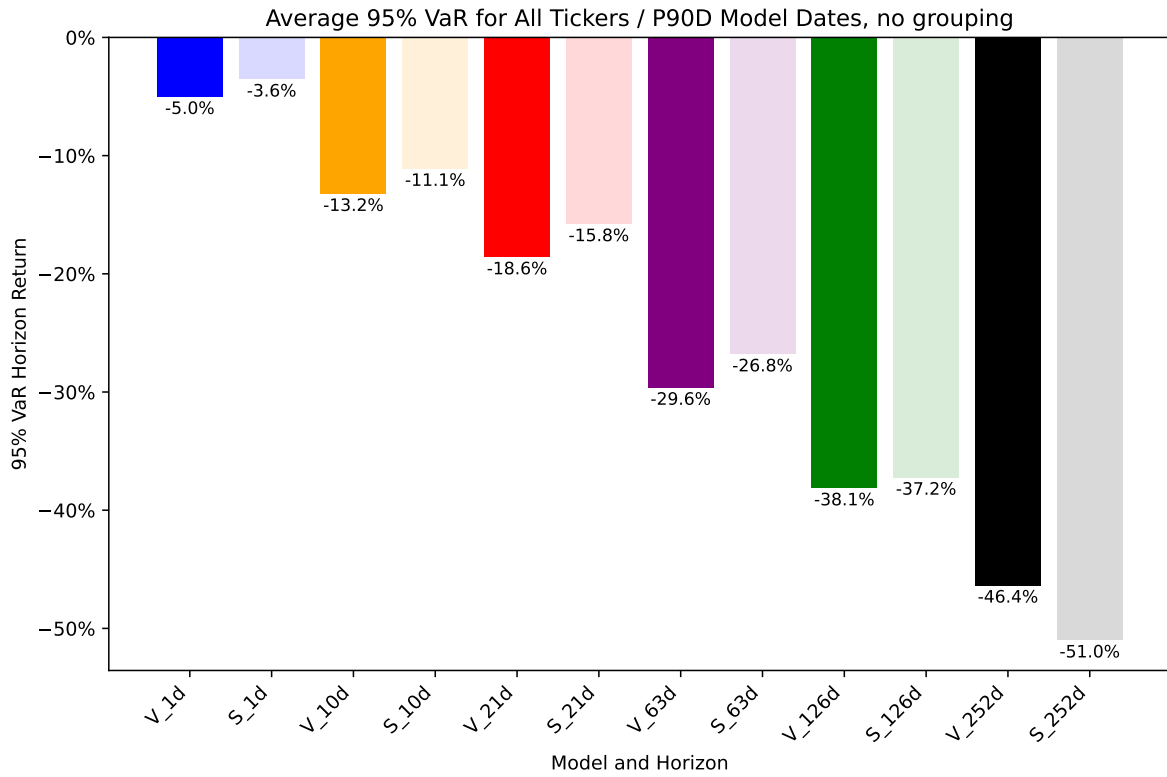
Prior 365 Calendar Days (P365D)

Period examined: All model dates from 2024-04-02 through 2025-03-28



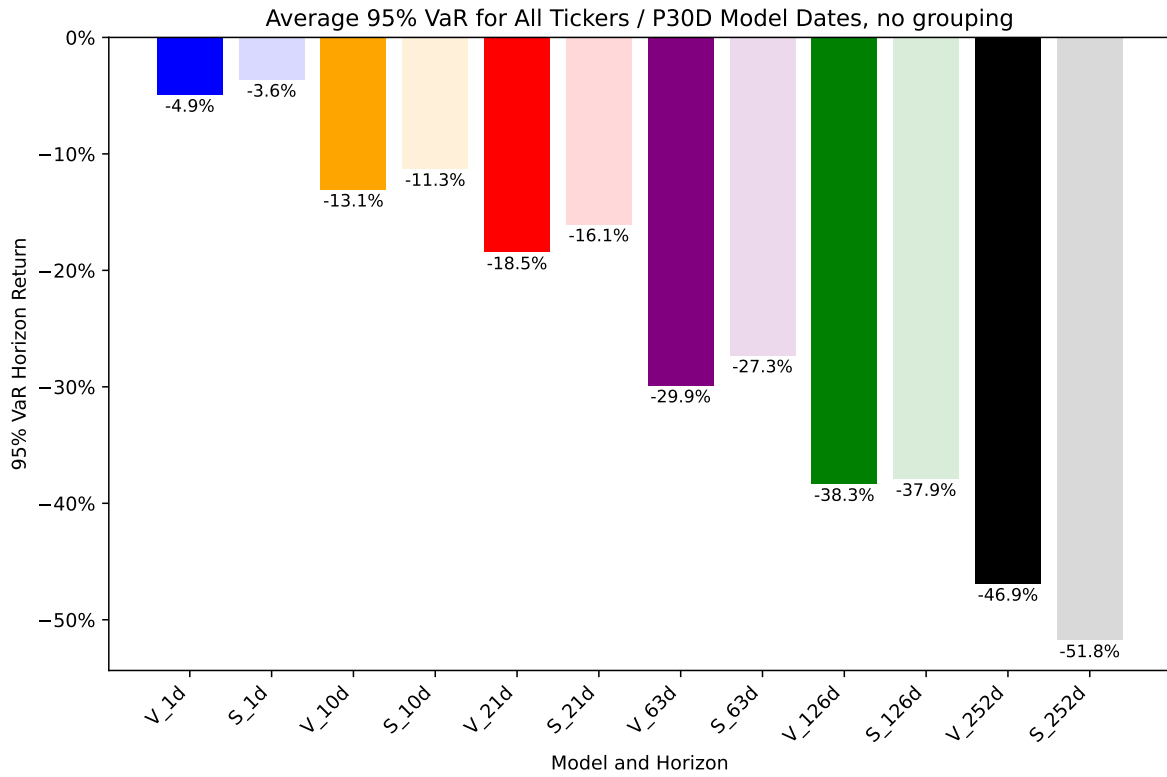
Prior 90 Calendar Days (P90D)

Period examined: All model dates from 2025-01-02 through 2025-03-28



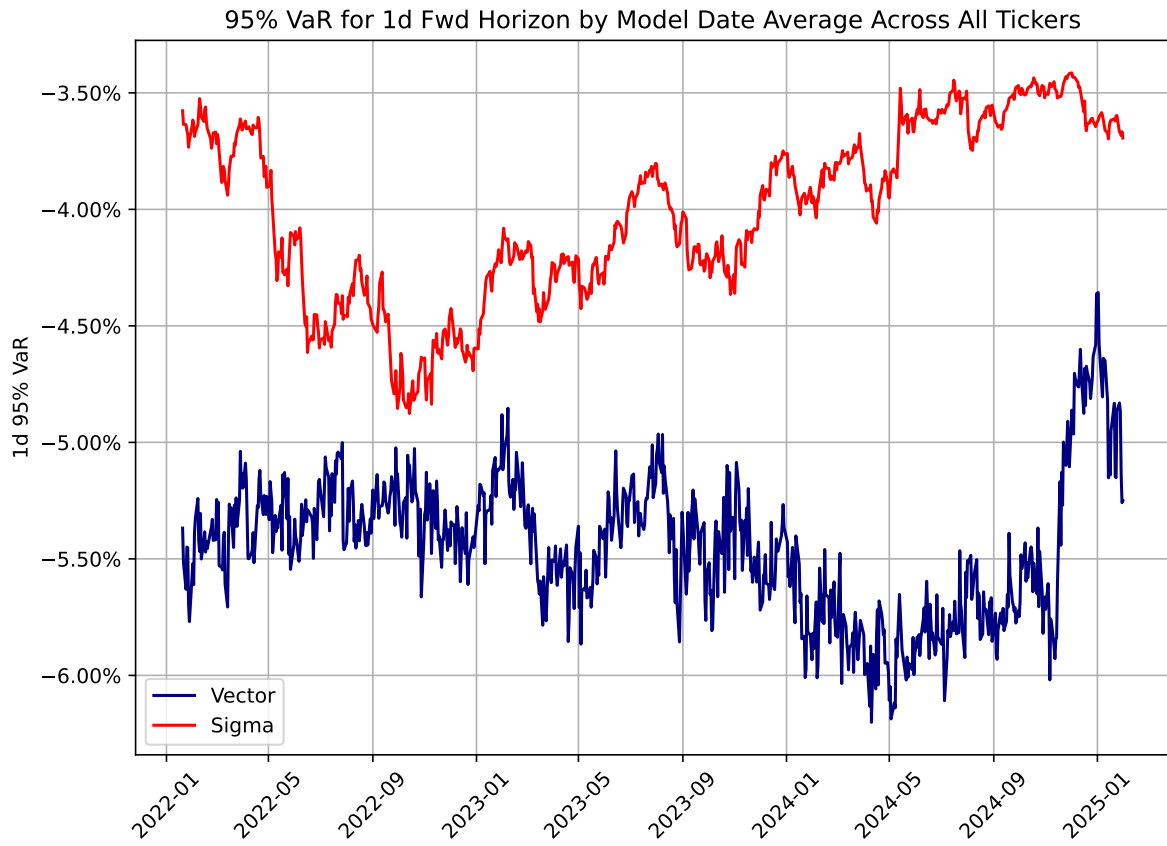
Prior 30 Calendar Days (P30D)

Period examined: All model dates from 2025-03-03 through 2025-03-28

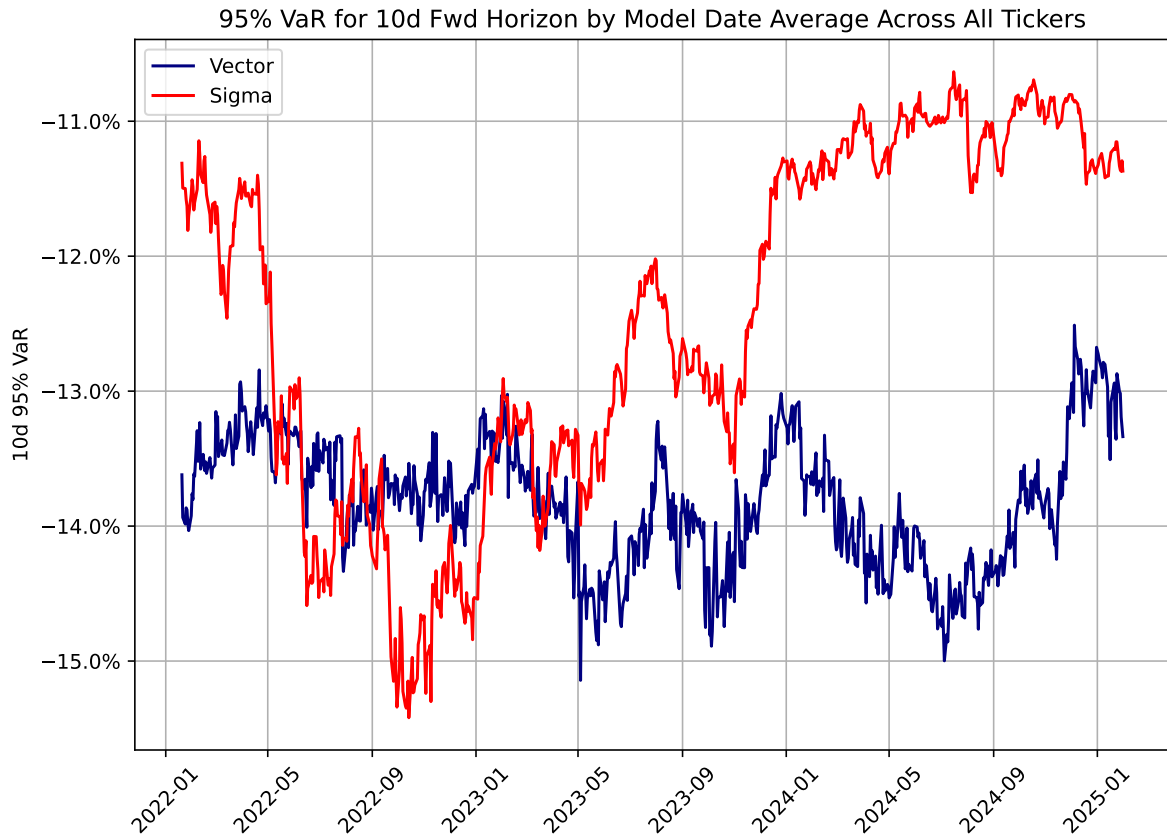


Daily Levels

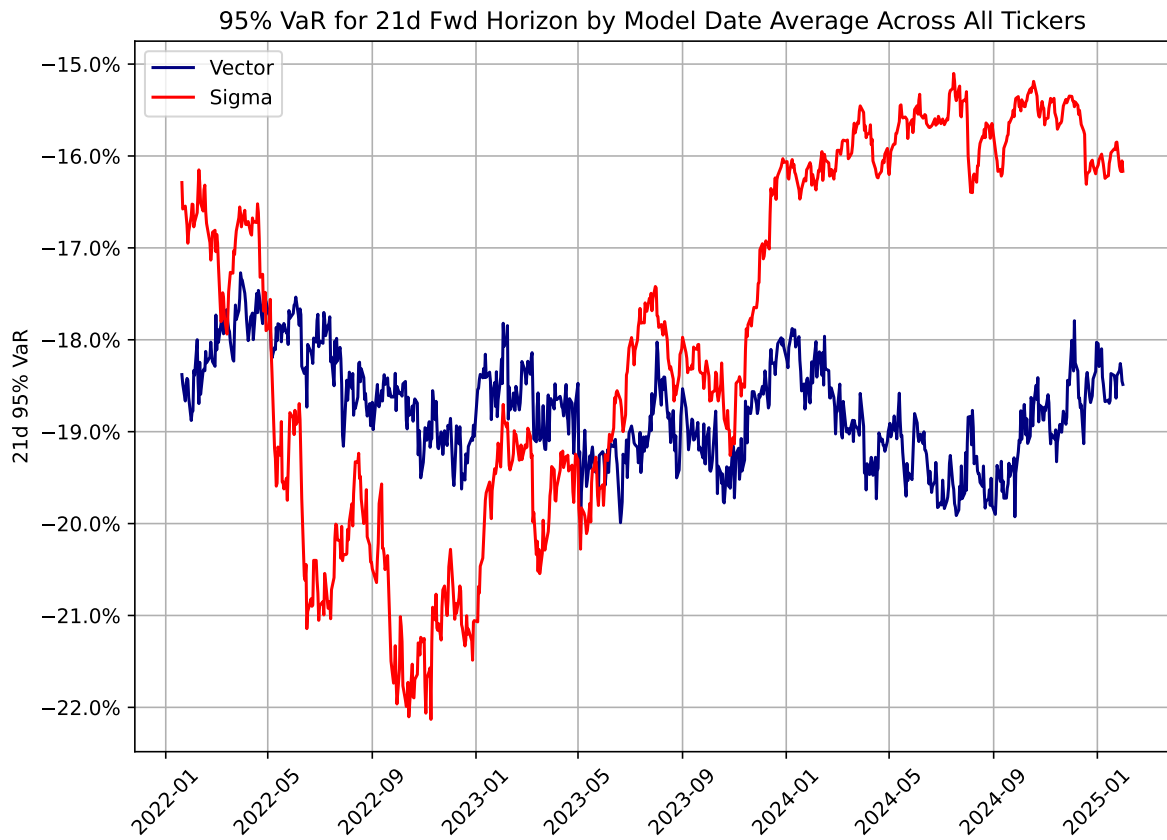
1d Horizon



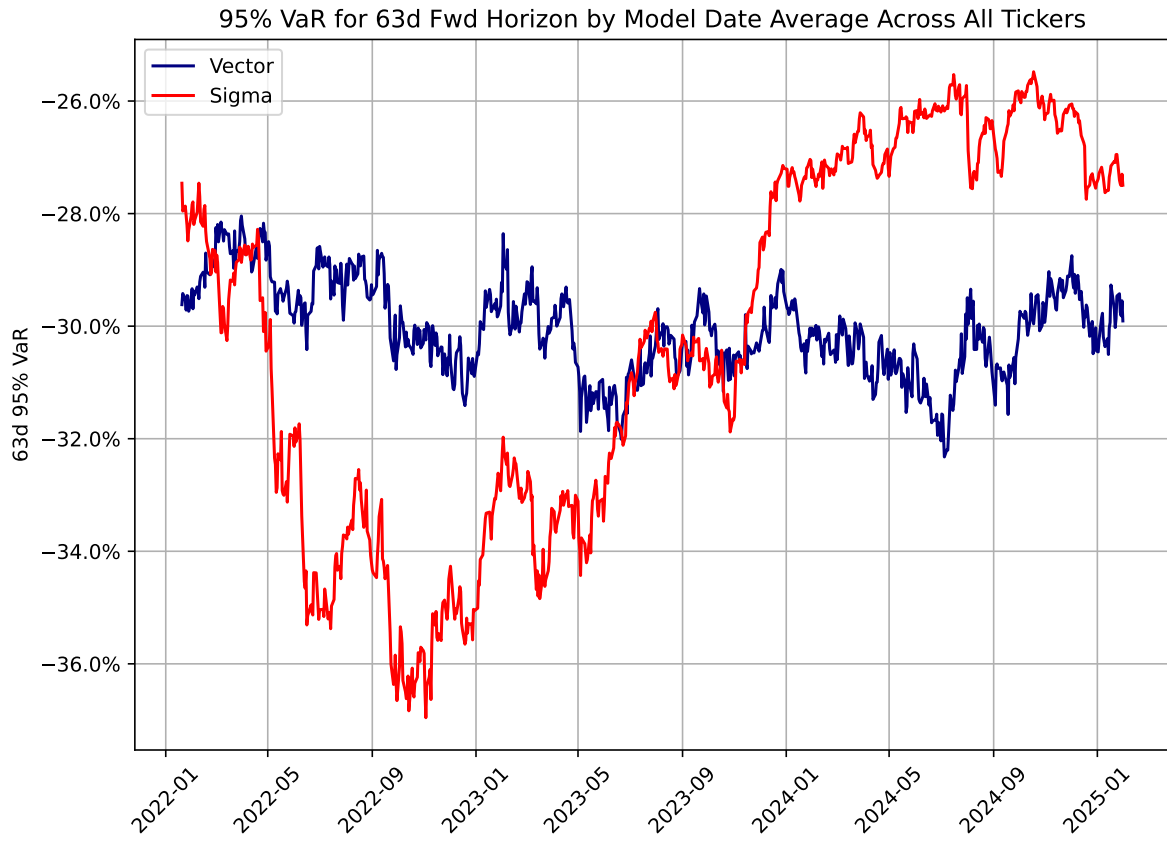
10d Horizon



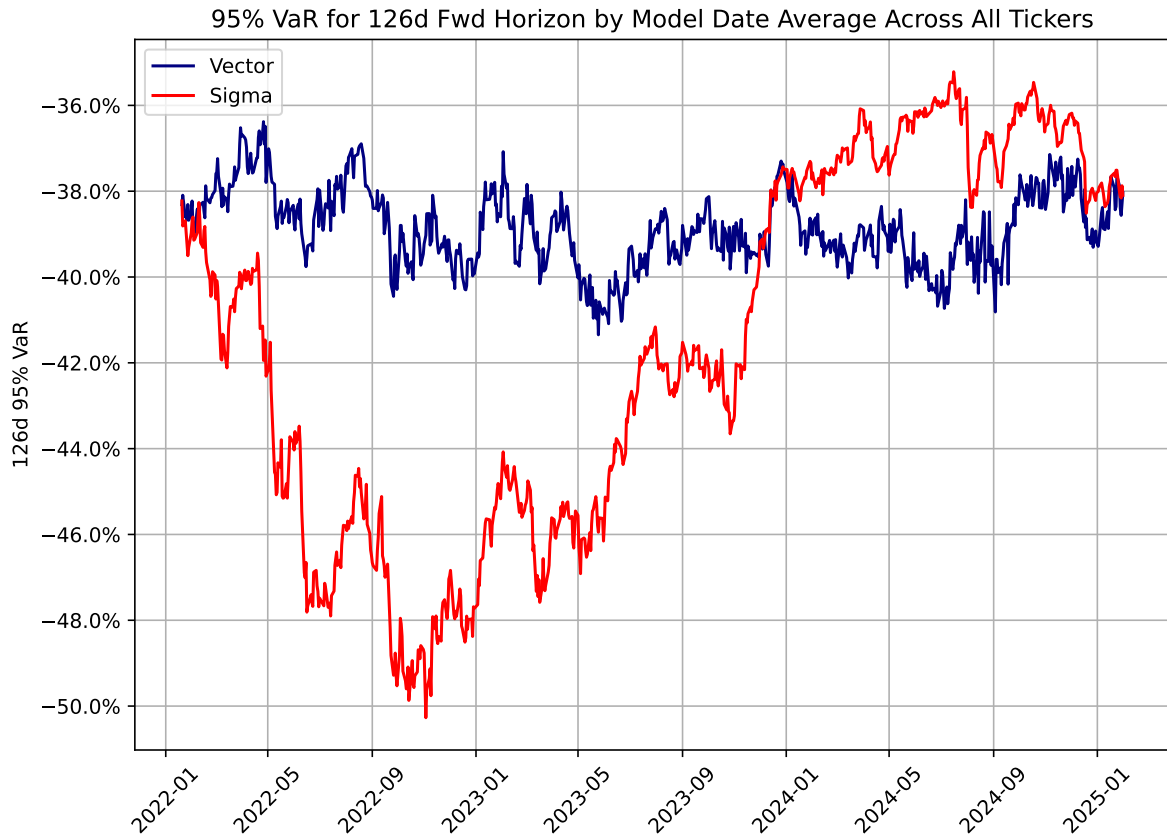
21d Horizon



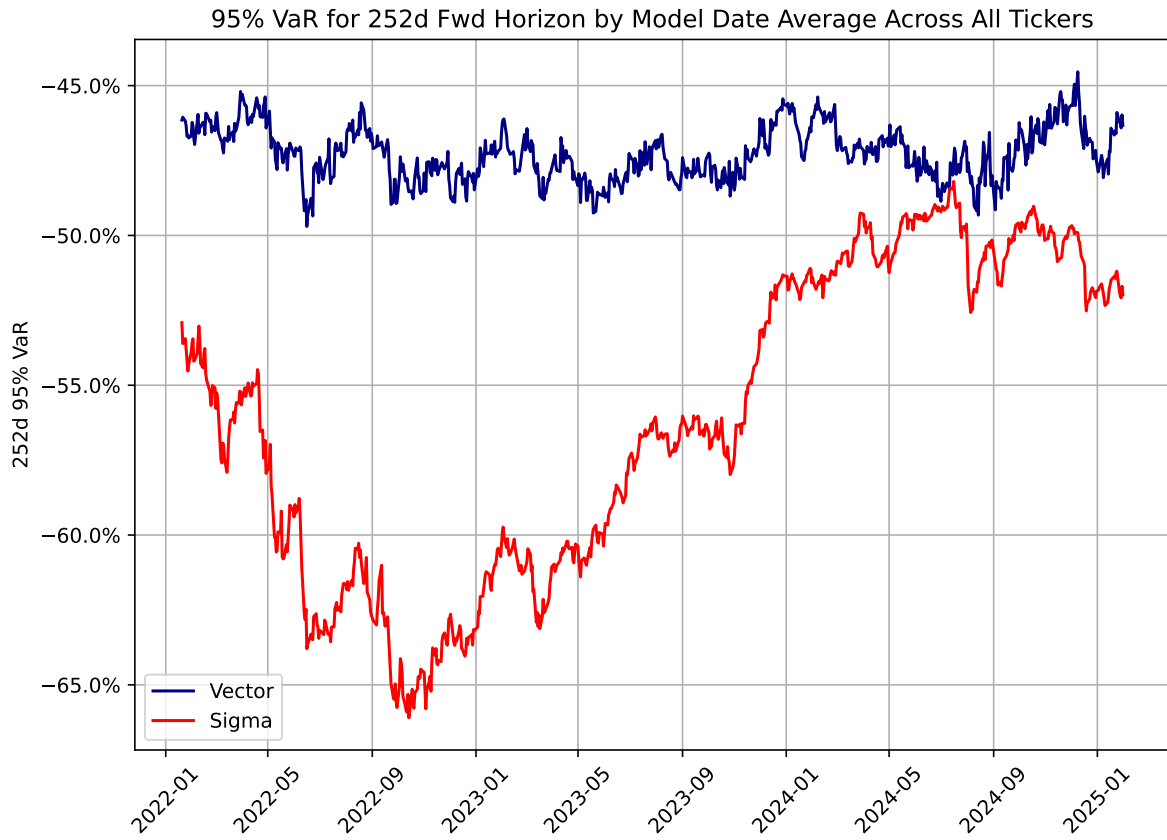
63d Horizon



126d Horizon



252d Horizon



Performance Summary

Here we compare the performance of 95% VaR estimates generated by the Vector Model (“V”, presented with dark shading) with those generated by Sigma (“S”, presented with light shading). This comparison is made on the basis of VaR breakage rates and Return on VaR based Capital (ROVBC), presenting the average results across tickers and model dates for model dates in the period indicated.

To facilitate evaluation of VaR breakage we provide dashed horizontal lines at the targetted breakage level. Proximity to that line is the key breakage related criteria.

Vector Model ROVBC can be evaluated on the basis of outright levels relative to Sigma and alpha relative to Sigma ROVBC (which, as discussed previously, is assigned the underlying ticker price returns). We advise keeping proximity of VaR breakage rates to targetted levels in mind when comparing outright ROVBC levels. For example, a model with much more benign VaR estimates will likely have higher ROVBC in the context of an upwardly trending market, but how did it do on VaR breakage rates compared to the other model. This tradeoff between ROVBC and VaR breakage rate proximity to target is the motivation for including ROVBC Adjusted for Average Vector Model-Sigma VaR Differentials in the Report Card presented earlier in this report, and for providing the alpha metrics.

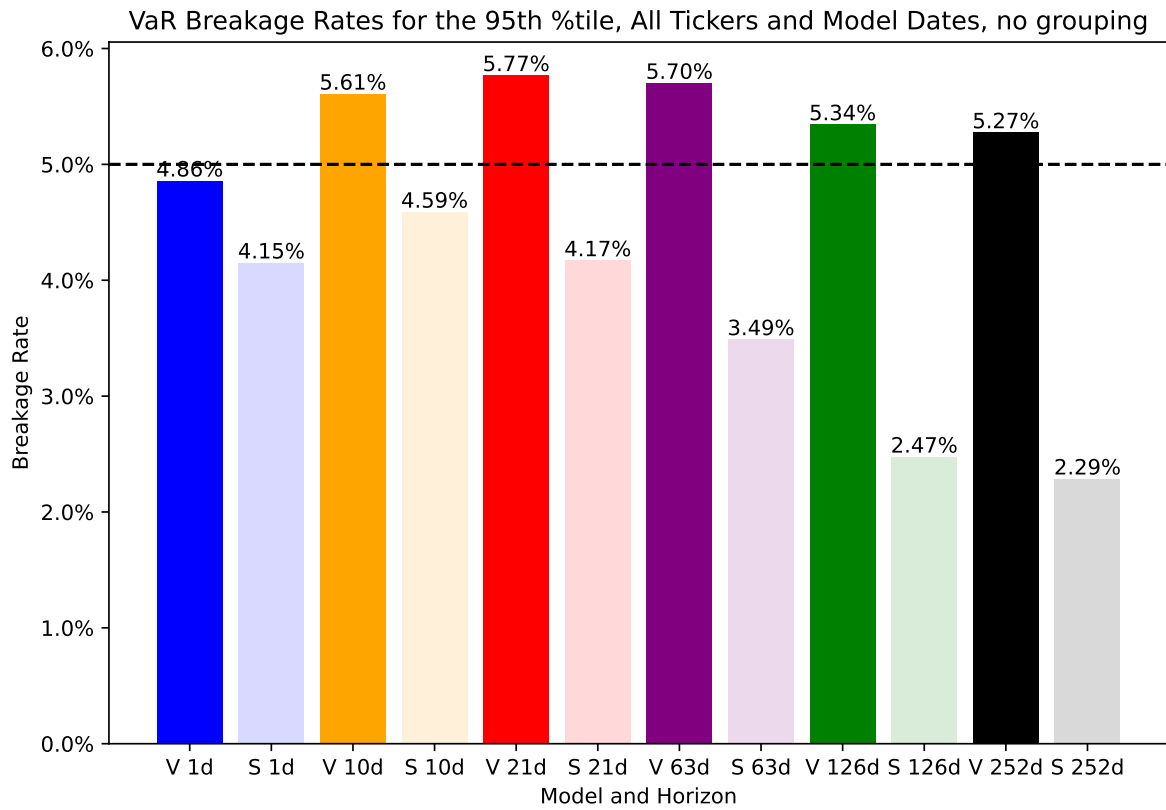
Alpha allows us to isolate ROVBC performance differences between the Vector Model and Sigma apart from any systematic difference between the ROVBC multiplier for the Vector Model and 1.00x. Alpha across TMD’s could be driven by VaR differentials between tickers and / or between dates. Thus we also present average alpha by ticker across model dates. If this cross-date based alpha is positive, at least some of the overall alpha is driven by variation in Vector Model VaR relative to Sigma across time as opposed to variation in Vector Model VaR relative to Sigma between tickers.

Results for each horizon reflect the average for all model estimates for that horizon from all model dates for which forward performance is known. Note that periods for all horizons > 1d overlap.

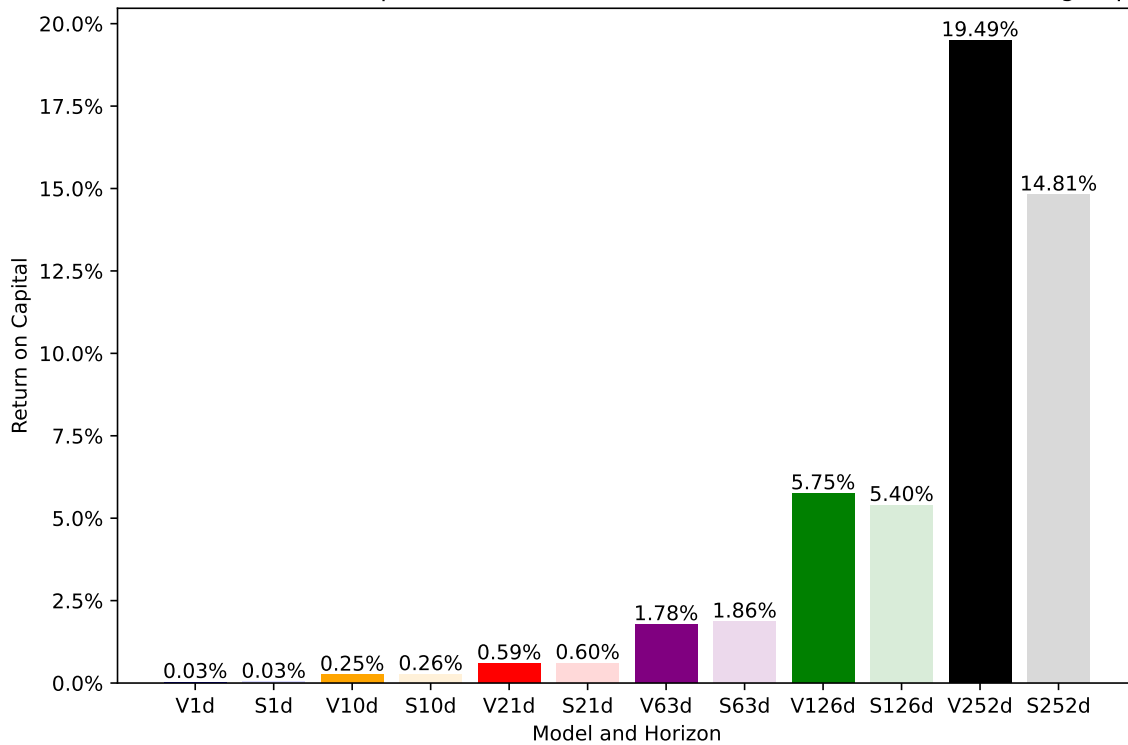


All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-03-28



Return on VaR Based Capital for the 95th %tile, All Tickers and Model Dates, no grouping



Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's:

	1d	10d	21d	63d	126d	252d
intercept	-0.01%	-0.11%	-0.23%	-0.79%	-1.50%	-2.78%
intercept_p_value	5.12%	0.00%	0.00%	0.00%	0.00%	0.00%
slope	115.79%	134.68%	136.57%	136.28%	133.94%	150.56%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

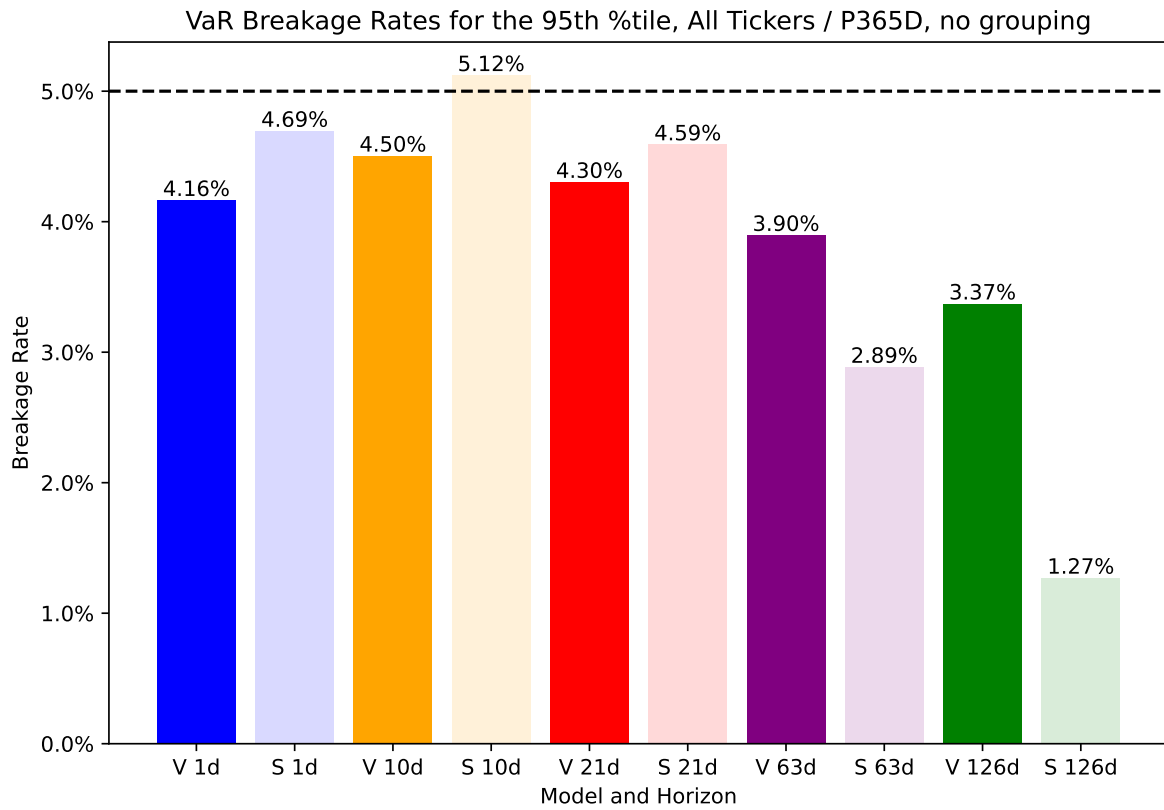
Average Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns, by ticker across Model Dates:

	1d	10d	21d	63d	126d	252d
intercept	0.00%	0.11%	0.25%	0.78%	1.58%	2.58%
intercept_p_value	49.43%	17.13%	14.68%	8.94%	10.12%	9.14%
slope	103.94%	111.35%	115.39%	119.86%	126.54%	141.10%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

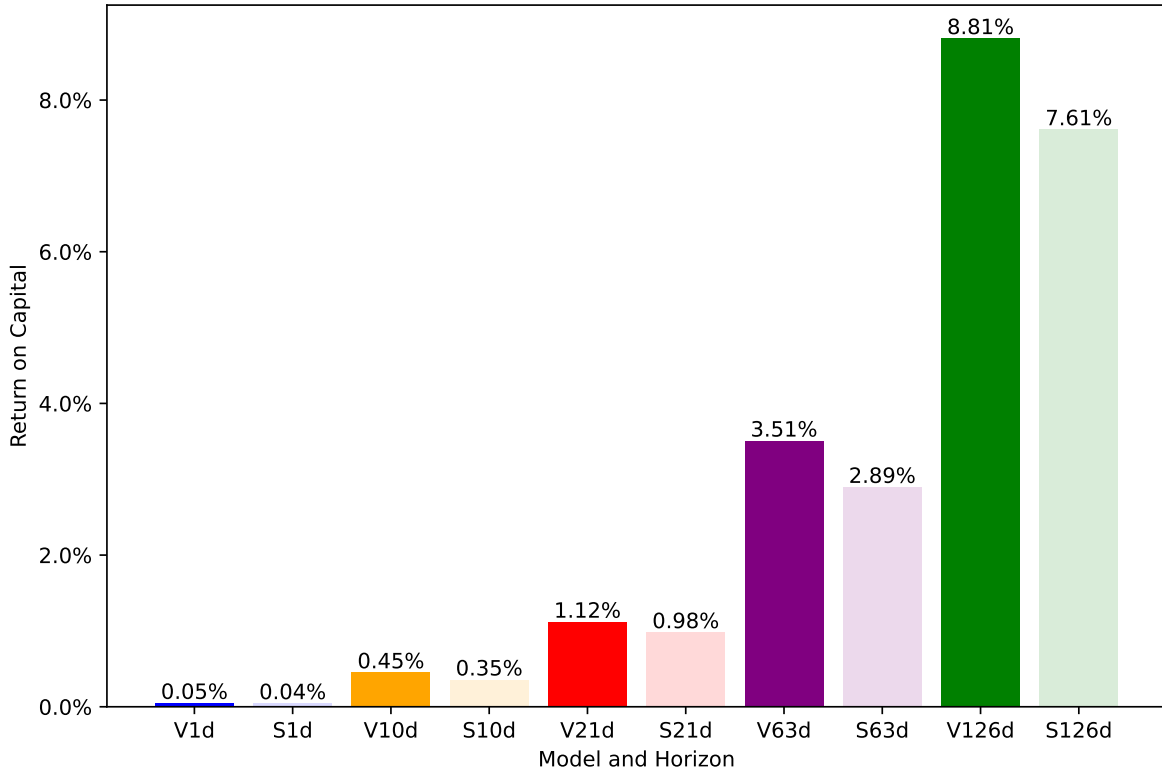


Prior 365 Calendar Days (P365D)

Period examined: All model dates from 2024-04-02 through 2025-03-28



Return on VaR Based Capital for the 95th %tile, All Tickers / P365D, no grouping



Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's:

	1d	10d	21d	63d	126d
intercept	0.00%	0.01%	-0.11%	0.00%	-0.33%
intercept_p_value	80.13%	82.08%	2.85%	99.10%	0.78%
slope	102.66%	124.30%	125.71%	118.37%	118.99%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%

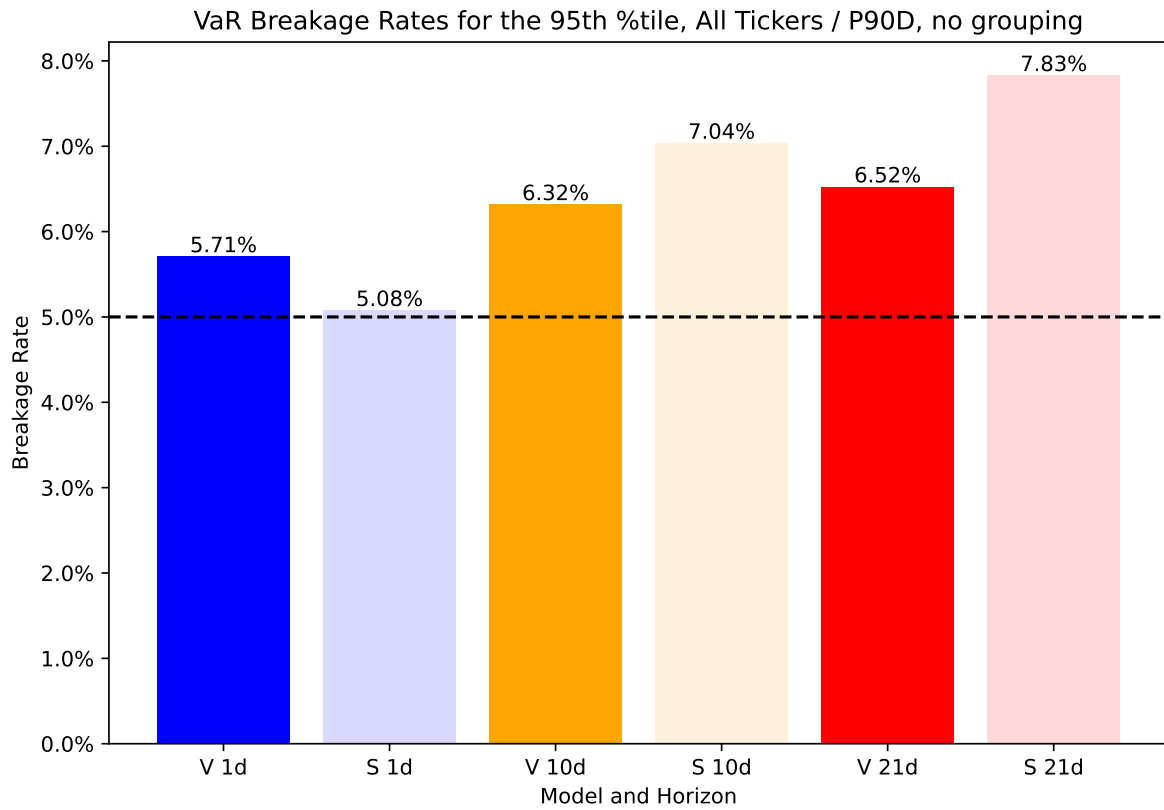
Average Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns, by ticker across Model Dates:

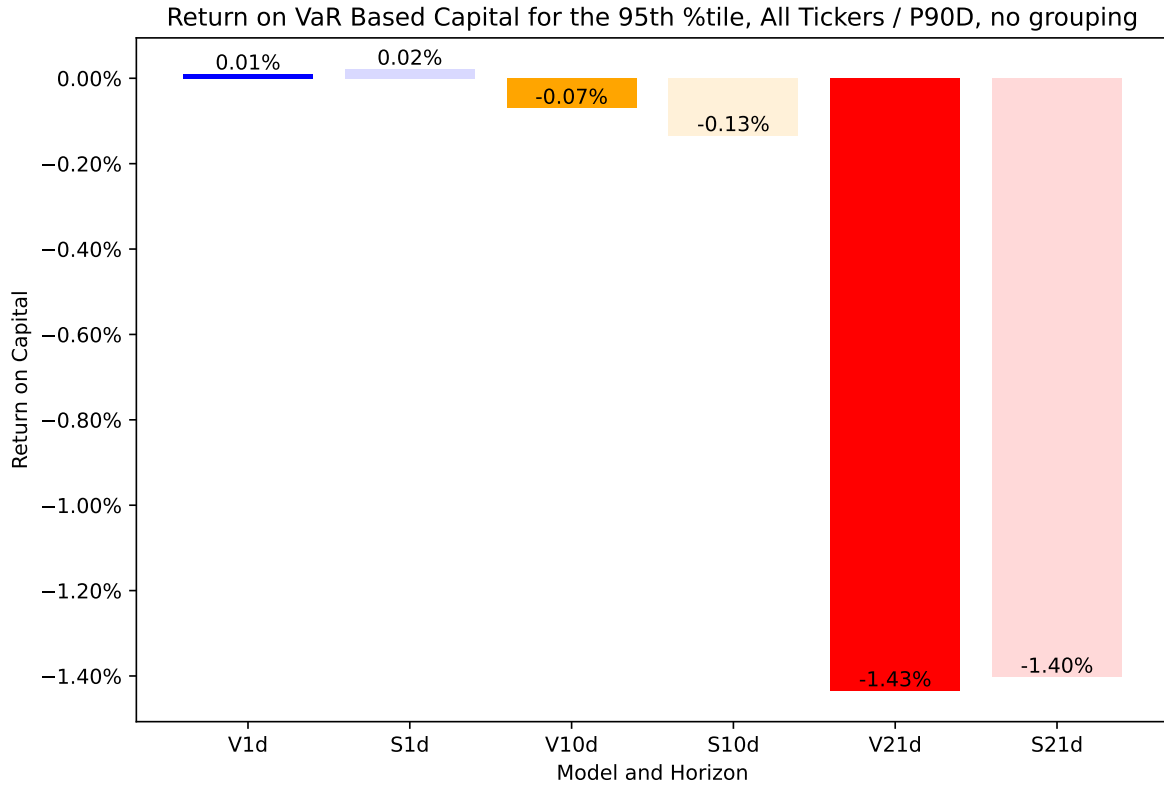
	1d	10d	21d	63d	126d
intercept	0.01%	0.08%	0.10%	0.40%	-0.13%
intercept_p_value	48.82%	18.10%	13.19%	17.49%	20.26%
slope	89.35%	93.00%	95.43%	99.73%	108.79%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%



Prior 90 Calendar Days (P90D)

Period examined: All model dates from 2025-01-02 through 2025-03-28





Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's:

	1d	10d	21d
intercept	-0.01%	0.06%	0.15%
intercept_p_value	58.81%	27.39%	6.55%
slope	111.95%	110.57%	111.50%
slope_p_value	0.00%	0.00%	0.00%

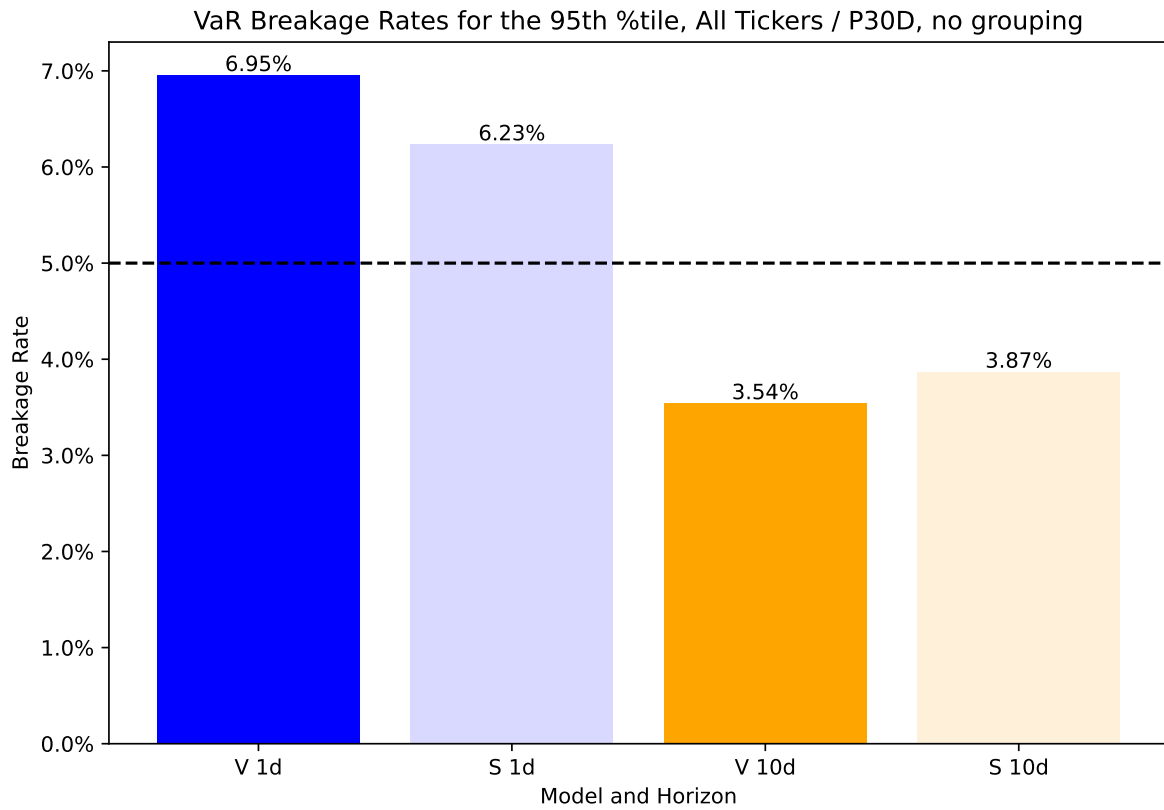
Average Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns, by ticker across Model Dates:

	1d	10d	21d
intercept	-0.00%	0.02%	-0.03%
intercept_p_value	48.21%	27.58%	29.12%
slope	100.47%	100.75%	100.21%
slope_p_value	0.00%	0.00%	0.00%

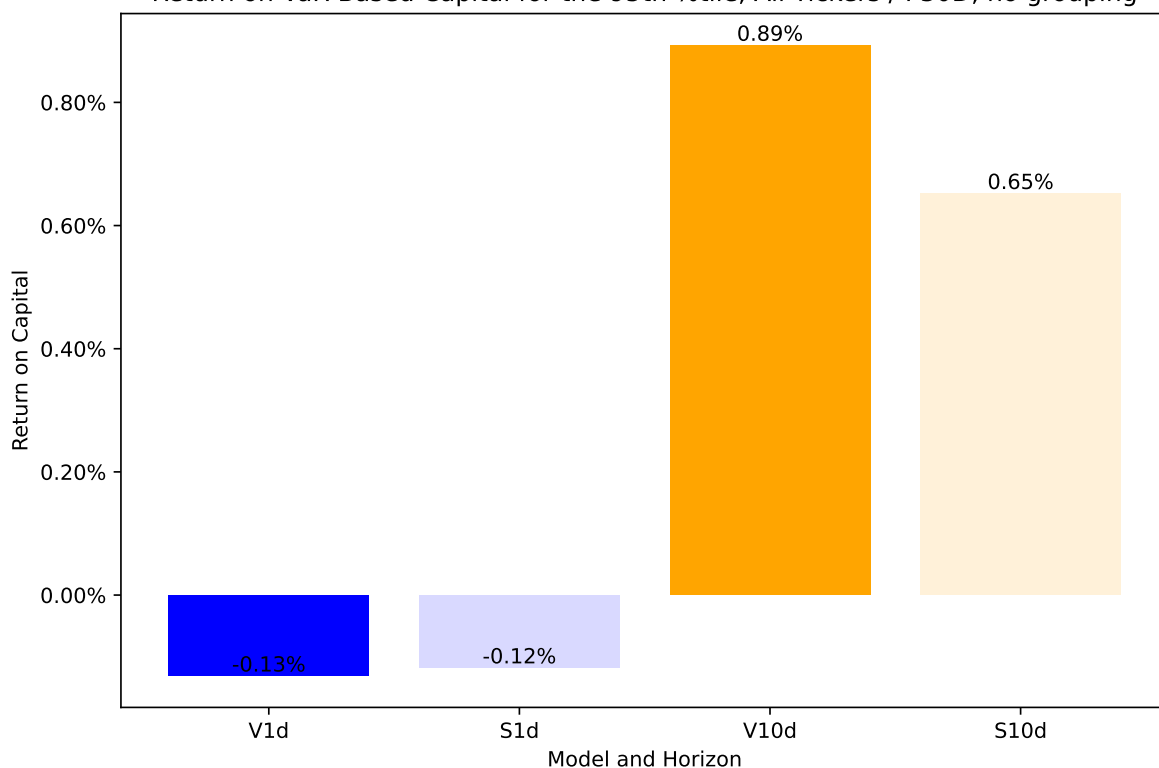


Prior 30 Calendar Days (P30D)

Period examined: All model dates from 2025-03-03 through 2025-03-28



Return on VaR Based Capital for the 95th %tile, All Tickers / P30D, no grouping



Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's:

	1d	10d
intercept	0.01%	0.19%
intercept_p_value	84.50%	1.83%
slope	116.46%	108.41%
slope_p_value	0.00%	0.00%

Average Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns, by ticker across Model Dates:

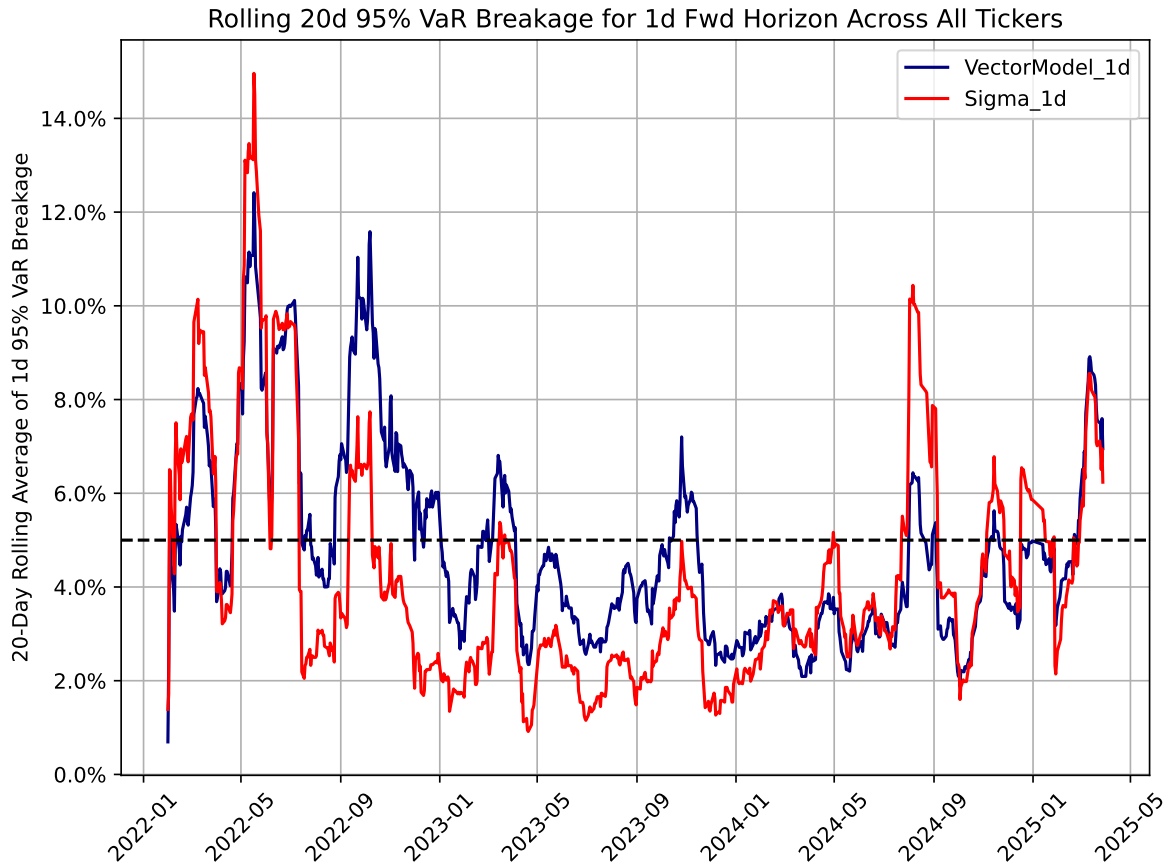
	1d	10d
intercept	-0.00%	-0.06%
intercept_p_value	42.32%	38.10%
slope	105.88%	105.58%
slope_p_value	0.00%	0.00%



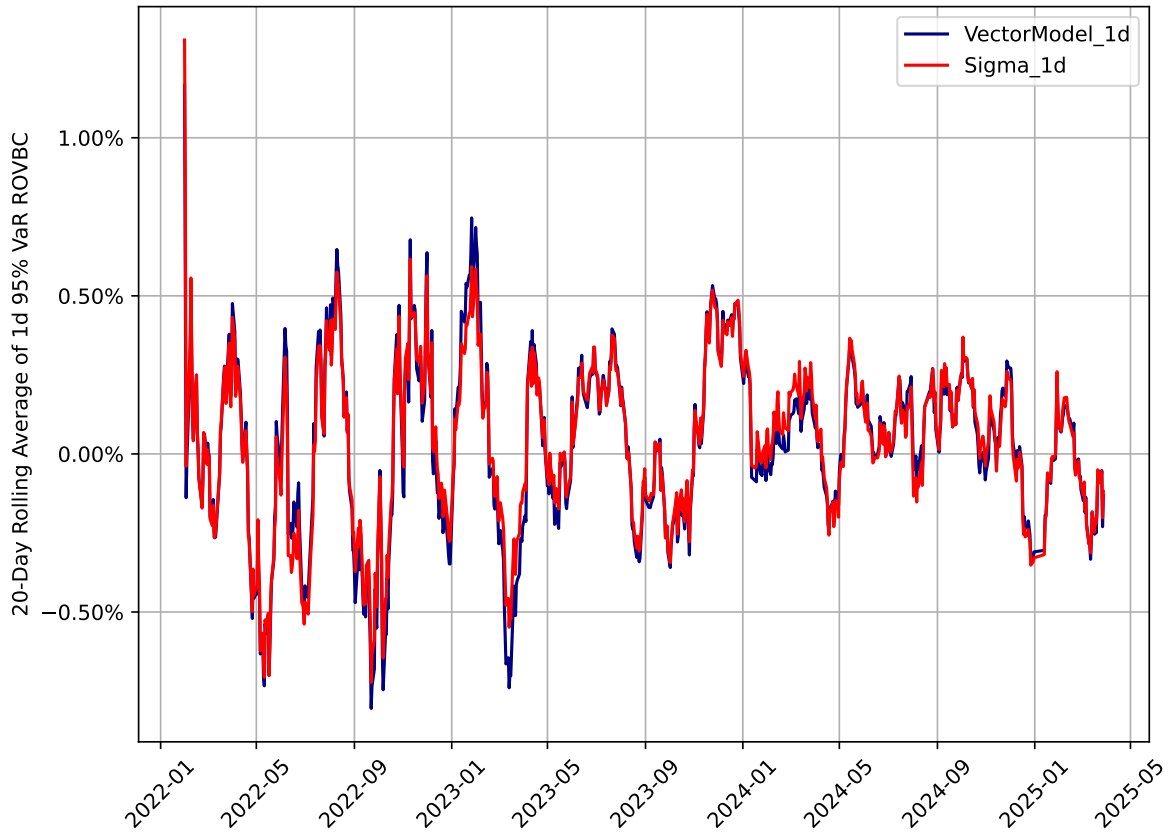
Rolling Performance

Here we look at 20 day rolling moving averages of the breakage and ROVBC statistics summarized in the preceding section. These 20day moving averages are averages of daily averages across all tickers.

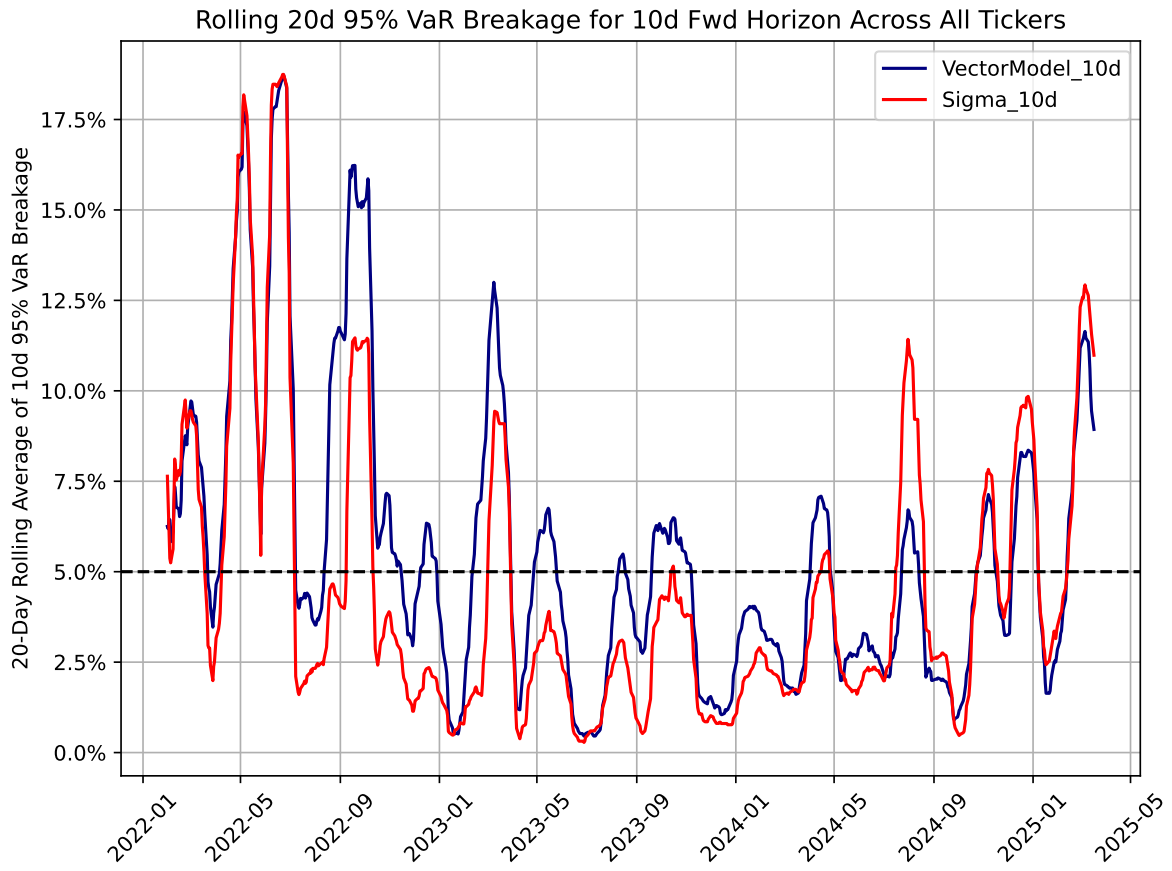
1d Horizon



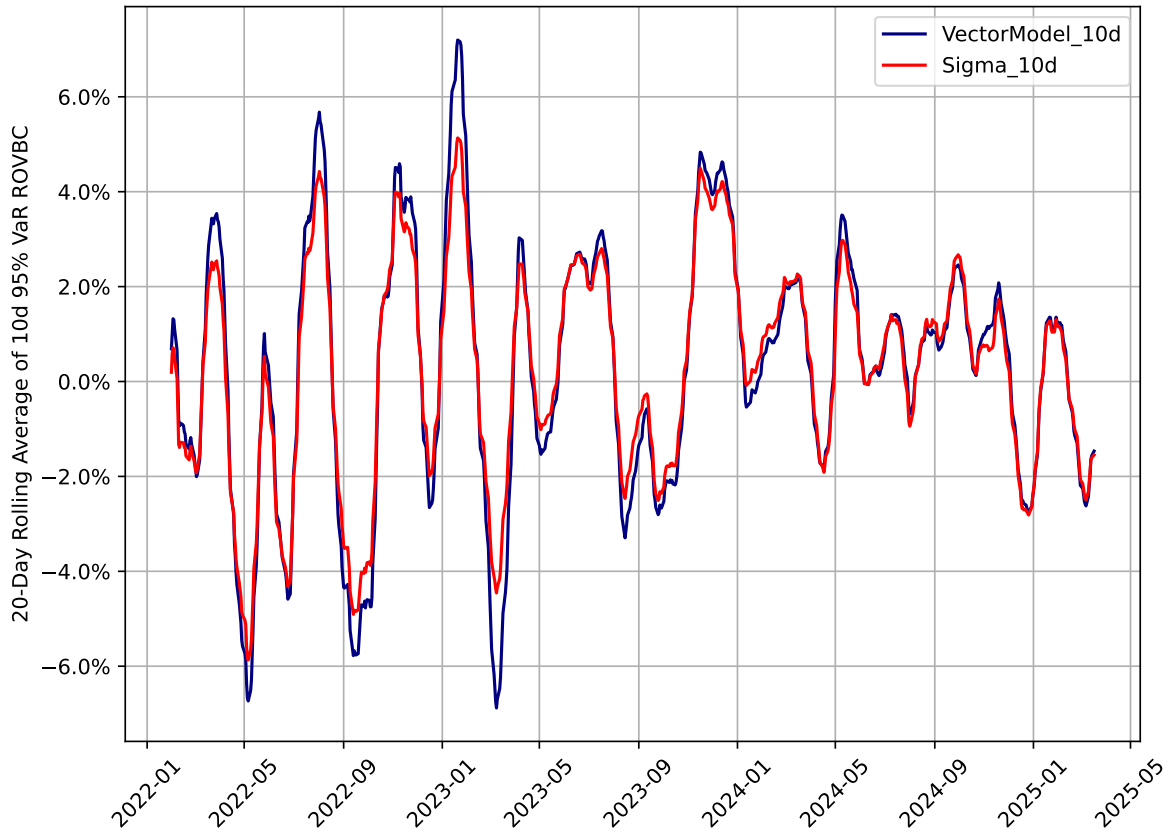
Rolling 20d 95% ROVBC for 1d Fwd Horizon Across All Tickers



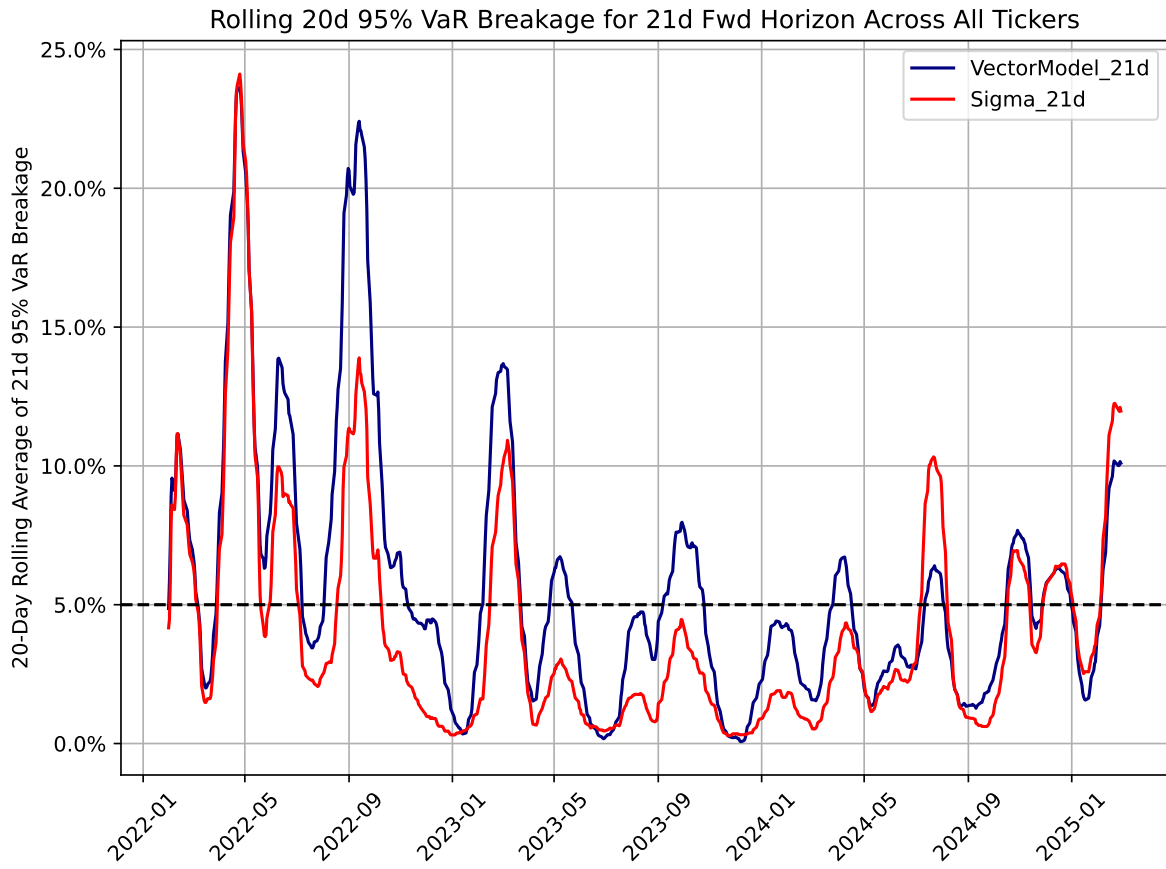
10d Horizon



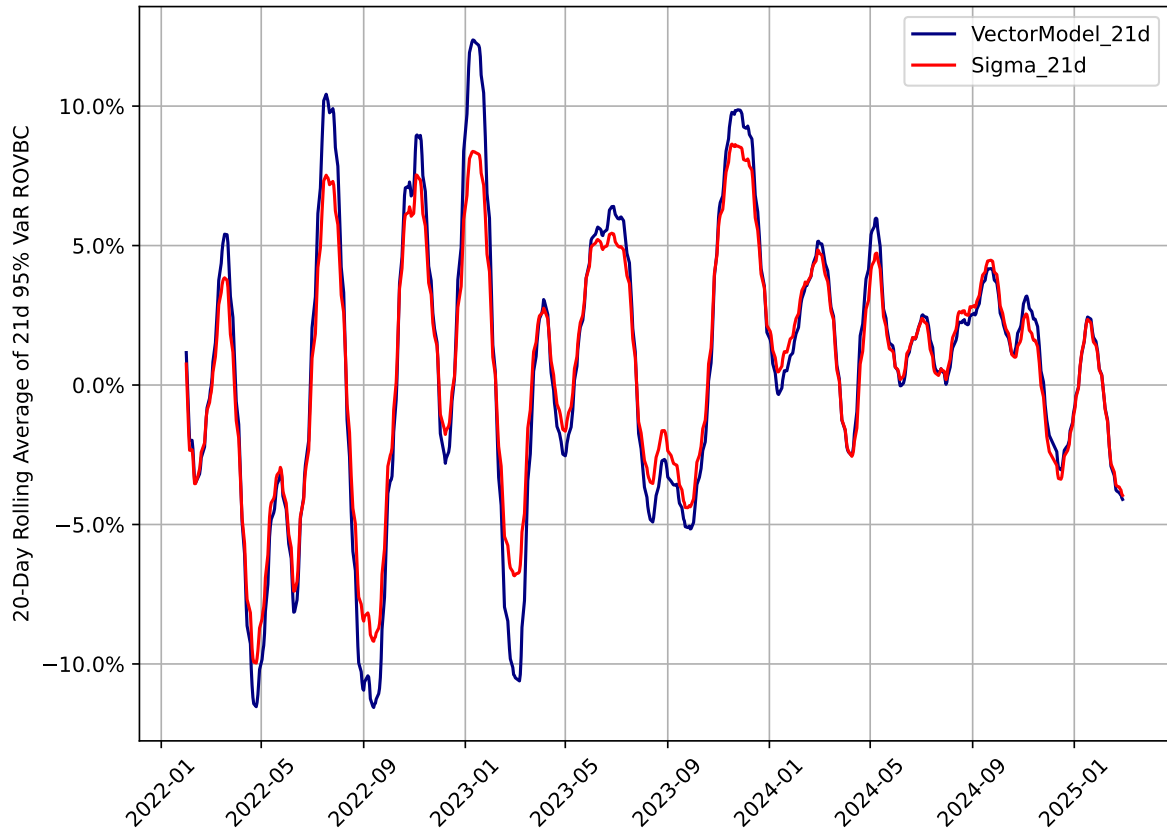
Rolling 20d 95% ROVBC for 10d Fwd Horizon Across All Tickers



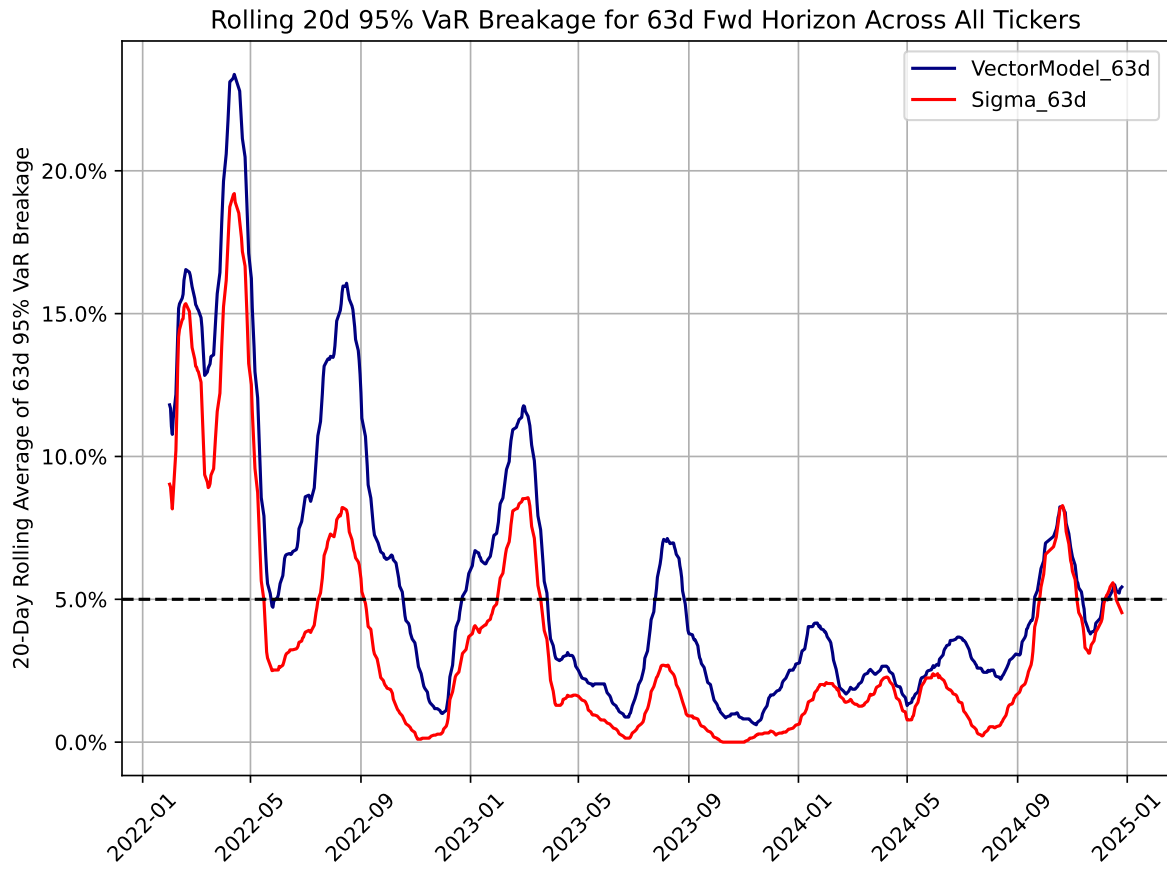
21d Horizon

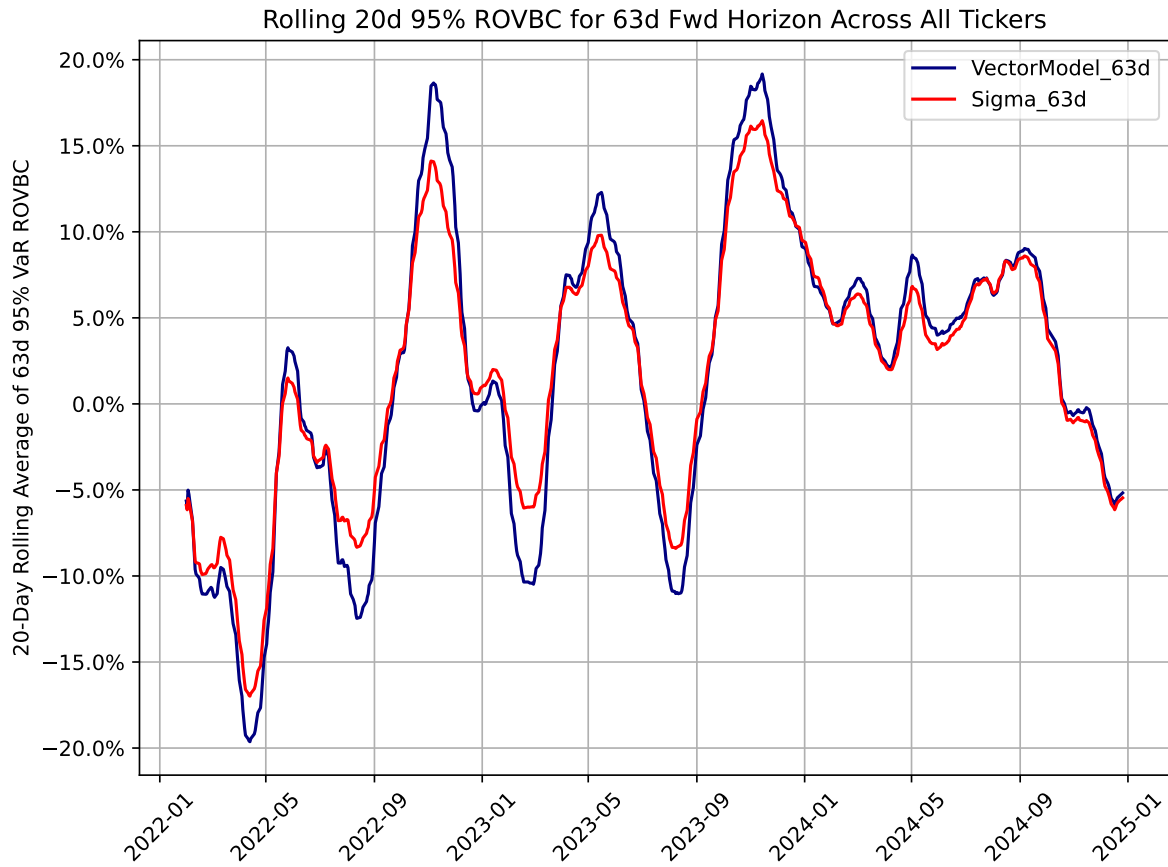


Rolling 20d 95% ROVBC for 21d Fwd Horizon Across All Tickers

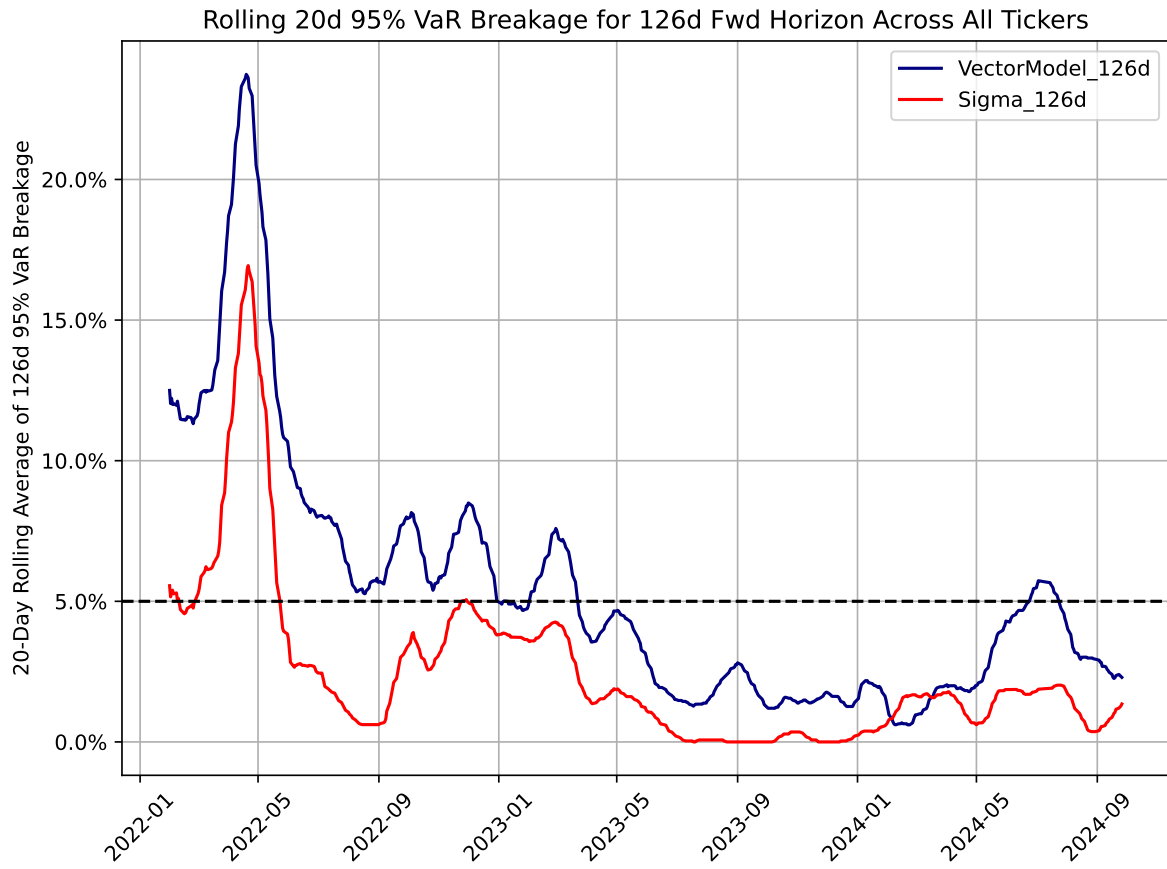


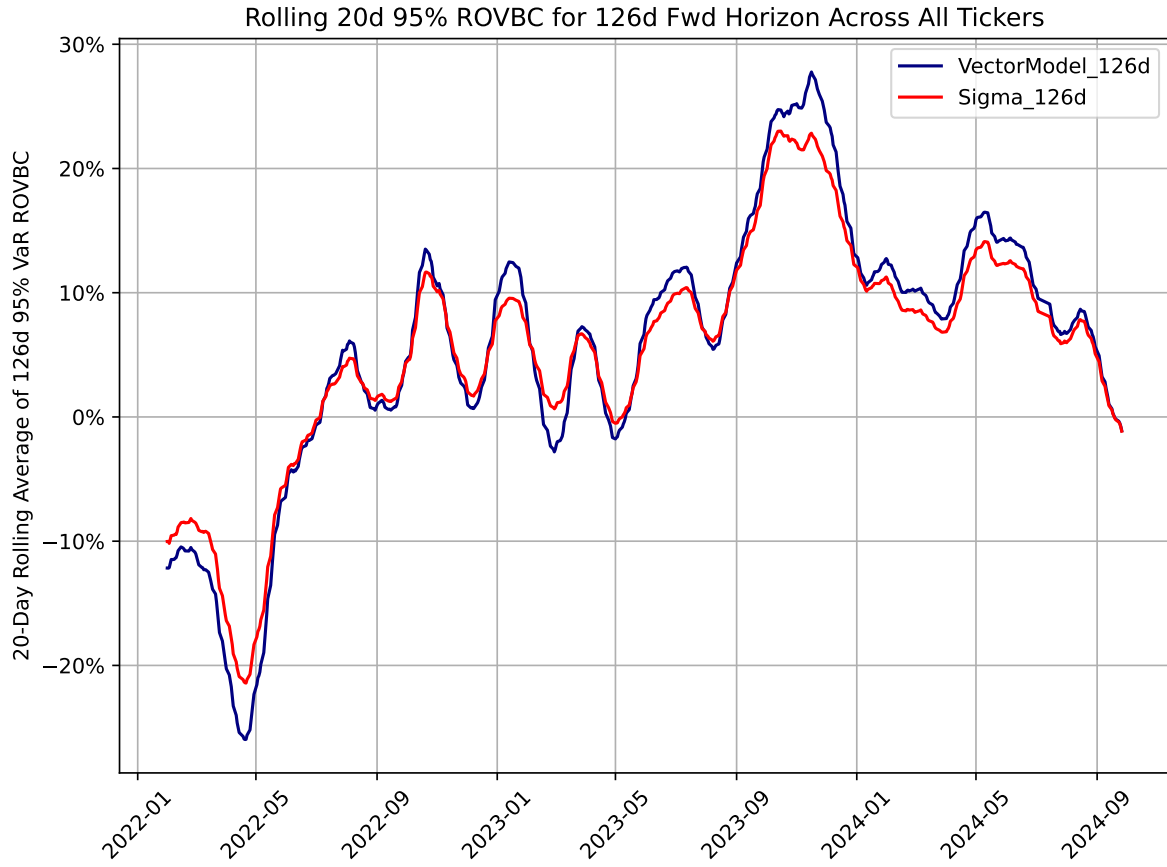
63d Horizon



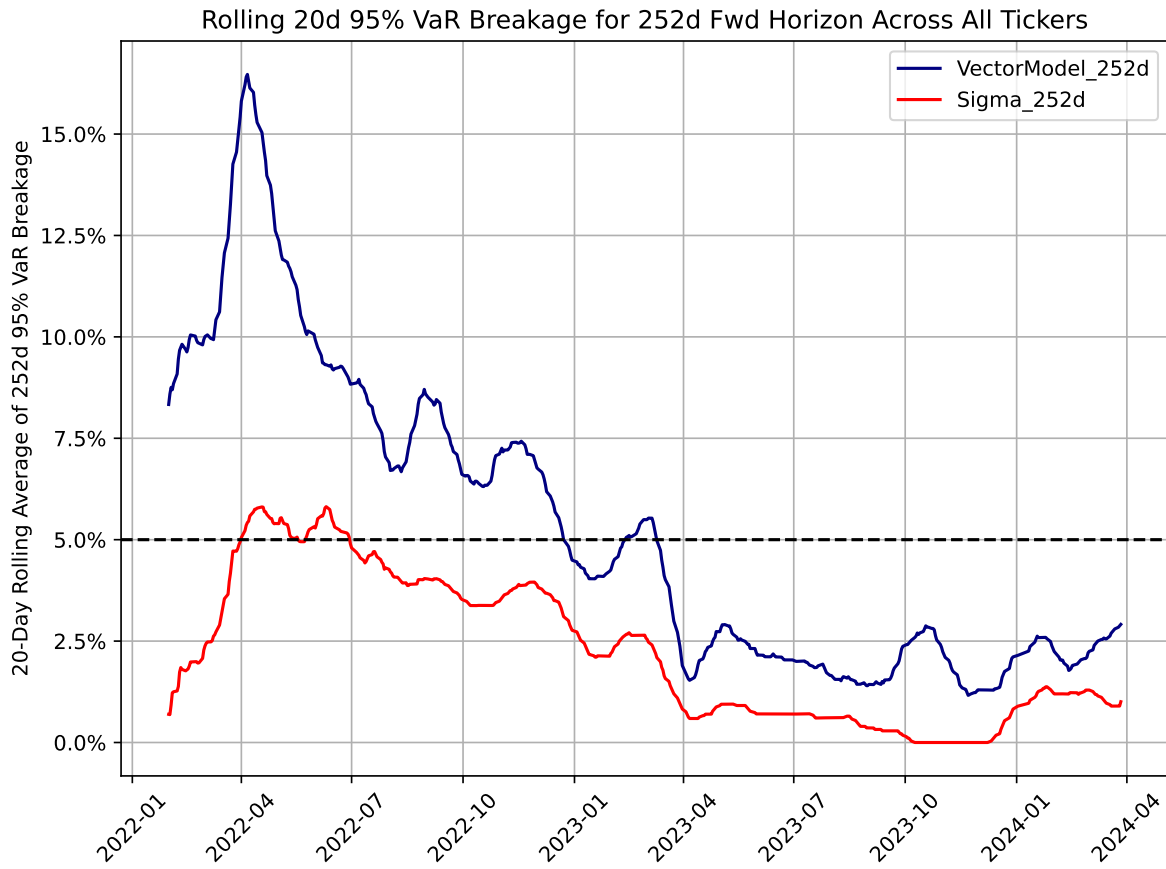


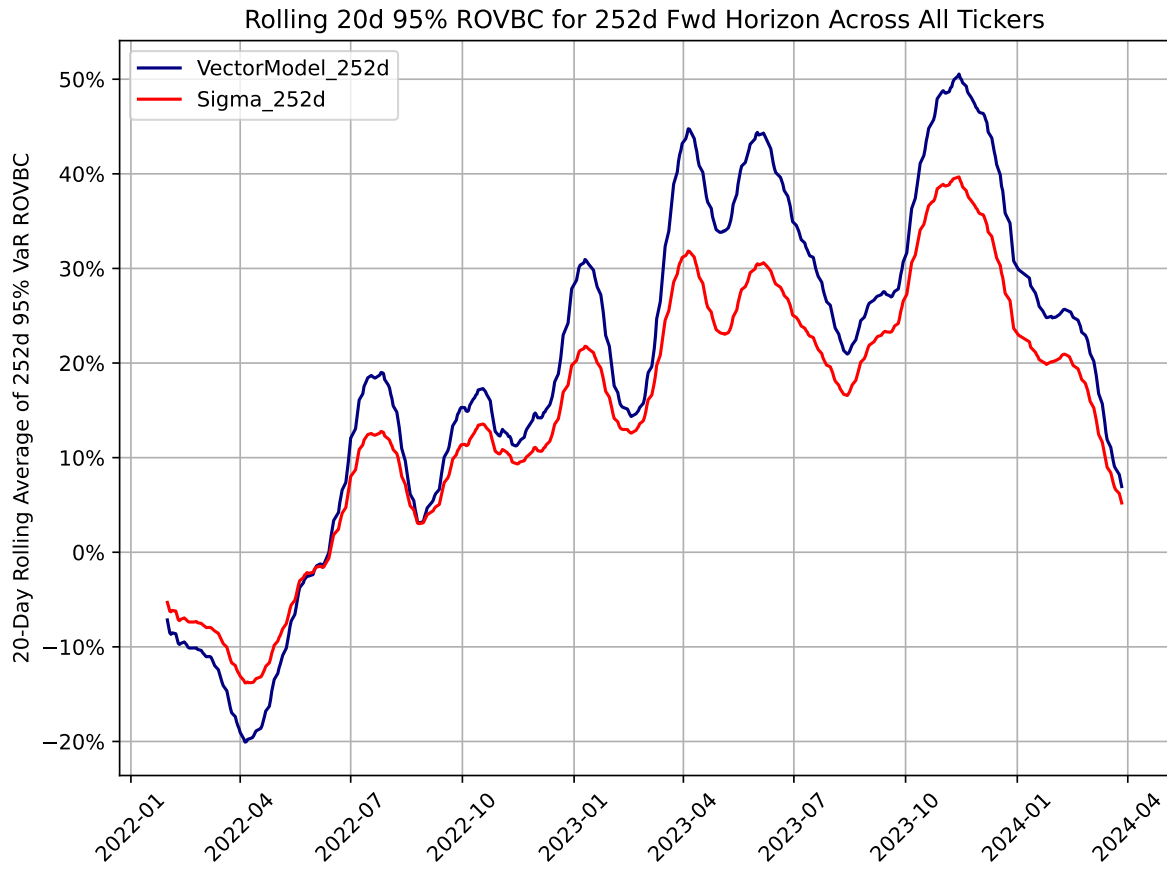
126d Horizon





252d Horizon





Top 30 Tickers By VaR Breakage

All TMD: 1d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
1.0	SBNY	30.11%	SBNY	7.43%
1.0	SIVBQ	18.92%	VST	7.03%
1.0	TSLA	18.24%	FRCB	6.47%
1.0	CHTR	17.6%	MUB	5.99%
1.0	LQD	17.07%	PHM	5.97%
1.0	FRCB	13.67%	ACGL	5.96%
1.0	GME	12.76%	TRGP	5.87%
1.0	GOLD	12.43%	GOOGL	5.77%
1.0	MSTR	11.78%	NVDA	5.75%
1.0	UAA	11.51%	VCSH	5.73%
1.0	AAP	11.48%	AAPL	5.71%
1.0	SLV	10.4%	IRM	5.68%
1.0	VCSH	10.32%	VZ	5.55%
1.0	BALL	9.84%	AZN	5.5%
1.0	GNRC	9.82%	LQD	5.48%
1.0	META	9.65%	QQQ	5.45%
1.0	ZTS	9.59%	MSFT	5.44%
1.0	VFC	9.58%	SIVBQ	5.41%
1.0	MUB	9.44%	PEP	5.39%
1.0	ISRG	8.99%	NVS	5.36%
1.0	AMZN	8.83%	LEN	5.32%
1.0	BUD	8.81%	TXN	5.28%
1.0	HD	8.77%	GLD	5.22%
1.0	OXY	8.7%	CDNS	5.22%
1.0	KEY	8.68%	AMD	5.19%
1.0	TLT	8.6%	MOS	5.13%
1.0	AMC	8.44%	UNH	5.06%
1.0	KALU	8.19%	ON	5.05%
1.0	JAZZ	8.14%	MU	5.03%
1.0	SBUX	8.05%	AVGO	5.03%



All TMD: 10d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
10.0	SBNY	40.89%	MUB	13.49%
10.0	SIVBQ	24.32%	SIVBQ	11.97%
10.0	AAP	22.13%	SBNY	11.52%
10.0	CHTR	20.29%	FRCB	10.43%
10.0	TSLA	19.54%	AAP	9.73%
10.0	GOLD	18.15%	CVS	8.21%
10.0	FRCB	15.83%	BAC	7.83%
10.0	GME	15.77%	FRA	7.75%
10.0	ZTS	15.37%	LW	7.61%
10.0	LQD	15.12%	CTLT	7.18%
10.0	AMC	15.05%	CLF	7.14%
10.0	NEM	13.38%	MS	7.1%
10.0	BUD	13.38%	BALL	6.94%
10.0	TLT	13.13%	NEM	6.89%
10.0	SLV	12.29%	WFC	6.87%
10.0	KALU	12.18%	X	6.77%
10.0	MSTR	12.16%	BMY	6.75%
10.0	GSK	11.94%	NWL	6.72%
10.0	VFC	11.87%	AZN	6.63%
10.0	CVS	11.67%	CHTR	6.63%
10.0	VCSH	10.93%	UNH	6.34%
10.0	PRGO	10.73%	ADBE	6.33%
10.0	BALL	10.6%	GSK	6.29%
10.0	KEY	10.34%	TEVA	6.22%
10.0	JAZZ	10.21%	EMB	6.11%
10.0	META	10.01%	IRM	6.06%
10.0	CTLT	10.0%	AA	6.03%
10.0	AMZN	9.97%	IEP	5.98%
10.0	FRA	9.78%	CMCSA	5.94%
10.0	ISRG	9.74%	EXPE	5.91%



All TMD: 21d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
21.0	SBNY	57.62%	SIVBQ	16.22%
21.0	SIVBQ	26.64%	FRCB	14.03%
21.0	AAP	24.49%	MUB	14.03%
21.0	CHTR	24.01%	AAP	11.49%
21.0	TSLA	20.22%	SBNY	10.78%
21.0	GOLD	19.02%	LW	10.46%
21.0	FRCB	16.91%	GSK	9.19%
21.0	LQD	16.73%	CVS	8.77%
21.0	GSK	16.67%	CHTR	8.22%
21.0	AMC	15.97%	CTLT	8.07%
21.0	VCSH	15.82%	EMB	8.05%
21.0	TLT	15.61%	VCSH	7.65%
21.0	CVS	15.45%	FIS	7.52%
21.0	NEM	15.36%	TEVA	7.19%
21.0	BUD	15.21%	NWL	7.14%
21.0	PRGO	13.96%	WDC	7.06%
21.0	KALU	13.76%	NEM	7.01%
21.0	BXP	13.73%	LQD	7.0%
21.0	VFC	13.27%	ABBV	6.71%
21.0	CTLT	13.11%	VZ	6.7%
21.0	ZTS	12.93%	AZN	6.64%
21.0	GME	12.13%	FRA	6.61%
21.0	GNRC	12.13%	AMZN	6.42%
21.0	MSTR	12.07%	BAC	6.41%
21.0	UAA	11.87%	BXP	5.92%
21.0	FIS	11.61%	COST	5.87%
21.0	ISRG	11.28%	GOLD	5.85%
21.0	JAZZ	10.83%	INTC	5.78%
21.0	BIIB	10.55%	BA	5.73%
21.0	EXPE	10.47%	BUD	5.72%



All TMD: 63d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
63.0	SBNY	85.5%	SBNY	33.09%
63.0	SIVBQ	43.63%	SIVBQ	32.05%
63.0	AAP	36.96%	FRCB	26.98%
63.0	CHTR	33.94%	MUB	13.74%
63.0	FRCB	31.29%	GSK	13.43%
63.0	AMC	20.49%	NEM	12.61%
63.0	VFC	20.06%	CTLT	11.04%
63.0	TSLA	19.91%	LW	10.35%
63.0	BIIB	19.49%	CHTR	9.96%
63.0	GOLD	18.87%	KEY	9.86%
63.0	KALU	18.46%	ZION	9.34%
63.0	TLT	17.9%	LQD	9.19%
63.0	NEM	17.05%	AAP	9.03%
63.0	GSK	17.04%	BHC	8.82%
63.0	LQD	16.32%	IEP	8.78%
63.0	GNRC	16.11%	BXP	8.6%
63.0	BXP	15.36%	CVS	8.58%
63.0	BHC	15.15%	TLT	8.11%
63.0	CTLT	14.72%	BMY	7.98%
63.0	FIS	14.66%	HCA	7.97%
63.0	AMZN	14.0%	VCSH	7.96%
63.0	CVS	13.55%	CMA	7.7%
63.0	VCSH	13.17%	NFLX	7.63%
63.0	KEY	12.29%	CYH	7.53%
63.0	ZION	11.78%	LEN	7.37%
63.0	BUD	11.69%	BALL	7.3%
63.0	FITB	10.8%	EMB	7.01%
63.0	EXPE	10.67%	PCG	7.0%
63.0	CMA	10.5%	TFC	6.7%
63.0	IEP	10.36%	EXPE	6.69%



All TMD: 126d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
126.0	SBNY	100.0%	SIVBQ	50.58%
126.0	SIVBQ	66.02%	SBNY	47.21%
126.0	FRCB	45.68%	FRCB	45.32%
126.0	AAP	40.8%	GSK	19.55%
126.0	CHTR	39.21%	IEP	19.4%
126.0	VFC	32.81%	AAP	18.55%
126.0	AMC	30.0%	VZ	12.02%
126.0	GSK	23.48%	CTLT	10.85%
126.0	TSLA	20.23%	INTC	10.75%
126.0	TLT	19.94%	BHC	10.13%
126.0	IEP	19.4%	CSTM	10.08%
126.0	BIIB	18.73%	MUB	9.75%
126.0	ZION	17.74%	BALL	9.68%
126.0	BXP	17.26%	NEM	8.62%
126.0	CVS	17.1%	MRK	8.56%
126.0	NEM	15.99%	KEY	8.38%
126.0	GNRC	15.61%	EMB	7.95%
126.0	OXY	13.43%	LW	7.87%
126.0	GOLD	13.36%	VCSH	7.65%
126.0	CTLT	13.22%	BXP	7.11%
126.0	VCSH	13.19%	LUMN	6.76%
126.0	AMZN	12.35%	LQD	6.75%
126.0	CMA	12.25%	CHTR	5.78%
126.0	BUD	11.88%	CLF	5.62%
126.0	BHC	11.58%	HYG	5.25%
126.0	KEY	11.39%	ELAN	5.07%
126.0	BMY	11.3%	ZION	5.02%
126.0	SNY	11.09%	CMA	4.75%
126.0	EXPE	10.76%	CYH	4.43%
126.0	LQD	10.64%	GOLD	4.3%



All TMD: 252d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
252.0	SBNY	100.0%	SIVBQ	91.51%
252.0	SIVBQ	91.51%	FRCB	90.29%
252.0	FRCB	90.65%	SBNY	81.41%
252.0	AAP	70.9%	IEP	46.85%
252.0	AMC	57.43%	AAP	25.56%
252.0	CHTR	44.19%	BMY	18.52%
252.0	IEP	44.09%	GSK	18.16%
252.0	VFC	39.78%	LUMN	17.49%
252.0	BIIB	29.62%	LW	15.43%
252.0	ZION	28.65%	BXP	13.33%
252.0	CMA	28.46%	VZ	9.74%
252.0	BXP	20.86%	VNO	6.63%
252.0	FIS	20.83%	CTLT	5.39%
252.0	GSK	19.1%	INTC	4.89%
252.0	CVS	18.13%	MRK	4.81%
252.0	BMY	15.74%	LNC	3.12%
252.0	TLT	15.0%	ELAN	2.62%
252.0	CTLT	14.44%	EMB	2.22%
252.0	VNO	13.26%	CVS	1.68%
252.0	BHC	12.26%	BALL	1.51%
252.0	ELAN	11.67%	NWL	1.34%
252.0	NWL	11.11%	ZION	1.15%
252.0	GNRC	9.94%	TLT	0.93%
252.0	EXPE	9.71%	BHC	0.75%
252.0	LNC	9.17%	VCSH	0.74%
252.0	PRGO	7.98%	NEM	0.58%
252.0	LQD	7.21%	CMA	0.38%
252.0	KEY	6.75%	LQD	0.37%
252.0	OXY	6.67%	KEY	0.2%
252.0	FITB	6.55%	CLF	0.19%



P30D: 1d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates in the period examined for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
1.0	ISRG	35.71%	HLT	30.0%
1.0	MSFT	35.0%	ISRG	28.57%
1.0	TSLA	33.33%	META	25.0%
1.0	META	30.0%	CCL	22.22%
1.0	TXN	25.0%	AAPL	20.0%
1.0	SBUX	25.0%	JAZZ	20.0%
1.0	LLY	25.0%	COST	20.0%
1.0	VFC	23.53%	HSBC	20.0%
1.0	AMZN	23.53%	MS	20.0%
1.0	MU	22.22%	VNO	17.65%
1.0	GWV	20.0%	VFC	17.65%
1.0	NAVI	20.0%	QQQ	15.0%
1.0	LQD	20.0%	EXPE	15.0%
1.0	ZTS	20.0%	GS	15.0%
1.0	CLF	17.65%	SBUX	15.0%
1.0	GOLD	16.67%	SPY	15.0%
1.0	CCL	16.67%	BMJ	15.0%
1.0	CDNS	15.79%	GOOGL	15.0%
1.0	EXPE	15.0%	ORCL	15.0%
1.0	NFLX	15.0%	BAC	15.0%
1.0	BAC	15.0%	AMZN	11.76%
1.0	KHC	15.0%	MU	11.11%
1.0	GOOGL	15.0%	BA	10.53%
1.0	WFC	15.0%	PWR	10.53%
1.0	AMGN	15.0%	BBY	10.53%
1.0	VZ	15.0%	MUB	10.0%
1.0	BHC	11.76%	FITB	10.0%
1.0	CYH	11.11%	HCA	10.0%
1.0	INTC	11.11%	PEP	10.0%
1.0	PWR	10.53%	GILD	10.0%



P30D: 10d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates in the period examined for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
10.0	SBUX	54.55%	AAPL	45.45%
10.0	GILD	45.45%	HLT	45.45%
10.0	TSLA	40.0%	HD	45.45%
10.0	VFC	37.5%	ADBE	40.0%
10.0	AAPL	36.36%	VFC	37.5%
10.0	HLT	36.36%	GILD	36.36%
10.0	LLY	36.36%	COST	36.36%
10.0	META	27.27%	LLY	27.27%
10.0	CMG	18.18%	SBUX	27.27%
10.0	KALU	18.18%	ISRG	25.0%
10.0	EXPE	18.18%	LVS	20.0%
10.0	JAZZ	18.18%	EXPE	18.18%
10.0	MU	10.0%	KHC	18.18%
10.0	FITB	9.09%	JAZZ	18.18%
10.0	JPM	9.09%	CSCO	9.09%
10.0	AA	9.09%	GS	9.09%
10.0	KEY	9.09%	TFC	9.09%
10.0	KHC	9.09%	MS	9.09%
10.0	CHTR	9.09%	MUB	9.09%
10.0	NAVI	9.09%	JPM	9.09%
10.0	PEP	9.09%	KALU	9.09%
10.0	WFC	9.09%	META	9.09%
10.0	LQD	9.09%	BBY	9.09%
10.0	ZTS	9.09%	BAC	9.09%
10.0	BBY	9.09%	FITB	9.09%
10.0	CAH	0.0%	PEP	9.09%
10.0	NWL	0.0%	CMG	9.09%
10.0	QQQ	0.0%	NEM	0.0%
10.0	QCOM	0.0%	NFLX	0.0%
10.0	PWR	0.0%	VST	0.0%



P90D: 1d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
1.0	TSLA	34.0%	AAPL	16.36%
1.0	MSFT	27.27%	ISRG	15.79%
1.0	AMZN	21.15%	TRGP	12.73%
1.0	META	20.37%	HCA	12.73%
1.0	BAC	20.0%	HLT	12.73%
1.0	TXN	20.0%	QQQ	12.73%
1.0	GOOGL	18.18%	SPY	12.73%
1.0	CLF	17.31%	MSI	12.0%
1.0	UNH	17.31%	CCL	11.54%
1.0	CZR	16.98%	TXN	10.91%
1.0	CDNS	16.67%	GOOGL	10.91%
1.0	ZTS	16.36%	COST	10.91%
1.0	MU	15.09%	ORCL	10.91%
1.0	AAP	15.09%	IRM	10.91%
1.0	NAVI	14.55%	BMJ	10.91%
1.0	CMA	14.55%	MS	10.91%
1.0	PWR	13.46%	AMZN	9.62%
1.0	KHC	13.21%	VST	9.26%
1.0	ISRG	13.16%	META	9.26%
1.0	HCA	12.73%	GS	9.09%
1.0	BHC	12.0%	PEP	9.09%
1.0	LLY	11.54%	HSBC	9.09%
1.0	GOLD	11.32%	NVDA	9.09%
1.0	GWV	10.91%	EXPE	9.09%
1.0	AMGN	10.91%	LNC	8.16%
1.0	ON	10.91%	VFC	8.16%
1.0	AAPL	10.91%	LEN	8.0%
1.0	QCOM	10.91%	VNO	7.84%
1.0	VFC	10.2%	UNH	7.69%
1.0	AMC	9.26%	LLY	7.69%



P90D: 10d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
10.0	TSLA	58.0%	AAPL	25.93%
10.0	AAP	37.25%	FIS	24.07%
10.0	GOOGL	37.04%	PWR	23.53%
10.0	MSFT	29.63%	MSI	22.92%
10.0	CDNS	27.78%	VFC	22.45%
10.0	BALL	27.08%	CZR	21.15%
10.0	WDC	25.0%	CCL	20.41%
10.0	CMA	24.07%	GS	20.37%
10.0	AMZN	22.64%	HLT	20.37%
10.0	META	22.64%	HON	20.37%
10.0	ZTS	22.22%	MRK	20.37%
10.0	UNH	21.57%	ISRG	20.0%
10.0	CZR	21.15%	BBY	19.23%
10.0	VFC	20.41%	TEVA	18.87%
10.0	SBUX	20.37%	VST	18.87%
10.0	PWR	19.61%	BALL	18.75%
10.0	KEY	18.87%	BAC	18.52%
10.0	VST	18.87%	JPM	18.52%
10.0	BBY	17.31%	COST	18.52%
10.0	LLY	17.02%	MS	18.52%
10.0	FSUGY	15.38%	AAP	17.65%
10.0	MSTR	15.22%	WDC	17.31%
10.0	NWL	14.89%	CDNS	16.67%
10.0	AAPL	14.81%	IRM	16.67%
10.0	HLT	14.81%	CNC	16.67%
10.0	WFC	14.81%	SPY	16.67%
10.0	ON	14.81%	NVDA	16.67%
10.0	GNRC	14.58%	QQQ	16.67%
10.0	TEVA	13.21%	UNH	15.69%
10.0	MRK	12.96%	TFC	15.69%



P90D: 21d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
21.0	TSLA	62.5%	FIS	51.16%
21.0	GOOGL	53.49%	WDC	48.78%
21.0	CZR	51.22%	NWL	48.57%
21.0	NWL	48.57%	TEVA	47.62%
21.0	WDC	46.34%	CCL	45.0%
21.0	VFC	41.46%	VFC	39.02%
21.0	AAP	40.54%	HLT	37.21%
21.0	VST	39.53%	COST	37.21%
21.0	CDNS	39.53%	IRM	37.21%
21.0	MSFT	34.88%	TSLA	35.0%
21.0	CMA	34.88%	CZR	34.15%
21.0	SBUX	32.56%	PWR	34.15%
21.0	EXPE	30.23%	BBY	34.15%
21.0	CCL	30.0%	CDNS	32.56%
21.0	BBY	29.27%	MSI	32.43%
21.0	META	28.57%	AMZN	30.23%
21.0	HLT	25.58%	MS	30.23%
21.0	UNH	25.0%	MRK	27.91%
21.0	PWR	24.39%	ISRG	25.0%
21.0	KEY	23.81%	HD	23.26%
21.0	ZTS	23.26%	SPY	23.26%
21.0	BALL	21.62%	GS	23.26%
21.0	GNRC	21.05%	GOOGL	23.26%
21.0	ON	18.6%	JPM	23.26%
21.0	BAC	13.95%	QQQ	23.26%
21.0	GWV	13.95%	BAC	20.93%
21.0	AMC	12.5%	VST	20.93%
21.0	IRM	11.63%	TFC	20.51%
21.0	MRK	11.63%	META	19.05%
21.0	ORCL	11.63%	AAPL	16.28%



P365D: 1d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
1.0	TSLA	17.6%	VST	13.33%
1.0	GOLD	14.66%	NVDA	9.62%
1.0	UNH	13.14%	IRM	8.3%
1.0	UAA	12.61%	CCL	8.25%
1.0	CLF	12.33%	MU	8.15%
1.0	MSFT	11.81%	TXN	8.02%
1.0	QCOM	11.72%	QQQ	7.98%
1.0	MU	11.16%	SLV	7.92%
1.0	KHC	10.68%	TRGP	7.88%
1.0	NFLX	10.21%	HCA	7.56%
1.0	CNC	9.83%	AAPL	7.53%
1.0	ON	9.79%	PHM	7.47%
1.0	GSK	9.58%	AVGO	7.23%
1.0	CHTR	9.52%	LEN	7.2%
1.0	MSTR	9.13%	SPY	7.05%
1.0	AMZN	9.05%	HLT	7.05%
1.0	CZR	9.05%	CMG	6.69%
1.0	AAP	9.05%	GLD	6.64%
1.0	ZTS	8.75%	LLY	6.54%
1.0	INTC	8.44%	GBTC	6.44%
1.0	CVS	8.33%	GOOGL	6.36%
1.0	PEP	8.3%	AMAT	6.33%
1.0	BALL	8.26%	GSK	6.25%
1.0	SBUX	7.88%	THC	6.25%
1.0	VFC	7.69%	ABBV	6.22%
1.0	GME	7.65%	JPM	6.22%
1.0	TXN	7.59%	MS	6.22%
1.0	BHC	7.54%	GOLD	6.03%
1.0	LQD	7.47%	AMZN	6.03%
1.0	NAVI	7.11%	CDNS	6.01%



P365D: 10d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
10.0	TSLA	23.31%	VST	13.22%
10.0	AAP	18.96%	CVS	12.81%
10.0	GSK	17.77%	CNC	12.71%
10.0	CVS	16.94%	CLF	12.5%
10.0	BUD	16.87%	MU	11.91%
10.0	ZTS	15.29%	CDNS	11.49%
10.0	GOLD	14.96%	WDC	11.35%
10.0	CLF	14.22%	BALL	10.78%
10.0	BALL	14.22%	IRM	10.7%
10.0	LW	12.39%	HON	9.88%
10.0	MSTR	12.38%	FSUGY	9.79%
10.0	CZR	12.16%	NVDA	9.54%
10.0	INTC	10.96%	LLY	9.48%
10.0	UAA	10.78%	LVS	9.43%
10.0	BMY	10.74%	CCL	9.36%
10.0	SBUX	10.7%	AZN	9.09%
10.0	SLV	10.33%	SBUX	9.05%
10.0	WDC	10.04%	BAC	8.71%
10.0	KHC	9.75%	CMG	8.71%
10.0	VZ	9.58%	MRK	8.64%
10.0	CMA	9.54%	LEN	8.37%
10.0	CSTM	9.5%	WFC	8.3%
10.0	BHC	9.5%	GSK	8.26%
10.0	PRGO	9.33%	AAP	8.06%
10.0	KALU	9.21%	BHC	8.0%
10.0	NEM	9.17%	UNH	7.98%
10.0	EXPE	9.05%	BMY	7.85%
10.0	WFC	8.71%	PCG	7.84%
10.0	CDNS	8.51%	LW	7.69%
10.0	AMZN	8.51%	AA	7.69%



P365D: 21d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
21.0	BUD	25.11%	CVS	16.81%
21.0	GSK	24.44%	WDC	14.81%
21.0	AAP	21.35%	CDNS	14.55%
21.0	TSLA	19.46%	BUD	14.1%
21.0	LW	19.27%	INTC	12.86%
21.0	CVS	19.03%	CSTM	12.83%
21.0	INTC	16.19%	MRK	12.78%
21.0	KHC	15.84%	CCL	12.63%
21.0	CSTM	14.16%	GSK	12.44%
21.0	GOLD	13.64%	LW	11.93%
21.0	CZR	13.53%	AZN	11.5%
21.0	WDC	13.43%	FSUGY	11.31%
21.0	PRGO	13.26%	TEVA	10.91%
21.0	BIIB	11.95%	IRM	10.57%
21.0	BALL	10.65%	CNC	10.45%
21.0	ZTS	10.62%	FIS	9.91%
21.0	NEM	10.57%	CMG	9.78%
21.0	ON	10.36%	ELAN	9.74%
21.0	GOOGL	10.36%	VST	9.69%
21.0	ELAN	10.26%	MU	9.55%
21.0	MRK	10.13%	AAP	9.38%
21.0	SBUX	9.69%	PCG	9.28%
21.0	CMA	9.33%	GT	9.18%
21.0	CLF	9.26%	UNH	9.01%
21.0	BHC	8.6%	AMZN	8.6%
21.0	VFC	8.1%	LVS	8.12%
21.0	KALU	8.07%	ABBV	7.93%
21.0	LQD	7.93%	NWL	7.83%
21.0	CCL	7.89%	VFC	7.62%
21.0	NWL	7.83%	QQQ	7.59%



P365D: 63d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
63.0	AAP	47.17%	LEN	28.65%
63.0	BIIB	33.51%	PCG	28.03%
63.0	LW	27.68%	BUD	18.38%
63.0	KALU	27.47%	LW	17.51%
63.0	BUD	25.41%	AZN	17.39%
63.0	PCG	22.29%	IRM	16.22%
63.0	CSTM	21.55%	FSUGY	15.17%
63.0	GSK	20.54%	HCA	14.92%
63.0	ON	17.88%	GSK	14.59%
63.0	OXY	17.49%	CSTM	13.81%
63.0	GNRC	16.76%	NVS	13.51%
63.0	PEP	16.22%	NEM	12.57%
63.0	KHC	15.56%	CMG	11.48%
63.0	CNC	15.17%	MU	11.17%
63.0	NEM	14.75%	CYH	9.6%
63.0	INTC	13.71%	CNC	9.55%
63.0	CVS	13.51%	FIS	9.44%
63.0	BHC	12.24%	DHI	9.19%
63.0	CMCSA	11.96%	CMCSA	8.7%
63.0	HCA	11.6%	WDC	8.14%
63.0	MRK	11.35%	MSI	7.91%
63.0	GOLD	11.24%	ACGL	7.61%
63.0	MU	11.17%	BIIB	6.49%
63.0	AMGN	10.81%	PHM	6.49%
63.0	WDC	9.3%	PWR	6.04%
63.0	CLF	8.57%	UNH	6.01%
63.0	NWL	8.2%	PEP	5.95%
63.0	LQD	8.11%	KALU	5.49%
63.0	GWV	7.61%	FRA	5.41%
63.0	TSLA	6.59%	KHC	5.0%



P365D: 126d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
126.0	AAP	69.44%	CSTM	53.66%
126.0	BIIB	68.29%	MRK	46.34%
126.0	OXY	62.81%	BIIB	18.7%
126.0	MRK	49.59%	LEN	17.89%
126.0	BUD	45.53%	IRM	12.2%
126.0	CSTM	45.53%	GSK	10.57%
126.0	GSK	24.39%	CLF	6.84%
126.0	CNC	22.22%	FSUGY	2.44%
126.0	DHI	17.89%	PCG	2.0%
126.0	PRGO	12.5%	LW	1.67%
126.0	CLF	11.97%	DHI	1.63%
126.0	INTC	11.97%	INTC	0.85%
126.0	MU	9.09%	WDC	0.85%
126.0	CVS	8.94%	PEP	0.81%
126.0	KHC	7.38%	LVS	0.0%
126.0	CZR	4.31%	NFLX	0.0%
126.0	WDC	4.24%	LLY	0.0%
126.0	UAA	2.65%	LNC	0.0%
126.0	CYH	1.69%	OXY	0.0%
126.0	AMGN	1.63%	ORLY	0.0%
126.0	KALU	0.83%	ORCL	0.0%
126.0	PEP	0.81%	ON	0.0%
126.0	MSTR	0.0%	NWL	0.0%
126.0	MSI	0.0%	LQD	0.0%
126.0	PHM	0.0%	NVS	0.0%
126.0	LUMN	0.0%	NVDA	0.0%
126.0	PCG	0.0%	NEM	0.0%
126.0	LVS	0.0%	META	0.0%
126.0	LW	0.0%	NAVI	0.0%
126.0	ORLY	0.0%	MUB	0.0%



Top 30 Tickers By ROVBC

All TMD: 1d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
1.0	MSTR	0.72%	MSTR	0.5%
1.0	GME	0.39%	VST	0.25%
1.0	NFLX	0.27%	NVDA	0.25%
1.0	AAPL	0.21%	GME	0.22%
1.0	INTC	0.2%	AVGO	0.19%
1.0	INTU	0.19%	LLY	0.18%
1.0	META	0.18%	PWR	0.18%
1.0	AVGO	0.16%	GBTC	0.18%
1.0	XOM	0.14%	TRGP	0.17%
1.0	GW	0.14%	GE	0.15%
1.0	ORCL	0.13%	TMUS	0.14%
1.0	AMZN	0.13%	NFLX	0.13%
1.0	NVDA	0.12%	CAH	0.12%
1.0	CDNS	0.12%	PHM	0.12%
1.0	ISRG	0.12%	CDNS	0.12%
1.0	ORLY	0.11%	TDG	0.11%
1.0	GNRC	0.11%	ACGL	0.11%
1.0	HD	0.11%	ETRN	0.11%
1.0	BHC	0.11%	ORCL	0.11%
1.0	TRGP	0.1%	ORLY	0.11%
1.0	OXY	0.1%	ISRG	0.1%
1.0	PWR	0.1%	X	0.1%
1.0	VST	0.1%	TEVA	0.1%
1.0	AZO	0.1%	GW	0.1%
1.0	TMUS	0.1%	THC	0.1%
1.0	GBTC	0.09%	CMG	0.09%
1.0	TDG	0.09%	COST	0.09%
1.0	CAH	0.09%	IRM	0.09%
1.0	MSI	0.09%	PCG	0.09%
1.0	LLY	0.09%	AZO	0.09%



All TMD: 10d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
10.0	MSTR	8.24%	MSTR	4.52%
10.0	GME	6.08%	VST	2.67%
10.0	NFLX	2.69%	NVDA	2.58%
10.0	META	2.46%	LLY	1.91%
10.0	AVGO	1.9%	AVGO	1.9%
10.0	VST	1.76%	GBTC	1.71%
10.0	TEVA	1.75%	GME	1.69%
10.0	NVDA	1.73%	TRGP	1.68%
10.0	GBTC	1.47%	NFLX	1.53%
10.0	SLV	1.41%	META	1.45%
10.0	GWV	1.33%	PWR	1.43%
10.0	AAPL	1.33%	ETRN	1.41%
10.0	ORCL	1.32%	CAH	1.38%
10.0	CAH	1.32%	GE	1.33%
10.0	ETRN	1.23%	TEVA	1.24%
10.0	LLY	1.23%	X	1.19%
10.0	TMUS	1.21%	PHM	1.17%
10.0	OXY	1.18%	TMUS	1.15%
10.0	GE	1.14%	TDG	1.12%
10.0	CTLT	1.11%	ORLY	1.04%
10.0	XOM	1.08%	THC	1.02%
10.0	INTU	1.08%	GWV	1.01%
10.0	MSI	1.03%	ACGL	1.0%
10.0	TRGP	1.0%	ORCL	0.99%
10.0	GILD	0.97%	IRM	0.97%
10.0	ORLY	0.93%	ISRG	0.95%
10.0	HCA	0.91%	CDNS	0.89%
10.0	GS	0.89%	COST	0.87%
10.0	ABBV	0.87%	AZO	0.87%
10.0	THC	0.85%	MSI	0.87%



All TMD: 21d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
21.0	MSTR	20.21%	MSTR	9.86%
21.0	GME	8.26%	VST	5.8%
21.0	META	7.53%	NVDA	5.62%
21.0	NFLX	6.46%	LLY	4.14%
21.0	GBTC	4.76%	GBTC	4.0%
21.0	TEVA	4.39%	AVGO	3.78%
21.0	VST	4.09%	META	3.6%
21.0	NVDA	3.98%	NFLX	3.54%
21.0	AVGO	3.61%	ETRN	3.51%
21.0	ETRN	3.53%	TRGP	3.48%
21.0	ORCL	3.34%	GE	3.08%
21.0	GWV	3.12%	PWR	2.97%
21.0	LLY	3.11%	CAH	2.85%
21.0	GE	2.83%	X	2.73%
21.0	CAH	2.82%	PHM	2.68%
21.0	GILD	2.79%	TEVA	2.48%
21.0	TRGP	2.53%	TMUS	2.45%
21.0	TMUS	2.49%	TDG	2.35%
21.0	SLV	2.45%	ORCL	2.34%
21.0	AAPL	2.32%	GWV	2.33%
21.0	XOM	2.22%	ORLY	2.23%
21.0	MSI	2.17%	THC	2.22%
21.0	CTLT	2.07%	IRM	2.21%
21.0	OXY	2.06%	ACGL	2.14%
21.0	AMZN	2.04%	COST	2.08%
21.0	HCA	2.02%	ISRG	2.05%
21.0	GS	2.01%	GME	2.04%
21.0	AMGN	2.0%	MSI	2.01%
21.0	INTU	2.0%	AZO	1.99%
21.0	AZO	1.93%	GILD	1.94%



All TMD: 63d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
63.0	MSTR	52.69%	MSTR	30.87%
63.0	META	28.44%	VST	20.6%
63.0	NFLX	24.13%	NVDA	20.02%
63.0	VST	18.57%	GBTC	13.27%
63.0	AVGO	14.92%	AVGO	13.18%
63.0	NVDA	14.66%	META	13.13%
63.0	GBTC	12.46%	NFLX	12.18%
63.0	ETRN	11.33%	LLY	11.74%
63.0	TEVA	11.1%	ETRN	10.42%
63.0	ORCL	10.8%	GE	10.24%
63.0	GE	10.22%	TRGP	10.12%
63.0	LLY	10.1%	PHM	9.41%
63.0	CTLT	9.97%	PWR	8.68%
63.0	GME	8.85%	TEVA	8.15%
63.0	GWV	8.79%	CAH	7.88%
63.0	CAH	8.56%	ORCL	7.29%
63.0	ISRG	8.2%	THC	7.24%
63.0	MSI	8.07%	TDG	7.19%
63.0	GILD	8.01%	GWV	7.02%
63.0	TRGP	7.82%	ISRG	6.97%
63.0	TDG	7.42%	ACGL	6.83%
63.0	TMUS	6.6%	IRM	6.62%
63.0	INTU	6.52%	CMG	6.54%
63.0	PHM	6.52%	MSI	6.41%
63.0	AAPL	6.21%	TMUS	6.21%
63.0	LEN	6.19%	DHI	6.16%
63.0	XOM	6.06%	ORLY	6.09%
63.0	THC	6.04%	CPRT	5.9%
63.0	CMG	5.95%	JPM	5.9%
63.0	GOOGL	5.88%	CDNS	5.83%



All TMD: 126d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
126.0	MSTR	121.71%	MSTR	77.19%
126.0	META	75.17%	NVDA	54.86%
126.0	NFLX	60.52%	VST	47.59%
126.0	NVDA	52.01%	GBTC	40.42%
126.0	VST	47.52%	META	31.96%
126.0	GBTC	41.69%	NFLX	29.43%
126.0	AVGO	37.97%	AVGO	28.17%
126.0	ORCL	29.13%	GE	25.23%
126.0	LLY	27.99%	LLY	24.34%
126.0	TEVA	25.25%	PHM	23.02%
126.0	GE	24.84%	TRGP	22.82%
126.0	ISRG	23.73%	THC	20.46%
126.0	CAH	20.31%	PWR	19.75%
126.0	TDG	19.95%	ETRN	18.67%
126.0	GWG	19.49%	ORCL	18.29%
126.0	AMD	19.39%	TEVA	17.84%
126.0	LEN	19.2%	ISRG	17.35%
126.0	MSI	18.75%	TDG	17.28%
126.0	GILD	18.69%	IRM	16.9%
126.0	AMZN	18.47%	GWG	16.89%
126.0	TRGP	17.93%	CAH	16.71%
126.0	INTU	17.4%	ACGL	16.36%
126.0	ETRN	17.11%	CMG	15.76%
126.0	TMUS	17.03%	DHI	15.71%
126.0	THC	15.93%	MSI	15.28%
126.0	ORLY	15.48%	CPRT	14.05%
126.0	ACGL	15.01%	CCL	14.03%
126.0	CDNS	14.65%	LEN	13.8%
126.0	PHM	14.52%	JPM	13.74%
126.0	GOOGL	14.3%	ORLY	13.28%



All TMD: 252d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
252.0	MSTR	444.59%	MSTR	234.72%
252.0	META	198.11%	NVDA	159.75%
252.0	VST	166.08%	VST	131.63%
252.0	NVDA	159.8%	GBTC	131.1%
252.0	GBTC	140.67%	META	86.51%
252.0	NFLX	139.8%	AVGO	74.54%
252.0	AVGO	112.77%	NFLX	67.39%
252.0	LLY	84.2%	GE	64.74%
252.0	AMZN	75.8%	PHM	63.65%
252.0	ORCL	73.88%	LLY	61.38%
252.0	ISRG	70.7%	THC	54.41%
252.0	GE	70.03%	TRGP	51.09%
252.0	TEVA	68.48%	PWR	44.36%
252.0	THC	65.62%	TDG	44.09%
252.0	TDG	61.26%	TEVA	41.81%
252.0	INTU	58.55%	DHI	41.06%
252.0	AMD	57.36%	ISRG	39.83%
252.0	LEN	57.08%	IRM	39.65%
252.0	TRGP	51.91%	ACGL	39.27%
252.0	MSI	51.57%	ORCL	38.92%
252.0	PHM	48.4%	CMG	38.41%
252.0	DHI	48.13%	LEN	37.23%
252.0	AMAT	47.46%	GWV	37.06%
252.0	GWV	47.21%	ETRN	35.88%
252.0	WDC	46.85%	AMAT	35.45%
252.0	ACGL	46.44%	AMD	35.3%
252.0	GOOGL	45.23%	CCL	34.41%
252.0	CAH	42.74%	CPRT	34.27%
252.0	COST	40.69%	AMZN	32.66%
252.0	CMG	39.6%	CDNS	32.59%



P30D: 1d

Results reflect ticker level average 95% VaR based ROVBC across all model dates in the period examined for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
1.0	MSTR	2.62%	MSTR	2.32%
1.0	UNH	1.61%	MOS	0.75%
1.0	PWR	0.99%	UNH	0.61%
1.0	GOLD	0.75%	AAP	0.55%
1.0	OXY	0.75%	HCA	0.54%
1.0	HCA	0.67%	NEM	0.5%
1.0	AAP	0.66%	XOM	0.5%
1.0	AMD	0.63%	AZO	0.48%
1.0	INTU	0.62%	OXY	0.47%
1.0	NEM	0.5%	X	0.45%
1.0	GME	0.42%	THC	0.41%
1.0	CDNS	0.4%	INTC	0.41%
1.0	THC	0.36%	CDNS	0.4%
1.0	DHI	0.36%	GLD	0.39%
1.0	CHTR	0.35%	SLV	0.39%
1.0	XOM	0.34%	FCX	0.38%
1.0	TEVA	0.33%	GOLD	0.38%
1.0	X	0.33%	LW	0.34%
1.0	MOS	0.31%	DHI	0.34%
1.0	SLV	0.31%	CAH	0.33%
1.0	LW	0.27%	PWR	0.31%
1.0	BHP	0.26%	MNST	0.3%
1.0	MNST	0.24%	GT	0.28%
1.0	CNC	0.24%	AMD	0.27%
1.0	AZO	0.24%	CVS	0.22%
1.0	GSK	0.23%	BA	0.22%
1.0	BMY	0.22%	ORLY	0.21%
1.0	T	0.22%	VZ	0.19%
1.0	ACGL	0.21%	CNC	0.18%
1.0	CMCSA	0.19%	FIS	0.18%



P30D: 10d

Results reflect ticker level average 95% VaR based ROVBC across all model dates in the period examined for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
10.0	MSTR	27.95%	MSTR	22.46%
10.0	INTC	21.67%	INTC	12.34%
10.0	UNH	17.29%	X	11.32%
10.0	AMD	14.32%	MOS	10.9%
10.0	NEM	13.34%	BA	9.94%
10.0	BA	11.79%	FCX	9.33%
10.0	X	10.75%	NEM	8.7%
10.0	AAP	9.6%	AMD	7.56%
10.0	CDNS	8.17%	CDNS	7.45%
10.0	FCX	7.71%	TRGP	7.13%
10.0	PWR	7.04%	XOM	6.48%
10.0	MOS	6.89%	VST	6.12%
10.0	OXY	6.61%	UNH	6.08%
10.0	MU	6.3%	PWR	6.03%
10.0	GOLD	5.95%	AAP	5.75%
10.0	LW	5.59%	CAH	5.3%
10.0	GE	5.5%	FIS	5.25%
10.0	HCA	5.16%	GOLD	4.82%
10.0	XOM	4.75%	OXY	4.74%
10.0	VST	4.55%	PCG	4.67%
10.0	CMCSA	4.51%	HCA	4.66%
10.0	CVS	4.49%	MNST	4.17%
10.0	THC	3.82%	GE	4.16%
10.0	CAH	3.8%	THC	4.15%
10.0	SLV	3.51%	LW	4.02%
10.0	ORLY	3.07%	NFLX	3.76%
10.0	AA	2.95%	GLD	3.72%
10.0	NFLX	2.69%	ACGL	3.21%
10.0	IRM	2.68%	CVS	3.04%
10.0	FIS	2.65%	AZO	3.01%



P90D: 1d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
1.0	INTC	2.82%	INTC	1.03%
1.0	PRGO	1.57%	TMUS	0.54%
1.0	GOLD	1.05%	T	0.53%
1.0	BUD	0.66%	BUD	0.52%
1.0	BHC	0.56%	MSTR	0.5%
1.0	MSTR	0.54%	GOLD	0.47%
1.0	AMGN	0.45%	GILD	0.46%
1.0	GILD	0.43%	PRGO	0.45%
1.0	NEM	0.41%	NEM	0.43%
1.0	CHTR	0.4%	GSK	0.4%
1.0	BMY	0.4%	GT	0.39%
1.0	T	0.38%	HSBC	0.38%
1.0	GSK	0.38%	GE	0.37%
1.0	VZ	0.37%	SLV	0.35%
1.0	SLV	0.36%	GLD	0.34%
1.0	ZTS	0.36%	VZ	0.33%
1.0	CVS	0.35%	MNST	0.33%
1.0	GE	0.33%	ABBV	0.31%
1.0	OXY	0.33%	X	0.29%
1.0	CMCSA	0.31%	AMGN	0.29%
1.0	SNY	0.3%	ORLY	0.28%
1.0	LNC	0.3%	LNC	0.28%
1.0	PWR	0.29%	CVS	0.27%
1.0	SBUX	0.28%	SNY	0.27%
1.0	ABBV	0.28%	CAH	0.26%
1.0	ORLY	0.28%	AZO	0.25%
1.0	NVS	0.28%	AZN	0.25%
1.0	BALL	0.24%	HCA	0.24%
1.0	TXN	0.23%	NVS	0.24%
1.0	TMUS	0.21%	NFLX	0.23%



P90D: 10d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
10.0	INTC	15.41%	INTC	8.77%
10.0	CVS	13.3%	CVS	7.51%
10.0	BUD	11.54%	BUD	5.92%
10.0	GOLD	8.65%	TMUS	4.97%
10.0	AMGN	5.85%	T	4.63%
10.0	NEM	5.84%	GOLD	4.54%
10.0	GILD	4.96%	X	4.45%
10.0	SNY	4.63%	NEM	4.28%
10.0	GSK	4.55%	GILD	4.12%
10.0	ABBV	4.19%	HSBC	3.85%
10.0	SLV	4.13%	LNC	3.56%
10.0	GE	3.75%	GE	3.49%
10.0	X	3.71%	ABBV	3.42%
10.0	VZ	3.2%	GSK	3.36%
10.0	NVS	3.02%	AMGN	3.3%
10.0	LNC	2.98%	MNST	3.05%
10.0	AZN	2.87%	VZ	2.78%
10.0	T	2.71%	SNY	2.77%
10.0	TMUS	2.62%	GT	2.7%
10.0	MU	2.47%	GLD	2.69%
10.0	PRGO	2.46%	AZN	2.65%
10.0	CMCSA	2.44%	JAZZ	2.6%
10.0	JAZZ	2.38%	NFLX	2.55%
10.0	HSBC	2.27%	ORLY	2.51%
10.0	UNH	2.25%	NVS	2.45%
10.0	ORLY	2.23%	SLV	2.34%
10.0	META	1.91%	AZO	2.29%
10.0	CHTR	1.81%	LLY	2.21%
10.0	BA	1.81%	VICI	2.18%
10.0	CSTM	1.77%	CAH	1.86%



P90D: 21d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
21.0	CVS	28.71%	CVS	15.35%
21.0	BUD	27.01%	BUD	14.83%
21.0	GOLD	18.51%	TMUS	11.63%
21.0	AMGN	16.75%	GILD	11.38%
21.0	ABBV	12.85%	ABBV	10.46%
21.0	GILD	12.04%	T	10.29%
21.0	INTC	11.46%	GOLD	10.06%
21.0	SNY	10.51%	HSBC	8.19%
21.0	GSK	9.47%	AMGN	8.19%
21.0	NEM	8.77%	GSK	8.15%
21.0	PRGO	8.75%	INTC	7.53%
21.0	AZN	7.99%	NEM	7.18%
21.0	NVS	7.94%	MNST	6.96%
21.0	SLV	7.83%	SNY	6.67%
21.0	T	6.84%	JAZZ	6.65%
21.0	TMUS	6.54%	X	6.6%
21.0	GE	5.84%	VZ	6.59%
21.0	LNC	5.74%	AZN	6.59%
21.0	VZ	5.71%	NVS	6.25%
21.0	CHTR	5.18%	LNC	6.22%
21.0	HSBC	4.99%	PRGO	6.19%
21.0	JAZZ	4.96%	GE	5.66%
21.0	X	4.54%	GLD	5.34%
21.0	CSTM	4.47%	AZO	5.27%
21.0	VICI	4.3%	ORLY	5.15%
21.0	META	4.01%	VICI	5.0%
21.0	AZO	4.0%	SLV	4.9%
21.0	ORLY	3.65%	CSTM	4.9%
21.0	SBUX	3.46%	LLY	4.65%
21.0	MNST	3.14%	SBUX	4.35%



P365D: 1d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
1.0	GME	1.42%	GME	0.76%
1.0	MSTR	0.77%	LUMN	0.55%
1.0	BHC	0.63%	MSTR	0.53%
1.0	INTC	0.63%	TSLA	0.39%
1.0	NWL	0.54%	VST	0.29%
1.0	PRGO	0.49%	T	0.26%
1.0	CHTR	0.48%	TMUS	0.25%
1.0	VFC	0.41%	TRGP	0.24%
1.0	TSLA	0.38%	VNO	0.23%
1.0	SLV	0.29%	AVGO	0.23%
1.0	GOLD	0.28%	CHTR	0.23%
1.0	LNC	0.23%	GILD	0.21%
1.0	LUMN	0.22%	GE	0.21%
1.0	EXPE	0.2%	NFLX	0.21%
1.0	UNH	0.18%	HSBC	0.19%
1.0	NEM	0.15%	GS	0.19%
1.0	AMZN	0.15%	EXPE	0.17%
1.0	GILD	0.15%	SLV	0.16%
1.0	FITB	0.15%	AAPL	0.15%
1.0	T	0.14%	PWR	0.15%
1.0	PWR	0.14%	NVDA	0.15%
1.0	GE	0.14%	WFC	0.15%
1.0	ABBV	0.14%	MS	0.14%
1.0	ORCL	0.13%	ISRG	0.14%
1.0	ZTS	0.13%	VFC	0.14%
1.0	NFLX	0.12%	GLD	0.14%
1.0	AAPL	0.11%	INTC	0.14%
1.0	ZION	0.11%	BHC	0.14%
1.0	GS	0.11%	NWL	0.13%
1.0	GNRC	0.1%	ORCL	0.13%



P365D: 10d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
10.0	GME	22.07%	GME	6.97%
10.0	MSTR	8.36%	LUMN	4.6%
10.0	VFC	3.55%	MSTR	4.3%
10.0	CHTR	3.3%	VST	3.28%
10.0	EXPE	2.53%	TSLA	2.77%
10.0	GILD	2.51%	TRGP	2.51%
10.0	GOLD	2.26%	TMUS	2.32%
10.0	LUMN	2.19%	T	2.18%
10.0	NWL	2.13%	GILD	2.1%
10.0	AVGO	2.07%	AVGO	2.03%
10.0	INTC	1.91%	NFLX	1.95%
10.0	SLV	1.83%	NVDA	1.73%
10.0	META	1.81%	CHTR	1.7%
10.0	SNY	1.79%	HSBC	1.68%
10.0	NEM	1.76%	EXPE	1.67%
10.0	ABBV	1.6%	ISRG	1.58%
10.0	GS	1.59%	GS	1.58%
10.0	UNH	1.5%	VFC	1.52%
10.0	TEVA	1.46%	VNO	1.41%
10.0	LNC	1.39%	GE	1.35%
10.0	T	1.31%	MS	1.33%
10.0	GE	1.28%	AMC	1.32%
10.0	AMGN	1.22%	NEM	1.29%
10.0	NFLX	1.2%	THC	1.23%
10.0	TMUS	1.2%	AAPL	1.2%
10.0	ORCL	1.17%	COST	1.19%
10.0	VST	1.1%	GLD	1.16%
10.0	NVS	1.07%	LNC	1.14%
10.0	TSLA	1.06%	WFC	1.13%
10.0	GNRC	1.04%	JAZZ	1.12%



P365D: 21d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
21.0	GME	39.81%	GME	12.91%
21.0	MSTR	21.34%	LUMN	11.07%
21.0	CHTR	9.21%	MSTR	9.19%
21.0	LUMN	7.75%	VST	7.38%
21.0	VFC	6.85%	TSLA	6.23%
21.0	TSLA	6.71%	TMUS	5.44%
21.0	GILD	6.66%	TRGP	5.27%
21.0	EXPE	5.91%	GILD	5.23%
21.0	META	4.45%	T	5.05%
21.0	GOLD	4.42%	NFLX	4.99%
21.0	TEVA	4.1%	AVGO	4.05%
21.0	AMGN	3.9%	CHTR	3.94%
21.0	UAA	3.81%	ISRG	3.89%
21.0	SNY	3.59%	VNO	3.77%
21.0	GS	3.49%	NVDA	3.74%
21.0	AVGO	3.41%	VFC	3.7%
21.0	BXP	3.41%	HSBC	3.49%
21.0	ABBV	3.41%	GS	3.46%
21.0	NFLX	3.39%	EXPE	3.38%
21.0	TMUS	3.38%	THC	3.15%
21.0	LNC	3.35%	COST	3.15%
21.0	NEM	3.11%	ORCL	3.14%
21.0	ORCL	3.09%	GE	2.97%
21.0	T	3.09%	MS	2.93%
21.0	SLV	2.91%	META	2.92%
21.0	CVS	2.91%	LNC	2.85%
21.0	SBUX	2.85%	AAPL	2.84%
21.0	GE	2.73%	CCL	2.83%
21.0	NVS	2.67%	AMC	2.61%
21.0	CCL	2.66%	ABBV	2.58%



P365D: 63d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
63.0	MSTR	68.28%	MSTR	43.06%
63.0	GME	59.47%	LUMN	42.29%
63.0	LUMN	43.33%	TSLA	28.74%
63.0	TSLA	43.09%	VST	25.7%
63.0	VFC	28.71%	VFC	21.19%
63.0	CHTR	24.45%	VNO	21.1%
63.0	GILD	22.03%	GME	20.59%
63.0	EXPE	21.55%	TRGP	19.27%
63.0	BXP	21.15%	AVGO	16.39%
63.0	VST	19.79%	GILD	16.02%
63.0	UAA	16.86%	CCL	15.75%
63.0	AVGO	16.64%	NFLX	15.41%
63.0	META	15.42%	EXPE	14.79%
63.0	CCL	15.09%	TMUS	13.9%
63.0	NFLX	13.08%	T	13.42%
63.0	SBUX	13.0%	ISRG	11.78%
63.0	VNO	12.98%	GS	11.21%
63.0	CMA	12.87%	MS	10.82%
63.0	GOLD	12.26%	CHTR	10.66%
63.0	GS	11.38%	ORCL	10.65%
63.0	NEM	11.25%	META	10.6%
63.0	BMY	11.16%	BMY	9.85%
63.0	TRGP	10.7%	NVDA	9.47%
63.0	ZION	10.48%	SBUX	9.37%
63.0	ABBV	10.25%	JPM	9.27%
63.0	TMUS	10.23%	CSCO	8.82%
63.0	ORCL	10.21%	HSBC	8.8%
63.0	CYH	9.09%	ZION	8.64%
63.0	GE	8.49%	WFC	8.59%
63.0	SNY	8.35%	IRM	8.49%



P365D: 126d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
126.0	MSTR	190.78%	MSTR	114.73%
126.0	TSLA	104.8%	LUMN	91.55%
126.0	LUMN	91.75%	VST	74.86%
126.0	GME	87.91%	TSLA	65.25%
126.0	VFC	65.07%	VNO	50.14%
126.0	EXPE	62.85%	TRGP	47.35%
126.0	VST	61.02%	CCL	45.8%
126.0	GILD	60.34%	VFC	43.83%
126.0	CHTR	51.56%	EXPE	39.89%
126.0	NFLX	44.53%	NFLX	37.53%
126.0	VNO	42.06%	GILD	35.45%
126.0	UAA	41.0%	GME	34.14%
126.0	BXP	40.68%	TMUS	32.7%
126.0	CCL	37.32%	AVGO	32.21%
126.0	META	34.31%	ORCL	29.81%
126.0	TMUS	31.49%	MS	29.13%
126.0	AVGO	31.2%	T	28.6%
126.0	BMJ	29.97%	GBTC	26.69%
126.0	ZION	29.54%	GS	25.21%
126.0	ORCL	29.25%	WFC	25.02%
126.0	GS	26.52%	ISRG	24.99%
126.0	CMA	25.89%	BMJ	24.51%
126.0	TRGP	24.99%	NVDA	24.23%
126.0	SBUX	24.35%	META	24.18%
126.0	GBTC	20.93%	CSCO	23.58%
126.0	FITB	20.83%	ZION	21.53%
126.0	KEY	20.51%	CMA	21.34%
126.0	NWL	20.08%	SBUX	20.56%
126.0	GNRC	19.94%	JPM	20.38%
126.0	NVDA	19.31%	MSI	19.28%



Bottom 30 Tickers By VaR Breakage

All TMD: 1d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
1.0	MS	0.26%	GME	0.83%
1.0	CPRT	0.38%	AMC	0.98%
1.0	AMAT	0.38%	BHC	1.5%
1.0	PCG	0.44%	CYH	1.76%
1.0	FSUGY	0.52%	ELAN	1.83%
1.0	CAH	0.52%	BIIB	2.1%
1.0	VNO	0.55%	GT	2.13%
1.0	CCL	0.56%	NFLX	2.13%
1.0	NVDA	0.64%	LUMN	2.33%
1.0	CSCO	0.65%	ETRN	2.48%
1.0	WRK	0.69%	PRGO	2.54%
1.0	THC	0.78%	CITI	2.55%
1.0	PHM	0.78%	NWL	2.64%
1.0	MOS	0.79%	GE	2.72%
1.0	X	0.93%	IEP	2.8%
1.0	GT	0.99%	CTLT	2.81%
1.0	TRGP	1.02%	FIS	2.85%
1.0	QQQ	1.04%	UAA	2.95%
1.0	MNST	1.15%	T	3.05%
1.0	COST	1.15%	BALL	3.15%
1.0	HYG	1.27%	JAZZ	3.15%
1.0	ETRN	1.32%	EXPE	3.16%
1.0	LLY	1.34%	KEY	3.22%
1.0	GE	1.36%	LNC	3.29%
1.0	GS	1.4%	SBUX	3.32%
1.0	MRK	1.4%	CPRT	3.32%
1.0	IRM	1.42%	CMA	3.38%
1.0	GBTC	1.63%	META	3.39%
1.0	DHI	1.67%	CSCO	3.39%
1.0	BBY	1.68%	TFC	3.45%



All TMD: 10d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
10.0	NVDA	0.0%	GME	0.14%
10.0	AMAT	0.0%	AMC	1.41%
10.0	CPRT	0.13%	TMUS	1.41%
10.0	PHM	0.13%	GBTC	1.63%
10.0	CSCO	0.13%	POST	1.78%
10.0	GBTC	0.15%	TDG	1.79%
10.0	POST	0.25%	BIIB	1.83%
10.0	CITI	0.34%	NFLX	2.13%
10.0	MNST	0.38%	ORLY	2.17%
10.0	TMUS	0.51%	OXY	2.23%
10.0	AZO	0.53%	LUMN	2.33%
10.0	COST	0.64%	XOM	2.56%
10.0	MS	0.65%	CPRT	2.56%
10.0	LUMN	0.68%	BBY	2.57%
10.0	DHI	0.77%	WYNN	2.68%
10.0	TXN	0.77%	DHI	2.69%
10.0	QQQ	0.78%	TXN	2.7%
10.0	ORLY	0.89%	QCOM	2.71%
10.0	THC	1.03%	CAH	2.73%
10.0	VNO	1.09%	NAVI	2.76%
10.0	PCG	1.18%	JAZZ	2.88%
10.0	LLY	1.21%	T	2.91%
10.0	TRGP	1.27%	AZO	2.93%
10.0	LEN	1.29%	AVGO	3.04%
10.0	CAH	1.3%	AMD	3.05%
10.0	MOS	1.31%	PRGO	3.13%
10.0	ETRN	1.34%	INTU	3.13%
10.0	HLT	1.41%	GLD	3.18%
10.0	PWR	1.43%	ETRN	3.18%
10.0	BBY	1.54%	GWV	3.19%



All TMD: 21d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
21.0	CSCO	0.0%	GME	0.14%
21.0	NVDA	0.0%	ETRN	0.34%
21.0	CPRT	0.0%	OXY	0.4%
21.0	AMAT	0.0%	TDG	0.52%
21.0	MS	0.0%	GBTC	0.61%
21.0	MNST	0.0%	POST	0.65%
21.0	GBTC	0.0%	TXN	0.65%
21.0	AZO	0.0%	AVGO	0.81%
21.0	POST	0.13%	TMUS	0.91%
21.0	PHM	0.13%	NAVI	0.94%
21.0	LLY	0.14%	CAH	1.06%
21.0	ETRN	0.17%	WYNN	1.23%
21.0	DHI	0.26%	GLD	1.3%
21.0	ORLY	0.39%	GILD	1.31%
21.0	TRGP	0.39%	LEN	1.32%
21.0	TMUS	0.39%	JAZZ	1.34%
21.0	TXN	0.39%	AZO	1.36%
21.0	QQQ	0.4%	VICI	1.43%
21.0	LEN	0.53%	DHI	1.43%
21.0	GE	0.55%	PHM	1.45%
21.0	CAH	0.66%	LLY	1.52%
21.0	WRK	0.72%	BIIB	1.74%
21.0	THC	0.79%	QCOM	1.97%
21.0	LUMN	0.84%	CSCO	1.99%
21.0	CITI	0.88%	MSTR	2.08%
21.0	VICI	0.91%	ON	2.24%
21.0	COST	1.04%	META	2.26%
21.0	JPM	1.05%	CITI	2.28%
21.0	SPY	1.17%	AMC	2.3%
21.0	ACGL	1.19%	ORLY	2.34%



All TMD: 63d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
63.0	LLY	0.0%	NAVI	0.0%
63.0	CAH	0.0%	ORLY	0.0%
63.0	UNH	0.0%	CPRT	0.0%
63.0	SLV	0.0%	CAH	0.0%
63.0	PWR	0.0%	TXN	0.0%
63.0	CMG	0.0%	TDG	0.0%
63.0	TXN	0.0%	VICI	0.0%
63.0	COST	0.0%	ETRN	0.0%
63.0	VICI	0.0%	VST	0.0%
63.0	CPRT	0.0%	ORCL	0.0%
63.0	TRGP	0.0%	MSFT	0.0%
63.0	TMUS	0.0%	TMUS	0.0%
63.0	ETRN	0.0%	AZO	0.0%
63.0	HLT	0.0%	POST	0.0%
63.0	SBUX	0.0%	AVGO	0.0%
63.0	GS	0.0%	WYNN	0.0%
63.0	GE	0.0%	GBTC	0.0%
63.0	CSCO	0.0%	AMD	0.0%
63.0	POST	0.0%	AMC	0.0%
63.0	SPY	0.0%	GME	0.0%
63.0	AMAT	0.0%	HON	0.0%
63.0	ORLY	0.0%	GS	0.0%
63.0	NAVI	0.0%	OXY	0.0%
63.0	MSI	0.0%	XOM	0.0%
63.0	AZO	0.0%	LLY	0.0%
63.0	MSFT	0.0%	AMAT	0.14%
63.0	ABBV	0.0%	BBY	0.14%
63.0	ACGL	0.0%	CDNS	0.14%
63.0	NVDA	0.0%	JAZZ	0.14%
63.0	WRK	0.0%	WRK	0.19%



All TMD: 126d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
126.0	IRM	0.0%	ZTS	0.0%
126.0	MNST	0.0%	QCOM	0.0%
126.0	TDG	0.0%	INTU	0.0%
126.0	NVDA	0.0%	QQQ	0.0%
126.0	SPY	0.0%	SBUX	0.0%
126.0	SLV	0.0%	HSBC	0.0%
126.0	ETRN	0.0%	HON	0.0%
126.0	LVS	0.0%	HLT	0.0%
126.0	LLY	0.0%	HD	0.0%
126.0	QQQ	0.0%	HCA	0.0%
126.0	QCOM	0.0%	GWV	0.0%
126.0	PWR	0.0%	GT	0.0%
126.0	GBTC	0.0%	SLV	0.0%
126.0	GE	0.0%	GS	0.0%
126.0	GILD	0.0%	GME	0.0%
126.0	LEN	0.0%	GILD	0.0%
126.0	ON	0.0%	GE	0.0%
126.0	POST	0.0%	GBTC	0.0%
126.0	JPM	0.0%	FRA	0.0%
126.0	INTU	0.0%	FITB	0.0%
126.0	ORLY	0.0%	ISRG	0.0%
126.0	PCG	0.0%	TDG	0.0%
126.0	HSBC	0.0%	JAZZ	0.0%
126.0	HON	0.0%	KALU	0.0%
126.0	CSCO	0.0%	NVS	0.0%
126.0	HLT	0.0%	NFLX	0.0%
126.0	HCA	0.0%	ORCL	0.0%
126.0	GWV	0.0%	NAVI	0.0%
126.0	GT	0.0%	ORLY	0.0%
126.0	PHM	0.0%	MU	0.0%



All TMD: 252d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
252.0	IRM	0.0%	AA	0.0%
252.0	ORCL	0.0%	OXY	0.0%
252.0	ON	0.0%	ORLY	0.0%
252.0	NVS	0.0%	ORCL	0.0%
252.0	NVDA	0.0%	ON	0.0%
252.0	NFLX	0.0%	NVS	0.0%
252.0	NAVI	0.0%	NVDA	0.0%
252.0	MUB	0.0%	NFLX	0.0%
252.0	MU	0.0%	NAVI	0.0%
252.0	MSI	0.0%	MUB	0.0%
252.0	MSFT	0.0%	MU	0.0%
252.0	MS	0.0%	MSTR	0.0%
252.0	MNST	0.0%	MSI	0.0%
252.0	ORLY	0.0%	MSFT	0.0%
252.0	LW	0.0%	MS	0.0%
252.0	LLY	0.0%	MOS	0.0%
252.0	LEN	0.0%	MNST	0.0%
252.0	KHC	0.0%	META	0.0%
252.0	JPM	0.0%	LVS	0.0%
252.0	JAZZ	0.0%	LLY	0.0%
252.0	ISRG	0.0%	LEN	0.0%
252.0	INTU	0.0%	KHC	0.0%
252.0	HSBC	0.0%	KALU	0.0%
252.0	HON	0.0%	JPM	0.0%
252.0	HLT	0.0%	JAZZ	0.0%
252.0	HD	0.0%	ISRG	0.0%
252.0	HCA	0.0%	INTU	0.0%
252.0	LVS	0.0%	HYG	0.0%
252.0	PCG	0.0%	HSBC	0.0%
252.0	PEP	0.0%	HON	0.0%



P30D: 1d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates in the period examined for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
1.0	AA	0.0%	CNC	0.0%
1.0	CPRT	0.0%	PHM	0.0%
1.0	CSCO	0.0%	PCG	0.0%
1.0	NEM	0.0%	OXY	0.0%
1.0	VNO	0.0%	IEP	0.0%
1.0	VST	0.0%	ORLY	0.0%
1.0	CZR	0.0%	CPRT	0.0%
1.0	DHI	0.0%	LQD	0.0%
1.0	MSI	0.0%	CSTM	0.0%
1.0	EMB	0.0%	CVS	0.0%
1.0	MOS	0.0%	CYH	0.0%
1.0	MNST	0.0%	PRGO	0.0%
1.0	FRA	0.0%	CZR	0.0%
1.0	FSUGY	0.0%	NWL	0.0%
1.0	HYG	0.0%	EMB	0.0%
1.0	LW	0.0%	NEM	0.0%
1.0	GLD	0.0%	GOLD	0.0%
1.0	LVS	0.0%	MSI	0.0%
1.0	LUMN	0.0%	GNRC	0.0%
1.0	LNC	0.0%	FRA	0.0%
1.0	WYNN	0.0%	MOS	0.0%
1.0	GS	0.0%	MNST	0.0%
1.0	GSK	0.0%	GE	0.0%
1.0	GT	0.0%	DHI	0.0%
1.0	X	0.0%	LW	0.0%
1.0	LEN	0.0%	CDNS	0.0%
1.0	KALU	0.0%	GT	0.0%
1.0	UAA	0.0%	AAP	0.0%
1.0	HSBC	0.0%	X	0.0%
1.0	GILD	0.0%	ACGL	0.0%



P30D: 10d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates in the period examined for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
10.0	ISRG	0.0%	AA	0.0%
10.0	MOS	0.0%	OXY	0.0%
10.0	MNST	0.0%	ORLY	0.0%
10.0	TMUS	0.0%	ORCL	0.0%
10.0	LW	0.0%	ON	0.0%
10.0	LVS	0.0%	NWL	0.0%
10.0	LUMN	0.0%	NVS	0.0%
10.0	TRGP	0.0%	NVDA	0.0%
10.0	LNC	0.0%	NFLX	0.0%
10.0	TXN	0.0%	NEM	0.0%
10.0	LEN	0.0%	NAVI	0.0%
10.0	UAA	0.0%	MU	0.0%
10.0	UNH	0.0%	MSTR	0.0%
10.0	MRK	0.0%	MSI	0.0%
10.0	USB	0.0%	PCG	0.0%
10.0	VICI	0.0%	MSFT	0.0%
10.0	ZION	0.0%	MOS	0.0%
10.0	IRM	0.0%	MNST	0.0%
10.0	INTU	0.0%	LW	0.0%
10.0	INTC	0.0%	LUMN	0.0%
10.0	IEP	0.0%	LQD	0.0%
10.0	HYG	0.0%	LNC	0.0%
10.0	HSBC	0.0%	LEN	0.0%
10.0	HON	0.0%	KEY	0.0%
10.0	VNO	0.0%	ZION	0.0%
10.0	HD	0.0%	IRM	0.0%
10.0	HCA	0.0%	INTU	0.0%
10.0	VCSH	0.0%	INTC	0.0%
10.0	GWV	0.0%	IEP	0.0%
10.0	MS	0.0%	MRK	0.0%



P90D: 1d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
1.0	FSUGY	0.0%	ORLY	0.0%
1.0	BUD	0.0%	BHC	0.0%
1.0	CAH	0.0%	FRA	0.0%
1.0	HYG	0.0%	BUD	0.0%
1.0	HSBC	0.0%	IEP	0.0%
1.0	TRGP	0.0%	CSTM	0.0%
1.0	TMUS	0.0%	SNY	0.0%
1.0	SLV	0.0%	EMB	0.0%
1.0	VCSH	0.0%	BHP	0.0%
1.0	SNY	0.0%	SLV	0.0%
1.0	CPRT	0.0%	AMC	0.0%
1.0	GS	0.0%	MNST	0.0%
1.0	SPY	0.0%	PRGO	0.0%
1.0	CTLT	0.0%	ACGL	0.0%
1.0	GLD	0.0%	CVS	0.0%
1.0	GILD	0.0%	NWL	0.0%
1.0	FRA	0.0%	CTLT	0.0%
1.0	GT	0.0%	LQD	0.0%
1.0	KALU	0.0%	TLT	0.0%
1.0	QQQ	0.0%	VICI	1.82%
1.0	PHM	0.0%	UAA	1.82%
1.0	NWL	0.0%	ZION	1.82%
1.0	X	0.0%	TDG	1.82%
1.0	MOS	0.0%	AZN	1.82%
1.0	MNST	0.0%	LW	1.82%
1.0	WYNN	0.0%	ABBV	1.82%
1.0	OXY	0.0%	X	1.82%
1.0	LEN	0.0%	TEVA	1.82%
1.0	LVS	0.0%	VCSH	1.82%
1.0	AZO	0.0%	KALU	1.85%



P90D: 10d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
10.0	TMUS	0.0%	SNY	0.0%
10.0	HYG	0.0%	TLT	0.0%
10.0	HSBC	0.0%	THC	0.0%
10.0	THC	0.0%	KEY	0.0%
10.0	HD	0.0%	ORLY	0.0%
10.0	HCA	0.0%	CSTM	0.0%
10.0	GWV	0.0%	CTLT	0.0%
10.0	GT	0.0%	CVS	0.0%
10.0	GSK	0.0%	TDG	0.0%
10.0	IEP	0.0%	INTU	0.0%
10.0	GS	0.0%	ELAN	0.0%
10.0	GOLD	0.0%	EMB	0.0%
10.0	PRGO	0.0%	T	0.0%
10.0	GME	0.0%	FCX	0.0%
10.0	GLD	0.0%	MSTR	0.0%
10.0	GE	0.0%	SLV	0.0%
10.0	GBTC	0.0%	IEP	0.0%
10.0	TRGP	0.0%	RIO	0.0%
10.0	FRA	0.0%	GE	0.0%
10.0	TLT	0.0%	HSBC	0.0%
10.0	FCX	0.0%	GLD	0.0%
10.0	INTU	0.0%	GME	0.0%
10.0	TDG	0.0%	GOLD	0.0%
10.0	POST	0.0%	QCOM	0.0%
10.0	PHM	0.0%	PRGO	0.0%
10.0	ORLY	0.0%	GSK	0.0%
10.0	QQQ	0.0%	HCA	0.0%
10.0	RIO	0.0%	LQD	0.0%
10.0	NVS	0.0%	LNC	0.0%
10.0	NVDA	0.0%	CHTR	0.0%



P90D: 21d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
21.0	AA	0.0%	AA	0.0%
21.0	ORLY	0.0%	NEM	0.0%
21.0	NVS	0.0%	NAVI	0.0%
21.0	NVDA	0.0%	MU	0.0%
21.0	NFLX	0.0%	MSTR	0.0%
21.0	NEM	0.0%	LW	0.0%
21.0	MU	0.0%	LUMN	0.0%
21.0	MSI	0.0%	LQD	0.0%
21.0	MS	0.0%	LNC	0.0%
21.0	MOS	0.0%	LLY	0.0%
21.0	MNST	0.0%	LEN	0.0%
21.0	LW	0.0%	KHC	0.0%
21.0	LVS	0.0%	KEY	0.0%
21.0	OXY	0.0%	KALU	0.0%
21.0	LUMN	0.0%	INTU	0.0%
21.0	LNC	0.0%	INTC	0.0%
21.0	LEN	0.0%	IEP	0.0%
21.0	KHC	0.0%	HYG	0.0%
21.0	KALU	0.0%	HSBC	0.0%
21.0	JPM	0.0%	HON	0.0%
21.0	ZION	0.0%	HCA	0.0%
21.0	INTC	0.0%	GT	0.0%
21.0	IEP	0.0%	GSK	0.0%
21.0	HYG	0.0%	GOLD	0.0%
21.0	HSBC	0.0%	NVDA	0.0%
21.0	HON	0.0%	GNRC	0.0%
21.0	HD	0.0%	NVS	0.0%
21.0	LQD	0.0%	ORLY	0.0%
21.0	HCA	0.0%	XOM	0.0%
21.0	PEP	0.0%	X	0.0%



P365D: 1d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
1.0	CAH	0.0%	AMC	0.0%
1.0	HYG	0.0%	CTLT	0.0%
1.0	SPY	0.0%	NWL	0.86%
1.0	WRK	0.0%	IEP	1.25%
1.0	MOS	0.0%	CHTR	1.3%
1.0	TRGP	0.0%	CYH	1.33%
1.0	PHM	0.0%	ETRN	1.49%
1.0	QQQ	0.0%	GME	1.53%
1.0	ETRN	0.0%	BHC	2.01%
1.0	CTLT	0.0%	ZION	2.18%
1.0	GS	0.41%	LVS	2.42%
1.0	HSBC	0.41%	EMB	2.5%
1.0	CPRT	0.42%	PRGO	2.6%
1.0	NVDA	0.42%	TFC	2.63%
1.0	CSCO	0.43%	GNRC	2.63%
1.0	MSI	0.44%	BA	2.67%
1.0	GT	0.48%	ELAN	2.87%
1.0	PCG	0.48%	ORLY	2.9%
1.0	VNO	0.5%	MNST	2.9%
1.0	GLD	0.83%	SBUX	2.9%
1.0	COST	0.83%	HYG	2.9%
1.0	MNST	0.83%	CMA	2.93%
1.0	MS	0.83%	FITB	2.94%
1.0	IEP	0.83%	NFLX	2.98%
1.0	THC	0.83%	AZO	2.99%
1.0	LEN	0.85%	ADBE	3.02%
1.0	FIS	0.85%	INTC	3.11%
1.0	TMUS	0.85%	TLT	3.12%
1.0	LUMN	0.92%	VFC	3.17%
1.0	LVS	0.97%	JAZZ	3.2%



P365D: 10d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
10.0	THC	0.0%	CTLT	0.0%
10.0	COST	0.0%	CHTR	0.0%
10.0	CPRT	0.0%	AMC	0.0%
10.0	CSCO	0.0%	HSBC	0.41%
10.0	CTLT	0.0%	T	0.42%
10.0	TRGP	0.0%	AZO	0.42%
10.0	TMUS	0.0%	KEY	0.43%
10.0	ETRN	0.0%	GME	0.51%
10.0	GBTC	0.0%	BHP	0.82%
10.0	GLD	0.0%	TDG	0.83%
10.0	GS	0.0%	JAZZ	0.9%
10.0	GT	0.0%	LUMN	0.91%
10.0	HD	0.0%	PRGO	1.04%
10.0	HSBC	0.0%	VCSH	1.23%
10.0	HYG	0.0%	MOS	1.24%
10.0	T	0.0%	BXP	1.25%
10.0	INTU	0.0%	ON	1.27%
10.0	SPY	0.0%	TLT	1.33%
10.0	LEN	0.0%	LNC	1.38%
10.0	LUMN	0.0%	VNO	1.48%
10.0	QQQ	0.0%	CITI	1.61%
10.0	MNST	0.0%	SNY	1.65%
10.0	MOS	0.0%	HYG	1.65%
10.0	MSI	0.0%	VZ	1.67%
10.0	POST	0.0%	GE	1.69%
10.0	NVDA	0.0%	MSTR	1.9%
10.0	USB	0.0%	IEP	2.07%
10.0	CITI	0.0%	GILD	2.07%
10.0	PHM	0.0%	RIO	2.07%
10.0	WRK	0.0%	NFLX	2.11%



P365D: 21d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
21.0	CPRT	0.0%	ZTS	0.0%
21.0	IEP	0.0%	CTLT	0.0%
21.0	CSCO	0.0%	ON	0.0%
21.0	T	0.0%	HSBC	0.0%
21.0	CTLT	0.0%	MSTR	0.0%
21.0	LNC	0.0%	CITI	0.0%
21.0	TRGP	0.0%	CHTR	0.0%
21.0	ETRN	0.0%	RIO	0.0%
21.0	LEN	0.0%	EMB	0.0%
21.0	FIS	0.0%	BXP	0.0%
21.0	TDG	0.0%	ETRN	0.0%
21.0	GBTC	0.0%	LNC	0.0%
21.0	GE	0.0%	BHP	0.0%
21.0	COST	0.0%	CSCO	0.0%
21.0	TEVA	0.0%	TDG	0.0%
21.0	JPM	0.0%	T	0.0%
21.0	TMUS	0.0%	VCSH	0.0%
21.0	TLT	0.0%	KEY	0.0%
21.0	GS	0.0%	INTU	0.0%
21.0	THC	0.0%	GLD	0.0%
21.0	GT	0.0%	GE	0.0%
21.0	ISRG	0.0%	AMC	0.0%
21.0	ZION	0.0%	WRK	0.0%
21.0	HD	0.0%	HYG	0.0%
21.0	HON	0.0%	AZO	0.0%
21.0	HSBC	0.0%	GILD	0.0%
21.0	HYG	0.0%	UAA	0.0%
21.0	GLD	0.0%	LQD	0.44%
21.0	USB	0.0%	NAVI	0.44%
21.0	TFC	0.0%	TXN	0.44%



P365D: 63d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
63.0	ZTS	0.0%	ZTS	0.0%
63.0	HYG	0.0%	ORLY	0.0%
63.0	HSBC	0.0%	OXY	0.0%
63.0	HON	0.0%	POST	0.0%
63.0	HLT	0.0%	PRGO	0.0%
63.0	HD	0.0%	GS	0.0%
63.0	QQQ	0.0%	QQQ	0.0%
63.0	RIO	0.0%	RIO	0.0%
63.0	GT	0.0%	GME	0.0%
63.0	SBUX	0.0%	HLT	0.0%
63.0	GS	0.0%	GLD	0.0%
63.0	SLV	0.0%	GE	0.0%
63.0	SPY	0.0%	GBTC	0.0%
63.0	GLD	0.0%	SBUX	0.0%
63.0	GILD	0.0%	SLV	0.0%
63.0	GE	0.0%	SNY	0.0%
63.0	GBTC	0.0%	SPY	0.0%
63.0	FSUGY	0.0%	FCX	0.0%
63.0	FRA	0.0%	EXPE	0.0%
63.0	T	0.0%	GILD	0.0%
63.0	IEP	0.0%	MSFT	0.0%
63.0	NAVI	0.0%	HON	0.0%
63.0	INTU	0.0%	HYG	0.0%
63.0	ISRG	0.0%	MOS	0.0%
63.0	MSTR	0.0%	META	0.0%
63.0	MSI	0.0%	MSTR	0.0%
63.0	MSFT	0.0%	MUB	0.0%
63.0	MS	0.0%	NAVI	0.0%
63.0	NFLX	0.0%	LQD	0.0%
63.0	MOS	0.0%	LNC	0.0%



P365D: 126d

Results reflect ticker level average 95% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
126.0	AA	0.0%	AA	0.0%
126.0	ORCL	0.0%	ORLY	0.0%
126.0	ON	0.0%	ORCL	0.0%
126.0	NWL	0.0%	ON	0.0%
126.0	NVS	0.0%	NWL	0.0%
126.0	NVDA	0.0%	NVS	0.0%
126.0	NFLX	0.0%	NVDA	0.0%
126.0	NEM	0.0%	NFLX	0.0%
126.0	NAVI	0.0%	NEM	0.0%
126.0	MUB	0.0%	NAVI	0.0%
126.0	MSTR	0.0%	MUB	0.0%
126.0	MSI	0.0%	MU	0.0%
126.0	MSFT	0.0%	MSTR	0.0%
126.0	MS	0.0%	MSI	0.0%
126.0	MOS	0.0%	MSFT	0.0%
126.0	MNST	0.0%	OXY	0.0%
126.0	META	0.0%	MS	0.0%
126.0	LW	0.0%	MNST	0.0%
126.0	LVS	0.0%	META	0.0%
126.0	LUMN	0.0%	LVS	0.0%
126.0	LQD	0.0%	LUMN	0.0%
126.0	LNC	0.0%	LQD	0.0%
126.0	LLY	0.0%	LNC	0.0%
126.0	LEN	0.0%	LLY	0.0%
126.0	KEY	0.0%	KHC	0.0%
126.0	JPM	0.0%	KEY	0.0%
126.0	JAZZ	0.0%	KALU	0.0%
126.0	ISRG	0.0%	JPM	0.0%
126.0	ZION	0.0%	JAZZ	0.0%
126.0	INTU	0.0%	ISRG	0.0%



Bottom 30 Tickers By ROVBC

All TMD: 1d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
1.0	SBNY	-1.34%	SBNY	-0.7%
1.0	SIVBQ	-1.05%	SIVBQ	-0.43%
1.0	FRCB	-0.39%	FRCB	-0.23%
1.0	AAP	-0.26%	AMC	-0.2%
1.0	IEP	-0.19%	AAP	-0.17%
1.0	AMC	-0.19%	IEP	-0.17%
1.0	ELAN	-0.18%	VFC	-0.13%
1.0	LUMN	-0.16%	UAA	-0.12%
1.0	CYH	-0.13%	CZR	-0.09%
1.0	CSTM	-0.13%	NWL	-0.09%
1.0	FIS	-0.11%	ELAN	-0.07%
1.0	CVS	-0.11%	CVS	-0.07%
1.0	VFC	-0.11%	BALL	-0.06%
1.0	UAA	-0.09%	LNC	-0.05%
1.0	GSK	-0.08%	BIIB	-0.05%
1.0	TSLA	-0.08%	MOS	-0.05%
1.0	T	-0.08%	TLT	-0.05%
1.0	NEM	-0.07%	CNC	-0.05%
1.0	TLT	-0.07%	CSTM	-0.04%
1.0	CHTR	-0.07%	NEM	-0.04%
1.0	USB	-0.06%	KALU	-0.04%
1.0	VZ	-0.06%	LUMN	-0.04%
1.0	BXP	-0.06%	GT	-0.03%
1.0	KALU	-0.05%	AA	-0.03%
1.0	KEY	-0.05%	FIS	-0.03%
1.0	EMB	-0.05%	KEY	-0.02%
1.0	ZION	-0.04%	GSK	-0.02%
1.0	CNC	-0.04%	ZION	-0.02%
1.0	LNC	-0.04%	NAVI	-0.02%
1.0	BIIB	-0.04%	USB	-0.02%



All TMD: 10d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
10.0	SBNY	-16.35%	SBNY	-6.69%
10.0	SIVBQ	-13.42%	SIVBQ	-5.52%
10.0	FRCB	-8.08%	FRCB	-3.91%
10.0	AMC	-3.73%	AAP	-1.84%
10.0	AAP	-3.21%	AMC	-1.58%
10.0	IEP	-1.65%	IEP	-1.5%
10.0	VFC	-1.56%	VFC	-1.32%
10.0	ELAN	-1.27%	UAA	-1.13%
10.0	LUMN	-1.15%	NWL	-1.1%
10.0	GSK	-1.1%	LUMN	-0.88%
10.0	BIIB	-1.08%	CZR	-0.69%
10.0	CHTR	-1.01%	BHC	-0.67%
10.0	NWL	-0.97%	ELAN	-0.63%
10.0	TLT	-0.87%	BALL	-0.61%
10.0	TSLA	-0.82%	BIIB	-0.59%
10.0	BXP	-0.82%	LNC	-0.55%
10.0	CYH	-0.81%	GNRC	-0.54%
10.0	FIS	-0.8%	CLF	-0.54%
10.0	BHC	-0.75%	ZION	-0.53%
10.0	ZION	-0.73%	CYH	-0.53%
10.0	PRGO	-0.72%	AA	-0.5%
10.0	GT	-0.64%	TLT	-0.5%
10.0	BALL	-0.62%	GT	-0.48%
10.0	LNC	-0.56%	MOS	-0.42%
10.0	CLF	-0.5%	BXP	-0.39%
10.0	VZ	-0.44%	KEY	-0.38%
10.0	CCL	-0.4%	CNC	-0.37%
10.0	NEM	-0.35%	FIS	-0.33%
10.0	LQD	-0.34%	CVS	-0.31%
10.0	ON	-0.34%	CHTR	-0.31%



All TMD: 21d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
21.0	SBNY	-37.68%	SBNY	-14.05%
21.0	SIVBQ	-26.77%	SIVBQ	-11.91%
21.0	FRCB	-15.42%	FRCB	-8.3%
21.0	AMC	-7.4%	AAP	-3.59%
21.0	AAP	-6.42%	AMC	-3.51%
21.0	VFC	-3.87%	IEP	-3.25%
21.0	IEP	-3.0%	VFC	-2.8%
21.0	NWL	-2.99%	NWL	-2.49%
21.0	ELAN	-2.76%	UAA	-1.99%
21.0	GSK	-2.08%	CZR	-1.66%
21.0	LNC	-1.9%	BHC	-1.56%
21.0	BIIB	-1.89%	LUMN	-1.47%
21.0	LUMN	-1.87%	LNC	-1.29%
21.0	TLT	-1.63%	ELAN	-1.13%
21.0	BHC	-1.62%	BALL	-1.11%
21.0	FIS	-1.47%	INTC	-1.08%
21.0	BXP	-1.46%	GT	-1.08%
21.0	CYH	-1.44%	BXP	-1.03%
21.0	CHTR	-1.4%	GNRC	-1.02%
21.0	ZION	-1.3%	BIIB	-1.02%
21.0	LW	-0.98%	TLT	-1.0%
21.0	GT	-0.94%	AA	-0.97%
21.0	BALL	-0.94%	CLF	-0.95%
21.0	CCL	-0.94%	CNC	-0.9%
21.0	PRGO	-0.88%	MOS	-0.85%
21.0	CNC	-0.88%	CYH	-0.82%
21.0	ON	-0.86%	ZION	-0.82%
21.0	CSTM	-0.81%	KEY	-0.68%
21.0	CVS	-0.61%	CHTR	-0.65%
21.0	MOS	-0.54%	CSTM	-0.64%



All TMD: 63d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
63.0	SBNY	-114.41%	SBNY	-39.31%
63.0	SIVBQ	-83.06%	SIVBQ	-36.19%
63.0	FRCB	-55.67%	FRCB	-25.78%
63.0	AMC	-35.64%	AMC	-15.78%
63.0	AAP	-18.75%	IEP	-11.88%
63.0	IEP	-11.76%	AAP	-11.01%
63.0	VFC	-11.05%	NWL	-7.09%
63.0	NWL	-7.36%	MOS	-5.66%
63.0	BHC	-7.15%	VFC	-5.64%
63.0	ELAN	-6.91%	CLF	-5.52%
63.0	MOS	-5.71%	BHC	-5.48%
63.0	GSK	-5.23%	CZR	-4.88%
63.0	CHTR	-5.21%	UAA	-4.79%
63.0	LNC	-4.96%	INTC	-4.35%
63.0	CLF	-4.93%	AA	-4.14%
63.0	TLT	-4.81%	CVS	-3.79%
63.0	BIIB	-4.09%	LUMN	-3.72%
63.0	FIS	-3.84%	LNC	-3.49%
63.0	CVS	-3.32%	ELAN	-3.23%
63.0	CNC	-3.18%	BALL	-3.13%
63.0	BALL	-3.16%	NEM	-2.97%
63.0	INTC	-2.97%	TLT	-2.95%
63.0	AA	-2.89%	GT	-2.7%
63.0	ON	-2.84%	BXP	-2.6%
63.0	PRGO	-2.82%	CSTM	-2.52%
63.0	JAZZ	-2.73%	PRGO	-2.51%
63.0	UAA	-2.52%	GNRC	-2.5%
63.0	LUMN	-2.35%	CNC	-2.47%
63.0	NEM	-2.23%	BIIB	-2.38%
63.0	GT	-2.1%	CHTR	-2.35%



All TMD: 126d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
126.0	SBNY	-185.53%	SIVBQ	-67.06%
126.0	SIVBQ	-156.58%	SBNY	-65.9%
126.0	FRCB	-118.22%	FRCB	-52.19%
126.0	AMC	-60.65%	AMC	-30.51%
126.0	AAP	-35.67%	IEP	-22.34%
126.0	VFC	-26.39%	AAP	-21.62%
126.0	IEP	-26.18%	NWL	-14.37%
126.0	NWL	-15.51%	MOS	-12.41%
126.0	MOS	-14.8%	VFC	-11.75%
126.0	BHC	-11.54%	CVS	-8.69%
126.0	CVS	-11.31%	CLF	-8.54%
126.0	ELAN	-9.73%	INTC	-6.88%
126.0	LNC	-9.46%	CTLT	-6.66%
126.0	GSK	-8.91%	CZR	-6.59%
126.0	CHTR	-8.82%	LNC	-6.39%
126.0	PRGO	-8.77%	PRGO	-6.17%
126.0	TLT	-8.58%	AA	-5.89%
126.0	AA	-7.73%	NEM	-5.85%
126.0	JAZZ	-7.42%	CNC	-5.83%
126.0	CNC	-6.81%	TLT	-5.28%
126.0	CLF	-6.66%	BHC	-5.0%
126.0	NEM	-6.44%	GSK	-4.92%
126.0	BIIB	-5.73%	ELAN	-4.82%
126.0	INTC	-5.15%	UAA	-4.51%
126.0	CZR	-4.69%	GT	-4.42%
126.0	BALL	-3.73%	GNRC	-3.98%
126.0	KHC	-3.65%	BALL	-3.87%
126.0	BMY	-3.33%	BXP	-3.85%
126.0	GT	-2.95%	CHTR	-3.79%
126.0	OXY	-2.94%	JAZZ	-3.7%



All TMD: 252d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
252.0	SBNY	-266.14%	SBNY	-96.1%
252.0	SIVBQ	-217.94%	SIVBQ	-95.64%
252.0	FRCB	-183.67%	FRCB	-91.52%
252.0	AMC	-120.99%	AMC	-62.33%
252.0	AAP	-77.55%	IEP	-44.46%
252.0	IEP	-58.91%	AAP	-42.0%
252.0	VFC	-49.73%	NWL	-29.63%
252.0	NWL	-39.41%	VFC	-26.94%
252.0	MOS	-35.08%	MOS	-25.47%
252.0	CVS	-29.41%	CVS	-20.3%
252.0	CHTR	-26.11%	BMY	-13.91%
252.0	UAA	-22.31%	PRGO	-13.22%
252.0	AA	-21.19%	UAA	-12.77%
252.0	PRGO	-20.64%	CLF	-12.31%
252.0	BIIB	-18.14%	CZR	-12.06%
252.0	JAZZ	-17.41%	JAZZ	-10.7%
252.0	CLF	-17.19%	LUMN	-10.38%
252.0	TLT	-15.69%	CHTR	-10.18%
252.0	BHC	-15.21%	CNC	-9.88%
252.0	CZR	-14.65%	AA	-9.77%
252.0	BMY	-14.21%	TLT	-8.91%
252.0	BXP	-12.4%	CTLT	-8.52%
252.0	LNC	-12.18%	LNC	-7.81%
252.0	OXY	-11.11%	INTC	-7.4%
252.0	CNC	-10.34%	NEM	-7.06%
252.0	KHC	-8.46%	BXP	-6.84%
252.0	NEM	-7.66%	BHC	-6.79%
252.0	GT	-7.18%	GT	-6.79%
252.0	BHP	-6.98%	BIIB	-6.6%
252.0	LUMN	-6.88%	KHC	-6.17%



P30D: 1d

Results reflect ticker level average 95% VaR based ROVBC across all model dates in the period examined for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
1.0	TSLA	-3.68%	VFC	-2.06%
1.0	VFC	-2.61%	CCL	-1.29%
1.0	ISRG	-2.02%	ISRG	-1.12%
1.0	CLF	-1.77%	CZR	-1.05%
1.0	BBY	-1.62%	BBY	-0.94%
1.0	LLY	-1.31%	LUMN	-0.9%
1.0	AVGO	-1.08%	SBUX	-0.79%
1.0	SBUX	-1.03%	WDC	-0.71%
1.0	CZR	-0.98%	HLT	-0.71%
1.0	CCL	-0.97%	CYH	-0.7%
1.0	BHC	-0.96%	ORCL	-0.69%
1.0	META	-0.94%	MU	-0.69%
1.0	AMC	-0.86%	EXPE	-0.66%
1.0	AMZN	-0.85%	LVS	-0.66%
1.0	NAVI	-0.82%	ADBE	-0.64%
1.0	MU	-0.82%	BHC	-0.61%
1.0	CYH	-0.81%	META	-0.6%
1.0	GOOGL	-0.79%	AMZN	-0.59%
1.0	EXPE	-0.67%	JAZZ	-0.59%
1.0	ORCL	-0.63%	LLY	-0.57%
1.0	ON	-0.59%	AVGO	-0.5%
1.0	TFC	-0.57%	COST	-0.48%
1.0	HLT	-0.55%	GS	-0.48%
1.0	MSFT	-0.55%	TFC	-0.48%
1.0	JAZZ	-0.54%	MS	-0.47%
1.0	WDC	-0.54%	NAVI	-0.46%
1.0	CSTM	-0.45%	CLF	-0.46%
1.0	KALU	-0.42%	IEP	-0.45%
1.0	LUMN	-0.36%	FITB	-0.45%
1.0	KEY	-0.33%	ON	-0.45%



P30D: 10d

Results reflect ticker level average 95% VaR based ROVBC across all model dates in the period examined for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
10.0	VFC	-14.94%	VFC	-12.61%
10.0	TSLA	-10.03%	ADBE	-7.95%
10.0	SBUX	-6.81%	LUMN	-7.84%
10.0	ADBE	-6.67%	LVS	-7.25%
10.0	META	-5.86%	UAA	-7.0%
10.0	GILD	-5.45%	SBUX	-5.51%
10.0	UAA	-5.4%	GILD	-4.74%
10.0	LLY	-5.11%	CLF	-4.42%
10.0	LUMN	-5.04%	COST	-4.29%
10.0	CZR	-4.8%	HLT	-4.29%
10.0	LVS	-4.63%	CZR	-4.22%
10.0	CMG	-3.62%	META	-3.76%
10.0	GOOGL	-3.62%	KHC	-3.64%
10.0	NAVI	-3.59%	HD	-3.22%
10.0	CLF	-3.54%	WYNN	-3.03%
10.0	KHC	-3.44%	AAPL	-3.03%
10.0	KALU	-3.26%	GOOGL	-3.02%
10.0	HLT	-3.22%	SNY	-2.91%
10.0	SNY	-2.85%	AVGO	-2.87%
10.0	BIIB	-2.72%	CMG	-2.86%
10.0	ZTS	-2.71%	PEP	-2.79%
10.0	PEP	-2.55%	LLY	-2.76%
10.0	AZN	-2.54%	LEN	-2.75%
10.0	AVGO	-2.52%	MRK	-2.75%
10.0	WYNN	-2.5%	NAVI	-2.62%
10.0	MRK	-2.5%	AZN	-2.53%
10.0	AAPL	-2.4%	BBY	-2.51%
10.0	AMGN	-2.23%	KALU	-2.5%
10.0	HD	-2.02%	JAZZ	-2.28%
10.0	BBY	-1.99%	ORCL	-2.15%



P90D: 1d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
1.0	TSLA	-2.0%	GME	-0.57%
1.0	GME	-1.02%	ON	-0.53%
1.0	VST	-0.95%	VFC	-0.5%
1.0	CZR	-0.82%	UAA	-0.48%
1.0	AMC	-0.81%	AVGO	-0.47%
1.0	ON	-0.81%	WDC	-0.44%
1.0	CLF	-0.76%	GNRC	-0.44%
1.0	AVGO	-0.76%	CCL	-0.43%
1.0	VFC	-0.74%	CZR	-0.43%
1.0	AAP	-0.68%	TEVA	-0.35%
1.0	CYH	-0.63%	NWL	-0.35%
1.0	GOOGL	-0.61%	VST	-0.34%
1.0	BBY	-0.52%	TSLA	-0.34%
1.0	UAA	-0.41%	BBY	-0.34%
1.0	BAC	-0.38%	GOOGL	-0.32%
1.0	MSFT	-0.32%	AAP	-0.31%
1.0	AMZN	-0.32%	LVS	-0.3%
1.0	GNRC	-0.32%	GBTC	-0.29%
1.0	CDNS	-0.32%	AMZN	-0.27%
1.0	WDC	-0.32%	IRM	-0.27%
1.0	CCL	-0.3%	LUMN	-0.27%
1.0	META	-0.25%	LW	-0.27%
1.0	ISRG	-0.25%	MSI	-0.25%
1.0	LW	-0.23%	CMG	-0.24%
1.0	NWL	-0.19%	CYH	-0.22%
1.0	TFC	-0.18%	NVDA	-0.22%
1.0	AA	-0.18%	BIIB	-0.2%
1.0	LLY	-0.18%	AMAT	-0.18%
1.0	KALU	-0.17%	MRK	-0.18%
1.0	LVS	-0.17%	AA	-0.18%



P90D: 10d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
10.0	TSLA	-23.71%	TSLA	-7.9%
10.0	AAP	-10.47%	NWL	-5.69%
10.0	ON	-8.03%	TEVA	-5.23%
10.0	AMC	-7.95%	UAA	-5.03%
10.0	GME	-7.73%	ON	-4.91%
10.0	GOOGL	-6.28%	GME	-4.51%
10.0	MSTR	-5.82%	VST	-4.29%
10.0	VST	-5.76%	WDC	-4.25%
10.0	GNRC	-4.78%	AAP	-3.91%
10.0	NWL	-4.36%	VFC	-3.78%
10.0	CZR	-4.28%	AVGO	-3.71%
10.0	CDNS	-4.23%	GOOGL	-3.66%
10.0	PWR	-4.1%	IRM	-3.55%
10.0	UAA	-3.76%	GNRC	-3.48%
10.0	BHC	-3.35%	LUMN	-3.45%
10.0	ELAN	-3.34%	PWR	-3.45%
10.0	WDC	-3.27%	CMG	-3.31%
10.0	TEVA	-3.04%	CCL	-3.27%
10.0	AMZN	-2.9%	GBTC	-3.17%
10.0	IRM	-2.85%	LW	-2.9%
10.0	MSFT	-2.83%	AMAT	-2.87%
10.0	BALL	-2.78%	LEN	-2.71%
10.0	LUMN	-2.49%	LVS	-2.67%
10.0	CMG	-2.45%	CZR	-2.54%
10.0	LW	-2.36%	AMZN	-2.49%
10.0	CMA	-2.23%	CDNS	-2.45%
10.0	CCL	-2.19%	MRK	-2.29%
10.0	KEY	-2.02%	AMD	-2.2%
10.0	LVS	-1.96%	BHC	-2.2%
10.0	AMD	-1.94%	ELAN	-2.19%



P90D: 21d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
21.0	TSLA	-44.4%	TSLA	-20.35%
21.0	AAP	-30.42%	NWL	-17.71%
21.0	ON	-19.78%	WDC	-14.69%
21.0	GME	-18.88%	TEVA	-13.76%
21.0	NWL	-18.8%	VST	-13.44%
21.0	VST	-18.11%	AAP	-11.72%
21.0	MSTR	-16.35%	ON	-11.61%
21.0	GOOGL	-15.47%	VFC	-11.24%
21.0	GNRC	-15.44%	MSTR	-10.92%
21.0	CZR	-13.86%	PWR	-10.77%
21.0	WDC	-11.5%	UAA	-10.74%
21.0	ELAN	-11.26%	GME	-10.06%
21.0	CDNS	-10.56%	CCL	-9.94%
21.0	PWR	-10.24%	IRM	-9.66%
21.0	VFC	-10.23%	GNRC	-9.54%
21.0	LW	-9.64%	AVGO	-8.79%
21.0	AMD	-9.19%	CDNS	-8.58%
21.0	TEVA	-9.18%	GBTC	-8.4%
21.0	AMC	-9.1%	GOOGL	-8.38%
21.0	UAA	-8.45%	AMAT	-8.28%
21.0	CMA	-8.19%	LW	-7.77%
21.0	CCL	-8.07%	AMD	-7.45%
21.0	MSFT	-7.85%	CMG	-7.12%
21.0	AA	-7.62%	CZR	-7.03%
21.0	IRM	-7.49%	NVDA	-7.02%
21.0	KEY	-6.61%	LUMN	-7.02%
21.0	LUMN	-6.38%	LEN	-6.87%
21.0	BHC	-6.36%	AMZN	-6.38%
21.0	GWV	-5.72%	ZION	-6.35%
21.0	BALL	-5.49%	ELAN	-6.08%



P365D: 1d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
1.0	CSTM	-0.45%	CLF	-0.32%
1.0	AAP	-0.4%	AAP	-0.26%
1.0	CLF	-0.4%	AMD	-0.26%
1.0	CZR	-0.34%	CZR	-0.24%
1.0	ON	-0.26%	CSTM	-0.23%
1.0	AMC	-0.23%	IEP	-0.23%
1.0	CVS	-0.2%	FSUGY	-0.2%
1.0	IEP	-0.2%	GT	-0.2%
1.0	LW	-0.16%	LW	-0.19%
1.0	AMD	-0.14%	ON	-0.18%
1.0	MU	-0.14%	BIIB	-0.16%
1.0	KALU	-0.13%	MRK	-0.15%
1.0	BALL	-0.12%	CNC	-0.14%
1.0	BIIB	-0.11%	AMAT	-0.14%
1.0	CNC	-0.1%	KALU	-0.13%
1.0	PEP	-0.1%	MU	-0.11%
1.0	ELAN	-0.1%	CVS	-0.11%
1.0	MRK	-0.09%	ELAN	-0.1%
1.0	AMAT	-0.09%	MOS	-0.09%
1.0	NAVI	-0.08%	LEN	-0.09%
1.0	FSUGY	-0.08%	OXY	-0.08%
1.0	OXY	-0.07%	GBTC	-0.08%
1.0	VST	-0.07%	NAVI	-0.08%
1.0	GT	-0.06%	FCX	-0.08%
1.0	WDC	-0.06%	BALL	-0.08%
1.0	UAA	-0.06%	LVS	-0.07%
1.0	BBY	-0.06%	BHP	-0.07%
1.0	CDNS	-0.06%	AMC	-0.06%
1.0	FCX	-0.05%	DHI	-0.05%
1.0	MOS	-0.05%	WDC	-0.05%



P365D: 10d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
10.0	AAP	-5.51%	CLF	-3.0%
10.0	CLF	-4.18%	AAP	-2.79%
10.0	ON	-2.84%	CSTM	-2.36%
10.0	CSTM	-2.42%	AMD	-2.19%
10.0	LW	-2.32%	IEP	-1.93%
10.0	BIIB	-2.18%	LW	-1.74%
10.0	BALL	-1.8%	FSUGY	-1.74%
10.0	CZR	-1.76%	ON	-1.71%
10.0	AMD	-1.59%	BIIB	-1.46%
10.0	ELAN	-1.46%	MRK	-1.45%
10.0	KALU	-1.37%	CZR	-1.36%
10.0	IEP	-1.28%	AMAT	-1.35%
10.0	OXY	-1.23%	BHC	-1.3%
10.0	KHC	-1.14%	LEN	-1.19%
10.0	AMC	-1.14%	OXY	-1.17%
10.0	FSUGY	-1.05%	WDC	-1.12%
10.0	WDC	-0.99%	BALL	-1.09%
10.0	PRGO	-0.99%	KALU	-1.04%
10.0	NAVI	-0.98%	GT	-0.99%
10.0	LVS	-0.88%	CNC	-0.89%
10.0	MRK	-0.86%	NAVI	-0.84%
10.0	CNC	-0.82%	KHC	-0.79%
10.0	BHC	-0.81%	LVS	-0.74%
10.0	CDNS	-0.75%	PRGO	-0.73%
10.0	GSK	-0.73%	ADBE	-0.69%
10.0	PEP	-0.66%	ELAN	-0.62%
10.0	AMAT	-0.65%	CMG	-0.61%
10.0	CMG	-0.65%	DHI	-0.59%
10.0	LEN	-0.6%	BHP	-0.55%
10.0	FCX	-0.43%	PEP	-0.53%



P365D: 21d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
21.0	AAP	-11.03%	AAP	-5.69%
21.0	LW	-6.9%	CLF	-5.39%
21.0	ON	-6.86%	CSTM	-4.76%
21.0	CLF	-6.47%	IEP	-3.9%
21.0	CSTM	-6.2%	AMD	-3.67%
21.0	BIIB	-4.55%	LW	-3.5%
21.0	CZR	-3.75%	FSUGY	-3.35%
21.0	AMD	-3.61%	ON	-3.27%
21.0	OXY	-3.57%	OXY	-3.26%
21.0	ELAN	-3.47%	BIIB	-2.96%
21.0	KALU	-2.72%	MRK	-2.95%
21.0	BALL	-2.63%	WDC	-2.95%
21.0	KHC	-2.51%	INTC	-2.76%
21.0	MRK	-2.38%	AMAT	-2.45%
21.0	WDC	-2.32%	GT	-2.44%
21.0	IEP	-2.04%	CNC	-2.16%
21.0	FSUGY	-1.8%	BALL	-2.04%
21.0	CNC	-1.8%	KALU	-1.99%
21.0	NAVI	-1.37%	CZR	-1.96%
21.0	FCX	-1.31%	LEN	-1.87%
21.0	GSK	-1.22%	BHC	-1.78%
21.0	AMAT	-1.22%	FCX	-1.72%
21.0	CDNS	-1.05%	KHC	-1.62%
21.0	GT	-0.98%	NAVI	-1.37%
21.0	MOS	-0.94%	MOS	-1.3%
21.0	PEP	-0.93%	CMG	-1.12%
21.0	CMG	-0.92%	CDNS	-1.09%
21.0	LEN	-0.89%	BHP	-1.05%
21.0	PRGO	-0.89%	PEP	-0.95%
21.0	ADBE	-0.88%	MU	-0.93%



P365D: 63d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
63.0	AAP	-34.55%	CSTM	-19.21%
63.0	CLF	-21.83%	CLF	-16.59%
63.0	CSTM	-19.42%	IEP	-16.25%
63.0	ON	-18.71%	AAP	-15.66%
63.0	BIIB	-16.73%	BIIB	-12.47%
63.0	OXY	-12.87%	FSUGY	-10.91%
63.0	KALU	-12.76%	LW	-10.84%
63.0	ELAN	-12.76%	AMD	-10.73%
63.0	LW	-12.55%	INTC	-10.4%
63.0	INTC	-11.82%	MRK	-10.23%
63.0	IEP	-10.88%	ELAN	-9.54%
63.0	AMD	-10.2%	ON	-8.94%
63.0	MRK	-10.1%	GT	-8.68%
63.0	BALL	-7.65%	KALU	-8.6%
63.0	PRGO	-6.97%	OXY	-8.52%
63.0	CNC	-6.72%	FCX	-8.02%
63.0	FCX	-6.64%	MU	-7.75%
63.0	WDC	-6.45%	AMAT	-7.51%
63.0	KHC	-6.39%	BALL	-7.39%
63.0	MU	-6.14%	WDC	-6.98%
63.0	FSUGY	-5.34%	KHC	-5.27%
63.0	PEP	-4.77%	LEN	-5.22%
63.0	BHP	-4.58%	CNC	-5.02%
63.0	GSK	-4.36%	PEP	-4.49%
63.0	ADBE	-3.97%	BHP	-4.48%
63.0	AMAT	-3.9%	PRGO	-4.17%
63.0	GT	-3.78%	QCOM	-4.13%
63.0	NAVI	-3.77%	MOS	-3.98%
63.0	LVS	-3.76%	CMG	-3.87%
63.0	BUD	-3.53%	GSK	-3.59%



P365D: 126d

Results reflect ticker level average 95% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
126.0	AAP	-77.26%	CSTM	-38.71%
126.0	BIIB	-42.9%	AAP	-33.5%
126.0	CSTM	-34.62%	IEP	-31.23%
126.0	CLF	-33.22%	CLF	-27.1%
126.0	OXY	-31.96%	BIIB	-26.43%
126.0	IEP	-28.18%	MRK	-20.69%
126.0	INTC	-21.84%	AMD	-17.72%
126.0	CNC	-19.46%	OXY	-17.67%
126.0	MRK	-19.45%	FSUGY	-16.56%
126.0	KALU	-18.3%	CNC	-16.54%
126.0	ELAN	-18.06%	INTC	-16.5%
126.0	PRGO	-17.52%	ELAN	-16.48%
126.0	AMD	-17.07%	ON	-15.98%
126.0	GSK	-15.74%	AMAT	-15.84%
126.0	BUD	-14.5%	BALL	-12.68%
126.0	KHC	-13.45%	KALU	-12.45%
126.0	ON	-12.96%	GSK	-12.32%
126.0	BALL	-12.44%	FCX	-12.0%
126.0	MU	-11.78%	LW	-11.63%
126.0	FCX	-11.52%	MU	-11.6%
126.0	WDC	-11.41%	GT	-11.43%
126.0	LW	-10.35%	WDC	-11.02%
126.0	FSUGY	-10.09%	KHC	-10.58%
126.0	AMC	-9.94%	LEN	-10.1%
126.0	NAVI	-9.77%	AMC	-9.99%
126.0	QCOM	-8.89%	PEP	-9.18%
126.0	DHI	-8.81%	QCOM	-8.99%
126.0	PEP	-8.73%	ADBE	-8.8%
126.0	AMAT	-8.55%	PRGO	-8.48%
126.0	LEN	-8.36%	AZN	-8.36%



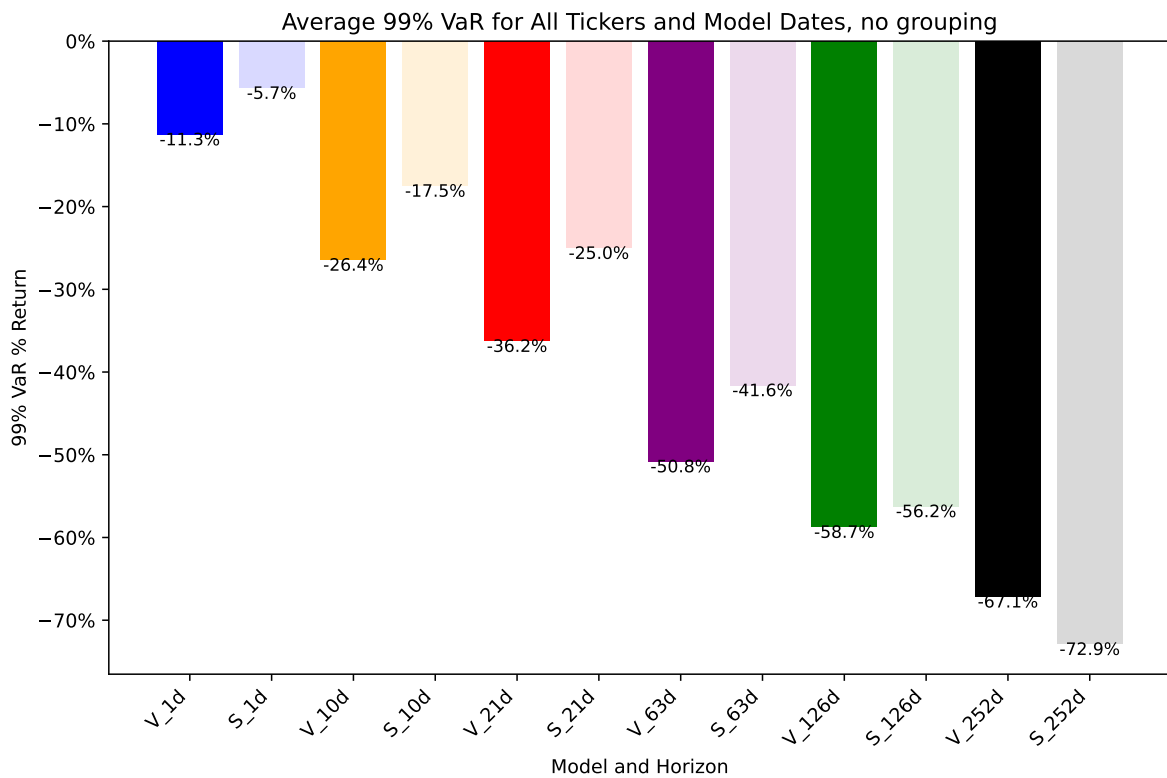
99% Value at Risk (VaR)

Historic Average Levels

Here we compare Vector Model (“V”, dark shading) and Sigma (“S”, light shading) 99% 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 which we have corresponding forward breakage and ROVBC performance. Thus, we will likely have 1d horizon performance for a model date of yesterday, but we won’t have 10d horizon performance.

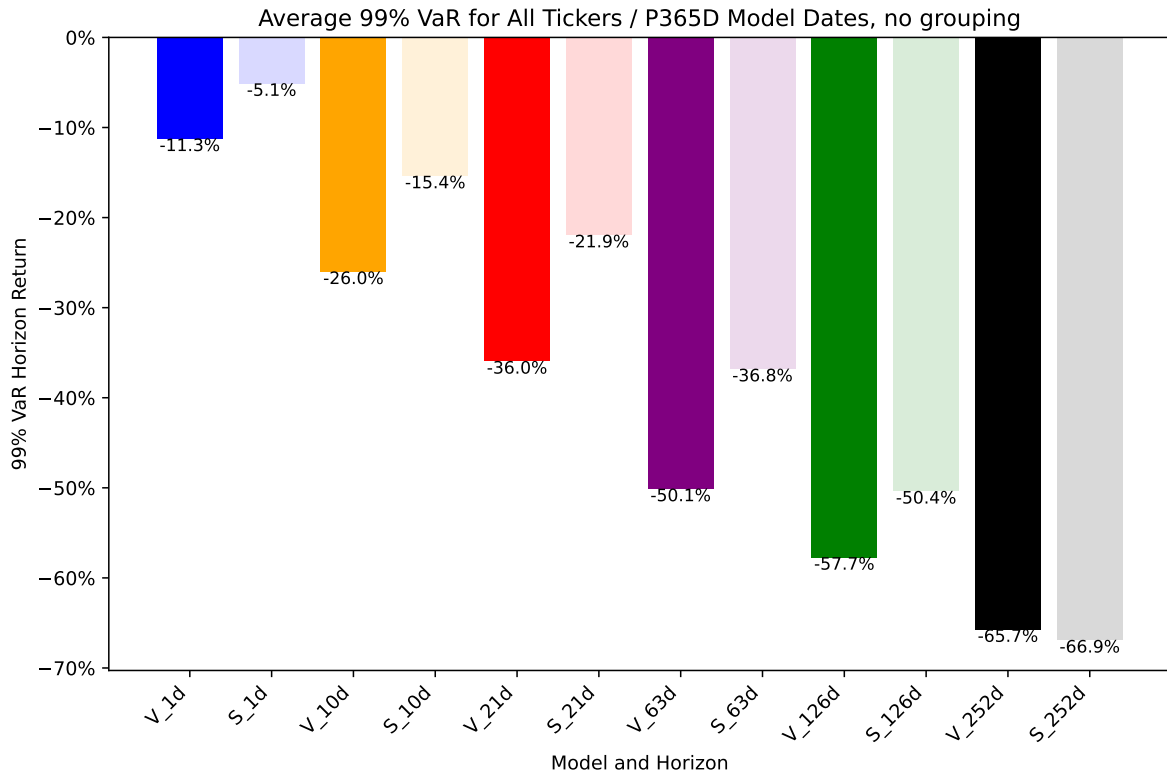
All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-03-28



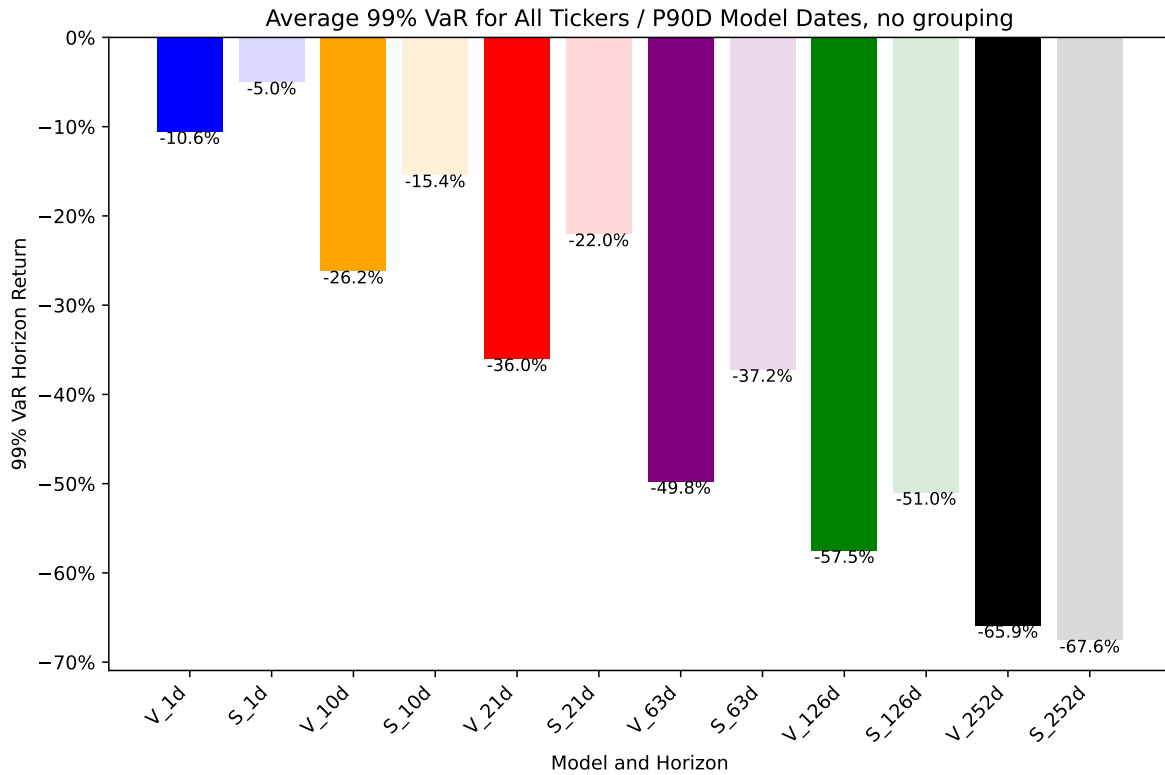
Prior 365 Calendar Days (P365D)

Period examined: All model dates from 2024-04-02 through 2025-03-28



Prior 90 Calendar Days (P90D)

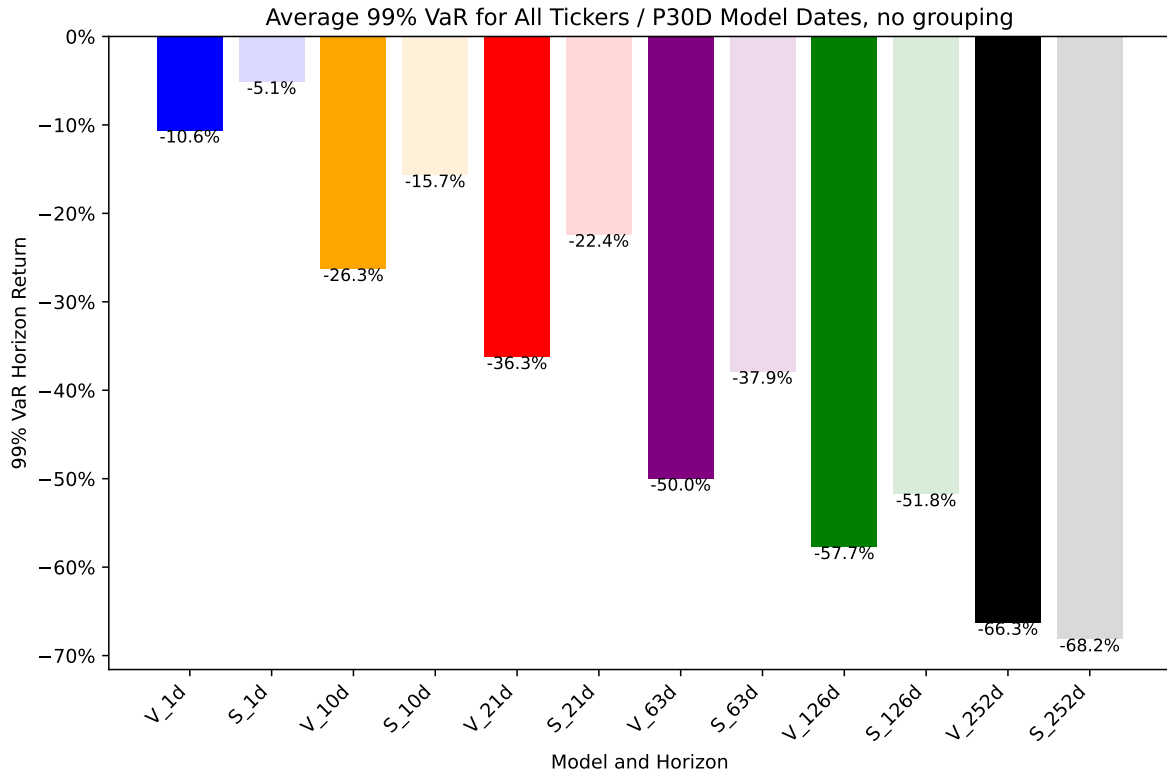
Period examined: All model dates from 2025-01-02 through 2025-03-28



Prior 30 Calendar Days (P30D)

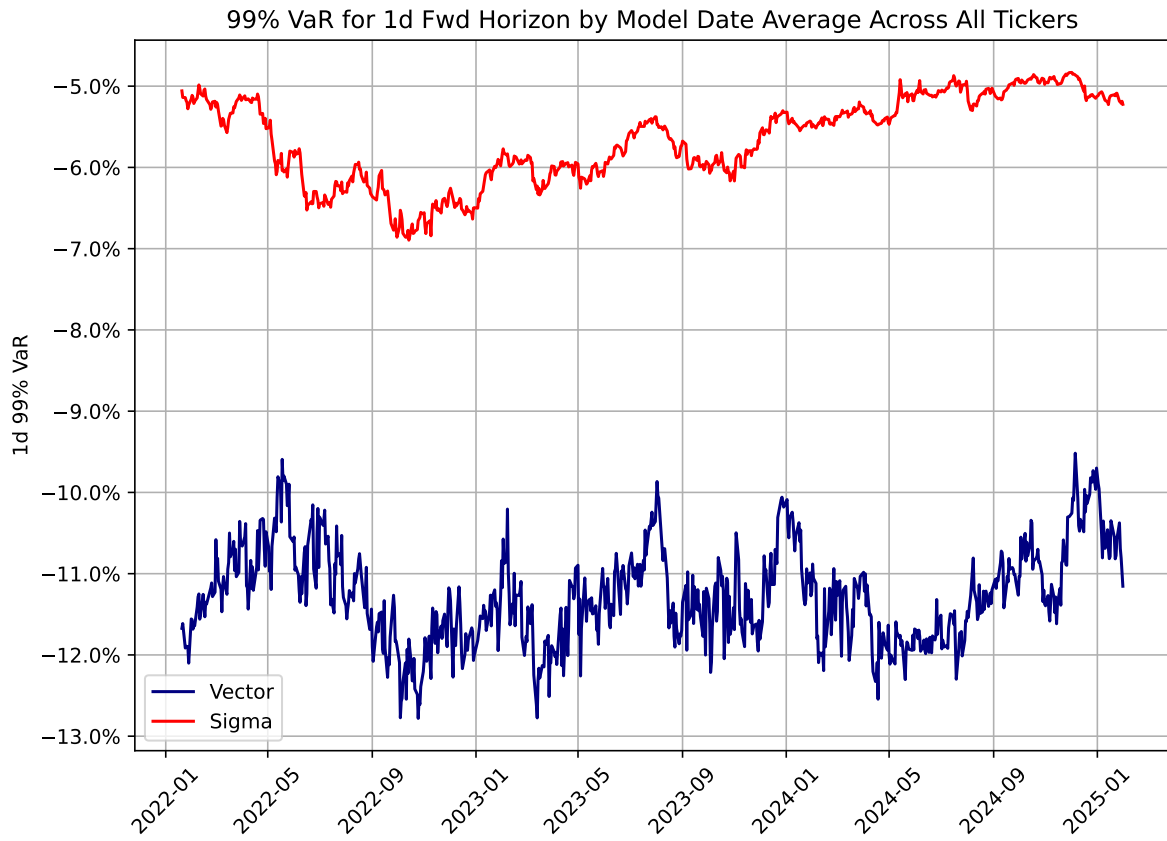
Period examined: All model dates from 2025-03-03 through 2025-03-28



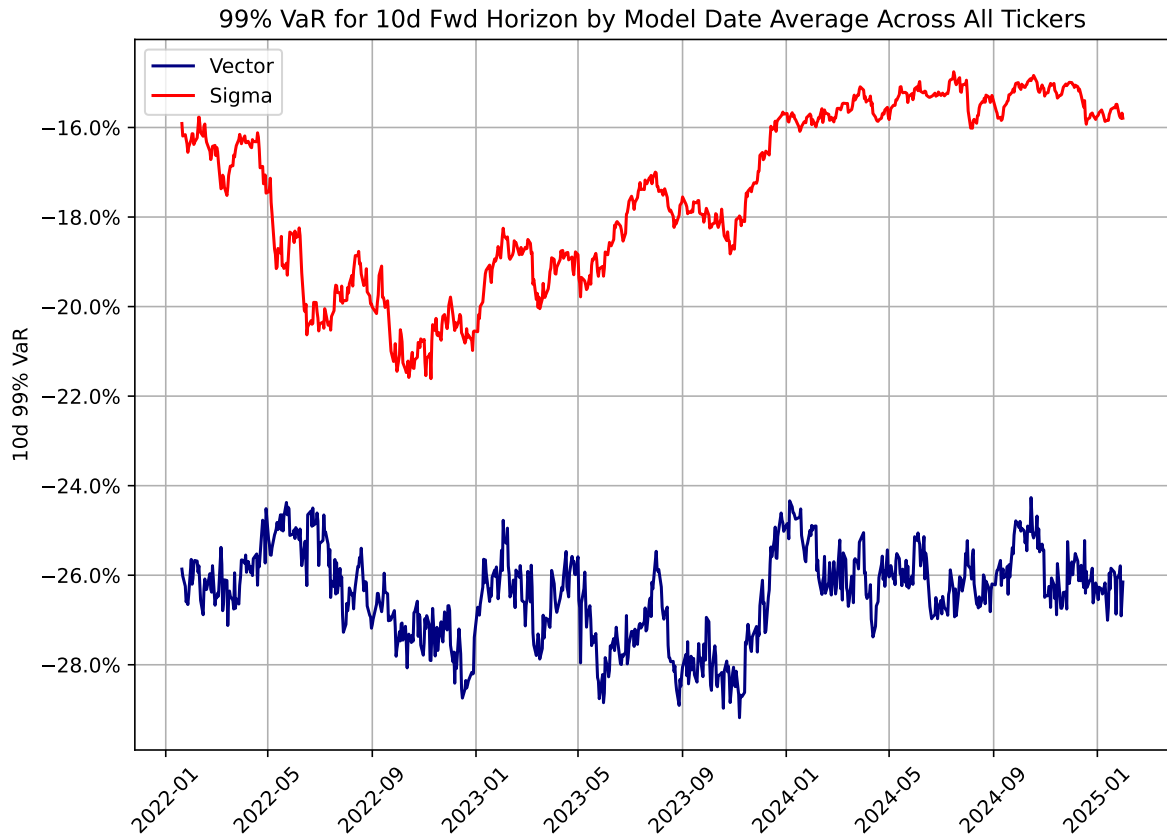


Daily Levels

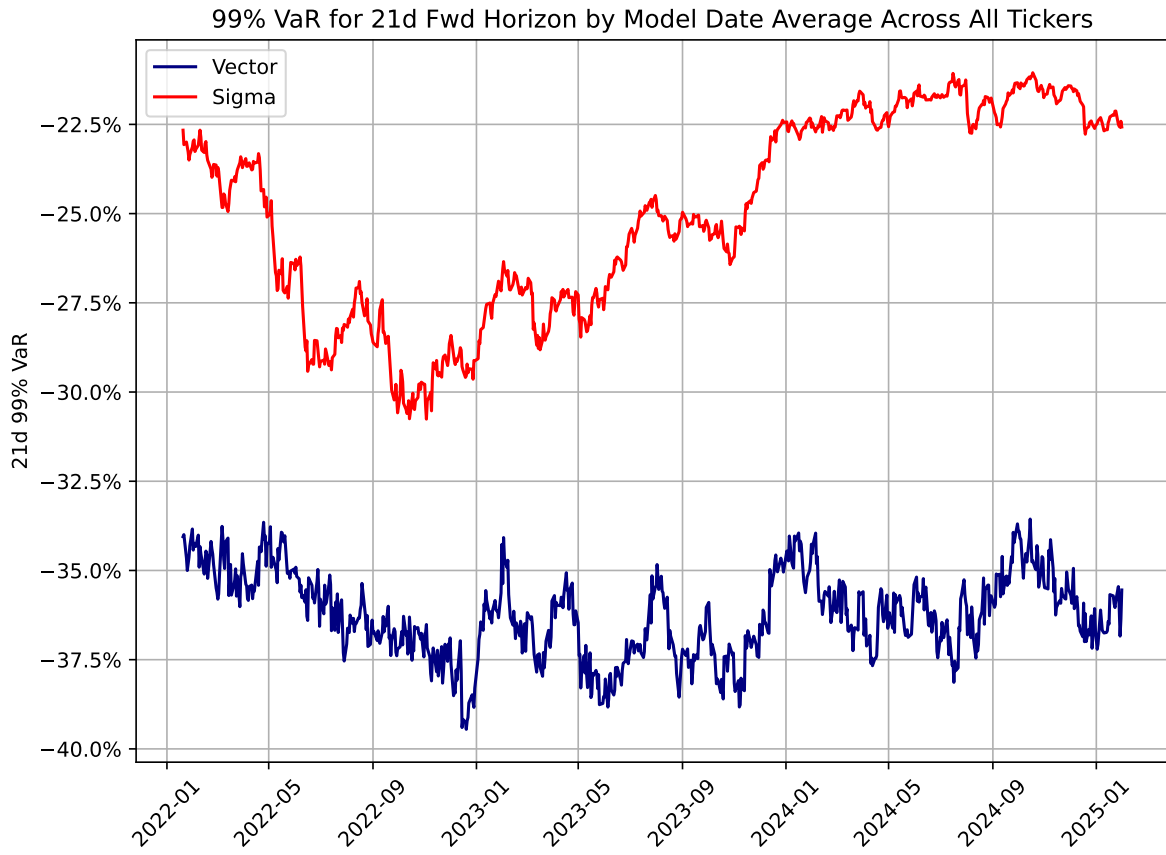
1d Horizon



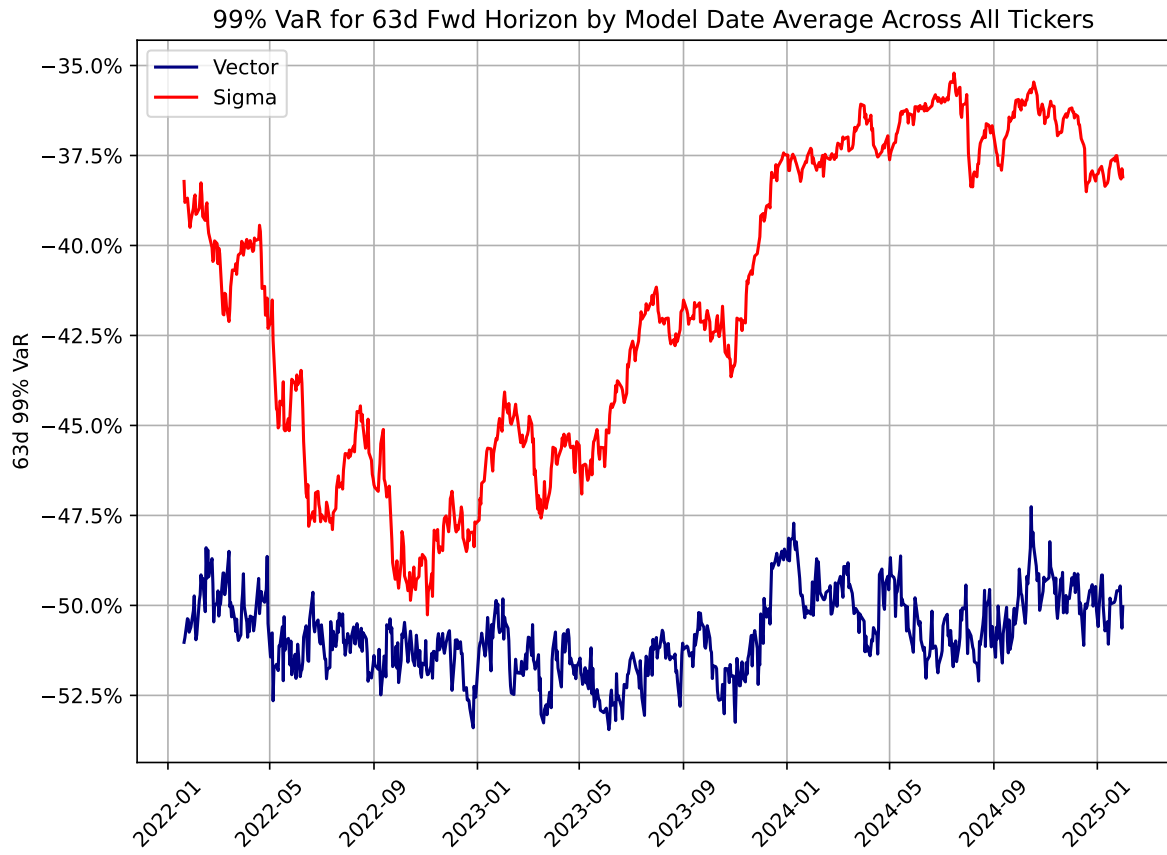
10d Horizon



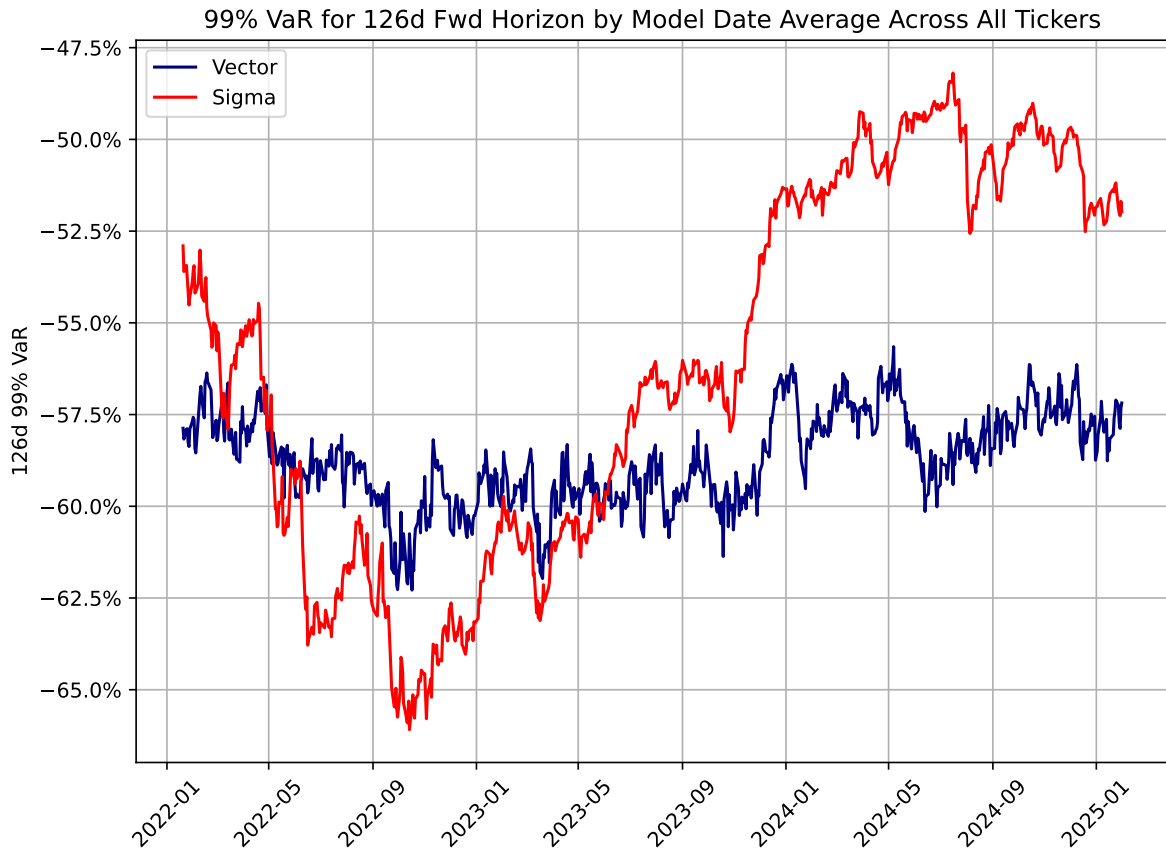
21d Horizon



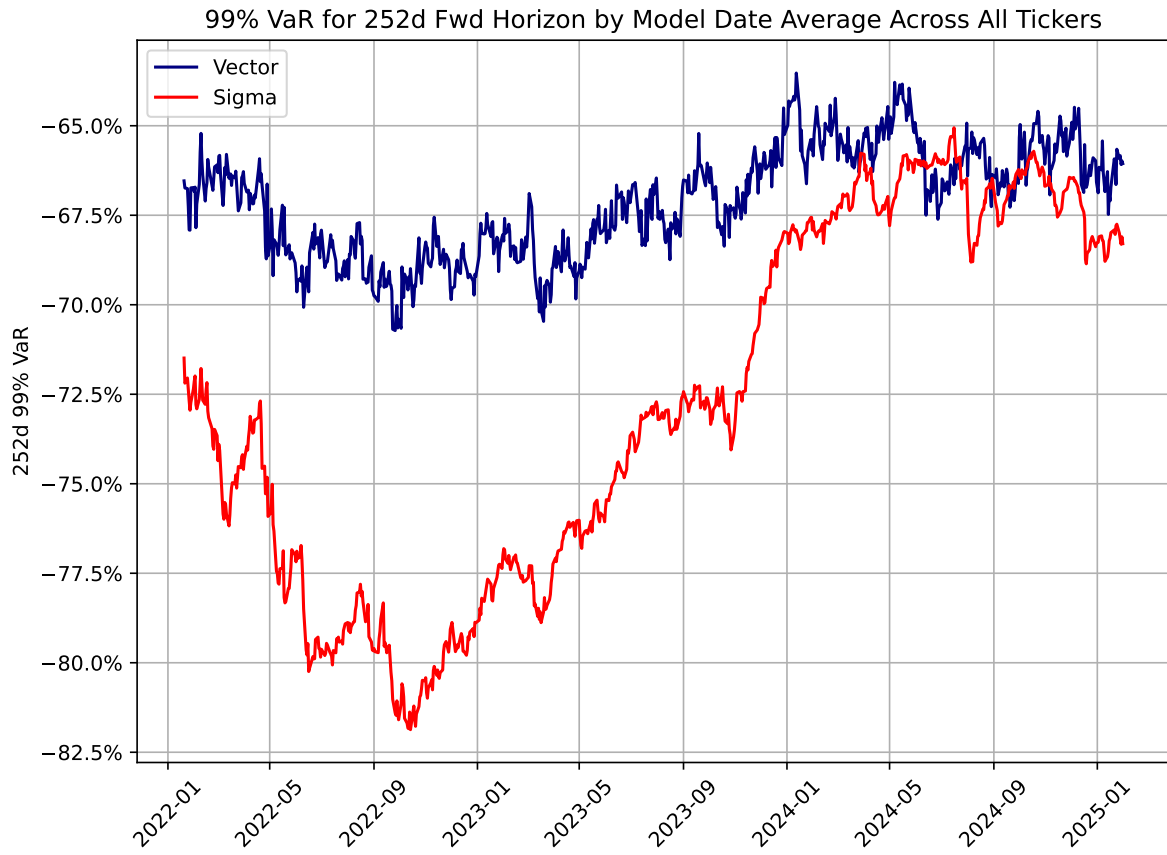
63d Horizon



126d Horizon



252d Horizon



Performance Summary

Here we compare the performance of 99% VaR estimates generated by the Vector Model (“V”, presented with dark shading) with those generated by Sigma (“S”, presented with light shading). This comparison is made on the basis of VaR breakage rates and Return on VaR based Capital (ROVBC), presenting the average results across tickers and model dates for model dates in the period indicated.

To facilitate evaluation of VaR breakage we provide dashed horizontal lines at the targetted breakage level. Proximity to that line is the key breakage related criteria.

Vector Model ROVBC can be evaluated on the basis of outright levels relative to Sigma and alpha relative to Sigma ROVBC (which, as discussed previously, is assigned the underlying ticker price returns). We advise keeping proximity of VaR breakage rates to targetted levels in mind when comparing outright ROVBC levels. For example, a model with much more benign VaR estimates will likely have higher ROVBC in the context of an upwardly trending market, but how did it do on VaR breakage rates compared to the other model. This tradeoff between ROVBC and VaR breakage rate proximity to target is the motivation for including ROVBC Adjusted for Average Vector Model-Sigma VaR Differentials in the Report Card presented earlier in this report, and for providing the alpha metrics.

Alpha allows us to isolate ROVBC performance differences between the Vector Model and Sigma apart from any systematic difference between the ROVBC multiplier for the Vector Model and 1.00x. Alpha across TMD’s could be driven by VaR differentials between tickers and / or between dates. Thus we also present average alpha by ticker across model dates. If this cross-date based alpha is positive, at least some of the overall alpha is driven by variation in Vector Model VaR relative to Sigma across time as opposed to variation in Vector Model VaR relative to Sigma between tickers.

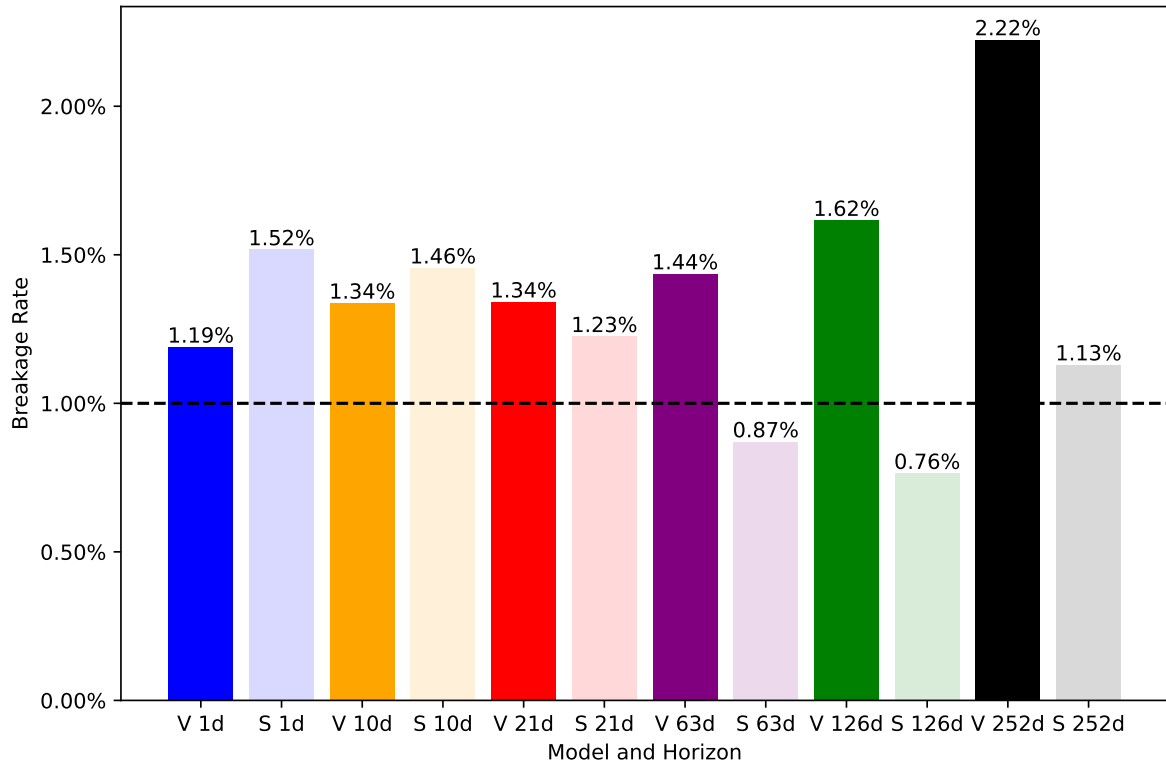
Results for each horizon reflect the average for all model estimates for that horizon from all model dates for which forward performance is known. Note that periods for all horizons > 1d overlap.

All Out of Sample Model Dates

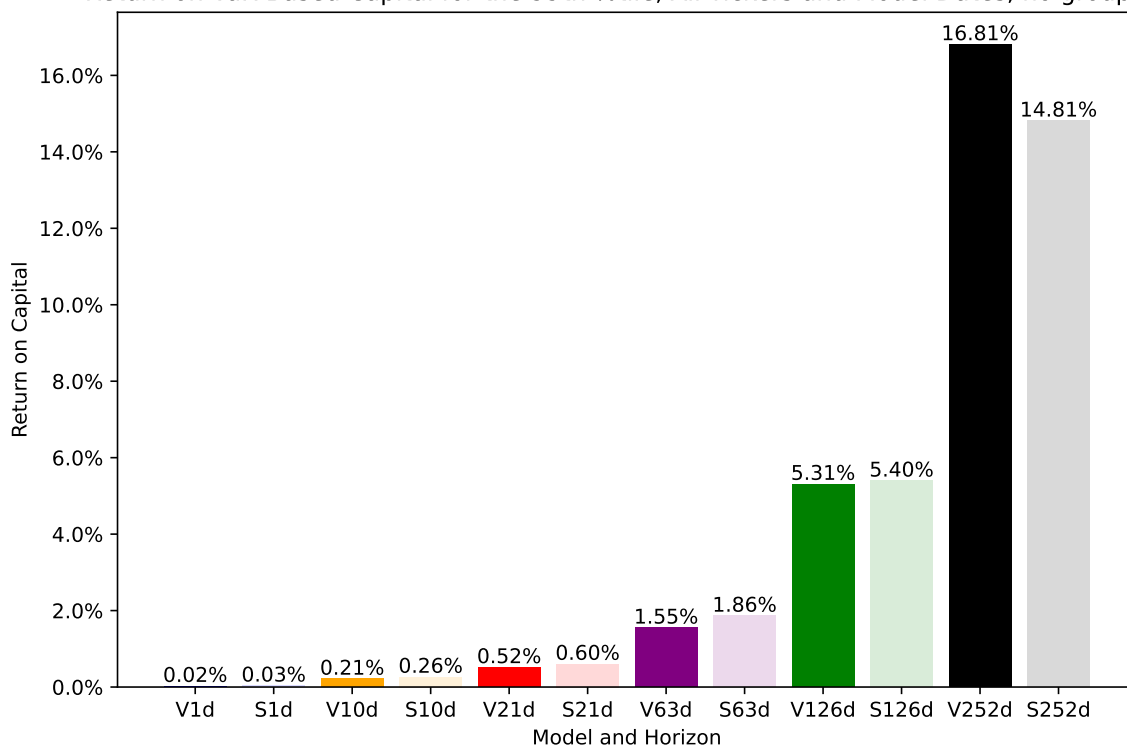
Period examined: All model dates from 2022-01-31 through 2025-03-28



VaR Breakage Rates for the 99th %tile, All Tickers and Model Dates, no grouping



Return on VaR Based Capital for the 99th %tile, All Tickers and Model Dates, no grouping



Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's across all TMD's:

	1d	10d	21d	63d	126d	252d
intercept	-0.00%	-0.08%	-0.15%	-0.54%	-1.14%	-1.11%
intercept_p_value	37.46%	0.00%	0.00%	0.00%	0.00%	0.00%
slope	87.99%	109.60%	110.70%	111.08%	119.13%	120.60%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

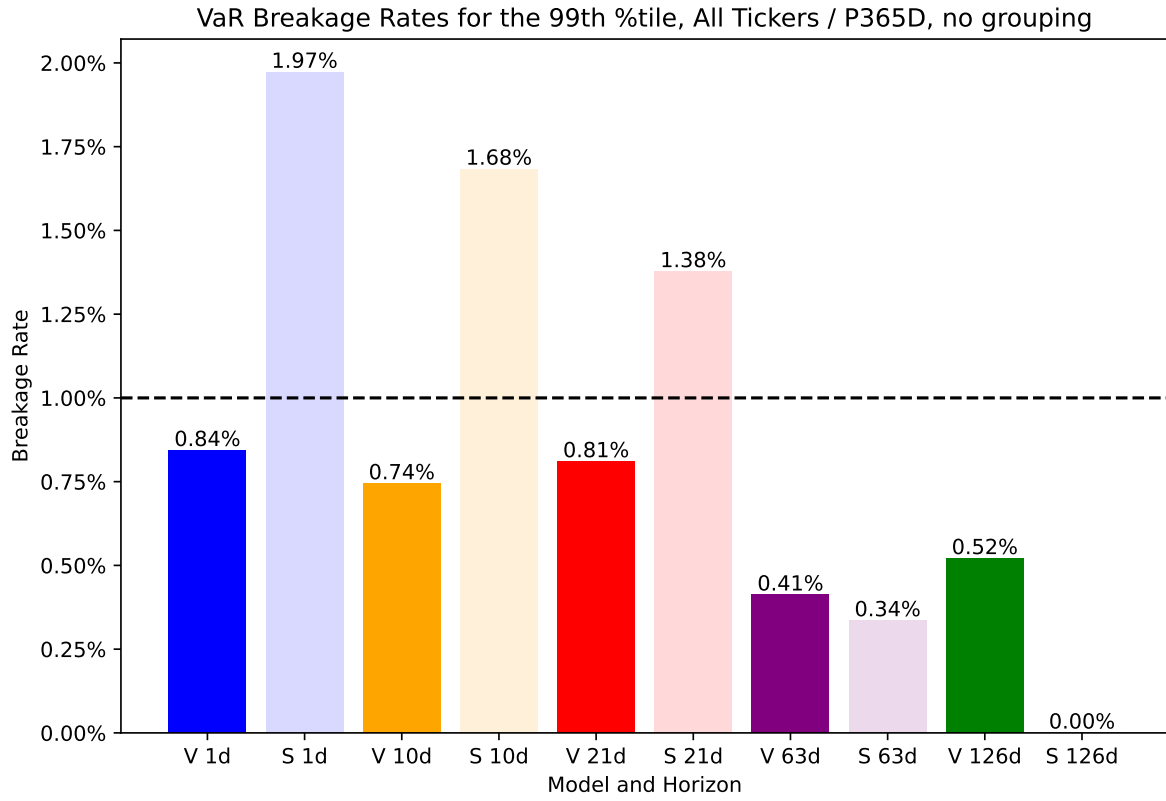
Average Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns, by ticker across Model Dates:

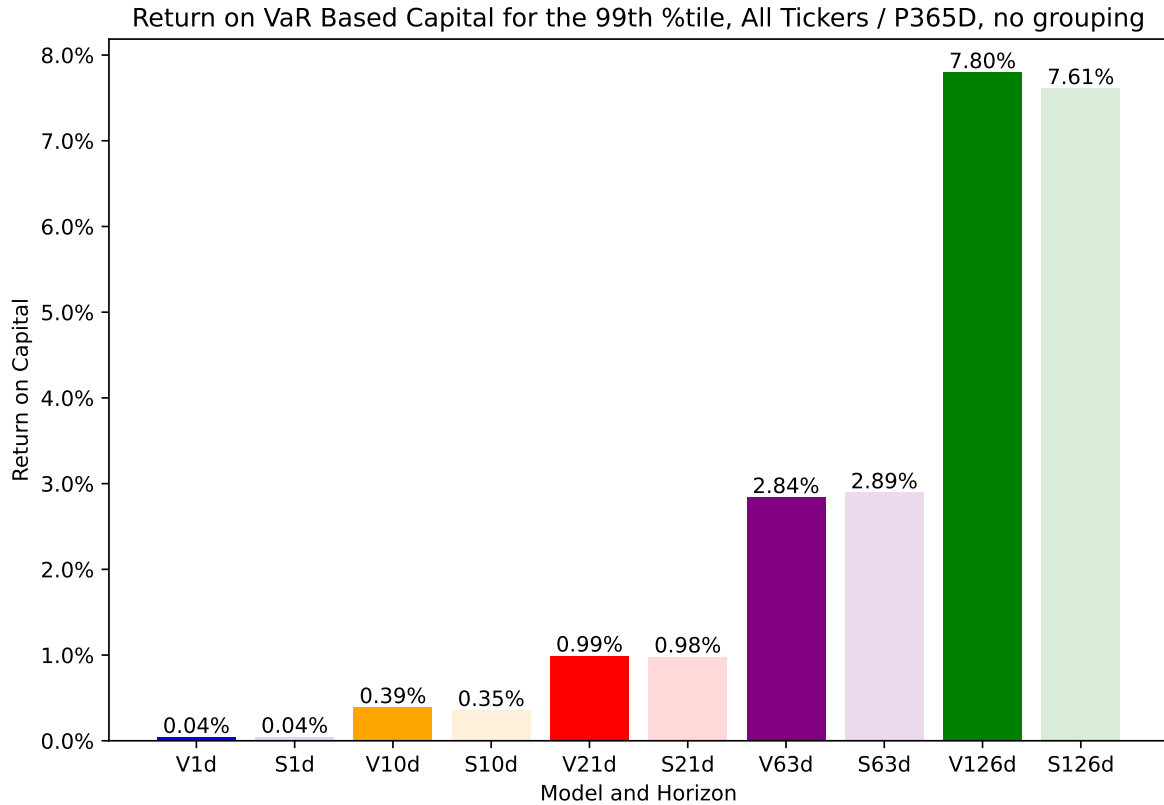
	1d	10d	21d	63d	126d	252d
intercept	0.01%	0.10%	0.25%	0.74%	1.45%	1.38%
intercept_p_value	47.44%	20.60%	19.40%	13.95%	9.86%	5.97%
slope	74.69%	85.00%	87.70%	97.09%	109.63%	122.99%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



Prior 365 Calendar Days (P365D)

md("Period examined: All model dates from "+ L365_first_date + " through "+ L365_latest_date)





Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's across all TMD's in P365D period:

	1d	10d	21d	63d	126d
intercept	0.01%	0.04%	-0.08%	-0.07%	-0.30%
intercept_p_value	17.41%	18.98%	11.99%	28.14%	0.05%
slope	74.93%	98.79%	108.58%	97.62%	104.89%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%

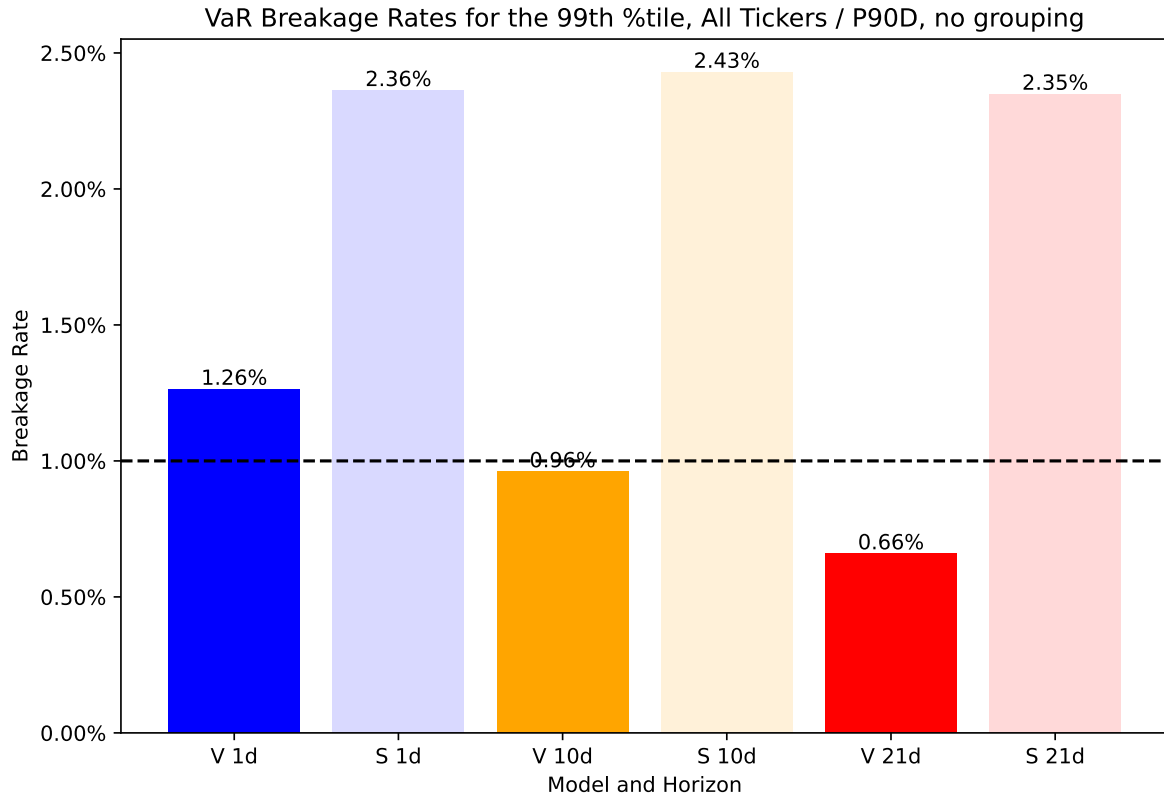
Average Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns, by ticker across Model Dates:

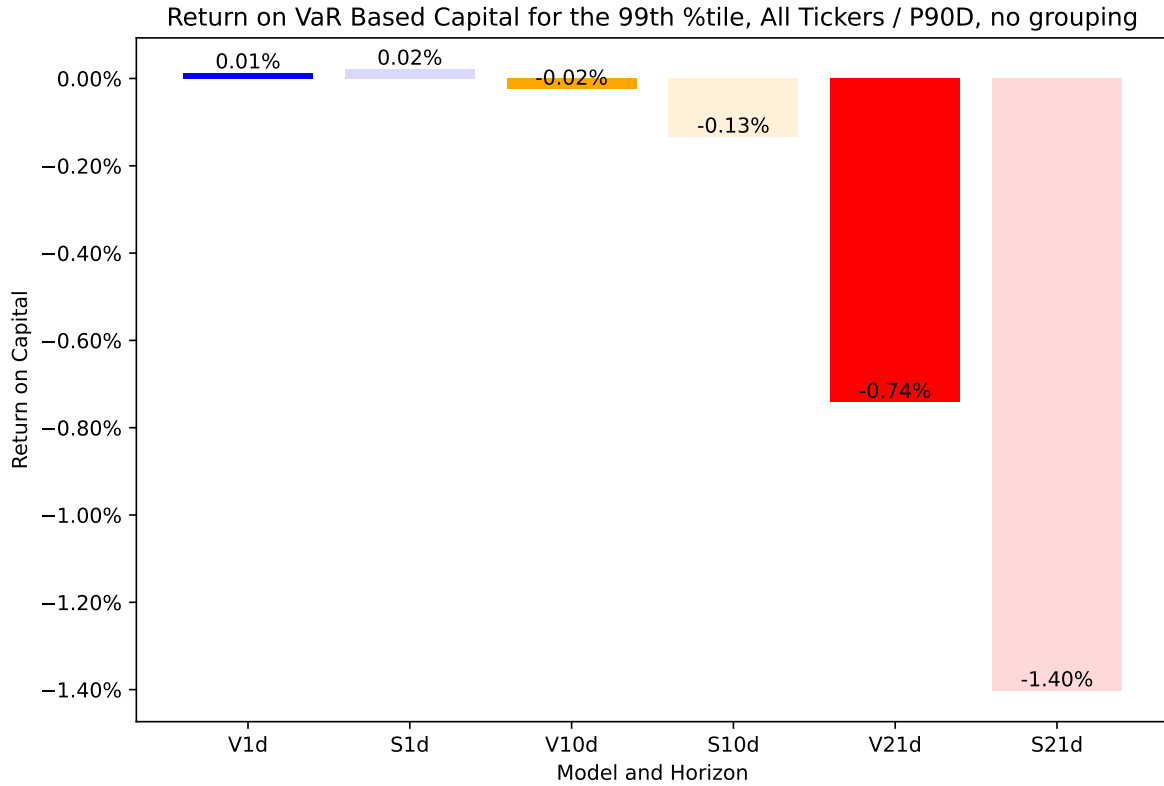
	1d	10d	21d	63d	126d
intercept	0.01%	0.07%	0.09%	0.26%	-0.01%
intercept_p_value	47.75%	17.51%	13.31%	15.37%	19.33%
slope	62.56%	71.08%	73.68%	82.22%	97.48%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%



Prior 90 Calendar Days (P90D)

md("Period examined: All model dates from "+ L90_first_date + " through "+ L90_latest_date)





Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's across all TMD's in P90d period:

	1d	10d	21d
intercept	-0.00%	0.06%	0.37%
intercept_p_value	96.47%	10.97%	0.00%
slope	71.56%	78.43%	79.54%
slope_p_value	0.00%	0.00%	0.00%

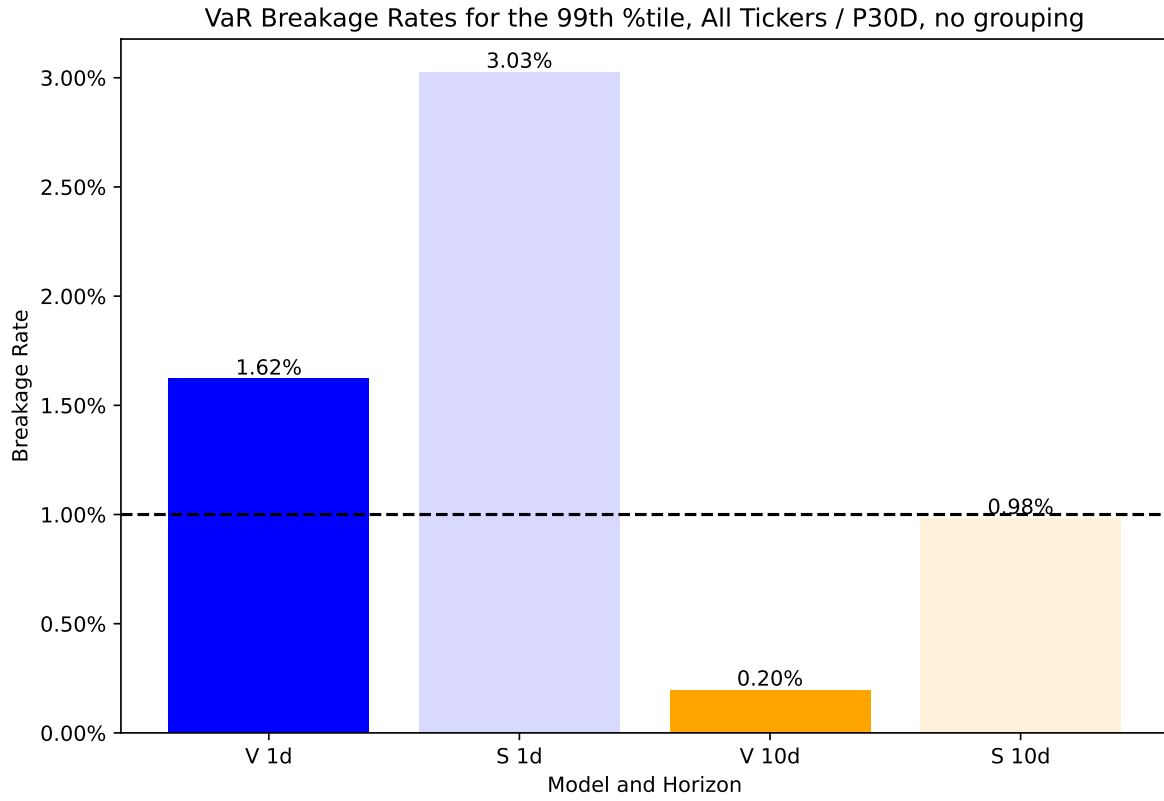
Average Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns, by ticker across Model Dates:

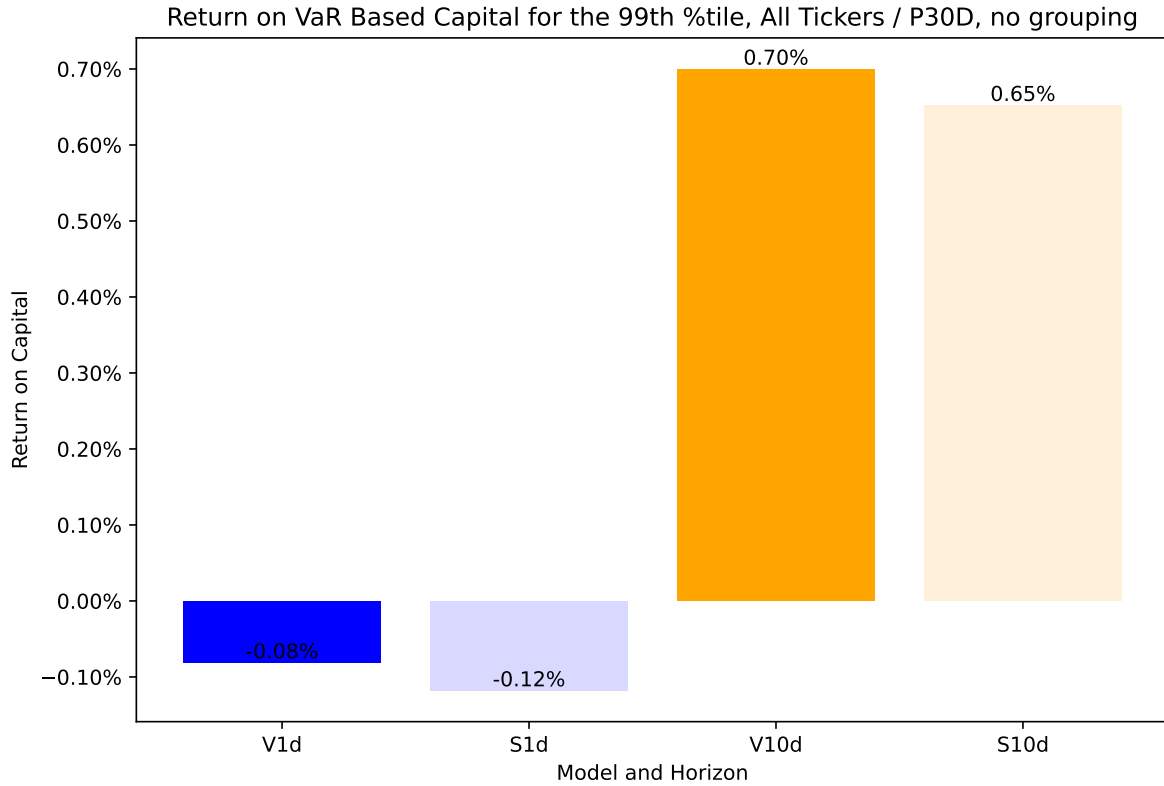
	1d	10d	21d
intercept	-0.00%	0.02%	-0.08%
intercept_p_value	44.93%	22.55%	30.39%
slope	68.04%	73.33%	74.82%
slope_p_value	0.00%	0.00%	0.00%



Prior 30 Calendar Days (P30D)

md("Period examined: All model dates from "+ L30_first_date + " through "+ L30_latest_date)





Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's across all TMD's in P30d period:

	1d	10d
intercept	0.01%	0.19%
intercept_p_value	79.70%	0.08%
slope	73.15%	77.67%
slope_p_value	0.00%	0.00%

Average Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns, by ticker across Model Dates:

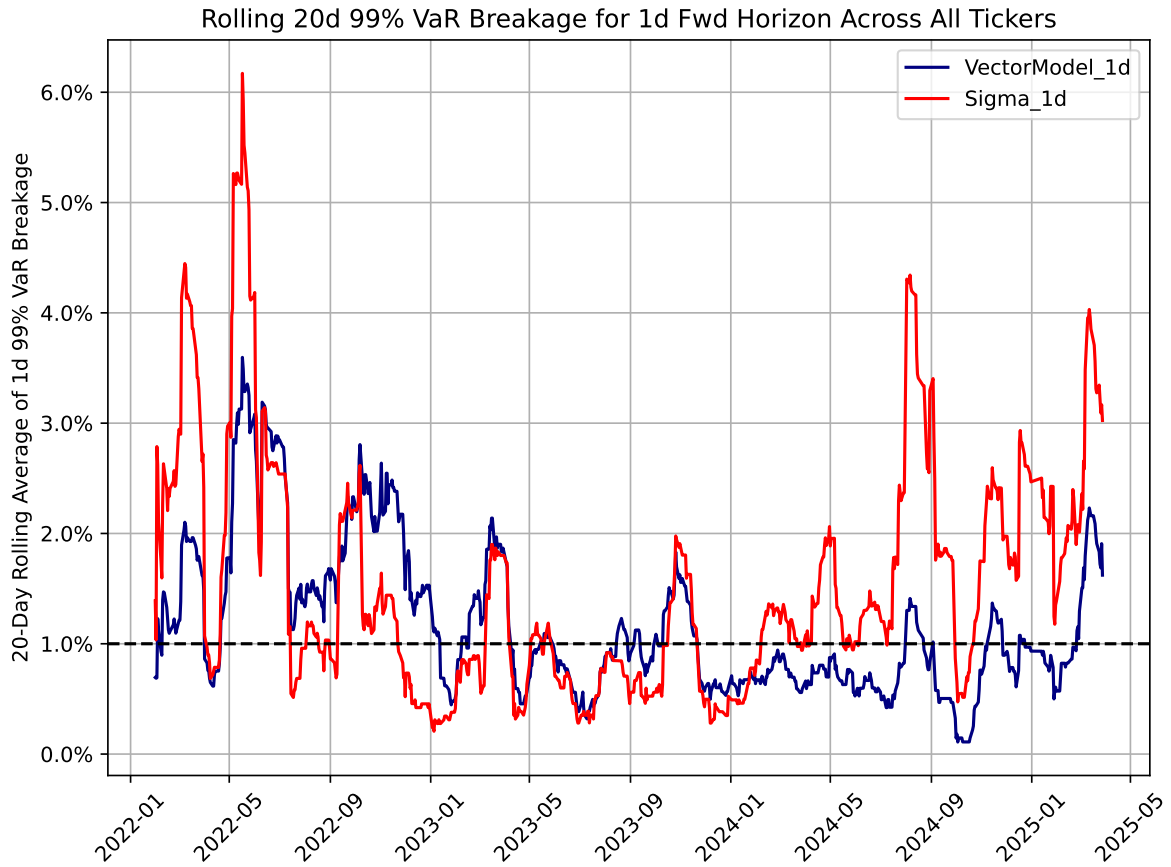
	1d	10d
intercept	-0.00%	-0.06%
intercept_p_value	46.46%	37.41%
slope	71.03%	79.04%
slope_p_value	0.00%	0.02%



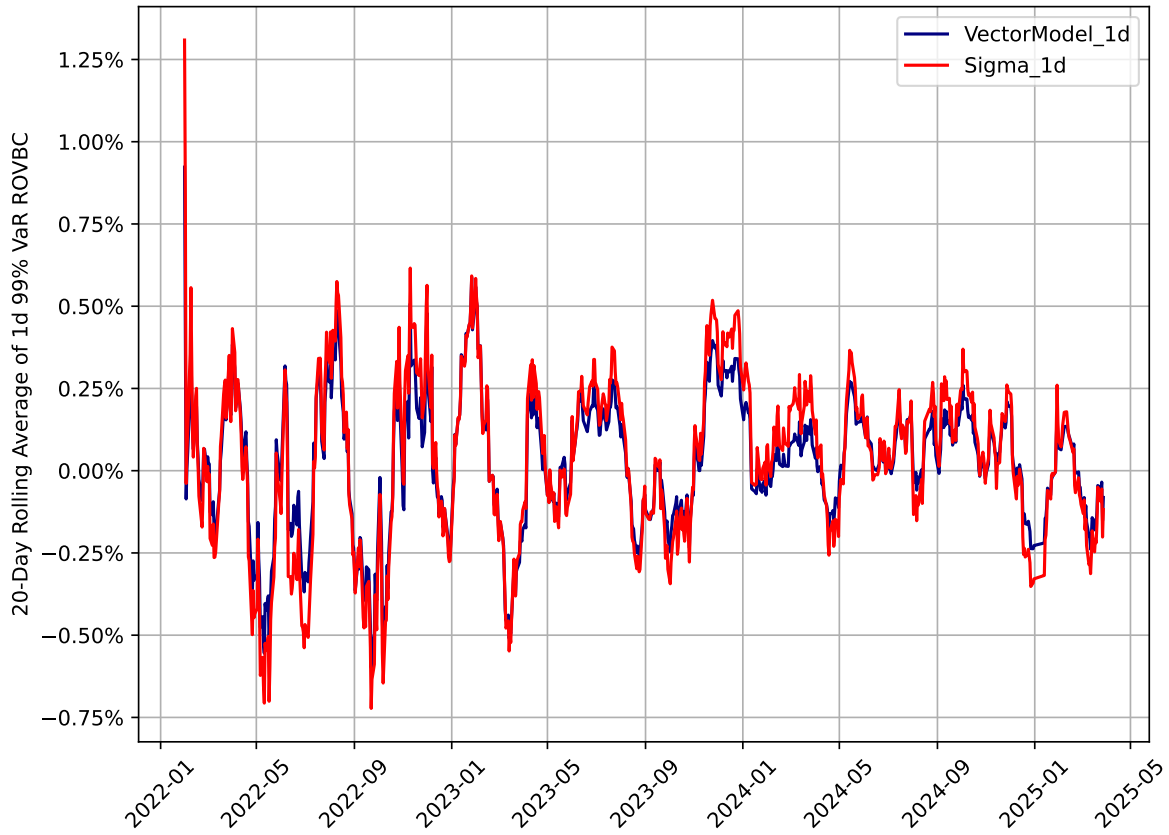
Rolling Performance

Here we look at 20 day rolling moving averages of the breakage and ROVBC statistics summarized in the preceding section. These 20day moving averages are averages of daily averages across all tickers.

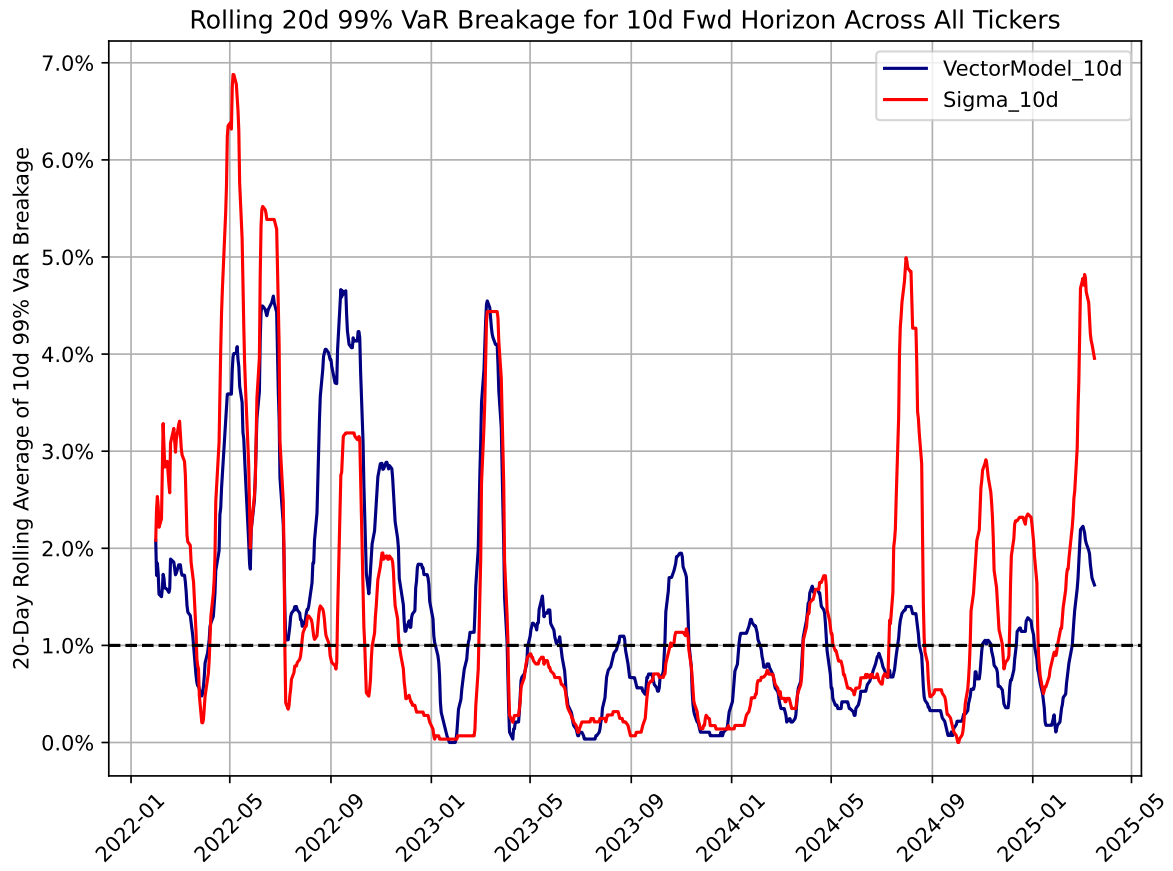
1d Horizon

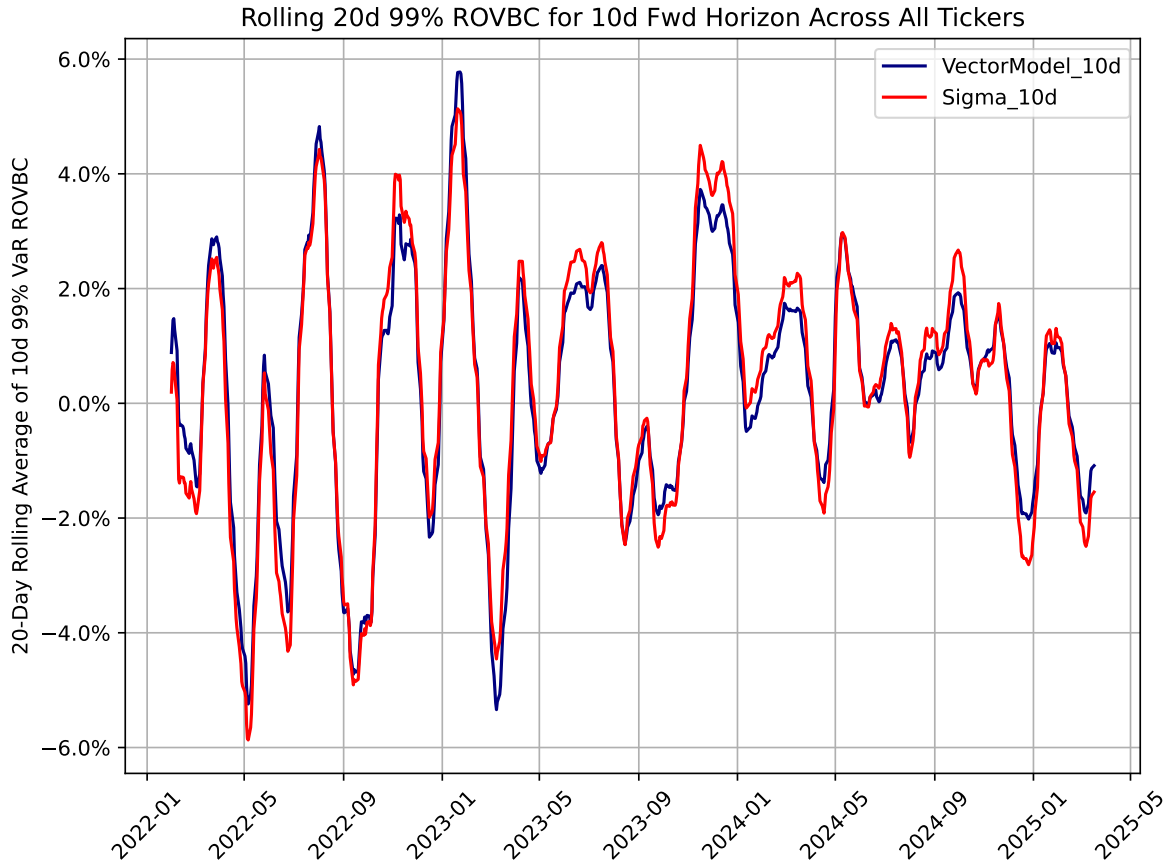


Rolling 20d 99% ROVBC for 1d Fwd Horizon Across All Tickers

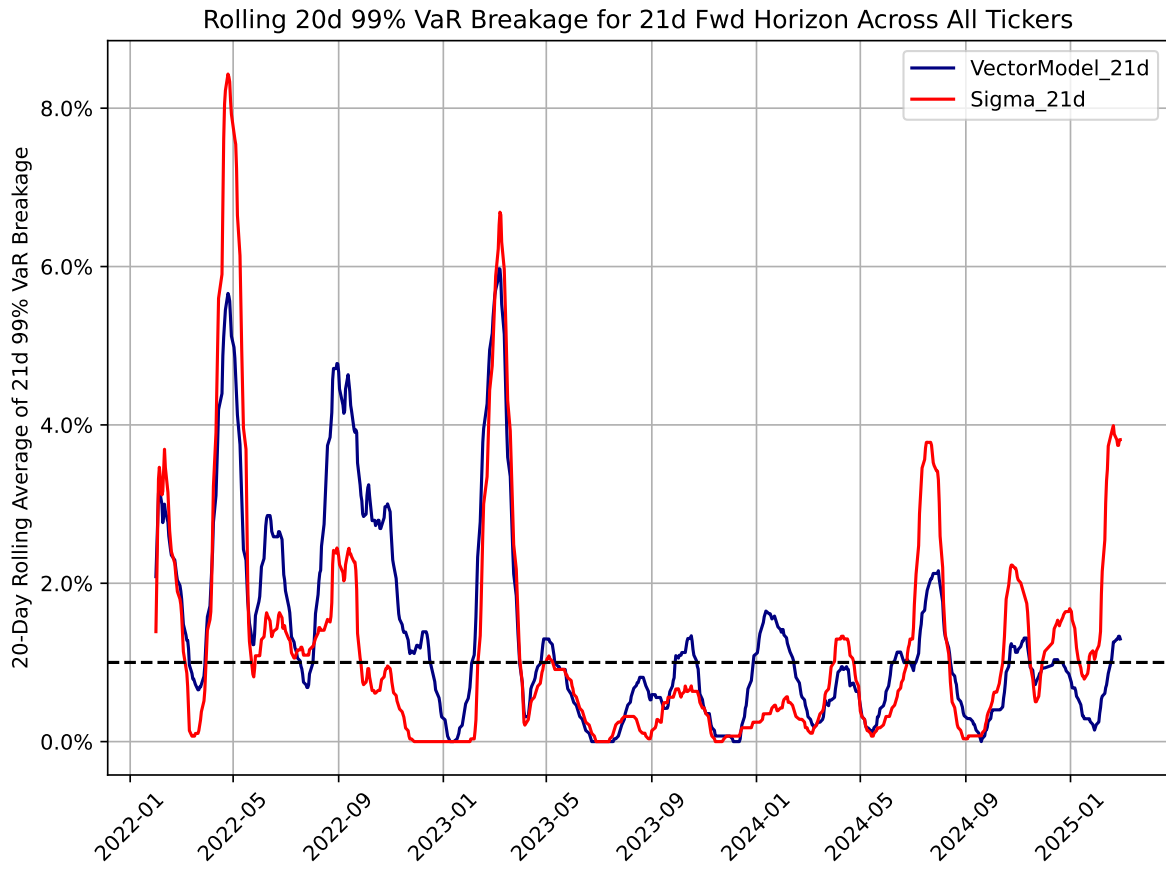


10d Horizon

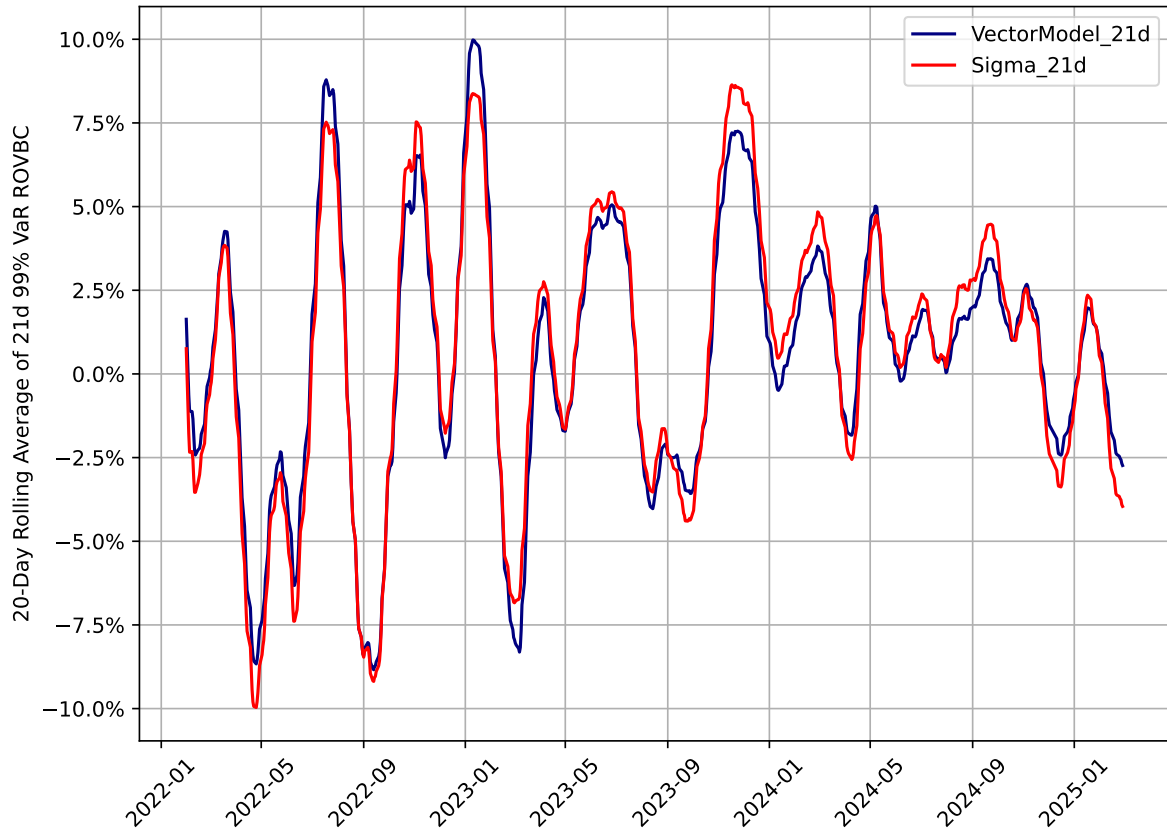




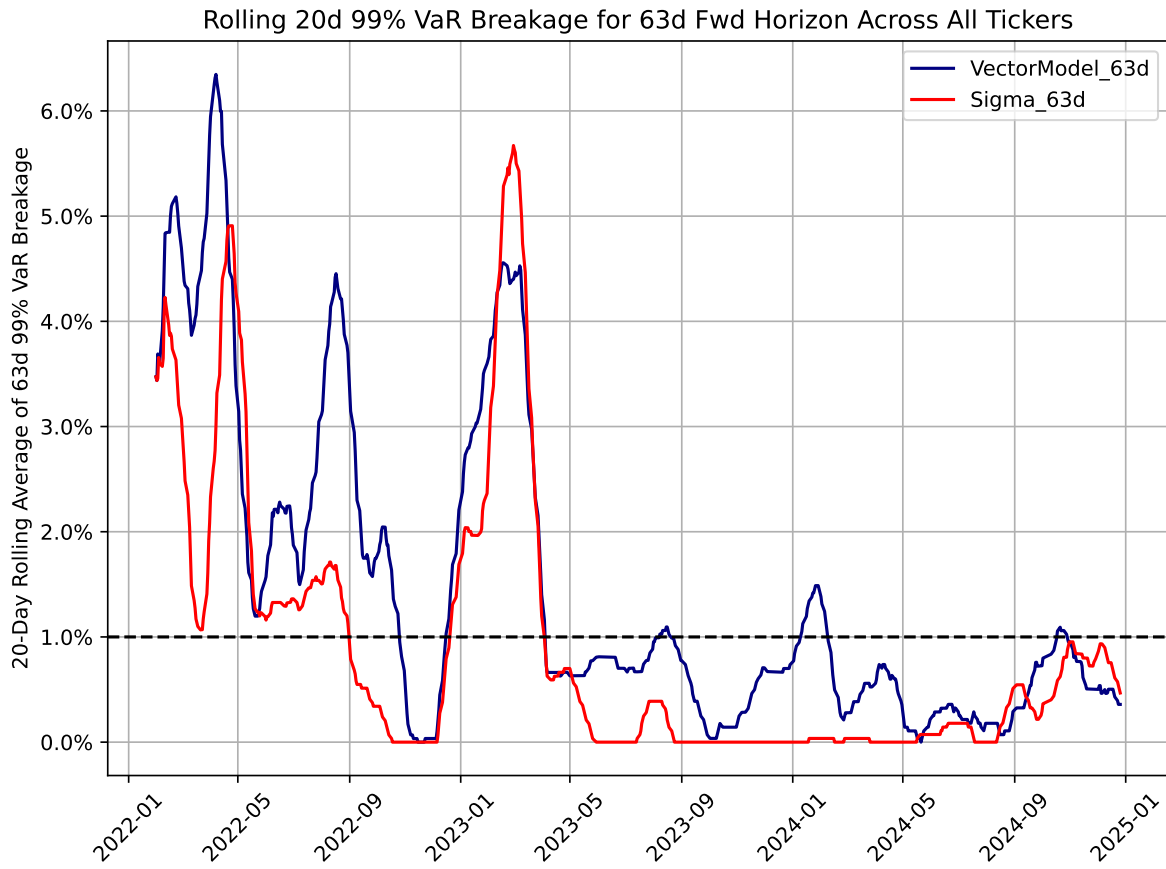
21d Horizon



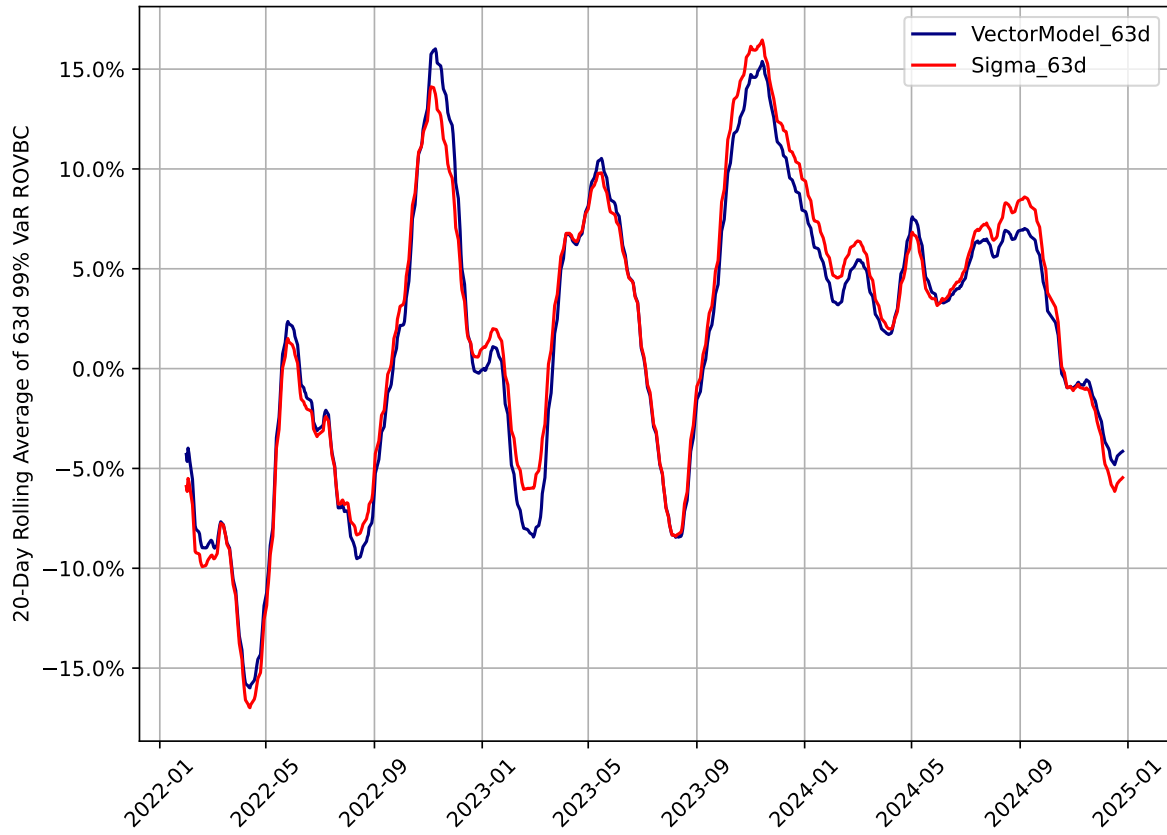
Rolling 20d 99% ROVBC for 21d Fwd Horizon Across All Tickers



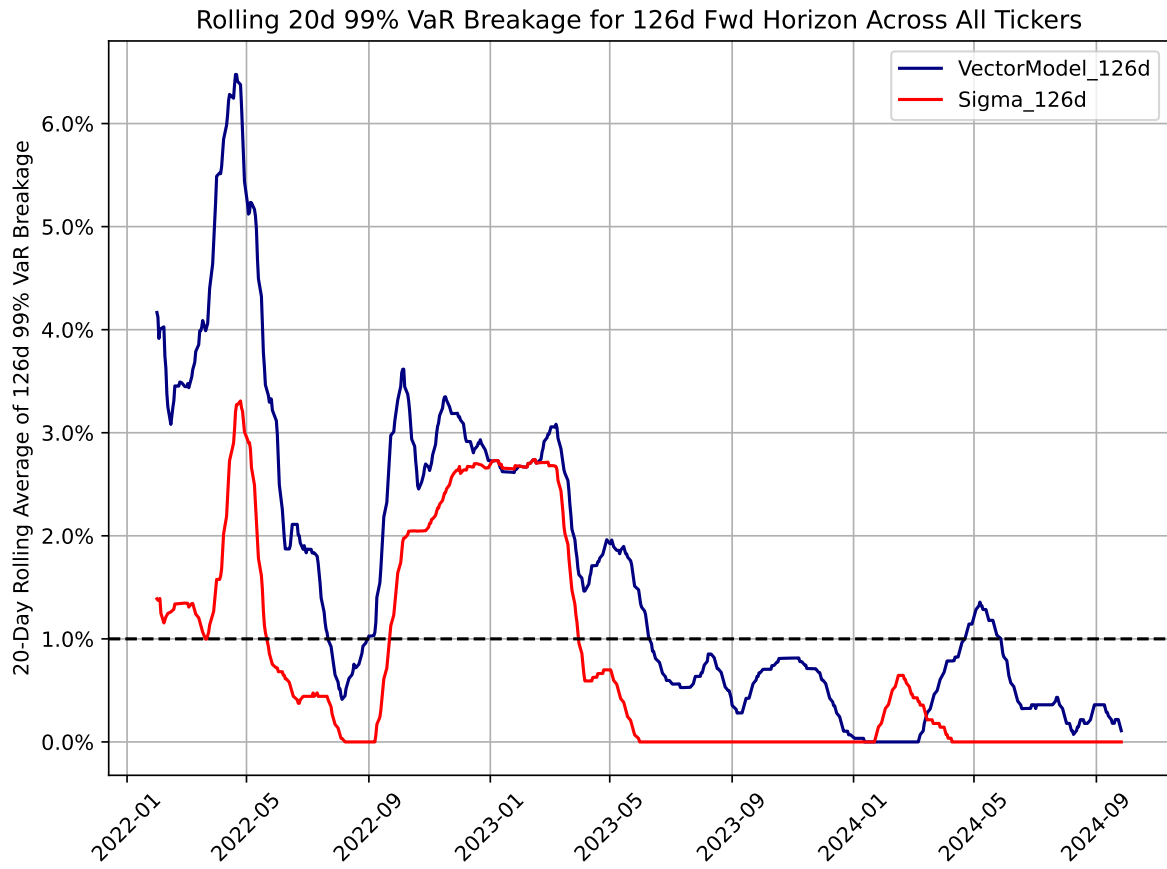
63d Horizon



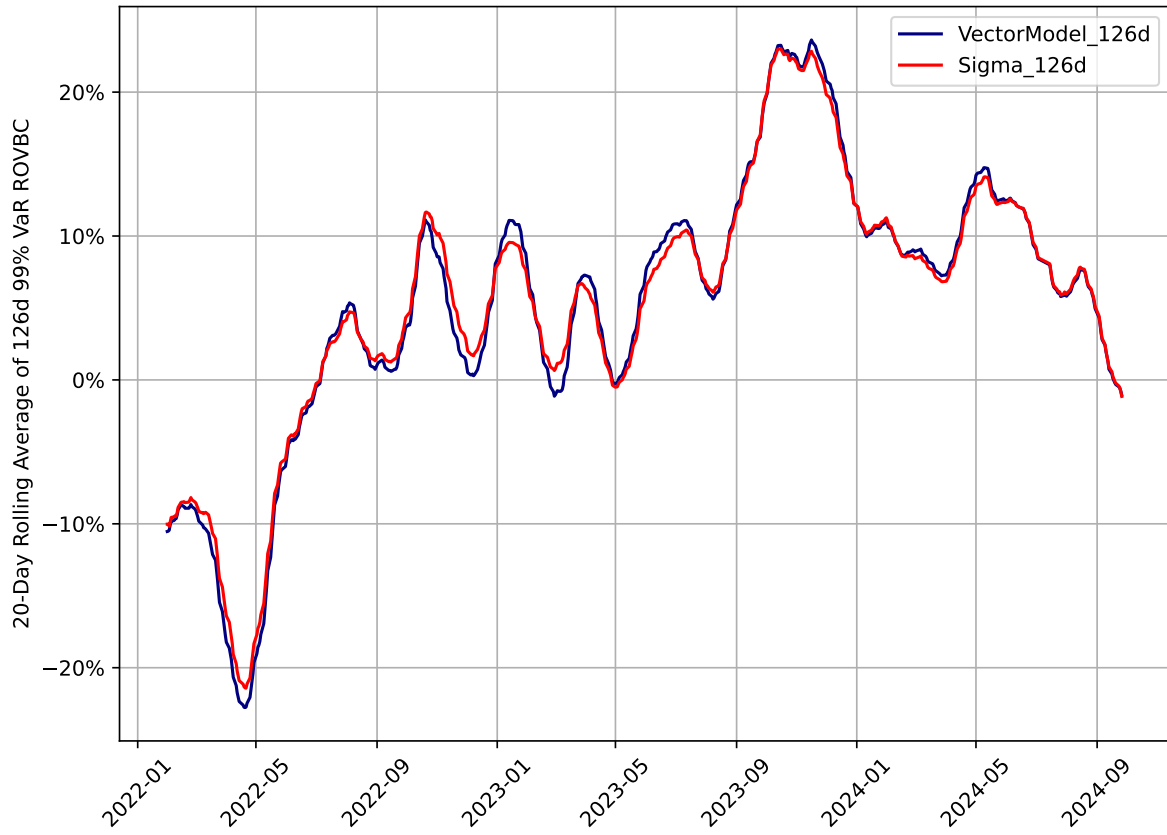
Rolling 20d 99% ROVBC for 63d Fwd Horizon Across All Tickers



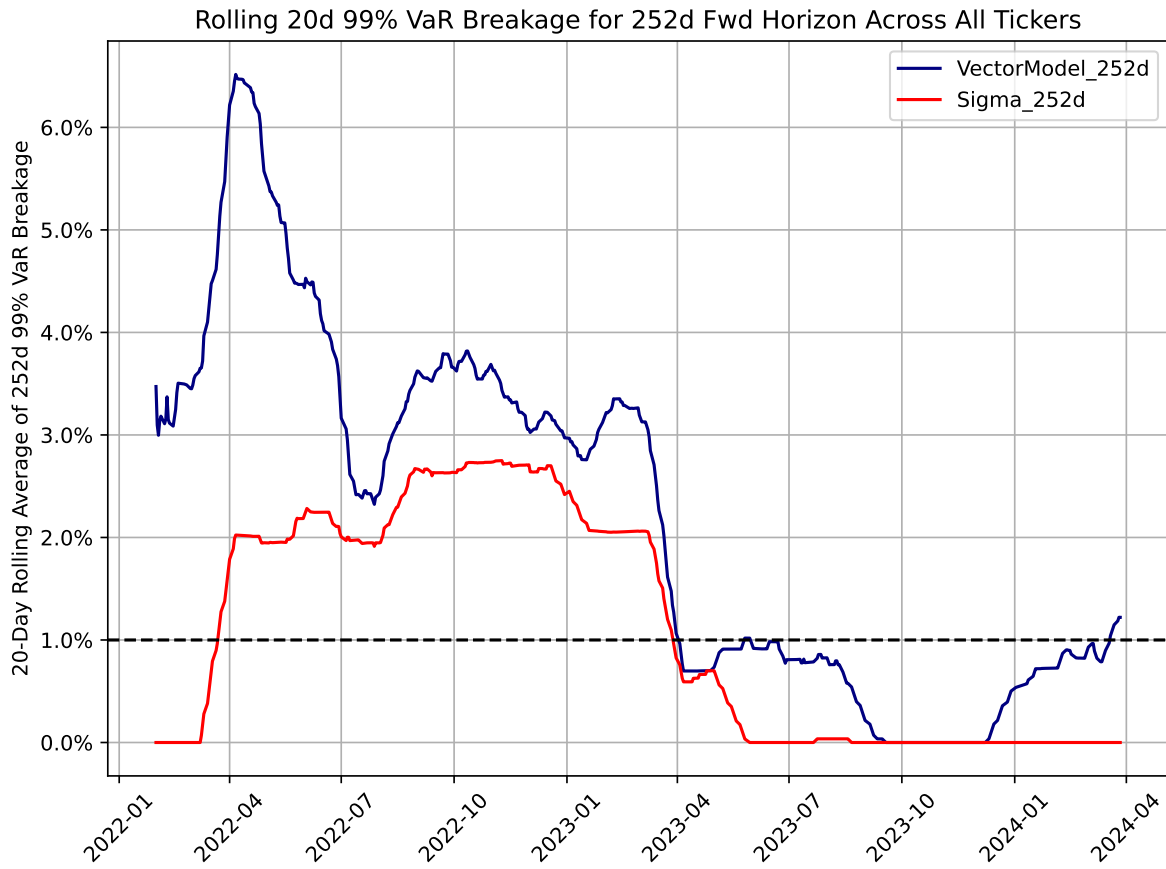
126d Horizon



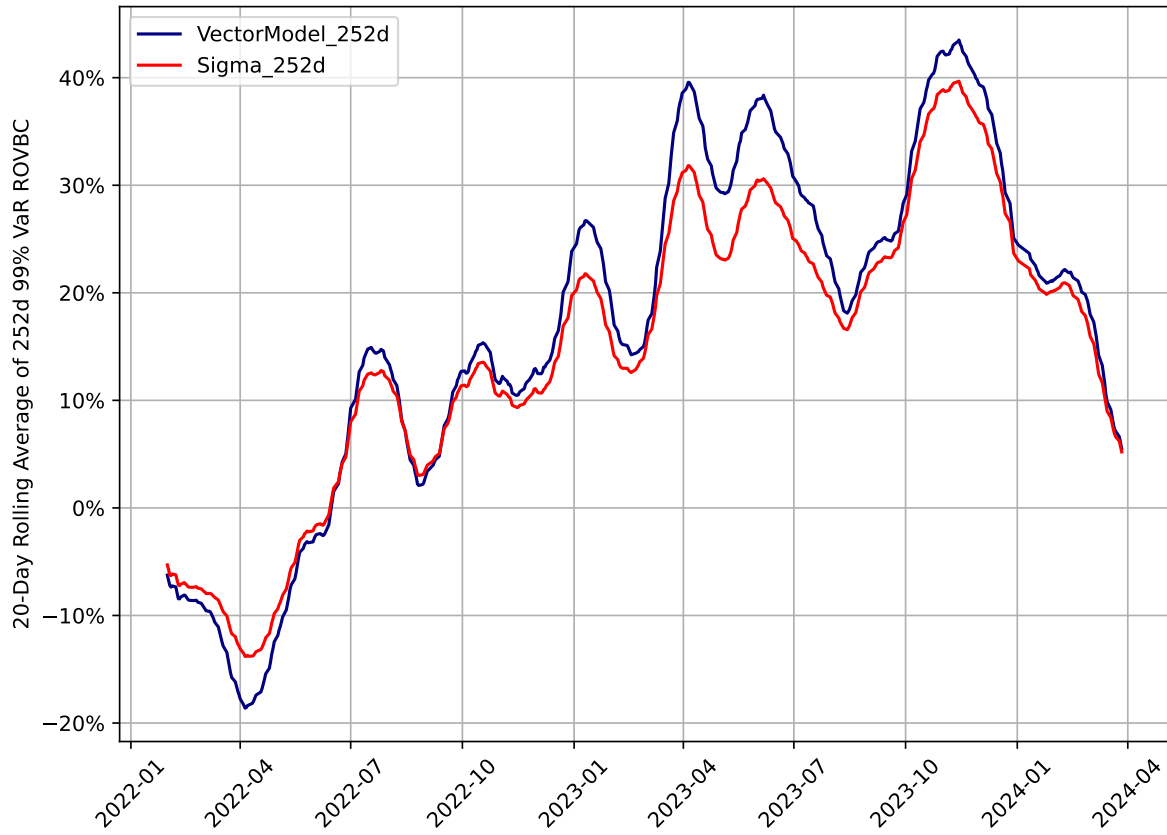
Rolling 20d 99% ROVBC for 126d Fwd Horizon Across All Tickers



252d Horizon



Rolling 20d 99% ROVBC for 252d Fwd Horizon Across All Tickers



Top 30 Tickers By VaR Breakage

All TMD: 1d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
1.0	SBNY	15.61%	SBNY	3.35%
1.0	SIVBQ	10.81%	SIVBQ	2.7%
1.0	TSLA	8.37%	VST	2.69%
1.0	LQD	6.75%	GOOGL	2.62%
1.0	GOLD	5.89%	ACGL	2.59%
1.0	FRCB	5.76%	IRM	2.58%
1.0	GME	5.13%	TRGP	2.55%
1.0	ZTS	4.27%	SPY	2.55%
1.0	JAZZ	4.07%	QCOM	2.45%
1.0	ISRG	3.68%	CMG	2.45%
1.0	AAP	3.6%	PWR	2.35%
1.0	FRA	3.57%	QQQ	2.34%
1.0	CHTR	3.52%	UNH	2.33%
1.0	MSTR	3.42%	VZ	2.32%
1.0	AMC	3.23%	PEP	2.31%
1.0	BUD	3.19%	NVDA	2.3%
1.0	CDNS	3.0%	NVS	2.3%
1.0	SLV	2.7%	LEN	2.21%
1.0	GNRC	2.66%	HSBC	2.17%
1.0	BXP	2.56%	FRCB	2.16%
1.0	KALU	2.47%	MSFT	2.12%
1.0	EXPE	2.24%	INTU	2.09%
1.0	GSK	2.19%	WFC	2.08%
1.0	PRGO	2.09%	MUB	2.04%
1.0	VZ	2.06%	GS	2.04%
1.0	TLT	1.96%	VCSH	2.04%
1.0	QCOM	1.94%	ZTS	1.94%
1.0	CMA	1.82%	MS	1.94%
1.0	VCSH	1.78%	ABBV	1.94%
1.0	OXY	1.71%	AMAT	1.92%



All TMD: 10d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
10.0	SBNY	18.96%	SIVBQ	7.72%
10.0	SIVBQ	15.44%	FRCB	5.4%
10.0	AAP	9.87%	SBNY	5.2%
10.0	TSLA	9.7%	MUB	4.96%
10.0	CHTR	8.58%	AAP	4.4%
10.0	AMC	8.58%	CTLT	4.23%
10.0	GOLD	7.31%	LW	3.67%
10.0	LQD	6.86%	FIS	3.62%
10.0	FRCB	5.4%	CHTR	3.51%
10.0	CVS	5.0%	PCG	3.4%
10.0	MSTR	4.51%	CVS	3.21%
10.0	ISRG	4.33%	GSK	3.08%
10.0	KALU	4.02%	IEP	3.05%
10.0	VCSH	3.94%	WDC	2.86%
10.0	GME	3.87%	COST	2.81%
10.0	GSK	3.85%	BALL	2.75%
10.0	SNY	3.56%	GT	2.69%
10.0	ZTS	3.49%	BAC	2.57%
10.0	CTLT	3.38%	ABBV	2.45%
10.0	NEM	3.31%	NEM	2.38%
10.0	GNRC	3.21%	EXPE	2.37%
10.0	EXPE	3.15%	WFC	2.33%
10.0	EMB	2.93%	VZ	2.32%
10.0	META	2.86%	AZN	2.3%
10.0	LW	2.76%	VST	2.3%
10.0	BIIB	2.61%	MRK	2.29%
10.0	CMA	2.59%	EMB	2.29%
10.0	BHC	2.59%	SNY	2.29%
10.0	AMZN	2.23%	FRA	2.29%
10.0	ORCL	2.16%	WRK	2.28%



All TMD: 21d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
21.0	SBNY	24.54%	SIVBQ	10.04%
21.0	SIVBQ	16.99%	FRCB	8.27%
21.0	CHTR	12.86%	SBNY	7.43%
21.0	AMC	10.22%	LW	6.03%
21.0	TSLA	9.76%	GSK	5.64%
21.0	FRCB	9.35%	MUB	5.06%
21.0	VCSH	9.34%	CTLT	3.75%
21.0	AAP	6.16%	WDC	3.6%
21.0	GOLD	5.72%	NEM	3.5%
21.0	LQD	5.71%	AAP	3.42%
21.0	BIIB	4.94%	SNY	3.37%
21.0	GSK	4.59%	IEP	3.26%
21.0	NEM	4.45%	INTC	3.09%
21.0	GNRC	4.28%	CHTR	3.05%
21.0	KEY	4.0%	COST	3.0%
21.0	CMA	3.97%	AMZN	2.94%
21.0	BUD	3.77%	EMB	2.86%
21.0	CTLT	3.75%	NFLX	2.85%
21.0	KALU	3.57%	KEY	2.71%
21.0	META	3.45%	ZION	2.71%
21.0	ZION	3.39%	VFC	2.65%
21.0	BHC	3.2%	BHC	2.64%
21.0	EMB	3.12%	TEVA	2.63%
21.0	AMZN	3.07%	VCSH	2.59%
21.0	FIS	3.03%	TFC	2.57%
21.0	IEP	2.85%	PCG	2.55%
21.0	MSTR	2.77%	USB	2.54%
21.0	CVS	2.75%	CMA	2.52%
21.0	VFC	2.51%	FRA	2.46%
21.0	SNY	2.46%	CVS	2.36%



All TMD: 63d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
63.0	SBNY	50.19%	SIVBQ	23.94%
63.0	SIVBQ	28.19%	SBNY	22.68%
63.0	FRCB	23.02%	FRCB	22.3%
63.0	CHTR	19.92%	IEP	8.63%
63.0	AMC	14.57%	GSK	8.59%
63.0	AAP	11.32%	BHC	8.53%
63.0	VCSH	10.01%	MUB	5.49%
63.0	ZION	8.05%	PCG	5.25%
63.0	LQD	7.82%	CTLT	4.45%
63.0	GSK	6.09%	KEY	3.95%
63.0	GOLD	6.06%	NEM	3.72%
63.0	MSTR	5.72%	EMB	3.71%
63.0	GNRC	5.57%	USB	3.4%
63.0	BHC	5.0%	VZ	3.06%
63.0	CMA	4.76%	VCSH	3.02%
63.0	KEY	4.55%	ZION	3.02%
63.0	BUD	4.54%	CMA	2.94%
63.0	TLT	4.34%	HCA	2.52%
63.0	BMY	4.26%	X	2.45%
63.0	META	3.79%	BUD	2.34%
63.0	BXP	3.38%	TFC	2.14%
63.0	EMB	3.16%	AZN	2.07%
63.0	NEM	3.15%	SNY	1.92%
63.0	BIIB	3.11%	LQD	1.92%
63.0	VNO	3.08%	CLF	1.86%
63.0	ON	3.07%	AA	1.84%
63.0	CTLT	2.76%	FCX	1.55%
63.0	NWL	2.4%	NFLX	1.44%
63.0	FRA	2.33%	GOLD	1.41%
63.0	NFLX	2.3%	HYG	1.37%



All TMD: 126d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
126.0	SBNY	69.14%	SIVBQ	46.72%
126.0	SIVBQ	48.26%	FRCB	44.96%
126.0	FRCB	44.96%	SBNY	44.61%
126.0	AAP	26.58%	IEP	18.93%
126.0	AMC	23.44%	GSK	14.24%
126.0	CHTR	21.88%	BHC	4.34%
126.0	GSK	11.21%	BALL	3.69%
126.0	BXP	9.98%	LW	3.24%
126.0	VFC	9.72%	NEM	2.82%
126.0	VCSH	9.0%	EMB	2.7%
126.0	GNRC	6.31%	VZ	1.83%
126.0	CTLT	6.27%	VCSH	1.5%
126.0	TLT	5.29%	MUB	0.9%
126.0	CMA	5.21%	CHTR	0.76%
126.0	BHC	5.14%	CTLT	0.51%
126.0	OXY	4.01%	INTC	0.46%
126.0	ZION	3.92%	HYG	0.15%
126.0	GOLD	3.38%	PCG	0.0%
126.0	VNO	2.66%	PEP	0.0%
126.0	NEM	2.51%	OXY	0.0%
126.0	LQD	2.4%	ON	0.0%
126.0	BIIB	2.17%	NWL	0.0%
126.0	SNY	2.1%	NVS	0.0%
126.0	META	2.0%	ORCL	0.0%
126.0	EMB	1.65%	NVDA	0.0%
126.0	FIS	1.22%	NFLX	0.0%
126.0	HYG	1.05%	ORLY	0.0%
126.0	CNC	0.96%	AA	0.0%
126.0	MSTR	0.8%	NAVI	0.0%
126.0	EXPE	0.78%	MU	0.0%



All TMD: 252d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
252.0	SBNY	94.8%	SIVBQ	91.12%
252.0	SIVBQ	91.12%	FRCB	90.29%
252.0	FRCB	89.21%	SBNY	72.12%
252.0	AMC	43.38%	IEP	37.8%
252.0	AAP	32.65%	LW	0.19%
252.0	BXP	18.06%	AA	0.0%
252.0	VFC	16.77%	NAVI	0.0%
252.0	CHTR	15.92%	NEM	0.0%
252.0	BIIB	11.92%	NFLX	0.0%
252.0	CMA	9.87%	NVDA	0.0%
252.0	VNO	7.2%	NVS	0.0%
252.0	ZION	7.12%	ON	0.0%
252.0	KEY	3.89%	NWL	0.0%
252.0	CTLT	3.88%	MU	0.0%
252.0	GNRC	3.73%	ORCL	0.0%
252.0	BHC	3.58%	ORLY	0.0%
252.0	BMJ	2.78%	OXY	0.0%
252.0	VCSH	2.77%	PCG	0.0%
252.0	MRK	2.04%	PEP	0.0%
252.0	FIS	1.69%	MUB	0.0%
252.0	EMB	1.66%	MSI	0.0%
252.0	GSK	1.31%	MSTR	0.0%
252.0	ELAN	1.21%	POST	0.0%
252.0	TLT	1.11%	KALU	0.0%
252.0	FITB	0.77%	KEY	0.0%
252.0	NEM	0.39%	KHC	0.0%
252.0	CVS	0.19%	LEN	0.0%
252.0	LW	0.0%	LLY	0.0%
252.0	POST	0.0%	LNC	0.0%
252.0	META	0.0%	LQD	0.0%



P30D: 1d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates in the period examined for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
1.0	NAVI	15.0%	ISRG	21.43%
1.0	VZ	15.0%	HLT	20.0%
1.0	ISRG	14.29%	CCL	16.67%
1.0	MU	11.11%	META	15.0%
1.0	TSLA	11.11%	COST	15.0%
1.0	BBY	10.53%	GS	15.0%
1.0	LQD	10.0%	VFC	11.76%
1.0	SBUX	10.0%	BBY	10.53%
1.0	QCOM	10.0%	SPY	10.0%
1.0	TXN	10.0%	JPM	10.0%
1.0	AMC	10.0%	MS	10.0%
1.0	GOOGL	10.0%	HSBC	10.0%
1.0	MSTR	6.67%	WFC	10.0%
1.0	CLF	5.88%	AAPL	10.0%
1.0	VFC	5.88%	QQQ	10.0%
1.0	CCL	5.56%	SBUX	10.0%
1.0	GME	5.26%	T	10.0%
1.0	UNH	5.26%	LLY	10.0%
1.0	GNRC	5.26%	BAC	10.0%
1.0	ADBE	5.26%	GOOGL	10.0%
1.0	HCA	5.0%	TMUS	6.67%
1.0	WFC	5.0%	CLF	5.88%
1.0	KHC	5.0%	AMZN	5.88%
1.0	LLY	5.0%	MU	5.56%
1.0	MSFT	5.0%	TSLA	5.56%
1.0	ORCL	5.0%	ADBE	5.26%
1.0	T	5.0%	VST	5.26%
1.0	EXPE	5.0%	GBTC	5.26%
1.0	ZTS	5.0%	GME	5.26%
1.0	CHTR	5.0%	AZO	5.26%



P30D: 10d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates in the period examined for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
10.0	LLY	18.18%	COST	36.36%
10.0	EXPE	9.09%	HLT	27.27%
10.0	AA	0.0%	VFC	25.0%
10.0	NWL	0.0%	ISRG	25.0%
10.0	MUB	0.0%	AAPL	9.09%
10.0	NAVI	0.0%	KHC	9.09%
10.0	NEM	0.0%	SBUX	9.09%
10.0	NFLX	0.0%	BBY	9.09%
10.0	NVDA	0.0%	NWL	0.0%
10.0	NVS	0.0%	NAVI	0.0%
10.0	ON	0.0%	NEM	0.0%
10.0	MSTR	0.0%	NFLX	0.0%
10.0	ORCL	0.0%	NVDA	0.0%
10.0	ORLY	0.0%	NVS	0.0%
10.0	OXY	0.0%	PEP	0.0%
10.0	PCG	0.0%	PCG	0.0%
10.0	PEP	0.0%	ON	0.0%
10.0	MU	0.0%	MU	0.0%
10.0	MSI	0.0%	ORCL	0.0%
10.0	JAZZ	0.0%	ORLY	0.0%
10.0	LUMN	0.0%	OXY	0.0%
10.0	KALU	0.0%	MUB	0.0%
10.0	KEY	0.0%	MSFT	0.0%
10.0	KHC	0.0%	MSTR	0.0%
10.0	LEN	0.0%	MSI	0.0%
10.0	LNC	0.0%	POST	0.0%
10.0	LQD	0.0%	MS	0.0%
10.0	LVS	0.0%	MRK	0.0%
10.0	MSFT	0.0%	MOS	0.0%
10.0	LW	0.0%	MNST	0.0%



P90D: 1d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
1.0	NAVI	12.73%	ISRG	10.53%
1.0	TSLA	10.0%	MSI	10.0%
1.0	TXN	9.09%	CCL	9.62%
1.0	GOOGL	9.09%	HLT	9.09%
1.0	UNH	7.69%	AAPL	9.09%
1.0	CDNS	7.41%	UNH	7.69%
1.0	AMC	7.41%	GOOGL	7.27%
1.0	ZTS	7.27%	QQQ	7.27%
1.0	HCA	7.27%	PEP	7.27%
1.0	VZ	5.45%	GS	7.27%
1.0	QCOM	5.45%	IRM	7.27%
1.0	AMGN	5.45%	TMUS	6.12%
1.0	ISRG	5.26%	LLY	5.77%
1.0	GNRC	4.17%	KHC	5.66%
1.0	GME	3.85%	VST	5.56%
1.0	AMZN	3.85%	META	5.56%
1.0	BBY	3.85%	BIIB	5.56%
1.0	GOLD	3.77%	HCA	5.45%
1.0	MU	3.77%	MS	5.45%
1.0	AAP	3.77%	JPM	5.45%
1.0	CZR	3.77%	NVDA	5.45%
1.0	CHTR	3.7%	TXN	5.45%
1.0	SBUX	3.64%	COST	5.45%
1.0	CMA	3.64%	ZTS	5.45%
1.0	LQD	3.64%	AMAT	5.45%
1.0	MSFT	3.64%	VFC	4.08%
1.0	AVGO	2.99%	TSLA	4.0%
1.0	MSTR	2.13%	AMZN	3.85%
1.0	VFC	2.04%	BBY	3.85%
1.0	CCL	1.92%	XOM	3.77%



P90D: 10d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
10.0	CZR	19.23%	FIS	22.22%
10.0	AAP	17.65%	MSI	20.83%
10.0	TSLA	16.0%	VFC	18.37%
10.0	ZTS	12.96%	ISRG	17.5%
10.0	CMA	12.96%	WDC	17.31%
10.0	VFC	10.2%	TEVA	16.98%
10.0	AMC	10.0%	MRK	16.67%
10.0	EXPE	9.26%	COST	16.67%
10.0	LLY	8.51%	NWL	14.89%
10.0	ON	5.56%	CCL	14.29%
10.0	BALL	4.17%	BBY	13.46%
10.0	UNH	3.92%	HLT	12.96%
10.0	BHC	2.0%	MS	12.96%
10.0	PWR	1.96%	JPM	12.96%
10.0	WDC	1.92%	GS	11.11%
10.0	FITB	1.85%	CZR	9.62%
10.0	CLF	1.85%	PCG	9.3%
10.0	CDNS	1.85%	EXPE	7.41%
10.0	MRK	0.0%	CDNS	7.41%
10.0	NVDA	0.0%	SBUX	7.41%
10.0	PEP	0.0%	BAC	7.41%
10.0	LW	0.0%	SPY	7.41%
10.0	META	0.0%	AAPL	7.41%
10.0	MNST	0.0%	PWR	5.88%
10.0	PCG	0.0%	QQQ	5.56%
10.0	OXY	0.0%	IRM	5.56%
10.0	ORLY	0.0%	TFC	3.92%
10.0	ORCL	0.0%	FITB	3.7%
10.0	LUMN	0.0%	TRGP	3.7%
10.0	NWL	0.0%	HD	3.7%



P90D: 21d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
21.0	CMA	30.23%	WDC	39.02%
21.0	CZR	19.51%	VFC	34.15%
21.0	WDC	14.63%	TEVA	33.33%
21.0	AMC	7.5%	HLT	25.58%
21.0	VFC	7.32%	CCL	22.5%
21.0	AAP	5.41%	JPM	20.93%
21.0	TSLA	5.0%	COST	16.28%
21.0	ON	4.65%	FIS	13.95%
21.0	GOOGL	2.33%	IRM	13.95%
21.0	ORCL	0.0%	GS	11.63%
21.0	ORLY	0.0%	MRK	11.63%
21.0	MSTR	0.0%	NWL	11.43%
21.0	NVS	0.0%	MSI	10.81%
21.0	OXY	0.0%	ISRG	9.38%
21.0	NVDA	0.0%	MS	9.3%
21.0	PCG	0.0%	HD	9.3%
21.0	NFLX	0.0%	BAC	9.3%
21.0	NEM	0.0%	PCG	8.11%
21.0	NAVI	0.0%	PWR	7.32%
21.0	PEP	0.0%	CDNS	4.65%
21.0	MUB	0.0%	WFC	4.65%
21.0	MU	0.0%	TSLA	2.5%
21.0	NWL	0.0%	CZR	2.44%
21.0	AA	0.0%	META	2.38%
21.0	MSI	0.0%	QQQ	2.33%
21.0	PHM	0.0%	AMZN	2.33%
21.0	MS	0.0%	SPY	2.33%
21.0	MRK	0.0%	MOS	0.0%
21.0	MOS	0.0%	LQD	0.0%
21.0	MNST	0.0%	ORCL	0.0%



P365D: 1d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
1.0	GOLD	6.03%	VST	6.67%
1.0	TSLA	5.15%	NVDA	5.44%
1.0	QCOM	5.02%	AMAT	4.64%
1.0	NAVI	4.18%	CMG	4.6%
1.0	GME	3.57%	IRM	4.56%
1.0	LW	3.45%	UNH	4.24%
1.0	MSTR	3.37%	JPM	4.15%
1.0	TXN	2.95%	CCL	3.88%
1.0	VZ	2.94%	MU	3.86%
1.0	GSK	2.92%	TMUS	3.83%
1.0	AMGN	2.9%	QQQ	3.78%
1.0	CHTR	2.6%	QCOM	3.77%
1.0	CDNS	2.58%	LLY	3.74%
1.0	GOOGL	2.54%	TRGP	3.73%
1.0	HCA	2.52%	GS	3.73%
1.0	CMA	2.51%	PWR	3.42%
1.0	ZTS	2.5%	LEN	3.39%
1.0	BUD	2.49%	TXN	3.38%
1.0	MU	2.15%	WFC	3.35%
1.0	UNH	2.12%	MS	3.32%
1.0	MSFT	2.11%	HLT	3.32%
1.0	WFC	2.09%	PEP	3.32%
1.0	CVS	2.08%	SPY	3.32%
1.0	SBUX	2.07%	WDC	3.08%
1.0	LQD	2.07%	MSI	3.07%
1.0	AMC	1.83%	AVGO	2.98%
1.0	CZR	1.81%	GBTC	2.97%
1.0	AMZN	1.72%	GOOGL	2.97%
1.0	KHC	1.71%	MSFT	2.95%
1.0	SLV	1.67%	INTU	2.94%



P365D: 10d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
10.0	CVS	11.57%	CVS	9.09%
10.0	TSLA	7.63%	MRK	7.41%
10.0	AAP	7.58%	WDC	6.99%
10.0	LW	5.13%	PCG	5.88%
10.0	GSK	4.96%	AZN	5.79%
10.0	ELAN	4.76%	SBUX	5.76%
10.0	ZTS	4.55%	ELAN	5.71%
10.0	BUD	4.53%	CCL	5.42%
10.0	CZR	4.5%	VST	5.37%
10.0	CLF	4.31%	FIS	5.04%
10.0	GOLD	4.27%	GT	4.74%
10.0	CMA	3.73%	CSTM	4.55%
10.0	KALU	3.35%	INTC	4.39%
10.0	NEM	2.92%	MSI	4.37%
10.0	BIIB	2.89%	LW	4.27%
10.0	AMC	2.28%	CDNS	4.26%
10.0	VFC	2.24%	ABBV	4.12%
10.0	EXPE	2.06%	VFC	4.04%
10.0	LLY	1.9%	MU	3.83%
10.0	INTC	1.75%	TEVA	3.81%
10.0	BALL	1.72%	JPM	3.7%
10.0	KHC	1.69%	BUD	3.7%
10.0	ON	1.69%	COST	3.7%
10.0	AZN	1.65%	UNH	3.36%
10.0	LQD	1.65%	KALU	3.35%
10.0	MSTR	1.43%	BAC	3.32%
10.0	CHTR	1.29%	CMG	3.32%
10.0	BHC	1.0%	WFC	3.32%
10.0	LNC	0.92%	MS	3.29%
10.0	CYH	0.87%	IRM	3.29%



P365D: 21d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
21.0	BUD	11.01%	WDC	12.04%
21.0	CVS	9.29%	INTC	10.0%
21.0	TSLA	6.79%	PCG	8.76%
21.0	AAP	6.77%	CVS	7.96%
21.0	ELAN	6.67%	ELAN	7.69%
21.0	GSK	6.67%	TEVA	7.27%
21.0	KALU	6.28%	VFC	6.67%
21.0	ON	5.86%	LW	6.42%
21.0	CMA	5.78%	AZN	6.19%
21.0	BIIB	5.31%	BUD	5.73%
21.0	LW	5.05%	MU	5.45%
21.0	WDC	4.63%	KALU	5.38%
21.0	KHC	4.52%	CMG	4.89%
21.0	CZR	3.86%	HLT	4.85%
21.0	BALL	3.7%	CCL	4.74%
21.0	INTC	2.86%	NEM	3.96%
21.0	CSTM	2.65%	JPM	3.96%
21.0	NEM	2.64%	IRM	3.96%
21.0	HCA	2.22%	FRA	3.96%
21.0	BMY	2.21%	CDNS	3.64%
21.0	LQD	2.2%	CSTM	3.54%
21.0	AA	1.83%	AMAT	3.14%
21.0	AMC	1.48%	GSK	3.11%
21.0	VFC	1.43%	HCA	3.11%
21.0	BHC	1.08%	COST	3.08%
21.0	PRGO	0.55%	GT	3.06%
21.0	GME	0.54%	FIS	2.7%
21.0	CYH	0.46%	UNH	2.7%
21.0	CLF	0.46%	QCOM	2.67%
21.0	CHTR	0.46%	CNC	2.27%



P365D: 63d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
63.0	BUD	17.84%	PCG	21.02%
63.0	AAP	12.58%	BUD	9.19%
63.0	ON	12.29%	AZN	8.15%
63.0	BMJ	2.72%	IRM	4.32%
63.0	GSK	2.7%	MU	2.79%
63.0	CVS	2.7%	HCA	2.76%
63.0	CNC	2.25%	FSUGY	1.12%
63.0	LQD	2.16%	WDC	0.58%
63.0	OXY	1.64%	OXY	0.0%
63.0	GOLD	1.12%	MUB	0.0%
63.0	UAA	0.57%	NAVI	0.0%
63.0	CLF	0.57%	NEM	0.0%
63.0	CMCSA	0.54%	NFLX	0.0%
63.0	PHM	0.0%	PEP	0.0%
63.0	NFLX	0.0%	ORLY	0.0%
63.0	NVDA	0.0%	NVDA	0.0%
63.0	NVS	0.0%	MSTR	0.0%
63.0	NWL	0.0%	NWL	0.0%
63.0	PEP	0.0%	ON	0.0%
63.0	NAVI	0.0%	ORCL	0.0%
63.0	LEN	0.0%	NVS	0.0%
63.0	ORCL	0.0%	MSFT	0.0%
63.0	ORLY	0.0%	MSI	0.0%
63.0	PCG	0.0%	LUMN	0.0%
63.0	NEM	0.0%	KEY	0.0%
63.0	MUB	0.0%	KHC	0.0%
63.0	LUMN	0.0%	LEN	0.0%
63.0	LLY	0.0%	LLY	0.0%
63.0	PRGO	0.0%	LNC	0.0%
63.0	MU	0.0%	LQD	0.0%



P365D: 126d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
126.0	AAP	38.89%	AA	0.0%
126.0	OXY	20.66%	AAP	0.0%
126.0	BIIB	8.94%	MSTR	0.0%
126.0	CNC	5.13%	MU	0.0%
126.0	CLF	1.71%	MUB	0.0%
126.0	GSK	1.63%	NAVI	0.0%
126.0	MRK	0.81%	NEM	0.0%
126.0	NVDA	0.0%	NFLX	0.0%
126.0	MUB	0.0%	NVDA	0.0%
126.0	NAVI	0.0%	NVS	0.0%
126.0	NEM	0.0%	NWL	0.0%
126.0	NFLX	0.0%	ON	0.0%
126.0	AA	0.0%	ORCL	0.0%
126.0	NVS	0.0%	ORLY	0.0%
126.0	MU	0.0%	OXY	0.0%
126.0	ON	0.0%	PCG	0.0%
126.0	ORCL	0.0%	PEP	0.0%
126.0	ORLY	0.0%	MSI	0.0%
126.0	PCG	0.0%	MSFT	0.0%
126.0	PEP	0.0%	MS	0.0%
126.0	NWL	0.0%	LNC	0.0%
126.0	MSTR	0.0%	JPM	0.0%
126.0	POST	0.0%	KALU	0.0%
126.0	MSI	0.0%	KEY	0.0%
126.0	MSFT	0.0%	KHC	0.0%
126.0	MS	0.0%	LEN	0.0%
126.0	MOS	0.0%	LLY	0.0%
126.0	MNST	0.0%	LQD	0.0%
126.0	META	0.0%	MRK	0.0%
126.0	LW	0.0%	LUMN	0.0%



Top 30 Tickers By ROVBC

All TMD: 1d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
1.0	MSTR	0.56%	MSTR	0.5%
1.0	GME	0.49%	VST	0.25%
1.0	INTU	0.19%	NVDA	0.25%
1.0	AAPL	0.18%	GME	0.22%
1.0	NFLX	0.15%	AVGO	0.19%
1.0	GNRC	0.14%	LLY	0.18%
1.0	VST	0.12%	PWR	0.18%
1.0	AVGO	0.12%	GBTC	0.18%
1.0	NWL	0.12%	TRGP	0.17%
1.0	NVDA	0.11%	GE	0.15%
1.0	META	0.11%	TMUS	0.14%
1.0	XOM	0.11%	NFLX	0.13%
1.0	ORCL	0.1%	CAH	0.12%
1.0	TDG	0.1%	PHM	0.12%
1.0	TMUS	0.1%	CDNS	0.12%
1.0	GWG	0.1%	TDG	0.11%
1.0	LLY	0.09%	ACGL	0.11%
1.0	TRGP	0.09%	ETRN	0.11%
1.0	WYNN	0.08%	ORCL	0.11%
1.0	AMZN	0.08%	ORLY	0.11%
1.0	ISRG	0.08%	ISRG	0.1%
1.0	GBTC	0.07%	X	0.1%
1.0	QCOM	0.07%	TEVA	0.1%
1.0	PWR	0.07%	GWG	0.1%
1.0	ABBV	0.07%	THC	0.1%
1.0	CTLT	0.07%	CMG	0.09%
1.0	THC	0.07%	COST	0.09%
1.0	ORLY	0.07%	IRM	0.09%
1.0	HCA	0.06%	PCG	0.09%
1.0	HD	0.06%	AZO	0.09%



All TMD: 10d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
10.0	MSTR	8.06%	MSTR	4.52%
10.0	GME	4.8%	VST	2.67%
10.0	NFLX	1.84%	NVDA	2.58%
10.0	VST	1.76%	LLY	1.91%
10.0	NVDA	1.6%	AVGO	1.9%
10.0	META	1.59%	GBTC	1.71%
10.0	LLY	1.28%	GME	1.69%
10.0	ETRN	1.26%	TRGP	1.68%
10.0	GBTC	1.25%	NFLX	1.53%
10.0	AAPL	1.25%	META	1.45%
10.0	TEVA	1.23%	PWR	1.43%
10.0	CTLT	1.15%	ETRN	1.41%
10.0	INTU	1.1%	CAH	1.38%
10.0	XOM	1.1%	GE	1.33%
10.0	AVGO	1.09%	TEVA	1.24%
10.0	CAH	1.02%	X	1.19%
10.0	ORCL	1.01%	PHM	1.17%
10.0	TMUS	1.01%	TMUS	1.15%
10.0	SLV	1.0%	TDG	1.12%
10.0	TRGP	0.92%	ORLY	1.04%
10.0	GE	0.81%	THC	1.02%
10.0	MSI	0.8%	GWW	1.01%
10.0	ABBV	0.76%	ACGL	1.0%
10.0	HCA	0.76%	ORCL	0.99%
10.0	GWW	0.72%	IRM	0.97%
10.0	OXY	0.71%	ISRG	0.95%
10.0	TDG	0.7%	CDNS	0.89%
10.0	HLT	0.68%	COST	0.87%
10.0	DHI	0.66%	AZO	0.87%
10.0	GS	0.65%	MSI	0.87%



All TMD: 21d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
21.0	MSTR	18.36%	MSTR	9.86%
21.0	GME	8.22%	VST	5.8%
21.0	NFLX	5.53%	NVDA	5.62%
21.0	META	5.08%	LLY	4.14%
21.0	VST	4.17%	GBTC	4.0%
21.0	GBTC	3.82%	AVGO	3.78%
21.0	NVDA	3.43%	META	3.6%
21.0	TEVA	2.96%	NFLX	3.54%
21.0	LLY	2.81%	ETRN	3.51%
21.0	ETRN	2.54%	TRGP	3.48%
21.0	AVGO	2.49%	GE	3.08%
21.0	XOM	2.47%	PWR	2.97%
21.0	TMUS	2.27%	CAH	2.85%
21.0	CAH	2.25%	X	2.73%
21.0	CTLT	2.25%	PHM	2.68%
21.0	ORCL	2.21%	TEVA	2.48%
21.0	GE	2.07%	TMUS	2.45%
21.0	INTU	2.05%	TDG	2.35%
21.0	TRGP	2.03%	ORCL	2.34%
21.0	SLV	1.75%	GWG	2.33%
21.0	HCA	1.72%	ORLY	2.23%
21.0	GILD	1.72%	THC	2.22%
21.0	ABBV	1.72%	IRM	2.21%
21.0	AAPL	1.69%	ACGL	2.14%
21.0	MSI	1.61%	COST	2.08%
21.0	GWG	1.59%	ISRG	2.05%
21.0	THC	1.45%	GME	2.04%
21.0	IRM	1.42%	MSI	2.01%
21.0	TDG	1.36%	AZO	1.99%
21.0	AMGN	1.35%	GILD	1.94%



All TMD: 63d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
63.0	MSTR	37.0%	MSTR	30.87%
63.0	META	24.15%	VST	20.6%
63.0	VST	16.31%	NVDA	20.02%
63.0	NVDA	15.87%	GBTC	13.27%
63.0	NFLX	15.03%	AVGO	13.18%
63.0	AVGO	14.35%	META	13.13%
63.0	GBTC	11.36%	NFLX	12.18%
63.0	LLY	10.63%	LLY	11.74%
63.0	ETRN	10.21%	ETRN	10.42%
63.0	CTLT	9.38%	GE	10.24%
63.0	GME	9.02%	TRGP	10.12%
63.0	TEVA	8.69%	PHM	9.41%
63.0	ORCL	8.12%	PWR	8.68%
63.0	AMZN	7.98%	TEVA	8.15%
63.0	CAH	7.37%	CAH	7.88%
63.0	TMUS	7.31%	ORCL	7.29%
63.0	GILD	7.29%	THC	7.24%
63.0	ISRG	7.17%	TDG	7.19%
63.0	GE	6.82%	GWV	7.02%
63.0	TRGP	5.94%	ISRG	6.97%
63.0	TDG	5.89%	ACGL	6.83%
63.0	PWR	5.3%	IRM	6.62%
63.0	CMG	5.26%	CMG	6.54%
63.0	GOOGL	5.05%	MSI	6.41%
63.0	XOM	5.04%	TMUS	6.21%
63.0	MSI	5.01%	DHI	6.16%
63.0	ACGL	4.98%	ORLY	6.09%
63.0	GWV	4.94%	CPRT	5.9%
63.0	THC	4.88%	JPM	5.9%
63.0	LEN	4.82%	CDNS	5.83%



All TMD: 126d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
126.0	MSTR	100.21%	MSTR	77.19%
126.0	META	65.47%	NVDA	54.86%
126.0	NVDA	51.29%	VST	47.59%
126.0	VST	44.08%	GBTC	40.42%
126.0	GBTC	41.3%	META	31.96%
126.0	NFLX	38.46%	NFLX	29.43%
126.0	AVGO	36.31%	AVGO	28.17%
126.0	LLY	30.64%	GE	25.23%
126.0	ORCL	22.74%	LLY	24.34%
126.0	TEVA	22.64%	PHM	23.02%
126.0	ISRG	22.58%	TRGP	22.82%
126.0	AMZN	21.82%	THC	20.46%
126.0	GE	19.64%	PWR	19.75%
126.0	CAH	18.41%	ETRN	18.67%
126.0	GILD	18.39%	ORCL	18.29%
126.0	ETRN	18.32%	TEVA	17.84%
126.0	TDG	18.15%	ISRG	17.35%
126.0	TMUS	16.48%	TDG	17.28%
126.0	TSLA	16.45%	IRM	16.9%
126.0	TRGP	16.36%	GWV	16.89%
126.0	THC	16.25%	CAH	16.71%
126.0	GOOGL	15.97%	ACGL	16.36%
126.0	GWV	15.92%	CMG	15.76%
126.0	MSI	15.26%	DHI	15.71%
126.0	AMD	15.14%	MSI	15.28%
126.0	PWR	15.03%	CPRT	14.05%
126.0	LEN	14.67%	CCL	14.03%
126.0	PHM	14.49%	LEN	13.8%
126.0	IRM	14.31%	JPM	13.74%
126.0	INTU	13.89%	ORLY	13.28%



All TMD: 252d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
252.0	MSTR	284.97%	MSTR	234.72%
252.0	VST	168.9%	NVDA	159.75%
252.0	NVDA	155.95%	VST	131.63%
252.0	META	144.76%	GBTC	131.1%
252.0	GBTC	131.64%	META	86.51%
252.0	AVGO	109.13%	AVGO	74.54%
252.0	NFLX	87.81%	NFLX	67.39%
252.0	AMZN	74.73%	GE	64.74%
252.0	ISRG	69.17%	PHM	63.65%
252.0	GE	64.45%	LLY	61.38%
252.0	THC	63.93%	THC	54.41%
252.0	ORCL	63.37%	TRGP	51.09%
252.0	TDG	60.71%	PWR	44.36%
252.0	PHM	56.36%	TDG	44.09%
252.0	TEVA	55.44%	TEVA	41.81%
252.0	INTU	55.32%	DHI	41.06%
252.0	LLY	53.16%	ISRG	39.83%
252.0	LEN	49.33%	IRM	39.65%
252.0	GOOGL	47.21%	ACGL	39.27%
252.0	TRGP	46.91%	ORCL	38.92%
252.0	GWW	46.5%	CMG	38.41%
252.0	COST	46.49%	LEN	37.23%
252.0	MSI	44.59%	GWW	37.06%
252.0	CAH	41.57%	ETRN	35.88%
252.0	DHI	41.55%	AMAT	35.45%
252.0	IRM	41.43%	AMD	35.3%
252.0	AMD	41.43%	CCL	34.41%
252.0	PWR	39.39%	CPRT	34.27%
252.0	AMAT	39.04%	AMZN	32.66%
252.0	QQQ	37.83%	CDNS	32.59%



P30D: 1d

Results reflect ticker level average 99% VaR based ROVBC across all model dates in the period examined for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
1.0	MSTR	1.73%	MSTR	2.32%
1.0	UNH	1.25%	MOS	0.75%
1.0	GOLD	0.63%	UNH	0.61%
1.0	NEM	0.54%	AAP	0.55%
1.0	PWR	0.52%	HCA	0.54%
1.0	AMD	0.42%	NEM	0.5%
1.0	HCA	0.39%	XOM	0.5%
1.0	AAP	0.37%	AZO	0.48%
1.0	LW	0.31%	OXY	0.47%
1.0	VZ	0.31%	X	0.45%
1.0	OXY	0.3%	THC	0.41%
1.0	SLV	0.26%	INTC	0.41%
1.0	MOS	0.26%	CDNS	0.4%
1.0	THC	0.24%	GLD	0.39%
1.0	XOM	0.24%	SLV	0.39%
1.0	X	0.23%	FCX	0.38%
1.0	CDNS	0.22%	GOLD	0.38%
1.0	CMCSA	0.21%	LW	0.34%
1.0	ORLY	0.21%	DHI	0.34%
1.0	MNST	0.2%	CAH	0.33%
1.0	DHI	0.19%	PWR	0.31%
1.0	GNRC	0.18%	MNST	0.3%
1.0	BA	0.16%	GT	0.28%
1.0	BMV	0.14%	AMD	0.27%
1.0	AZO	0.14%	CVS	0.22%
1.0	GLD	0.13%	BA	0.22%
1.0	GSK	0.12%	ORLY	0.21%
1.0	CAH	0.12%	VZ	0.19%
1.0	CVS	0.11%	CNC	0.18%
1.0	GT	0.1%	FIS	0.18%



P30D: 10d

Results reflect ticker level average 99% VaR based ROVBC across all model dates in the period examined for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
10.0	MSTR	23.19%	MSTR	22.46%
10.0	UNH	14.51%	INTC	12.34%
10.0	NEM	11.77%	X	11.32%
10.0	BA	11.4%	MOS	10.9%
10.0	X	10.13%	BA	9.94%
10.0	AMD	7.95%	FCX	9.33%
10.0	FCX	7.62%	NEM	8.7%
10.0	INTC	6.11%	AMD	7.56%
10.0	PWR	5.92%	CDNS	7.45%
10.0	GE	5.09%	TRGP	7.13%
10.0	GOLD	4.94%	XOM	6.48%
10.0	MOS	4.81%	VST	6.12%
10.0	VST	4.59%	UNH	6.08%
10.0	LW	4.42%	PWR	6.03%
10.0	CMCSA	4.29%	AAP	5.75%
10.0	THC	3.96%	CAH	5.3%
10.0	HCA	3.47%	FIS	5.25%
10.0	NFLX	3.35%	GOLD	4.82%
10.0	XOM	3.27%	OXY	4.74%
10.0	OXY	3.25%	PCG	4.67%
10.0	CDNS	3.18%	HCA	4.66%
10.0	SLV	3.14%	MNST	4.17%
10.0	CVS	3.03%	GE	4.16%
10.0	MS	3.0%	THC	4.15%
10.0	FIS	2.99%	LW	4.02%
10.0	AAP	2.97%	NFLX	3.76%
10.0	MU	2.96%	GLD	3.72%
10.0	TSLA	2.95%	ACGL	3.21%
10.0	CAH	2.49%	CVS	3.04%
10.0	TRGP	2.48%	AZO	3.01%



P90D: 1d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
1.0	INTC	0.76%	INTC	1.03%
1.0	BUD	0.67%	TMUS	0.54%
1.0	PRGO	0.59%	T	0.53%
1.0	GOLD	0.54%	BUD	0.52%
1.0	NEM	0.4%	MSTR	0.5%
1.0	GILD	0.39%	GOLD	0.47%
1.0	VZ	0.39%	GILD	0.46%
1.0	GSK	0.38%	PRGO	0.45%
1.0	UNH	0.34%	NEM	0.43%
1.0	SLV	0.32%	GSK	0.4%
1.0	ORLY	0.31%	GT	0.39%
1.0	CMCSA	0.29%	HSBC	0.38%
1.0	MSTR	0.29%	GE	0.37%
1.0	T	0.28%	SLV	0.35%
1.0	AMGN	0.26%	GLD	0.34%
1.0	CVS	0.25%	VZ	0.33%
1.0	ABBV	0.24%	MNST	0.33%
1.0	NVS	0.23%	ABBV	0.31%
1.0	SNY	0.23%	X	0.29%
1.0	SBUX	0.22%	AMGN	0.29%
1.0	CHTR	0.2%	ORLY	0.28%
1.0	TMUS	0.2%	LNC	0.28%
1.0	GE	0.2%	CVS	0.27%
1.0	GT	0.19%	SNY	0.27%
1.0	WYNN	0.17%	CAH	0.26%
1.0	QCOM	0.16%	AZO	0.25%
1.0	BHC	0.16%	AZN	0.25%
1.0	BMJ	0.16%	HCA	0.24%
1.0	MNST	0.16%	NVS	0.24%
1.0	ZTS	0.16%	NFLX	0.23%



P90D: 10d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
10.0	CVS	13.24%	INTC	8.77%
10.0	BUD	8.78%	CVS	7.51%
10.0	GOLD	5.78%	BUD	5.92%
10.0	NEM	4.67%	TMUS	4.97%
10.0	INTC	4.35%	T	4.63%
10.0	GSK	3.53%	GOLD	4.54%
10.0	SNY	3.51%	X	4.45%
10.0	AMGN	3.47%	NEM	4.28%
10.0	ABBV	3.36%	GILD	4.12%
10.0	X	3.28%	HSBC	3.85%
10.0	GILD	3.2%	LNC	3.56%
10.0	GE	3.15%	GE	3.49%
10.0	MU	3.12%	ABBV	3.42%
10.0	SLV	2.93%	GSK	3.36%
10.0	NVS	2.28%	AMGN	3.3%
10.0	AZN	2.16%	MNST	3.05%
10.0	HSBC	2.15%	VZ	2.78%
10.0	LNC	2.15%	SNY	2.77%
10.0	TMUS	2.08%	GT	2.7%
10.0	BA	1.92%	GLD	2.69%
10.0	JAZZ	1.88%	AZN	2.65%
10.0	VZ	1.87%	JAZZ	2.6%
10.0	UNH	1.8%	NFLX	2.55%
10.0	CMCSA	1.72%	ORLY	2.51%
10.0	CSTM	1.55%	NVS	2.45%
10.0	T	1.55%	SLV	2.34%
10.0	SBUX	1.39%	AZO	2.29%
10.0	NFLX	1.33%	LLY	2.21%
10.0	GLD	1.31%	VICI	2.18%
10.0	CHTR	1.3%	CAH	1.86%



P90D: 21d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
21.0	CVS	27.03%	CVS	15.35%
21.0	BUD	24.99%	BUD	14.83%
21.0	GOLD	14.77%	TMUS	11.63%
21.0	ABBV	12.5%	GILD	11.38%
21.0	AMGN	12.09%	ABBV	10.46%
21.0	GILD	9.66%	T	10.29%
21.0	GSK	9.38%	GOLD	10.06%
21.0	SNY	8.99%	HSBC	8.19%
21.0	NEM	7.67%	AMGN	8.19%
21.0	TMUS	6.17%	GSK	8.15%
21.0	SLV	5.93%	INTC	7.53%
21.0	GE	5.51%	NEM	7.18%
21.0	CSTM	5.46%	MNST	6.96%
21.0	NVS	5.28%	SNY	6.67%
21.0	AZN	4.92%	JAZZ	6.65%
21.0	SBUX	4.63%	X	6.6%
21.0	VZ	4.37%	VZ	6.59%
21.0	JAZZ	3.77%	AZN	6.59%
21.0	LNC	3.74%	NVS	6.25%
21.0	PRGO	3.73%	LNC	6.22%
21.0	X	3.67%	PRGO	6.19%
21.0	INTC	3.61%	GE	5.66%
21.0	T	3.42%	GLD	5.34%
21.0	AZO	3.38%	AZO	5.27%
21.0	CHTR	3.12%	ORLY	5.15%
21.0	HSBC	3.09%	VICI	5.0%
21.0	GLD	2.94%	SLV	4.9%
21.0	LLY	2.88%	CSTM	4.9%
21.0	VICI	2.54%	LLY	4.65%
21.0	MNST	2.51%	SBUX	4.35%



P365D: 1d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
1.0	GME	1.53%	GME	0.76%
1.0	MSTR	0.72%	LUMN	0.55%
1.0	NWL	0.55%	MSTR	0.53%
1.0	TSLA	0.31%	TSLA	0.39%
1.0	CHTR	0.28%	VST	0.29%
1.0	SLV	0.22%	T	0.26%
1.0	UNH	0.2%	TMUS	0.25%
1.0	EXPE	0.2%	TRGP	0.24%
1.0	VFC	0.2%	VNO	0.23%
1.0	BHC	0.18%	AVGO	0.23%
1.0	LUMN	0.17%	CHTR	0.23%
1.0	PRGO	0.16%	GILD	0.21%
1.0	LNC	0.15%	GE	0.21%
1.0	GILD	0.14%	NFLX	0.21%
1.0	NEM	0.13%	HSBC	0.19%
1.0	SBUX	0.13%	GS	0.19%
1.0	QCOM	0.12%	EXPE	0.17%
1.0	VST	0.12%	SLV	0.16%
1.0	ABBV	0.11%	AAPL	0.15%
1.0	ORCL	0.11%	PWR	0.15%
1.0	NFLX	0.11%	NVDA	0.15%
1.0	WFC	0.11%	WFC	0.15%
1.0	T	0.11%	MS	0.14%
1.0	META	0.1%	ISRG	0.14%
1.0	ZTS	0.09%	VFC	0.14%
1.0	GE	0.09%	GLD	0.14%
1.0	VNO	0.09%	INTC	0.14%
1.0	UAA	0.09%	BHC	0.14%
1.0	ORLY	0.09%	NWL	0.13%
1.0	ZION	0.09%	ORCL	0.13%



P365D: 10d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
10.0	GME	17.49%	GME	6.97%
10.0	MSTR	10.0%	LUMN	4.6%
10.0	CHTR	3.04%	MSTR	4.3%
10.0	LUMN	2.25%	VST	3.28%
10.0	TSLA	1.9%	TSLA	2.77%
10.0	VFC	1.83%	TRGP	2.51%
10.0	VST	1.82%	TMUS	2.32%
10.0	LNC	1.59%	T	2.18%
10.0	GILD	1.55%	GILD	2.1%
10.0	EXPE	1.54%	AVGO	2.03%
10.0	CVS	1.48%	NFLX	1.95%
10.0	TEVA	1.33%	NVDA	1.73%
10.0	ABBV	1.31%	CHTR	1.7%
10.0	SNY	1.3%	HSBC	1.68%
10.0	SLV	1.28%	EXPE	1.67%
10.0	NEM	1.26%	ISRG	1.58%
10.0	MU	1.26%	GS	1.58%
10.0	GE	1.21%	VFC	1.52%
10.0	GS	1.19%	VNO	1.41%
10.0	GOLD	1.15%	GE	1.35%
10.0	NFLX	1.14%	MS	1.33%
10.0	NVDA	1.13%	AMC	1.32%
10.0	TMUS	1.11%	NEM	1.29%
10.0	SBUX	1.03%	THC	1.23%
10.0	AVGO	1.01%	AAPL	1.2%
10.0	UNH	0.96%	COST	1.19%
10.0	META	0.93%	GLD	1.16%
10.0	THC	0.92%	LNC	1.14%
10.0	TRGP	0.88%	WFC	1.13%
10.0	HSBC	0.85%	JAZZ	1.12%



P365D: 21d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
21.0	GME	38.94%	GME	12.91%
21.0	MSTR	21.8%	LUMN	11.07%
21.0	LUMN	9.53%	MSTR	9.19%
21.0	CHTR	8.13%	VST	7.38%
21.0	TSLA	7.46%	TSLA	6.23%
21.0	GILD	4.57%	TMUS	5.44%
21.0	VST	4.4%	TRGP	5.27%
21.0	CVS	4.13%	GILD	5.23%
21.0	VFC	4.09%	T	5.05%
21.0	GOLD	3.67%	NFLX	4.99%
21.0	ABBV	3.47%	AVGO	4.05%
21.0	EXPE	3.25%	CHTR	3.94%
21.0	META	3.22%	ISRG	3.89%
21.0	TMUS	3.18%	VNO	3.77%
21.0	NEM	3.1%	NVDA	3.74%
21.0	GS	3.03%	VFC	3.7%
21.0	NFLX	3.01%	HSBC	3.49%
21.0	LNC	3.01%	GS	3.46%
21.0	BXP	2.97%	EXPE	3.38%
21.0	SNY	2.9%	THC	3.15%
21.0	TEVA	2.85%	COST	3.15%
21.0	AMGN	2.82%	ORCL	3.14%
21.0	SBUX	2.82%	GE	2.97%
21.0	GE	2.53%	MS	2.93%
21.0	ORCL	2.16%	META	2.92%
21.0	ZTS	2.14%	LNC	2.85%
21.0	AMC	2.13%	AAPL	2.84%
21.0	UAA	2.11%	CCL	2.83%
21.0	BUD	2.11%	AMC	2.61%
21.0	TRGP	2.11%	ABBV	2.58%



P365D: 63d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
63.0	GME	54.46%	MSTR	43.06%
63.0	MSTR	45.27%	LUMN	42.29%
63.0	LUMN	41.93%	TSLA	28.74%
63.0	TSLA	27.39%	VST	25.7%
63.0	VFC	26.36%	VFC	21.19%
63.0	VST	22.53%	VNO	21.1%
63.0	GILD	19.71%	GME	20.59%
63.0	BXP	18.39%	TRGP	19.27%
63.0	AVGO	16.48%	AVGO	16.39%
63.0	CHTR	15.12%	GILD	16.02%
63.0	EXPE	14.53%	CCL	15.75%
63.0	NFLX	14.28%	NFLX	15.41%
63.0	META	13.57%	EXPE	14.79%
63.0	VNO	12.67%	TMUS	13.9%
63.0	TMUS	11.58%	T	13.42%
63.0	UAA	10.21%	ISRG	11.78%
63.0	CYH	10.06%	GS	11.21%
63.0	BMJ	9.88%	MS	10.82%
63.0	GS	9.67%	CHTR	10.66%
63.0	NEM	9.66%	ORCL	10.65%
63.0	GOLD	9.58%	META	10.6%
63.0	TRGP	9.37%	BMJ	9.85%
63.0	SBUX	9.27%	NVDA	9.47%
63.0	ABBV	9.21%	SBUX	9.37%
63.0	CMA	9.13%	JPM	9.27%
63.0	ORCL	8.33%	CSCO	8.82%
63.0	CCL	7.9%	HSBC	8.8%
63.0	GE	7.24%	ZION	8.64%
63.0	NVDA	7.18%	WFC	8.59%
63.0	T	7.15%	IRM	8.49%



P365D: 126d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
126.0	MSTR	129.72%	MSTR	114.73%
126.0	LUMN	90.85%	LUMN	91.55%
126.0	TSLA	88.49%	VST	74.86%
126.0	VST	68.52%	TSLA	65.25%
126.0	GME	61.1%	VNO	50.14%
126.0	VFC	59.7%	TRGP	47.35%
126.0	GILD	59.52%	CCL	45.8%
126.0	NFLX	51.6%	VFC	43.83%
126.0	EXPE	50.65%	EXPE	39.89%
126.0	VNO	43.82%	NFLX	37.53%
126.0	BXP	41.65%	GILD	35.45%
126.0	CCL	33.61%	GME	34.14%
126.0	TMUS	33.27%	TMUS	32.7%
126.0	AVGO	30.31%	AVGO	32.21%
126.0	META	29.61%	ORCL	29.81%
126.0	CHTR	26.46%	MS	29.13%
126.0	ORCL	26.34%	T	28.6%
126.0	BMJ	25.86%	GBTC	26.69%
126.0	TRGP	25.71%	GS	25.21%
126.0	CMA	24.55%	WFC	25.02%
126.0	ZION	24.26%	ISRG	24.99%
126.0	GBTC	24.2%	BMJ	24.51%
126.0	UAA	23.8%	NVDA	24.23%
126.0	NVDA	22.63%	META	24.18%
126.0	GS	22.54%	CSCO	23.58%
126.0	SBUX	21.61%	ZION	21.53%
126.0	T	20.55%	CMA	21.34%
126.0	ISRG	19.91%	SBUX	20.56%
126.0	KEY	18.29%	JPM	20.38%
126.0	USB	16.36%	MSI	19.28%



Bottom 30 Tickers By VaR Breakage

All TMD: 1d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
1.0	DHI	0.0%	AMC	0.42%
1.0	CITI	0.0%	CITI	0.51%
1.0	CMG	0.0%	FSUGY	0.52%
1.0	RIO	0.0%	TLT	0.52%
1.0	QQQ	0.0%	NFLX	0.53%
1.0	PHM	0.0%	GME	0.55%
1.0	PCG	0.0%	CZR	0.67%
1.0	VNO	0.0%	KEY	0.7%
1.0	FSUGY	0.0%	GNRC	0.7%
1.0	CAH	0.0%	ELAN	0.7%
1.0	NVDA	0.0%	PRGO	0.75%
1.0	HLT	0.0%	POST	0.76%
1.0	AMAT	0.0%	KALU	0.78%
1.0	MS	0.0%	BIIB	0.79%
1.0	MOS	0.0%	EXPE	0.79%
1.0	GBTC	0.0%	OXY	0.79%
1.0	HYG	0.13%	BHC	0.82%
1.0	MNST	0.13%	ETRN	0.83%
1.0	EMB	0.13%	BBY	0.9%
1.0	MRK	0.13%	GOLD	0.92%
1.0	VICI	0.13%	NWL	0.92%
1.0	CPRT	0.13%	VFC	1.02%
1.0	COST	0.13%	BUD	1.02%
1.0	BAC	0.13%	RIO	1.03%
1.0	THC	0.13%	FIS	1.04%
1.0	IRM	0.13%	WRK	1.04%
1.0	FCX	0.13%	LW	1.05%
1.0	PWR	0.13%	VNO	1.1%
1.0	USB	0.13%	CTLT	1.13%
1.0	X	0.13%	GT	1.13%



All TMD: 10d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
10.0	IRM	0.0%	NAVI	0.0%
10.0	CPRT	0.0%	CPRT	0.0%
10.0	RIO	0.0%	POST	0.0%
10.0	MRK	0.0%	CAH	0.0%
10.0	TXN	0.0%	BIIB	0.0%
10.0	MNST	0.0%	SLV	0.13%
10.0	DHI	0.0%	AVGO	0.13%
10.0	TRGP	0.0%	WYNN	0.13%
10.0	ETRN	0.0%	GME	0.14%
10.0	PCG	0.0%	THC	0.26%
10.0	THC	0.0%	ZTS	0.26%
10.0	PEP	0.0%	GOOGL	0.26%
10.0	LVS	0.0%	MSFT	0.26%
10.0	COST	0.0%	TSLA	0.27%
10.0	FSUGY	0.0%	AMC	0.28%
10.0	LUMN	0.0%	DHI	0.38%
10.0	PHM	0.0%	TXN	0.39%
10.0	TDG	0.0%	TLT	0.39%
10.0	LEN	0.0%	GOLD	0.39%
10.0	POST	0.0%	OXY	0.39%
10.0	GOOGL	0.0%	AZO	0.4%
10.0	JPM	0.0%	LLY	0.4%
10.0	HCA	0.0%	GNRC	0.42%
10.0	HD	0.0%	GBTC	0.45%
10.0	HLT	0.0%	GLD	0.51%
10.0	QQQ	0.0%	GWV	0.51%
10.0	SBUX	0.0%	XOM	0.51%
10.0	GBTC	0.0%	TMUS	0.51%
10.0	MS	0.0%	PEP	0.51%
10.0	CSCO	0.0%	RIO	0.51%



All TMD: 21d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
21.0	IRM	0.0%	POST	0.0%
21.0	HLT	0.0%	CAH	0.0%
21.0	HD	0.0%	GWV	0.0%
21.0	POST	0.0%	CITI	0.0%
21.0	GS	0.0%	GNRC	0.0%
21.0	PWR	0.0%	GME	0.0%
21.0	QQQ	0.0%	CMCSA	0.0%
21.0	GE	0.0%	TXN	0.0%
21.0	GBTC	0.0%	GLD	0.0%
21.0	FSUGY	0.0%	CPRT	0.0%
21.0	SBUX	0.0%	GBTC	0.0%
21.0	SPY	0.0%	SBUX	0.0%
21.0	MS	0.0%	TMUS	0.0%
21.0	ETRN	0.0%	DHI	0.0%
21.0	TDG	0.0%	TLT	0.0%
21.0	DHI	0.0%	ETRN	0.0%
21.0	HON	0.0%	NAVI	0.0%
21.0	THC	0.0%	BIIB	0.0%
21.0	PHM	0.0%	TDG	0.0%
21.0	INTU	0.0%	AMD	0.0%
21.0	MRK	0.0%	LNC	0.0%
21.0	MOS	0.0%	WYNN	0.0%
21.0	MNST	0.0%	AVGO	0.0%
21.0	MSI	0.0%	ORCL	0.0%
21.0	LVS	0.0%	LLY	0.0%
21.0	LUMN	0.0%	BBY	0.0%
21.0	LNC	0.0%	OXY	0.0%
21.0	LLY	0.0%	VICI	0.13%
21.0	LEN	0.0%	XOM	0.13%
21.0	NAVI	0.0%	HON	0.13%



All TMD: 63d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
63.0	AA	0.0%	ZTS	0.0%
63.0	NAVI	0.0%	LNC	0.0%
63.0	MUB	0.0%	LLY	0.0%
63.0	MU	0.0%	LEN	0.0%
63.0	MSI	0.0%	KHC	0.0%
63.0	MSFT	0.0%	THC	0.0%
63.0	MS	0.0%	KALU	0.0%
63.0	MRK	0.0%	JPM	0.0%
63.0	MNST	0.0%	JAZZ	0.0%
63.0	LW	0.0%	ISRG	0.0%
63.0	LVS	0.0%	INTC	0.0%
63.0	LUMN	0.0%	TMUS	0.0%
63.0	LNC	0.0%	TRGP	0.0%
63.0	NVDA	0.0%	HSBC	0.0%
63.0	LLY	0.0%	HON	0.0%
63.0	JPM	0.0%	HLT	0.0%
63.0	JAZZ	0.0%	HD	0.0%
63.0	ISRG	0.0%	TSLA	0.0%
63.0	INTU	0.0%	GWV	0.0%
63.0	INTC	0.0%	TXN	0.0%
63.0	IEP	0.0%	GS	0.0%
63.0	HSBC	0.0%	GOOGL	0.0%
63.0	HON	0.0%	QQQ	0.0%
63.0	HLT	0.0%	GME	0.0%
63.0	HD	0.0%	TEVA	0.0%
63.0	HCA	0.0%	LUMN	0.0%
63.0	GWV	0.0%	LVS	0.0%
63.0	KHC	0.0%	META	0.0%
63.0	NVS	0.0%	QCOM	0.0%
63.0	ORCL	0.0%	PWR	0.0%



All TMD: 126d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
126.0	AA	0.0%	AA	0.0%
126.0	ON	0.0%	PCG	0.0%
126.0	NWL	0.0%	OXY	0.0%
126.0	NVS	0.0%	ORLY	0.0%
126.0	NVDA	0.0%	ORCL	0.0%
126.0	NFLX	0.0%	ON	0.0%
126.0	NAVI	0.0%	NWL	0.0%
126.0	MUB	0.0%	NVS	0.0%
126.0	MU	0.0%	NVDA	0.0%
126.0	MSI	0.0%	NFLX	0.0%
126.0	MSFT	0.0%	NAVI	0.0%
126.0	MS	0.0%	MU	0.0%
126.0	MOS	0.0%	MSTR	0.0%
126.0	MNST	0.0%	MSI	0.0%
126.0	LW	0.0%	MSFT	0.0%
126.0	LVS	0.0%	MS	0.0%
126.0	LUMN	0.0%	MRK	0.0%
126.0	LNC	0.0%	MOS	0.0%
126.0	LLY	0.0%	ISRG	0.0%
126.0	LEN	0.0%	JAZZ	0.0%
126.0	KHC	0.0%	JPM	0.0%
126.0	KALU	0.0%	KALU	0.0%
126.0	JPM	0.0%	KEY	0.0%
126.0	JAZZ	0.0%	KHC	0.0%
126.0	ISRG	0.0%	PEP	0.0%
126.0	INTU	0.0%	LEN	0.0%
126.0	INTC	0.0%	LNC	0.0%
126.0	IEP	0.0%	LQD	0.0%
126.0	HSBC	0.0%	LUMN	0.0%
126.0	HON	0.0%	LVS	0.0%



All TMD: 252d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
252.0	AA	0.0%	AA	0.0%
252.0	ORLY	0.0%	MSTR	0.0%
252.0	ORCL	0.0%	MU	0.0%
252.0	ON	0.0%	MUB	0.0%
252.0	NWL	0.0%	NAVI	0.0%
252.0	NVS	0.0%	NEM	0.0%
252.0	NVDA	0.0%	NFLX	0.0%
252.0	NFLX	0.0%	MSI	0.0%
252.0	NAVI	0.0%	NVDA	0.0%
252.0	MUB	0.0%	NWL	0.0%
252.0	MU	0.0%	ON	0.0%
252.0	MSTR	0.0%	ORCL	0.0%
252.0	MSI	0.0%	ORLY	0.0%
252.0	MSFT	0.0%	OXY	0.0%
252.0	MS	0.0%	PCG	0.0%
252.0	MOS	0.0%	NVS	0.0%
252.0	MNST	0.0%	MSFT	0.0%
252.0	META	0.0%	MS	0.0%
252.0	INTC	0.0%	MRK	0.0%
252.0	INTU	0.0%	ISRG	0.0%
252.0	ISRG	0.0%	JAZZ	0.0%
252.0	JAZZ	0.0%	JPM	0.0%
252.0	JPM	0.0%	KALU	0.0%
252.0	KALU	0.0%	KEY	0.0%
252.0	OXY	0.0%	KHC	0.0%
252.0	KHC	0.0%	LEN	0.0%
252.0	LLY	0.0%	LLY	0.0%
252.0	LNC	0.0%	LNC	0.0%
252.0	LQD	0.0%	LQD	0.0%
252.0	LUMN	0.0%	LUMN	0.0%



P30D: 1d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates in the period examined for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
1.0	AA	0.0%	AA	0.0%
1.0	LUMN	0.0%	HON	0.0%
1.0	THC	0.0%	PRGO	0.0%
1.0	LNC	0.0%	QCOM	0.0%
1.0	TLT	0.0%	HCA	0.0%
1.0	LEN	0.0%	RIO	0.0%
1.0	TMUS	0.0%	GT	0.0%
1.0	KEY	0.0%	GSK	0.0%
1.0	KALU	0.0%	SLV	0.0%
1.0	JPM	0.0%	POST	0.0%
1.0	JAZZ	0.0%	SNY	0.0%
1.0	ZION	0.0%	GNRC	0.0%
1.0	LVS	0.0%	TDG	0.0%
1.0	IRM	0.0%	GLD	0.0%
1.0	INTC	0.0%	GILD	0.0%
1.0	IEP	0.0%	GE	0.0%
1.0	HYG	0.0%	TEVA	0.0%
1.0	HSBC	0.0%	FSUGY	0.0%
1.0	HON	0.0%	FRA	0.0%
1.0	HLT	0.0%	GOLD	0.0%
1.0	HD	0.0%	HYG	0.0%
1.0	TRGP	0.0%	IEP	0.0%
1.0	GWV	0.0%	INTC	0.0%
1.0	GT	0.0%	MSTR	0.0%
1.0	GSK	0.0%	MSI	0.0%
1.0	INTU	0.0%	NEM	0.0%
1.0	LW	0.0%	NVDA	0.0%
1.0	META	0.0%	MOS	0.0%
1.0	MNST	0.0%	MNST	0.0%
1.0	QQQ	0.0%	LW	0.0%



P30D: 10d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates in the period examined for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
10.0	AA	0.0%	AA	0.0%
10.0	PCG	0.0%	OXY	0.0%
10.0	OXY	0.0%	ORLY	0.0%
10.0	ORLY	0.0%	ORCL	0.0%
10.0	ORCL	0.0%	ON	0.0%
10.0	ON	0.0%	NWL	0.0%
10.0	NWL	0.0%	NVS	0.0%
10.0	NVS	0.0%	NVDA	0.0%
10.0	NVDA	0.0%	NFLX	0.0%
10.0	NFLX	0.0%	NEM	0.0%
10.0	NEM	0.0%	NAVI	0.0%
10.0	NAVI	0.0%	MUB	0.0%
10.0	MUB	0.0%	MU	0.0%
10.0	MU	0.0%	MSTR	0.0%
10.0	MSTR	0.0%	MSI	0.0%
10.0	MSI	0.0%	MSFT	0.0%
10.0	MSFT	0.0%	MS	0.0%
10.0	MS	0.0%	MRK	0.0%
10.0	JPM	0.0%	JAZZ	0.0%
10.0	KALU	0.0%	JPM	0.0%
10.0	KEY	0.0%	KALU	0.0%
10.0	KHC	0.0%	KEY	0.0%
10.0	LEN	0.0%	LEN	0.0%
10.0	LNC	0.0%	LLY	0.0%
10.0	PEP	0.0%	PCG	0.0%
10.0	LQD	0.0%	LNC	0.0%
10.0	LVS	0.0%	LUMN	0.0%
10.0	LW	0.0%	LVS	0.0%
10.0	META	0.0%	LW	0.0%
10.0	MNST	0.0%	META	0.0%



P90D: 1d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
1.0	AA	0.0%	TDG	0.0%
1.0	NVDA	0.0%	LW	0.0%
1.0	NFLX	0.0%	VICI	0.0%
1.0	NEM	0.0%	LQD	0.0%
1.0	MUB	0.0%	UAA	0.0%
1.0	MSI	0.0%	CPRT	0.0%
1.0	MS	0.0%	KEY	0.0%
1.0	MRK	0.0%	CSTM	0.0%
1.0	MOS	0.0%	CTLT	0.0%
1.0	MNST	0.0%	CVS	0.0%
1.0	META	0.0%	CYH	0.0%
1.0	LW	0.0%	KALU	0.0%
1.0	LVS	0.0%	MNST	0.0%
1.0	NVS	0.0%	ELAN	0.0%
1.0	LUMN	0.0%	INTC	0.0%
1.0	LEN	0.0%	FITB	0.0%
1.0	KEY	0.0%	FRA	0.0%
1.0	KALU	0.0%	FSUGY	0.0%
1.0	JPM	0.0%	IEP	0.0%
1.0	JAZZ	0.0%	GE	0.0%
1.0	ZION	0.0%	GILD	0.0%
1.0	INTU	0.0%	GLD	0.0%
1.0	INTC	0.0%	HYG	0.0%
1.0	IEP	0.0%	GNRC	0.0%
1.0	HYG	0.0%	GOLD	0.0%
1.0	HSBC	0.0%	EMB	0.0%
1.0	HLT	0.0%	MOS	0.0%
1.0	LNC	0.0%	CMCSA	0.0%
1.0	NWL	0.0%	MSTR	0.0%
1.0	ON	0.0%	SNY	0.0%



P90D: 10d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
10.0	AA	0.0%	AA	0.0%
10.0	NWL	0.0%	NAVI	0.0%
10.0	NVS	0.0%	MUB	0.0%
10.0	NVDA	0.0%	MU	0.0%
10.0	NFLX	0.0%	MSTR	0.0%
10.0	NEM	0.0%	MSFT	0.0%
10.0	NAVI	0.0%	MOS	0.0%
10.0	MUB	0.0%	MNST	0.0%
10.0	MU	0.0%	META	0.0%
10.0	MSTR	0.0%	LW	0.0%
10.0	MSI	0.0%	LUMN	0.0%
10.0	MSFT	0.0%	LQD	0.0%
10.0	MS	0.0%	LNC	0.0%
10.0	MRK	0.0%	LLY	0.0%
10.0	MOS	0.0%	LEN	0.0%
10.0	ORCL	0.0%	KEY	0.0%
10.0	MNST	0.0%	KALU	0.0%
10.0	LW	0.0%	JAZZ	0.0%
10.0	LVS	0.0%	ZION	0.0%
10.0	LUMN	0.0%	INTU	0.0%
10.0	LQD	0.0%	INTC	0.0%
10.0	LNC	0.0%	IEP	0.0%
10.0	LEN	0.0%	HYG	0.0%
10.0	KHC	0.0%	HSBC	0.0%
10.0	KEY	0.0%	HCA	0.0%
10.0	KALU	0.0%	GWV	0.0%
10.0	JPM	0.0%	NEM	0.0%
10.0	JAZZ	0.0%	NFLX	0.0%
10.0	ISRG	0.0%	NVDA	0.0%
10.0	ZION	0.0%	NVS	0.0%



P90D: 21d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
21.0	AA	0.0%	AA	0.0%
21.0	ORLY	0.0%	NVS	0.0%
21.0	ORCL	0.0%	NVDA	0.0%
21.0	NWL	0.0%	NFLX	0.0%
21.0	NVS	0.0%	NEM	0.0%
21.0	NVDA	0.0%	NAVI	0.0%
21.0	NFLX	0.0%	MUB	0.0%
21.0	NEM	0.0%	MU	0.0%
21.0	NAVI	0.0%	MSTR	0.0%
21.0	MUB	0.0%	MSFT	0.0%
21.0	MU	0.0%	MOS	0.0%
21.0	MSTR	0.0%	MNST	0.0%
21.0	MSI	0.0%	LW	0.0%
21.0	MSFT	0.0%	LVS	0.0%
21.0	MS	0.0%	LUMN	0.0%
21.0	MRK	0.0%	LQD	0.0%
21.0	MOS	0.0%	LNC	0.0%
21.0	MNST	0.0%	LLY	0.0%
21.0	ZION	0.0%	LEN	0.0%
21.0	JAZZ	0.0%	KHC	0.0%
21.0	JPM	0.0%	KEY	0.0%
21.0	KALU	0.0%	KALU	0.0%
21.0	KEY	0.0%	JAZZ	0.0%
21.0	KHC	0.0%	ZION	0.0%
21.0	OXY	0.0%	INTU	0.0%
21.0	LEN	0.0%	INTC	0.0%
21.0	LNC	0.0%	IEP	0.0%
21.0	LQD	0.0%	HYG	0.0%
21.0	LUMN	0.0%	ON	0.0%
21.0	LVS	0.0%	ORCL	0.0%



P365D: 1d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
1.0	AA	0.0%	ETRN	0.0%
1.0	MS	0.0%	POST	0.0%
1.0	MOS	0.0%	WRK	0.0%
1.0	META	0.0%	AMC	0.0%
1.0	LVS	0.0%	NWL	0.0%
1.0	LUMN	0.0%	CTLT	0.0%
1.0	LEN	0.0%	TLT	0.0%
1.0	JPM	0.0%	HYG	0.41%
1.0	ZION	0.0%	SNY	0.41%
1.0	MSI	0.0%	GILD	0.42%
1.0	INTU	0.0%	MOS	0.42%
1.0	HYG	0.0%	KALU	0.42%
1.0	HLT	0.0%	CHTR	0.43%
1.0	HD	0.0%	KEY	0.44%
1.0	GWV	0.0%	PRGO	0.52%
1.0	GT	0.0%	EXPE	0.83%
1.0	GLD	0.0%	PHM	0.83%
1.0	GBTC	0.0%	BUD	0.83%
1.0	FSUGY	0.0%	LQD	0.83%
1.0	IEP	0.0%	IEP	0.83%
1.0	MUB	0.0%	EMB	0.83%
1.0	NFLX	0.0%	CPRT	0.84%
1.0	NVDA	0.0%	CMA	0.84%
1.0	XOM	0.0%	NFLX	0.85%
1.0	WYNN	0.0%	ON	0.85%
1.0	WRK	0.0%	FSUGY	0.86%
1.0	VNO	0.0%	OXY	0.86%
1.0	USB	0.0%	AA	0.86%
1.0	TRGP	0.0%	TFC	0.88%
1.0	TMUS	0.0%	GNRC	0.88%



P365D: 10d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
10.0	AA	0.0%	ZTS	0.0%
10.0	ORCL	0.0%	HSBC	0.0%
10.0	NWL	0.0%	ORLY	0.0%
10.0	NVS	0.0%	ORCL	0.0%
10.0	NVDA	0.0%	ON	0.0%
10.0	NFLX	0.0%	CPRT	0.0%
10.0	MUB	0.0%	CSCO	0.0%
10.0	MU	0.0%	CTLT	0.0%
10.0	MSI	0.0%	NFLX	0.0%
10.0	MSFT	0.0%	NAVI	0.0%
10.0	MS	0.0%	MSTR	0.0%
10.0	MRK	0.0%	MOS	0.0%
10.0	MOS	0.0%	EMB	0.0%
10.0	MNST	0.0%	ETRN	0.0%
10.0	ORLY	0.0%	META	0.0%
10.0	META	0.0%	FCX	0.0%
10.0	LUMN	0.0%	LUMN	0.0%
10.0	LEN	0.0%	LQD	0.0%
10.0	KEY	0.0%	LNC	0.0%
10.0	JPM	0.0%	KEY	0.0%
10.0	JAZZ	0.0%	GE	0.0%
10.0	ISRG	0.0%	GILD	0.0%
10.0	ZION	0.0%	JAZZ	0.0%
10.0	INTU	0.0%	ZION	0.0%
10.0	IEP	0.0%	GNRC	0.0%
10.0	HYG	0.0%	HYG	0.0%
10.0	HSBC	0.0%	PEP	0.0%
10.0	HON	0.0%	CITI	0.0%
10.0	HLT	0.0%	CMA	0.0%
10.0	LVS	0.0%	POST	0.0%



P365D: 21d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
21.0	IRM	0.0%	ZTS	0.0%
21.0	ORCL	0.0%	SBUX	0.0%
21.0	NWL	0.0%	GWV	0.0%
21.0	NVS	0.0%	SLV	0.0%
21.0	NVDA	0.0%	SNY	0.0%
21.0	NFLX	0.0%	GOOGL	0.0%
21.0	NAVI	0.0%	GOLD	0.0%
21.0	MUB	0.0%	GNRC	0.0%
21.0	MSTR	0.0%	GME	0.0%
21.0	MSI	0.0%	RIO	0.0%
21.0	MSFT	0.0%	GLD	0.0%
21.0	MS	0.0%	GE	0.0%
21.0	MRK	0.0%	GBTC	0.0%
21.0	MOS	0.0%	T	0.0%
21.0	MNST	0.0%	TDG	0.0%
21.0	META	0.0%	FITB	0.0%
21.0	LVS	0.0%	TFC	0.0%
21.0	LUMN	0.0%	MUB	0.0%
21.0	LNC	0.0%	EXPE	0.0%
21.0	LLY	0.0%	GILD	0.0%
21.0	LEN	0.0%	PRGO	0.0%
21.0	KEY	0.0%	HON	0.0%
21.0	JPM	0.0%	HSBC	0.0%
21.0	JAZZ	0.0%	NAVI	0.0%
21.0	ISRG	0.0%	NFLX	0.0%
21.0	ZION	0.0%	MOS	0.0%
21.0	INTU	0.0%	MNST	0.0%
21.0	IEP	0.0%	LQD	0.0%
21.0	HYG	0.0%	LNC	0.0%
21.0	HSBC	0.0%	LLY	0.0%



P365D: 63d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
63.0	AA	0.0%	AA	0.0%
63.0	MSFT	0.0%	MSFT	0.0%
63.0	MSI	0.0%	MSI	0.0%
63.0	MSTR	0.0%	MSTR	0.0%
63.0	MU	0.0%	MUB	0.0%
63.0	MUB	0.0%	NAVI	0.0%
63.0	NAVI	0.0%	NEM	0.0%
63.0	MS	0.0%	MS	0.0%
63.0	NEM	0.0%	NFLX	0.0%
63.0	NVDA	0.0%	NVS	0.0%
63.0	NVS	0.0%	NWL	0.0%
63.0	NWL	0.0%	ON	0.0%
63.0	ORCL	0.0%	ORCL	0.0%
63.0	ORLY	0.0%	ORLY	0.0%
63.0	PCG	0.0%	OXY	0.0%
63.0	NFLX	0.0%	NVDA	0.0%
63.0	PEP	0.0%	PEP	0.0%
63.0	MRK	0.0%	MRK	0.0%
63.0	MNST	0.0%	MNST	0.0%
63.0	ZION	0.0%	ISRG	0.0%
63.0	ISRG	0.0%	JAZZ	0.0%
63.0	JAZZ	0.0%	JPM	0.0%
63.0	JPM	0.0%	KALU	0.0%
63.0	KALU	0.0%	KEY	0.0%
63.0	KEY	0.0%	KHC	0.0%
63.0	MOS	0.0%	MOS	0.0%
63.0	KHC	0.0%	LEN	0.0%
63.0	LLY	0.0%	LNC	0.0%
63.0	LNC	0.0%	LQD	0.0%
63.0	LUMN	0.0%	LUMN	0.0%



P365D: 126d

Results reflect ticker level average 99% VaR breakage (VaRBreak) across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	VaRBreak_V	Ticker_S	VaRBreak_S
126.0	AA	0.0%	AA	0.0%
126.0	PCG	0.0%	MSTR	0.0%
126.0	ORLY	0.0%	MU	0.0%
126.0	ORCL	0.0%	MUB	0.0%
126.0	ON	0.0%	NAVI	0.0%
126.0	NWL	0.0%	NEM	0.0%
126.0	NVS	0.0%	NFLX	0.0%
126.0	NVDA	0.0%	MSI	0.0%
126.0	NFLX	0.0%	NVDA	0.0%
126.0	NEM	0.0%	NWL	0.0%
126.0	NAVI	0.0%	ON	0.0%
126.0	MUB	0.0%	ORCL	0.0%
126.0	MU	0.0%	ORLY	0.0%
126.0	MSTR	0.0%	OXY	0.0%
126.0	MSI	0.0%	PCG	0.0%
126.0	MSFT	0.0%	NVS	0.0%
126.0	MS	0.0%	PEP	0.0%
126.0	MOS	0.0%	MSFT	0.0%
126.0	JAZZ	0.0%	MRK	0.0%
126.0	JPM	0.0%	JPM	0.0%
126.0	KALU	0.0%	KALU	0.0%
126.0	KEY	0.0%	KEY	0.0%
126.0	KHC	0.0%	KHC	0.0%
126.0	LEN	0.0%	LEN	0.0%
126.0	PEP	0.0%	LLY	0.0%
126.0	LLY	0.0%	MS	0.0%
126.0	LQD	0.0%	LNC	0.0%
126.0	LUMN	0.0%	LUMN	0.0%
126.0	LVS	0.0%	LVS	0.0%
126.0	LW	0.0%	LW	0.0%



Bottom 30 Tickers By ROVBC

All TMD: 1d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
1.0	SBNY	-1.13%	SBNY	-0.7%
1.0	SIVBQ	-1.06%	SIVBQ	-0.43%
1.0	FRCB	-0.29%	FRCB	-0.23%
1.0	AAP	-0.22%	AMC	-0.2%
1.0	AMC	-0.15%	AAP	-0.17%
1.0	ELAN	-0.13%	IEP	-0.17%
1.0	LUMN	-0.12%	VFC	-0.13%
1.0	VFC	-0.12%	UAA	-0.12%
1.0	IEP	-0.11%	CZR	-0.09%
1.0	FIS	-0.08%	NWL	-0.09%
1.0	KALU	-0.08%	ELAN	-0.07%
1.0	GOLD	-0.07%	CVS	-0.07%
1.0	CVS	-0.06%	BALL	-0.06%
1.0	TLT	-0.06%	LNC	-0.05%
1.0	GSK	-0.06%	BIIB	-0.05%
1.0	CSTM	-0.05%	MOS	-0.05%
1.0	CNC	-0.05%	TLT	-0.05%
1.0	BXP	-0.05%	CNC	-0.05%
1.0	BIIB	-0.05%	CSTM	-0.04%
1.0	NEM	-0.05%	NEM	-0.04%
1.0	LQD	-0.04%	KALU	-0.04%
1.0	VZ	-0.04%	LUMN	-0.04%
1.0	PRGO	-0.03%	GT	-0.03%
1.0	LNC	-0.03%	AA	-0.03%
1.0	CHTR	-0.02%	FIS	-0.03%
1.0	TFC	-0.02%	KEY	-0.02%
1.0	MOS	-0.02%	GSK	-0.02%
1.0	BMY	-0.02%	ZION	-0.02%
1.0	CMCSA	-0.01%	NAVI	-0.02%
1.0	T	-0.01%	USB	-0.02%



All TMD: 10d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
10.0	SIVBQ	-13.28%	SBNY	-6.69%
10.0	SBNY	-12.06%	SIVBQ	-5.52%
10.0	FRCB	-4.94%	FRCB	-3.91%
10.0	AMC	-2.7%	AAP	-1.84%
10.0	AAP	-2.6%	AMC	-1.58%
10.0	VFC	-1.18%	IEP	-1.5%
10.0	IEP	-1.11%	VFC	-1.32%
10.0	NWL	-1.01%	UAA	-1.13%
10.0	ELAN	-0.86%	NWL	-1.1%
10.0	GSK	-0.78%	LUMN	-0.88%
10.0	LUMN	-0.69%	CZR	-0.69%
10.0	TFC	-0.65%	BHC	-0.67%
10.0	BHC	-0.59%	ELAN	-0.63%
10.0	BXP	-0.55%	BALL	-0.61%
10.0	BIIB	-0.53%	BIIB	-0.59%
10.0	TLT	-0.53%	LNC	-0.55%
10.0	CLF	-0.51%	GNRC	-0.54%
10.0	CYH	-0.49%	CLF	-0.54%
10.0	UAA	-0.49%	ZION	-0.53%
10.0	ZION	-0.48%	CYH	-0.53%
10.0	PRGO	-0.47%	AA	-0.5%
10.0	LW	-0.43%	TLT	-0.5%
10.0	CNC	-0.43%	GT	-0.48%
10.0	TSLA	-0.41%	MOS	-0.42%
10.0	MOS	-0.39%	BXP	-0.39%
10.0	LQD	-0.39%	KEY	-0.38%
10.0	FIS	-0.38%	CNC	-0.37%
10.0	GT	-0.35%	FIS	-0.33%
10.0	CHTR	-0.27%	CVS	-0.31%
10.0	BALL	-0.27%	CHTR	-0.31%



All TMD: 21d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
21.0	SBNY	-24.64%	SBNY	-14.05%
21.0	SIVBQ	-23.22%	SIVBQ	-11.91%
21.0	FRCB	-10.24%	FRCB	-8.3%
21.0	AMC	-8.8%	AAP	-3.59%
21.0	AAP	-3.76%	AMC	-3.51%
21.0	VFC	-2.77%	IEP	-3.25%
21.0	NWL	-2.47%	VFC	-2.8%
21.0	IEP	-2.32%	NWL	-2.49%
21.0	ELAN	-2.2%	UAA	-1.99%
21.0	BHC	-1.76%	CZR	-1.66%
21.0	ZION	-1.38%	BHC	-1.56%
21.0	BIIB	-1.33%	LUMN	-1.47%
21.0	TLT	-1.14%	LNC	-1.29%
21.0	GSK	-1.04%	ELAN	-1.13%
21.0	BALL	-1.02%	BALL	-1.11%
21.0	LNC	-1.01%	INTC	-1.08%
21.0	BXP	-0.95%	GT	-1.08%
21.0	PRGO	-0.94%	BXP	-1.03%
21.0	LW	-0.83%	GNRC	-1.02%
21.0	FIS	-0.78%	BIIB	-1.02%
21.0	KEY	-0.77%	TLT	-1.0%
21.0	TFC	-0.77%	AA	-0.97%
21.0	GT	-0.77%	CLF	-0.95%
21.0	ON	-0.75%	CNC	-0.9%
21.0	CNC	-0.73%	MOS	-0.85%
21.0	CZR	-0.68%	CYH	-0.82%
21.0	LQD	-0.67%	ZION	-0.82%
21.0	UAA	-0.64%	KEY	-0.68%
21.0	LUMN	-0.63%	CHTR	-0.65%
21.0	FITB	-0.42%	CSTM	-0.64%



All TMD: 63d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
63.0	SBNY	-84.72%	SBNY	-39.31%
63.0	SIVBQ	-76.86%	SIVBQ	-36.19%
63.0	FRCB	-45.47%	FRCB	-25.78%
63.0	AMC	-30.22%	AMC	-15.78%
63.0	AAP	-11.79%	IEP	-11.88%
63.0	IEP	-8.44%	AAP	-11.01%
63.0	VFC	-6.94%	NWL	-7.09%
63.0	NWL	-6.58%	MOS	-5.66%
63.0	BHC	-6.45%	VFC	-5.64%
63.0	MOS	-5.72%	CLF	-5.52%
63.0	CLF	-5.37%	BHC	-5.48%
63.0	ELAN	-5.36%	CZR	-4.88%
63.0	CHTR	-4.88%	UAA	-4.79%
63.0	AA	-3.79%	INTC	-4.35%
63.0	UAA	-3.69%	AA	-4.14%
63.0	LNC	-3.62%	CVS	-3.79%
63.0	TLT	-3.37%	LUMN	-3.72%
63.0	BIIB	-3.28%	LNC	-3.49%
63.0	BALL	-2.92%	ELAN	-3.23%
63.0	CZR	-2.65%	BALL	-3.13%
63.0	CVS	-2.14%	NEM	-2.97%
63.0	LUMN	-2.07%	TLT	-2.95%
63.0	CNC	-1.9%	GT	-2.7%
63.0	JAZZ	-1.85%	BXP	-2.6%
63.0	GSK	-1.84%	CSTM	-2.52%
63.0	INTC	-1.74%	PRGO	-2.51%
63.0	GT	-1.54%	GNRC	-2.5%
63.0	GOLD	-1.45%	CNC	-2.47%
63.0	PRGO	-1.45%	BIIB	-2.38%
63.0	FIS	-1.43%	CHTR	-2.35%



All TMD: 126d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
126.0	SBNY	-154.84%	SIVBQ	-67.06%
126.0	SIVBQ	-137.34%	SBNY	-65.9%
126.0	FRCB	-103.78%	FRCB	-52.19%
126.0	AMC	-47.79%	AMC	-30.51%
126.0	AAP	-31.36%	IEP	-22.34%
126.0	VFC	-16.58%	AAP	-21.62%
126.0	IEP	-15.76%	NWL	-14.37%
126.0	NWL	-15.43%	MOS	-12.41%
126.0	MOS	-14.3%	VFC	-11.75%
126.0	CHTR	-12.35%	CVS	-8.69%
126.0	AA	-9.67%	CLF	-8.54%
126.0	CVS	-8.5%	INTC	-6.88%
126.0	CLF	-8.21%	CTLT	-6.66%
126.0	ELAN	-7.15%	CZR	-6.59%
126.0	BHC	-7.12%	LNC	-6.39%
126.0	TLT	-6.98%	PRGO	-6.17%
126.0	CZR	-6.75%	AA	-5.89%
126.0	PRGO	-6.34%	NEM	-5.85%
126.0	JAZZ	-6.34%	CNC	-5.83%
126.0	CNC	-5.72%	TLT	-5.28%
126.0	NEM	-5.37%	BHC	-5.0%
126.0	LNC	-5.22%	GSK	-4.92%
126.0	FIS	-4.98%	ELAN	-4.82%
126.0	BIIB	-4.44%	UAA	-4.51%
126.0	UAA	-4.36%	GT	-4.42%
126.0	GSK	-4.26%	GNRC	-3.98%
126.0	BALL	-4.12%	BALL	-3.87%
126.0	GT	-3.99%	BXP	-3.85%
126.0	CTLT	-3.92%	CHTR	-3.79%
126.0	INTC	-3.69%	JAZZ	-3.7%



All TMD: 252d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
252.0	SBNY	-190.4%	SBNY	-96.1%
252.0	SIVBQ	-168.23%	SIVBQ	-95.64%
252.0	FRCB	-139.91%	FRCB	-91.52%
252.0	AMC	-85.73%	AMC	-62.33%
252.0	AAP	-71.04%	IEP	-44.46%
252.0	VFC	-41.96%	AAP	-42.0%
252.0	NWL	-34.8%	NWL	-29.63%
252.0	IEP	-30.11%	VFC	-26.94%
252.0	MOS	-26.48%	MOS	-25.47%
252.0	CHTR	-24.97%	CVS	-20.3%
252.0	CVS	-22.89%	BMJ	-13.91%
252.0	AA	-19.39%	PRGO	-13.22%
252.0	BIIB	-18.63%	UAA	-12.77%
252.0	JAZZ	-18.01%	CLF	-12.31%
252.0	PRGO	-17.12%	CZR	-12.06%
252.0	BMJ	-16.25%	JAZZ	-10.7%
252.0	CLF	-15.28%	LUMN	-10.38%
252.0	UAA	-14.07%	CHTR	-10.18%
252.0	CZR	-13.87%	CNC	-9.88%
252.0	TLT	-11.95%	AA	-9.77%
252.0	CNC	-11.85%	TLT	-8.91%
252.0	LUMN	-10.37%	CTLT	-8.52%
252.0	KEY	-10.3%	LNC	-7.81%
252.0	CTLT	-9.72%	INTC	-7.4%
252.0	OXY	-9.15%	NEM	-7.06%
252.0	BHC	-9.03%	BXP	-6.84%
252.0	BXP	-9.01%	BHC	-6.79%
252.0	LNC	-7.75%	GT	-6.79%
252.0	CMA	-7.39%	BIIB	-6.6%
252.0	NEM	-7.29%	KHC	-6.17%



P30D: 1d

Results reflect ticker level average 99% VaR based ROVBC across all model dates in the period examined for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
1.0	VFC	-1.48%	VFC	-2.06%
1.0	TSLA	-1.41%	CCL	-1.29%
1.0	CLF	-1.22%	ISRG	-1.12%
1.0	CCL	-0.89%	CZR	-1.05%
1.0	NAVI	-0.87%	BBY	-0.94%
1.0	ISRG	-0.83%	LUMN	-0.9%
1.0	AMC	-0.76%	SBUX	-0.79%
1.0	CZR	-0.71%	WDC	-0.71%
1.0	ORCL	-0.69%	HLT	-0.71%
1.0	WDC	-0.65%	CYH	-0.7%
1.0	GOOGL	-0.62%	ORCL	-0.69%
1.0	SBUX	-0.6%	MU	-0.69%
1.0	BBY	-0.57%	EXPE	-0.66%
1.0	CYH	-0.55%	LVS	-0.66%
1.0	MU	-0.53%	ADBE	-0.64%
1.0	BHC	-0.5%	BHC	-0.61%
1.0	EXPE	-0.49%	META	-0.6%
1.0	AVGO	-0.46%	AMZN	-0.59%
1.0	META	-0.45%	JAZZ	-0.59%
1.0	LLY	-0.41%	LLY	-0.57%
1.0	LUMN	-0.37%	AVGO	-0.5%
1.0	TFC	-0.35%	COST	-0.48%
1.0	HLT	-0.34%	GS	-0.48%
1.0	CSTM	-0.34%	TFC	-0.48%
1.0	KALU	-0.34%	MS	-0.47%
1.0	FITB	-0.31%	NAVI	-0.46%
1.0	JAZZ	-0.28%	CLF	-0.46%
1.0	ON	-0.28%	IEP	-0.45%
1.0	AMZN	-0.26%	FITB	-0.45%
1.0	LVS	-0.25%	ON	-0.45%



P30D: 10d

Results reflect ticker level average 99% VaR based ROVBC across all model dates in the period examined for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
10.0	VFC	-6.9%	VFC	-12.61%
10.0	LUMN	-4.95%	ADBE	-7.95%
10.0	LLY	-4.85%	LUMN	-7.84%
10.0	GILD	-4.8%	LVS	-7.25%
10.0	CZR	-4.39%	UAA	-7.0%
10.0	ADBE	-3.71%	SBUX	-5.51%
10.0	NAVI	-3.63%	GILD	-4.74%
10.0	SBUX	-3.51%	CLF	-4.42%
10.0	CLF	-3.14%	COST	-4.29%
10.0	META	-2.79%	HLT	-4.29%
10.0	CYH	-2.71%	CZR	-4.22%
10.0	KALU	-2.46%	META	-3.76%
10.0	EXPE	-2.43%	KHC	-3.64%
10.0	WYNN	-2.41%	HD	-3.22%
10.0	LVS	-2.41%	WYNN	-3.03%
10.0	AMGN	-2.4%	AAPL	-3.03%
10.0	UAA	-2.4%	GOOGL	-3.02%
10.0	KHC	-2.39%	SNY	-2.91%
10.0	ZTS	-2.38%	AVGO	-2.87%
10.0	CMG	-2.23%	CMG	-2.86%
10.0	AVGO	-2.16%	PEP	-2.79%
10.0	AZN	-2.15%	LLY	-2.76%
10.0	BHC	-2.08%	LEN	-2.75%
10.0	HLT	-2.0%	MRK	-2.75%
10.0	MRK	-1.91%	NAVI	-2.62%
10.0	SNY	-1.84%	AZN	-2.53%
10.0	TXN	-1.83%	BBY	-2.51%
10.0	BBY	-1.56%	KALU	-2.5%
10.0	GOOGL	-1.55%	JAZZ	-2.28%
10.0	HD	-1.48%	ORCL	-2.15%



P90D: 1d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
1.0	TSLA	-1.02%	GME	-0.57%
1.0	AMC	-0.7%	ON	-0.53%
1.0	AAP	-0.56%	VFC	-0.5%
1.0	ON	-0.54%	UAA	-0.48%
1.0	GME	-0.53%	AVGO	-0.47%
1.0	GOOGL	-0.49%	WDC	-0.44%
1.0	CZR	-0.44%	GNRC	-0.44%
1.0	CLF	-0.39%	CCL	-0.43%
1.0	AVGO	-0.38%	CZR	-0.43%
1.0	VFC	-0.38%	TEVA	-0.35%
1.0	CDNS	-0.38%	NWL	-0.35%
1.0	WDC	-0.35%	VST	-0.34%
1.0	GNRC	-0.34%	TSLA	-0.34%
1.0	CCL	-0.29%	BBY	-0.34%
1.0	UAA	-0.23%	GOOGL	-0.32%
1.0	LW	-0.19%	AAP	-0.31%
1.0	KALU	-0.18%	LVS	-0.3%
1.0	CYH	-0.17%	GBTC	-0.29%
1.0	TEVA	-0.17%	AMZN	-0.27%
1.0	AMAT	-0.16%	IRM	-0.27%
1.0	LVS	-0.15%	LUMN	-0.27%
1.0	LUMN	-0.14%	LW	-0.27%
1.0	CMG	-0.14%	MSI	-0.25%
1.0	BBY	-0.14%	CMG	-0.24%
1.0	NWL	-0.12%	CYH	-0.22%
1.0	VST	-0.12%	NVDA	-0.22%
1.0	AA	-0.12%	BIIB	-0.2%
1.0	NAVI	-0.11%	AMAT	-0.18%
1.0	MU	-0.11%	MRK	-0.18%
1.0	BAC	-0.1%	AA	-0.18%



P90D: 10d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
10.0	TSLA	-14.17%	TSLA	-7.9%
10.0	AAP	-9.22%	NWL	-5.69%
10.0	GME	-6.56%	TEVA	-5.23%
10.0	ON	-6.55%	UAA	-5.03%
10.0	AMC	-4.49%	ON	-4.91%
10.0	CZR	-3.86%	GME	-4.51%
10.0	GNRC	-3.54%	VST	-4.29%
10.0	VFC	-3.36%	WDC	-4.25%
10.0	NWL	-3.06%	AAP	-3.91%
10.0	GOOGL	-2.89%	VFC	-3.78%
10.0	PWR	-2.85%	AVGO	-3.71%
10.0	MSTR	-2.71%	GOOGL	-3.66%
10.0	ELAN	-2.64%	IRM	-3.55%
10.0	TEVA	-2.61%	GNRC	-3.48%
10.0	LW	-2.47%	LUMN	-3.45%
10.0	CDNS	-2.23%	PWR	-3.45%
10.0	LUMN	-2.07%	CMG	-3.31%
10.0	BHC	-2.06%	CCL	-3.27%
10.0	UAA	-1.97%	GBTC	-3.17%
10.0	MSFT	-1.88%	LW	-2.9%
10.0	CMA	-1.87%	AMAT	-2.87%
10.0	IRM	-1.84%	LEN	-2.71%
10.0	CMG	-1.81%	LVS	-2.67%
10.0	AMD	-1.52%	CZR	-2.54%
10.0	BALL	-1.35%	AMZN	-2.49%
10.0	CLF	-1.33%	CDNS	-2.45%
10.0	VST	-1.29%	MRK	-2.29%
10.0	CCL	-1.26%	AMD	-2.2%
10.0	GWV	-1.21%	BHC	-2.2%
10.0	USB	-1.2%	ELAN	-2.19%



P90D: 21d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
21.0	TSLA	-19.97%	TSLA	-20.35%
21.0	ON	-14.59%	NWL	-17.71%
21.0	GNRC	-12.55%	WDC	-14.69%
21.0	CZR	-11.8%	TEVA	-13.76%
21.0	NWL	-11.54%	VST	-13.44%
21.0	GME	-11.45%	AAP	-11.72%
21.0	AAP	-11.21%	ON	-11.61%
21.0	MSTR	-10.98%	VFC	-11.24%
21.0	LW	-10.02%	MSTR	-10.92%
21.0	ELAN	-9.42%	PWR	-10.77%
21.0	WDC	-9.33%	UAA	-10.74%
21.0	AMC	-8.44%	GME	-10.06%
21.0	PWR	-8.35%	CCL	-9.94%
21.0	CMA	-8.23%	IRM	-9.66%
21.0	VFC	-7.4%	GNRC	-9.54%
21.0	TEVA	-6.75%	AVGO	-8.79%
21.0	GOOGL	-6.53%	CDNS	-8.58%
21.0	BHC	-6.48%	GBTC	-8.4%
21.0	AMD	-6.08%	GOOGL	-8.38%
21.0	UAA	-5.93%	AMAT	-8.28%
21.0	VST	-5.78%	LW	-7.77%
21.0	MSFT	-5.54%	AMD	-7.45%
21.0	IRM	-5.11%	CMG	-7.12%
21.0	KEY	-5.07%	CZR	-7.03%
21.0	LUMN	-4.94%	NVDA	-7.02%
21.0	CCL	-4.79%	LUMN	-7.02%
21.0	CYH	-4.7%	LEN	-6.87%
21.0	NVDA	-4.65%	AMZN	-6.38%
21.0	AA	-4.56%	ZION	-6.35%
21.0	ZION	-4.2%	ELAN	-6.08%



P365D: 1d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
1.0	AAP	-0.3%	CLF	-0.32%
1.0	CLF	-0.27%	AAP	-0.26%
1.0	CSTM	-0.22%	AMD	-0.26%
1.0	ON	-0.19%	CZR	-0.24%
1.0	CZR	-0.18%	CSTM	-0.23%
1.0	AMC	-0.17%	IEP	-0.23%
1.0	AMD	-0.16%	FSUGY	-0.2%
1.0	KALU	-0.13%	GT	-0.2%
1.0	IEP	-0.12%	LW	-0.19%
1.0	CVS	-0.11%	ON	-0.18%
1.0	CNC	-0.09%	BIIB	-0.16%
1.0	AMAT	-0.08%	MRK	-0.15%
1.0	BALL	-0.08%	CNC	-0.14%
1.0	MRK	-0.08%	AMAT	-0.14%
1.0	FSUGY	-0.08%	KALU	-0.13%
1.0	MU	-0.08%	MU	-0.11%
1.0	BIIB	-0.07%	CVS	-0.11%
1.0	NAVI	-0.07%	ELAN	-0.1%
1.0	OXY	-0.07%	MOS	-0.09%
1.0	ELAN	-0.07%	LEN	-0.09%
1.0	LW	-0.06%	OXY	-0.08%
1.0	GT	-0.05%	GBTC	-0.08%
1.0	KHC	-0.05%	NAVI	-0.08%
1.0	FCX	-0.05%	FCX	-0.08%
1.0	LEN	-0.05%	BALL	-0.08%
1.0	CDNS	-0.05%	LVS	-0.07%
1.0	WDC	-0.05%	BHP	-0.07%
1.0	MOS	-0.04%	AMC	-0.06%
1.0	LVS	-0.04%	DHI	-0.05%
1.0	BHP	-0.04%	WDC	-0.05%



P365D: 10d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
10.0	AAP	-5.18%	CLF	-3.0%
10.0	CLF	-3.55%	AAP	-2.79%
10.0	ON	-2.35%	CSTM	-2.36%
10.0	LW	-2.15%	AMD	-2.19%
10.0	CZR	-1.87%	IEP	-1.93%
10.0	CSTM	-1.29%	LW	-1.74%
10.0	BIIB	-1.2%	FSUGY	-1.74%
10.0	AMD	-1.19%	ON	-1.71%
10.0	OXY	-1.1%	BIIB	-1.46%
10.0	ELAN	-1.01%	MRK	-1.45%
10.0	BALL	-0.96%	CZR	-1.36%
10.0	KALU	-0.94%	AMAT	-1.35%
10.0	KHC	-0.88%	BHC	-1.3%
10.0	IEP	-0.83%	LEN	-1.19%
10.0	CNC	-0.7%	OXY	-1.17%
10.0	FSUGY	-0.68%	WDC	-1.12%
10.0	MRK	-0.66%	BALL	-1.09%
10.0	AMAT	-0.61%	KALU	-1.04%
10.0	NAVI	-0.55%	GT	-0.99%
10.0	BHC	-0.51%	CNC	-0.89%
10.0	LVS	-0.5%	NAVI	-0.84%
10.0	WYNN	-0.47%	KHC	-0.79%
10.0	PRGO	-0.47%	LVS	-0.74%
10.0	CMG	-0.42%	PRGO	-0.73%
10.0	LEN	-0.4%	ADBE	-0.69%
10.0	CDNS	-0.34%	ELAN	-0.62%
10.0	WDC	-0.33%	CMG	-0.61%
10.0	MSFT	-0.32%	DHI	-0.59%
10.0	ADBE	-0.3%	BHP	-0.55%
10.0	GT	-0.29%	PEP	-0.53%



P365D: 21d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
21.0	AAP	-8.71%	AAP	-5.69%
21.0	ON	-5.43%	CLF	-5.39%
21.0	LW	-5.31%	CSTM	-4.76%
21.0	CLF	-5.09%	IEP	-3.9%
21.0	CZR	-3.72%	AMD	-3.67%
21.0	OXY	-3.69%	LW	-3.5%
21.0	ELAN	-3.6%	FSUGY	-3.35%
21.0	CSTM	-3.2%	ON	-3.27%
21.0	BIIB	-2.35%	OXY	-3.26%
21.0	AMD	-2.3%	BIIB	-2.96%
21.0	INTC	-2.12%	MRK	-2.95%
21.0	MRK	-2.03%	WDC	-2.95%
21.0	BALL	-2.01%	INTC	-2.76%
21.0	IEP	-1.88%	AMAT	-2.45%
21.0	KALU	-1.82%	GT	-2.44%
21.0	WDC	-1.78%	CNC	-2.16%
21.0	KHC	-1.72%	BALL	-2.04%
21.0	CNC	-1.47%	KALU	-1.99%
21.0	FSUGY	-1.28%	CZR	-1.96%
21.0	FCX	-1.24%	LEN	-1.87%
21.0	AMAT	-1.15%	BHC	-1.78%
21.0	NAVI	-1.15%	FCX	-1.72%
21.0	WYNN	-1.1%	KHC	-1.62%
21.0	GT	-0.85%	NAVI	-1.37%
21.0	BHC	-0.82%	MOS	-1.3%
21.0	PEP	-0.77%	CMG	-1.12%
21.0	BHP	-0.75%	CDNS	-1.09%
21.0	PRGO	-0.75%	BHP	-1.05%
21.0	MSFT	-0.66%	PEP	-0.95%
21.0	CMG	-0.65%	MU	-0.93%



P365D: 63d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
63.0	AAP	-25.97%	CSTM	-19.21%
63.0	CLF	-19.79%	CLF	-16.59%
63.0	IEP	-15.0%	IEP	-16.25%
63.0	ON	-14.21%	AAP	-15.66%
63.0	OXY	-13.15%	BIIB	-12.47%
63.0	BIIB	-12.63%	FSUGY	-10.91%
63.0	ELAN	-12.58%	LW	-10.84%
63.0	CSTM	-12.51%	AMD	-10.73%
63.0	LW	-9.12%	INTC	-10.4%
63.0	KALU	-8.84%	MRK	-10.23%
63.0	MRK	-8.3%	ELAN	-9.54%
63.0	INTC	-8.26%	ON	-8.94%
63.0	AMD	-7.43%	GT	-8.68%
63.0	BALL	-6.54%	KALU	-8.6%
63.0	FCX	-6.44%	OXY	-8.52%
63.0	WDC	-6.22%	FCX	-8.02%
63.0	FSUGY	-4.81%	MU	-7.75%
63.0	BUD	-4.78%	AMAT	-7.51%
63.0	KHC	-4.66%	BALL	-7.39%
63.0	CNC	-4.45%	WDC	-6.98%
63.0	PRGO	-4.4%	KHC	-5.27%
63.0	BHP	-4.16%	LEN	-5.22%
63.0	MU	-4.09%	CNC	-5.02%
63.0	GT	-4.05%	PEP	-4.49%
63.0	GSK	-3.98%	BHP	-4.48%
63.0	AMAT	-3.92%	PRGO	-4.17%
63.0	QCOM	-3.56%	QCOM	-4.13%
63.0	PEP	-3.43%	MOS	-3.98%
63.0	ADBE	-2.83%	CMG	-3.87%
63.0	CMCSA	-2.24%	GSK	-3.59%



P365D: 126d

Results reflect ticker level average 99% VaR based ROVBC across all model dates for which actual results for the stated horizon are known (periods for all horizons > 1d overlap).

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker_V	ROVBC_V	Ticker_S	ROVBC_S
126.0	AAP	-66.41%	CSTM	-38.71%
126.0	BIIB	-34.43%	AAP	-33.5%
126.0	IEP	-31.23%	IEP	-31.23%
126.0	OXY	-30.38%	CLF	-27.1%
126.0	CLF	-29.56%	BIIB	-26.43%
126.0	CSTM	-28.24%	MRK	-20.69%
126.0	MRK	-18.62%	AMD	-17.72%
126.0	ELAN	-17.7%	OXY	-17.67%
126.0	CNC	-16.09%	FSUGY	-16.56%
126.0	INTC	-15.48%	CNC	-16.54%
126.0	AMD	-15.24%	INTC	-16.5%
126.0	KALU	-14.8%	ELAN	-16.48%
126.0	ON	-13.31%	ON	-15.98%
126.0	PRGO	-12.57%	AMAT	-15.84%
126.0	FCX	-11.83%	BALL	-12.68%
126.0	KHC	-11.05%	KALU	-12.45%
126.0	LW	-10.81%	GSK	-12.32%
126.0	BALL	-10.61%	FCX	-12.0%
126.0	GSK	-10.12%	LW	-11.63%
126.0	AMC	-9.99%	MU	-11.6%
126.0	FSUGY	-9.77%	GT	-11.43%
126.0	BUD	-9.59%	WDC	-11.02%
126.0	AMAT	-9.49%	KHC	-10.58%
126.0	WDC	-9.44%	LEN	-10.1%
126.0	QCOM	-8.99%	AMC	-9.99%
126.0	GT	-7.65%	PEP	-9.18%
126.0	DHI	-7.59%	QCOM	-8.99%
126.0	MU	-7.19%	ADBE	-8.8%
126.0	BHP	-7.06%	PRGO	-8.48%
126.0	PEP	-6.87%	AZN	-8.36%



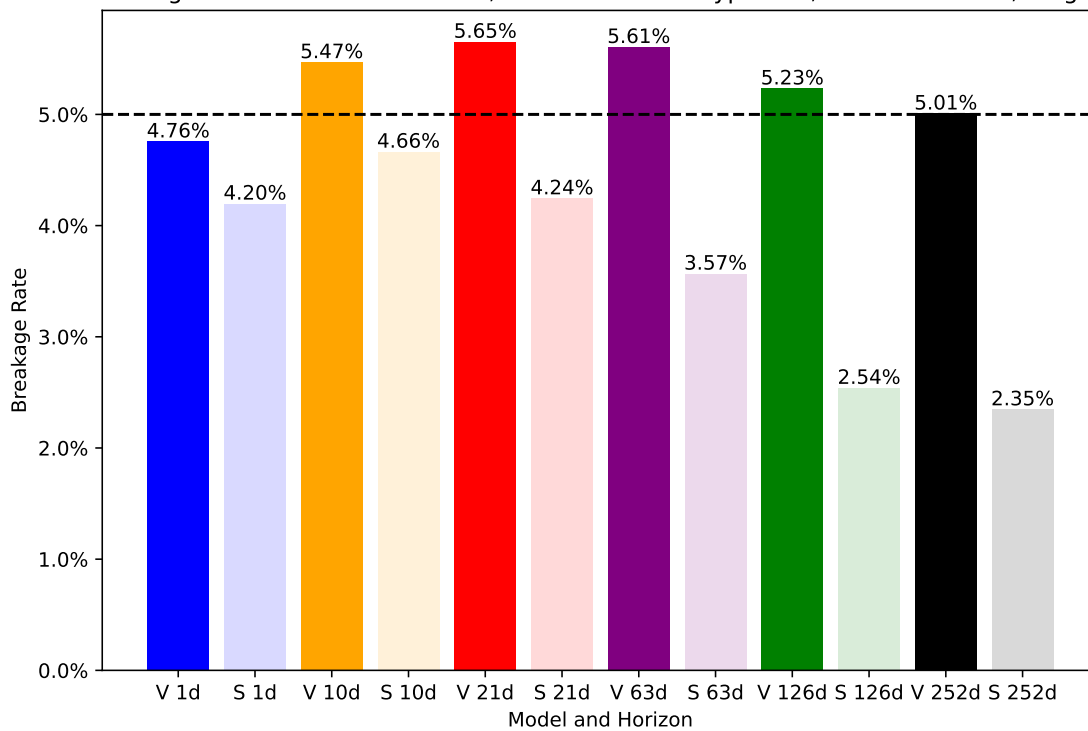
APPENDIX 1: 95% VaR Performance excluding Crypto & Meme stocks

Here we repeat the performance comparison of 95% VaR estimates generated by the Vector Model (“V”, presented with dark shading) and Sigma (“S”, presented with light shading) that was provided earlier but exclude tickers MSTR, GBTC, AMC, and GME from all model dates. We refer to these tickers as the Crypto / Meme basket, or “CryptMem” for short.

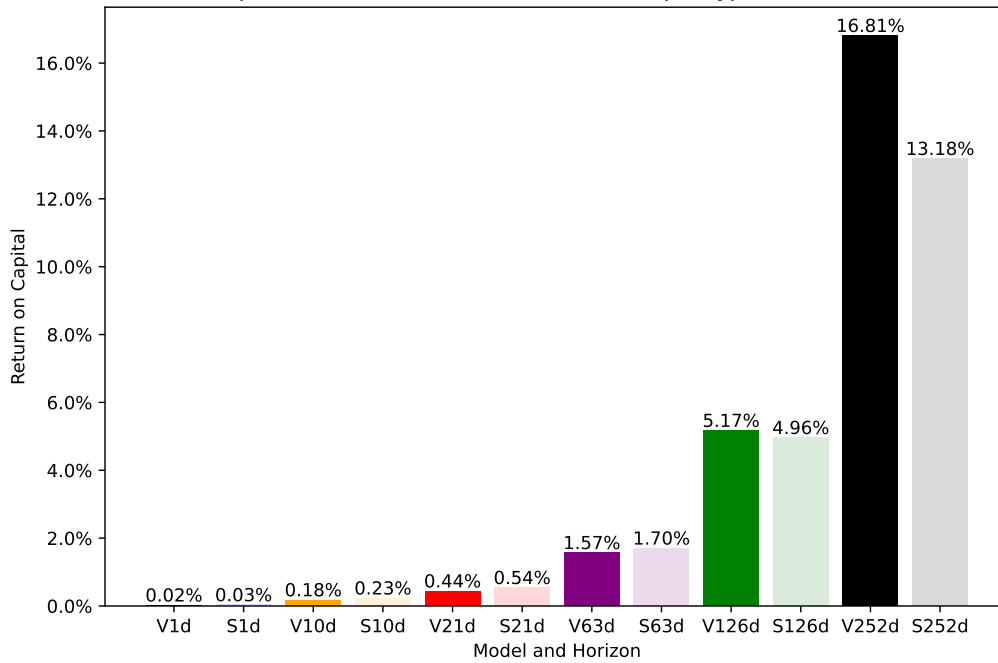
All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-03-28

VaR Breackage Rates for the 95th %tile, All Tickers excl CryptMem, All Model Dates, no grouping



Return on VaR Based Capital for the 95th %tile, All Tickers Except CryptMem and Model Dates, no grouping



Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's:

	1d	10d	21d	63d	126d	252d
intercept	-0.01%	-0.09%	-0.21%	-0.63%	-1.45%	-1.63%
intercept_p_value	4.34%	0.00%	0.00%	0.00%	0.00%	0.00%
slope	105.57%	115.84%	120.20%	127.92%	132.93%	140.15%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



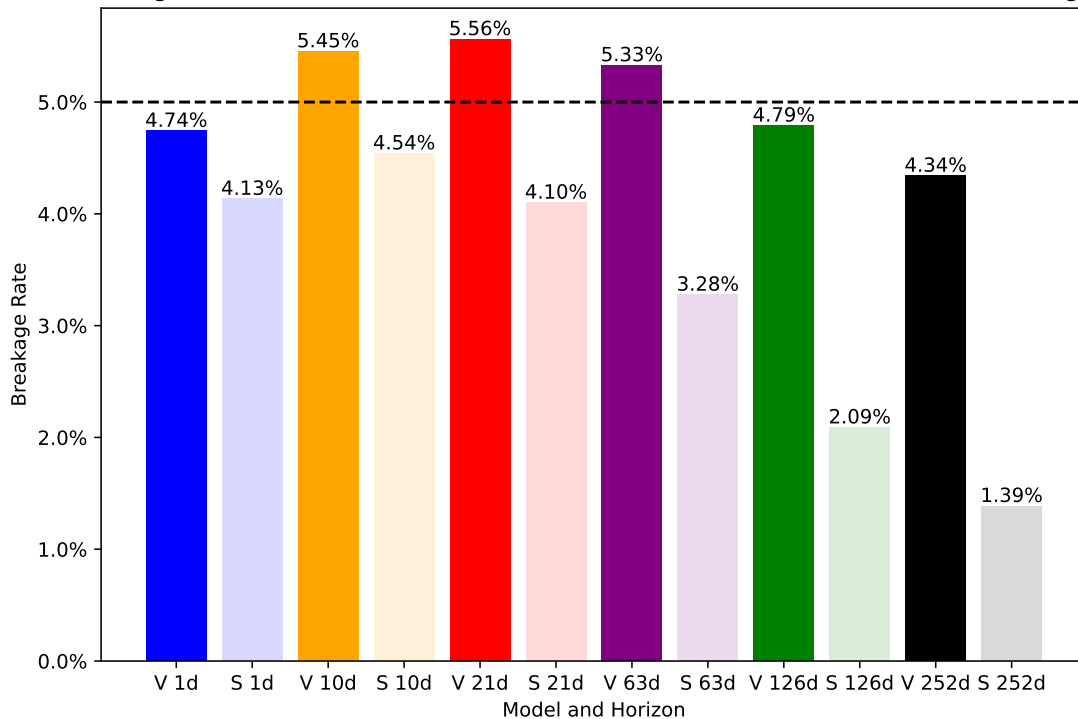
APPENDIX 2: 95% VaR Performance excluding Failed Banks

Here we repeat the performance comparison of 95% VaR estimates generated by the Vector Model (“V”, presented with dark shading) and Sigma (“S”, presented with light shading) that was provided earlier but exclude tickers SIVBQ, SBNY, and FRCB from all model dates. We refer to these tickers as the “Failed Banks”.

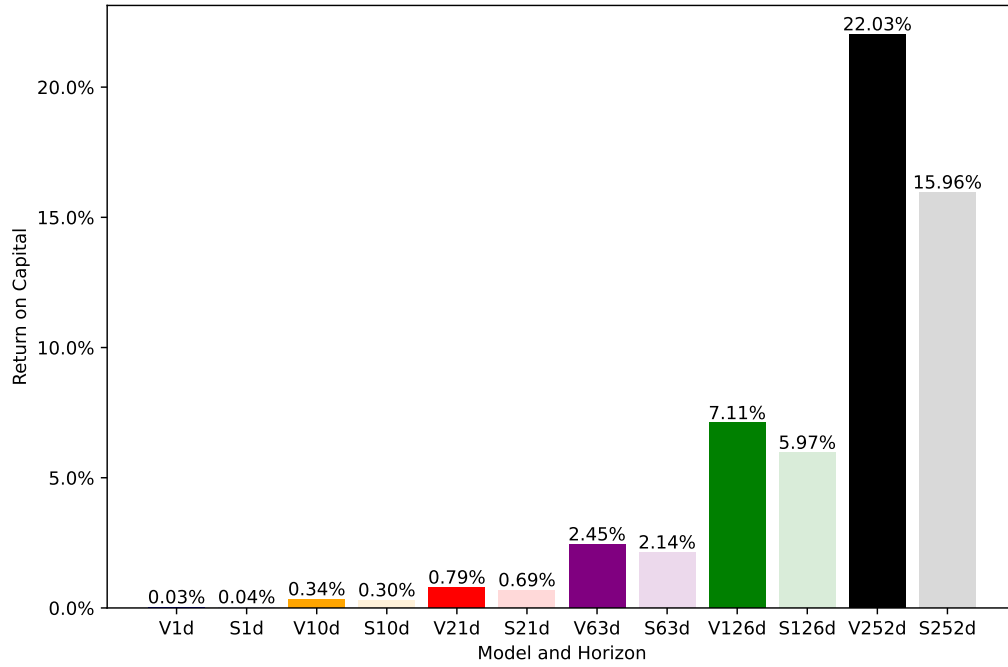
All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-03-28

VaR Breakage Rates for the 95th %tile, All Tickers excl Failed Banks, All Model Dates, no grouping



Return on VaR Based Capital for the 95th %tile, All Tickers excl. Failed Banks, All Model Dates, no grouping



Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's:

	1d	10d	21d	63d	126d	252d
intercept	-0.01%	-0.05%	-0.11%	-0.33%	-0.46%	-1.34%
intercept_p_value	17.87%	0.61%	0.00%	0.00%	0.00%	0.00%
slope	113.02%	128.70%	130.51%	128.71%	126.49%	146.65%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



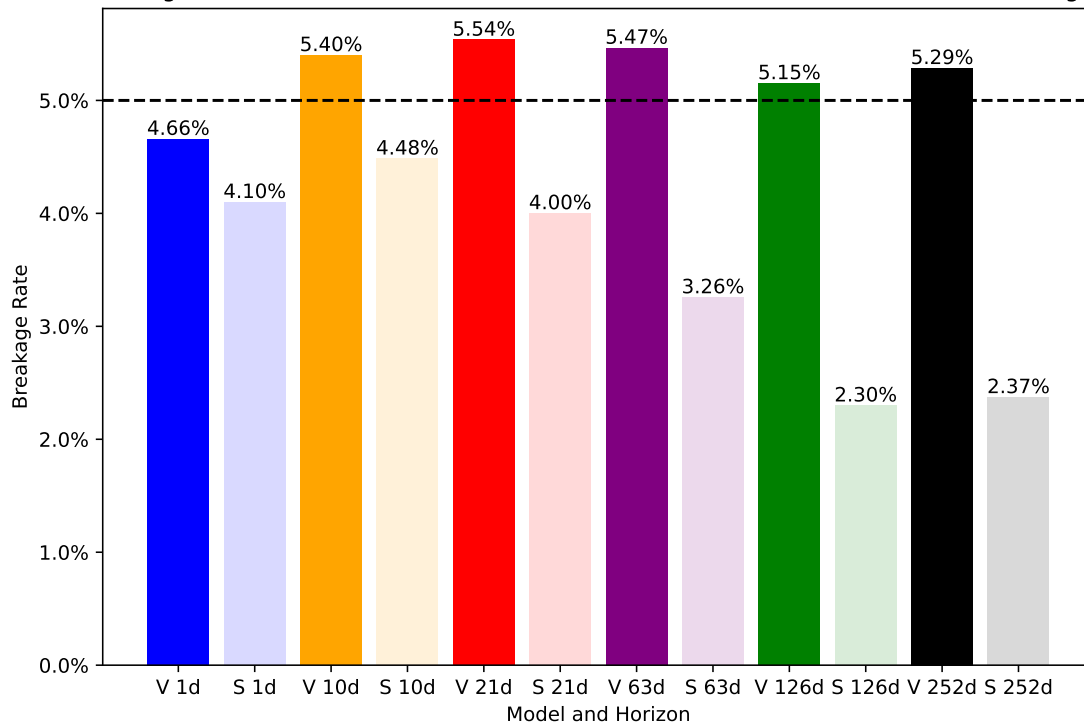
APPENDIX 3: 95% VaR Performance excluding Debt Funds

Here we repeat the performance comparison of 95% VaR estimates generated by the Vector Model (“V”, presented with dark shading) and Sigma (“S”, presented with light shading) that was provided earlier but exclude ETF and Closed End Fund tickers TLT, LQD, VCSH, MUB, HYG EMB, and FRA from all model dates. We refer to these tickers as the Debt Fund basket, or “Debt” for short.

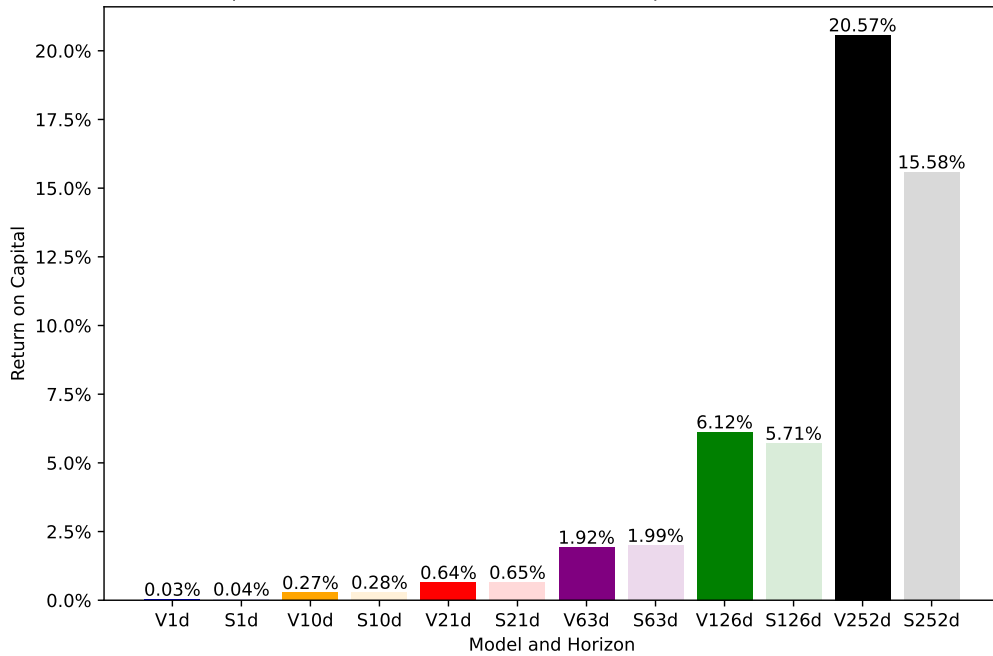
All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-03-28

VaR Breakage Rates for the 95th %tile, All Tickers excl Debt Funds, All Model Dates, no grouping



Return on VaR Based Capital for the 95th %tile, All Tickers Except Debt Funds and Model Dates, no grouping



Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's:

	1d	10d	21d	63d	126d	252d
intercept	-0.01%	-0.11%	-0.24%	-0.82%	-1.55%	-2.87%
intercept_p_value	6.11%	0.00%	0.00%	0.00%	0.00%	0.00%
slope	115.75%	134.70%	136.60%	136.35%	133.98%	150.62%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

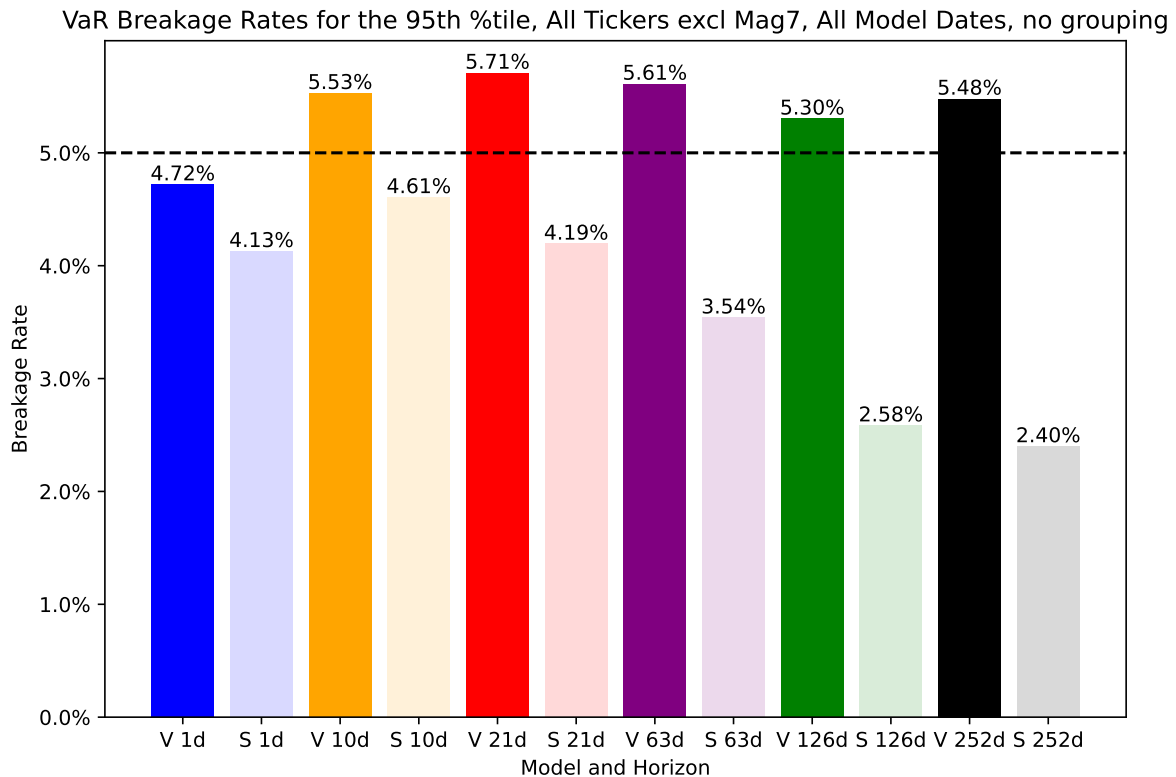


APPENDIX 4: 95% VaR Performance excluding “Mag 7” stocks

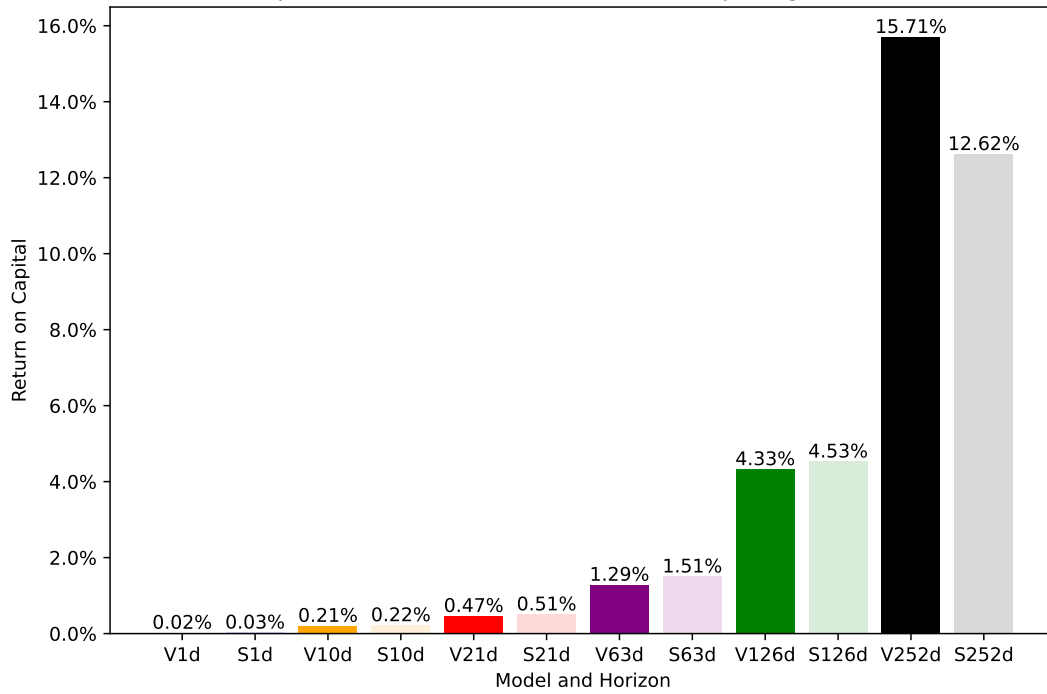
Here we repeat the performance comparison of 95% VaR estimates generated by the Vector Model (“V”, presented with dark shading) and Sigma (“S”, presented with light shading) that was provided earlier but exclude tickers AAPL, AMZN, GOOGL, META, NFLX, NVDA, and TSLA from all model dates. We refer to these tickers as the “Mag7” basket.

All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-03-28



Return on VaR Based Capital for the 95th %tile, All Tickers Except Mag7 and Model Dates, no grouping



Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's:

	1d	10d	21d	63d	126d	252d
intercept	-0.01%	-0.10%	-0.22%	-0.75%	-1.55%	-3.20%
intercept_p_value	7.29%	0.00%	0.00%	0.00%	0.00%	0.00%
slope	115.65%	135.12%	136.98%	136.12%	132.19%	151.85%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

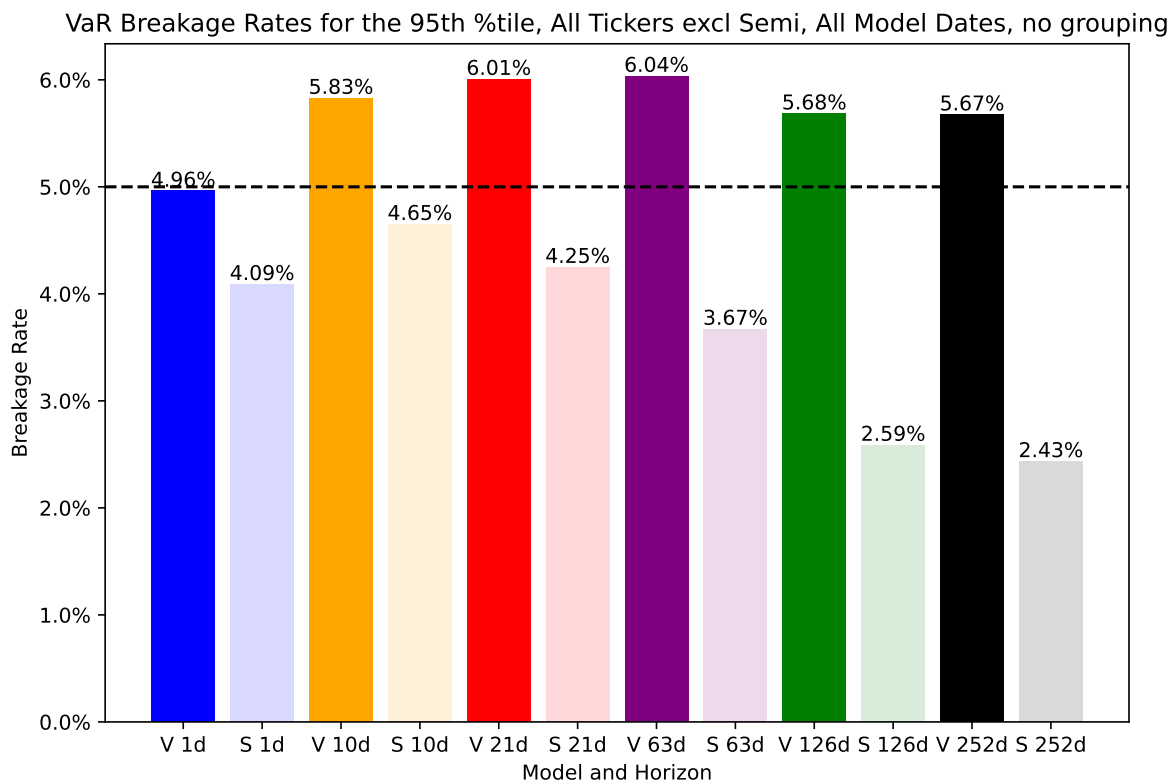


APPENDIX 5: 95% VaR Performance excluding “Semiconductor” stocks

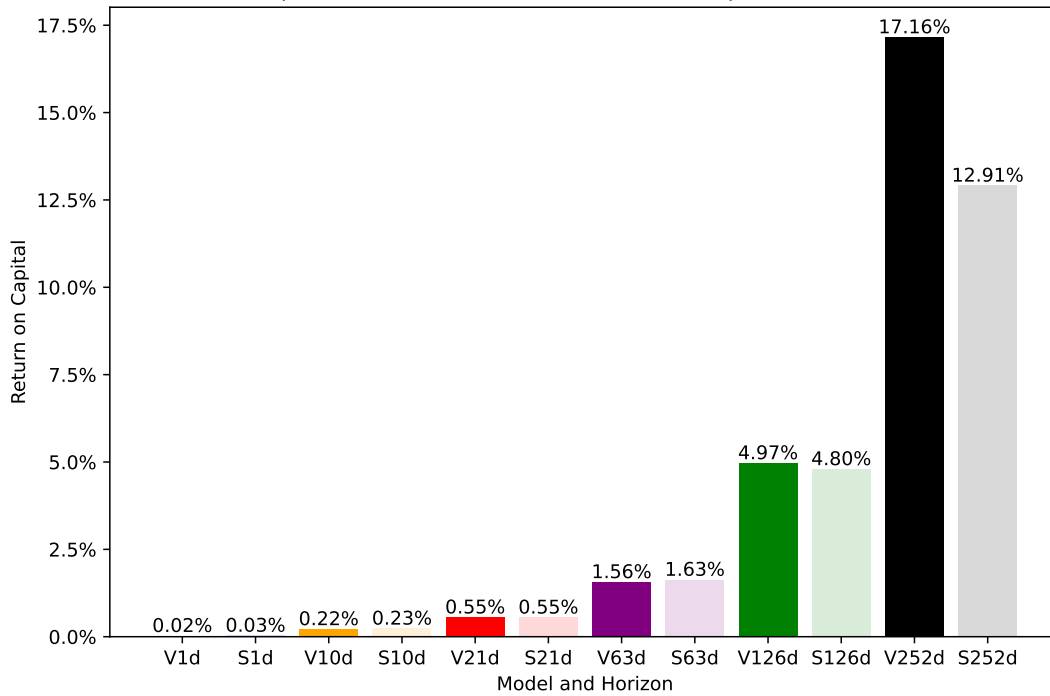
Here we repeat the performance comparison of 95% VaR estimates generated by the Vector Model (“V”, presented with dark shading) and Sigma (“S”, presented with light shading) that was provided earlier but exclude tickers ‘NVDA’, ‘AMD’, ‘AVGO’, ‘MU’, ‘AMAT’, ‘CDNS’, ‘TXN’, ‘ON’, ‘QCOM’, and ‘INTC’ from all model dates. We refer to these tickers as the “Semi” basket.

All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-03-28



Return on VaR Based Capital for the 95th %tile, All Tickers Except Semi and Model Dates, no grouping



Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's:

	1d	10d	21d	63d	126d	252d
intercept	-0.01%	-0.11%	-0.22%	-0.74%	-1.62%	-2.96%
intercept_p_value	5.03%	0.00%	0.00%	0.00%	0.00%	0.00%
slope	119.42%	139.38%	140.92%	140.39%	137.24%	155.87%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

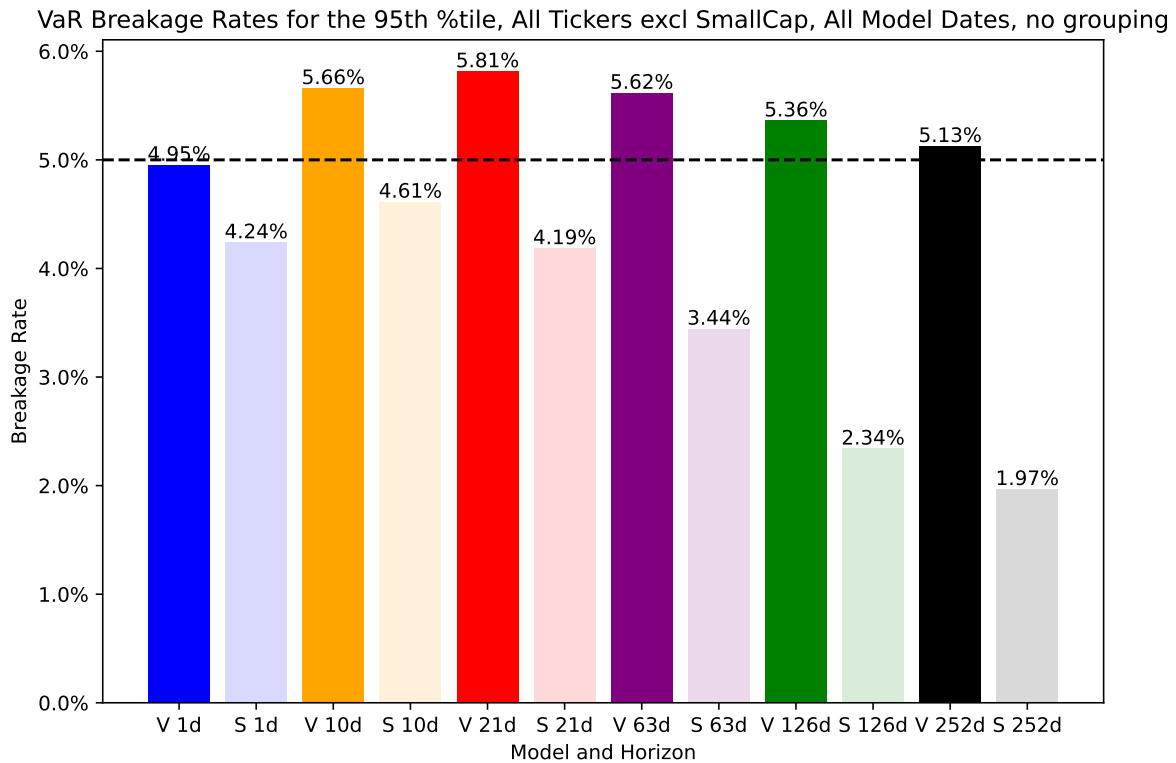


APPENDIX 6: 95% VaR Performance excluding Small Cap stocks

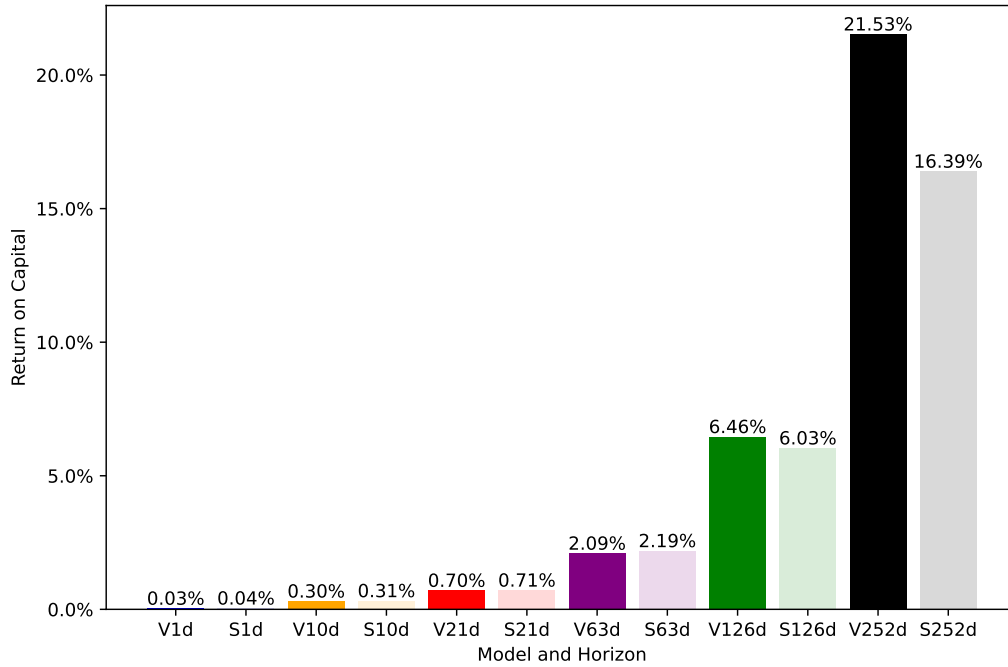
Here we repeat the performance comparison of 95% VaR estimates generated by the Vector Model (“V”, presented with dark shading) and Sigma (“S”, presented with light shading) that was provided earlier but exclude tickers ‘NAVJ’, ‘LUMN’, ‘CYH’, ‘NWL’, ‘KALU’, ‘IEP’, ‘POST’, ‘GT’, and ‘BHC’ from all model dates. We refer to these tickers as the “SmallCap” basket.

All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-03-28



Return on VaR Based Capital for the 95th %tile, All Tickers Except SmallCap and Model Dates, no grouping



Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's:

	1d	10d	21d	63d	126d	252d
intercept	-0.01%	-0.14%	-0.30%	-0.99%	-1.81%	-3.41%
intercept_p_value	2.54%	0.00%	0.00%	0.00%	0.00%	0.00%
slope	117.76%	139.36%	141.18%	139.75%	136.71%	152.40%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

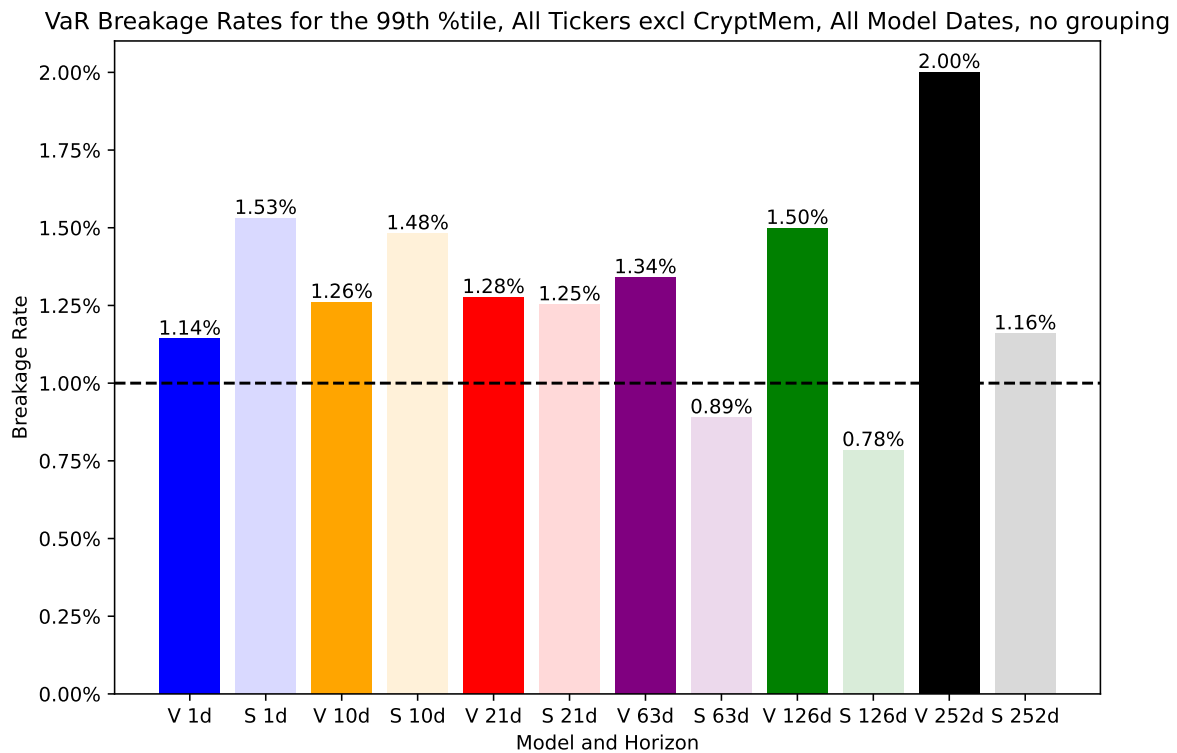


APPENDIX 7: 99% VaR Performance excluding Crypto & Meme stocks

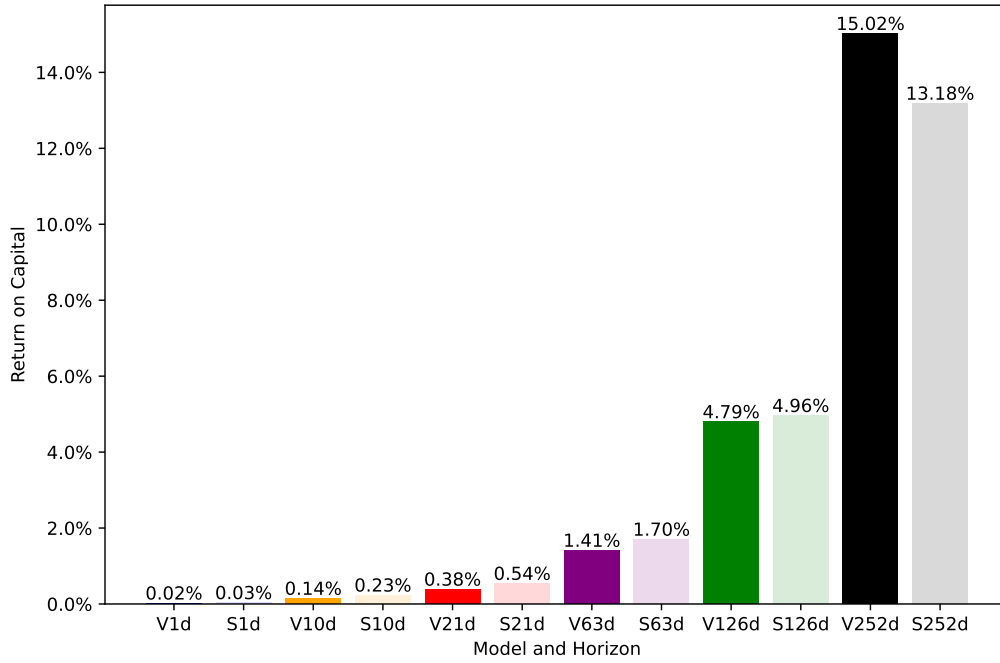
Here we repeat the performance comparison of 99% VaR estimates generated by the Vector Model (“V”, presented with dark shading) and Sigma (“S”, presented with light shading) that was provided earlier but exclude tickers MSTR, GBTC, AMC, and GME from all model dates. We refer to these tickers as the Crypto / Meme basket, or “CryptMem” for short.

All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-03-28



Return on VaR Based Capital for the 99th %tile, All Tickers Except CryptMem and Model Dates, no grouping



Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's:

	1d	10d	21d	63d	126d	252d
intercept	-0.00%	-0.06%	-0.12%	-0.42%	-1.06%	-1.25%
intercept_p_value	33.98%	0.00%	0.00%	0.00%	0.00%	0.00%
slope	76.68%	90.16%	93.59%	106.16%	117.52%	123.04%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



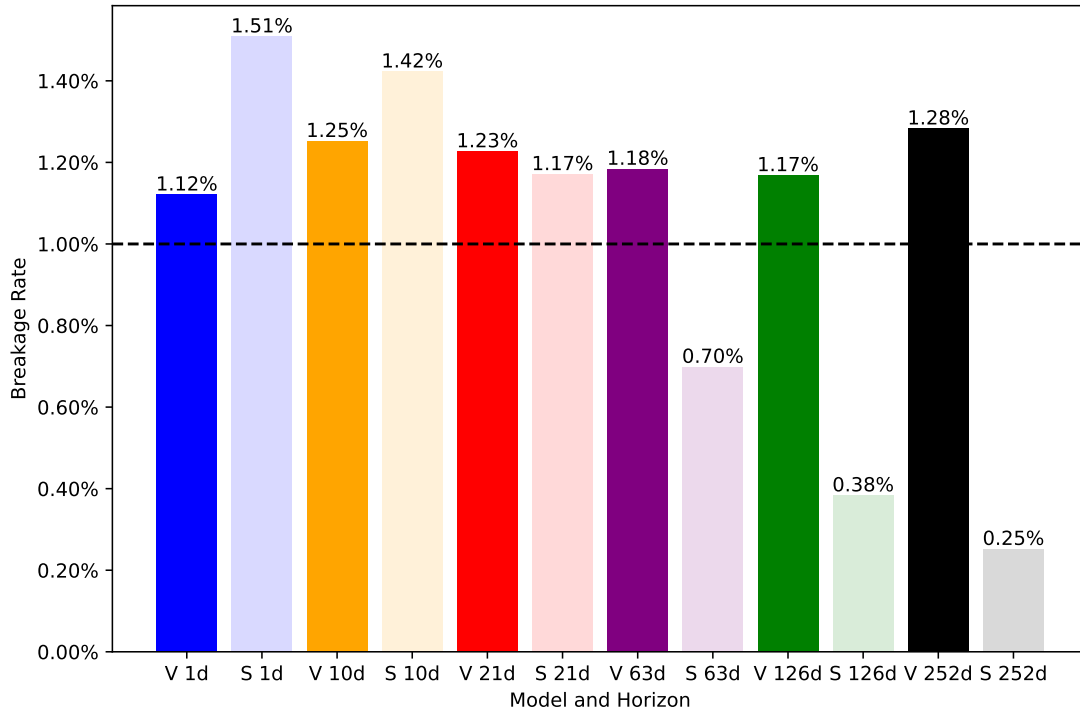
APPENDIX 8: 99% VaR Performance excluding Failed Banks

Here we repeat the performance comparison of 99% VaR estimates generated by the Vector Model (“V”, presented with dark shading) and Sigma (“S”, presented with light shading) that was provided earlier but exclude tickers SIVBQ, SBNY, and FRCB from all model dates. We refer to these tickers as the “Failed Banks”.

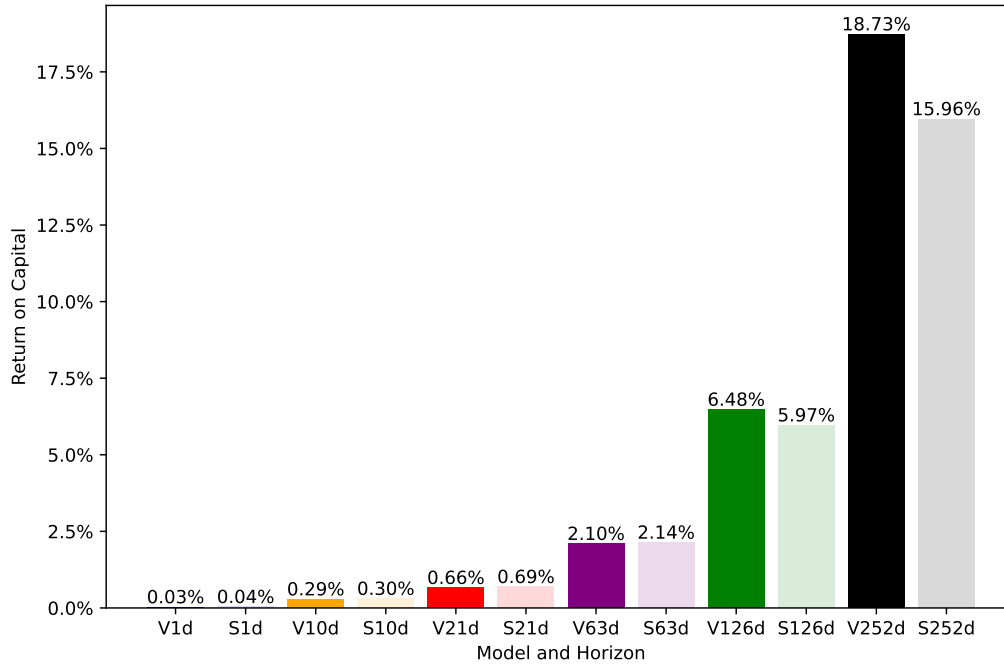
All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-03-28

VaR Breakege Rates for the 99th %tile, All Tickers excl Failed Banks, All Model Dates, no grouping



Return on VaR Based Capital for the 99th %tile, All Tickers excl. Failed Banks, All Model Dates, no grouping



Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's:

	1d	10d	21d	63d	126d	252d
intercept	-0.00%	-0.03%	-0.08%	-0.16%	-0.27%	-0.16%
intercept_p_value	96.06%	6.35%	0.16%	0.00%	0.00%	4.02%
slope	84.71%	104.64%	106.27%	104.42%	112.75%	118.03%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



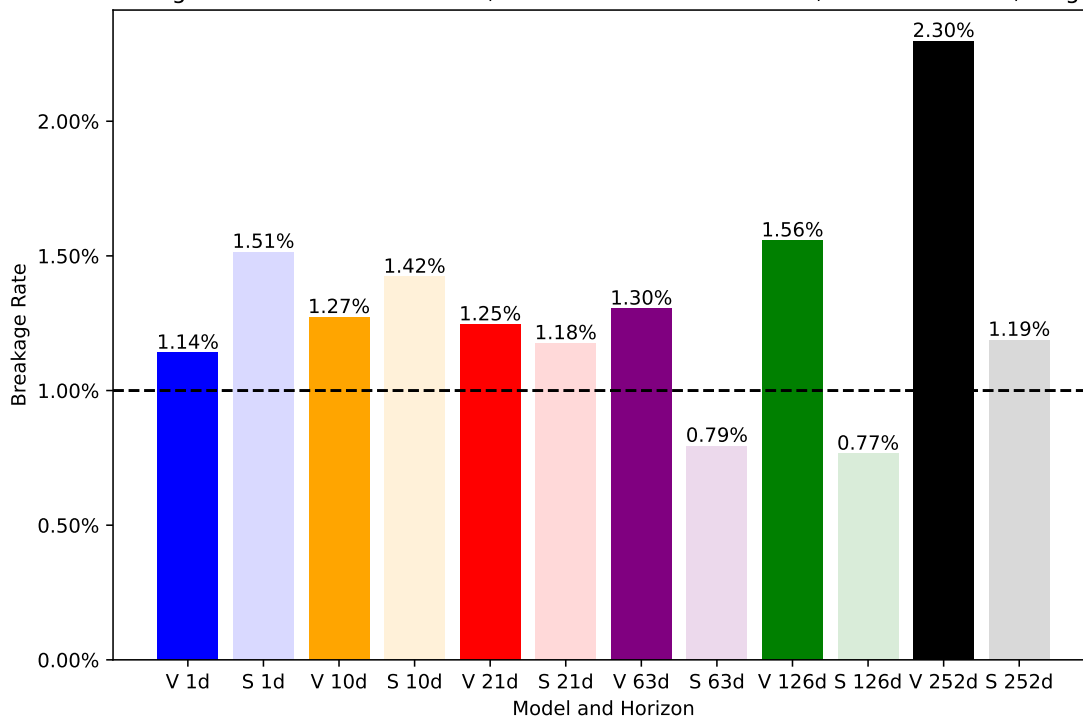
APPENDIX 9: 99% VaR Performance excluding Debt Funds

Here we repeat the performance comparison of 99% VaR estimates generated by the Vector Model (“V”, presented with dark shading) and Sigma (“S”, presented with light shading) that was provided earlier but exclude ETF and Closed End Fund tickers TLT, LQD, VCSH, MUB, HYG EMB, and FRA from all model dates. We refer to these tickers as the Debt Fund basket, or “Debt” for short.

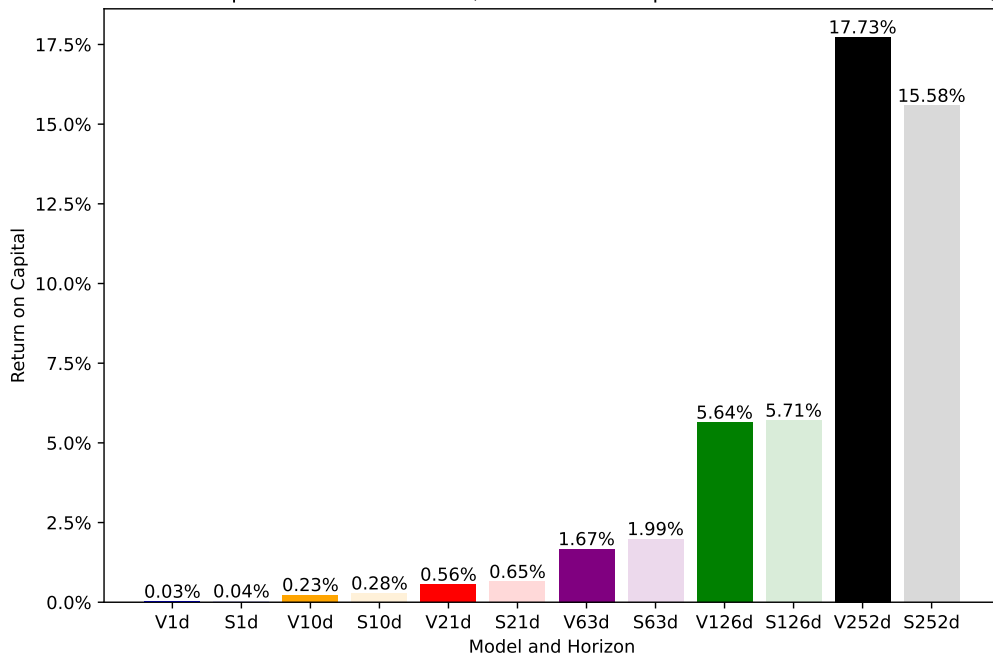
All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-03-28

VaR Breakege Rates for the 99th %tile, All Tickers excl Debt Funds, All Model Dates, no grouping



Return on VaR Based Capital for the 99th %tile, All Tickers Except Debt Funds and Model Dates, no grouping



Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's:

	1d	10d	21d	63d	126d	252d
intercept	-0.00%	-0.08%	-0.16%	-0.56%	-1.18%	-1.13%
intercept_p_value	38.29%	0.00%	0.00%	0.00%	0.00%	0.00%
slope	88.00%	109.65%	110.76%	111.12%	119.18%	120.62%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

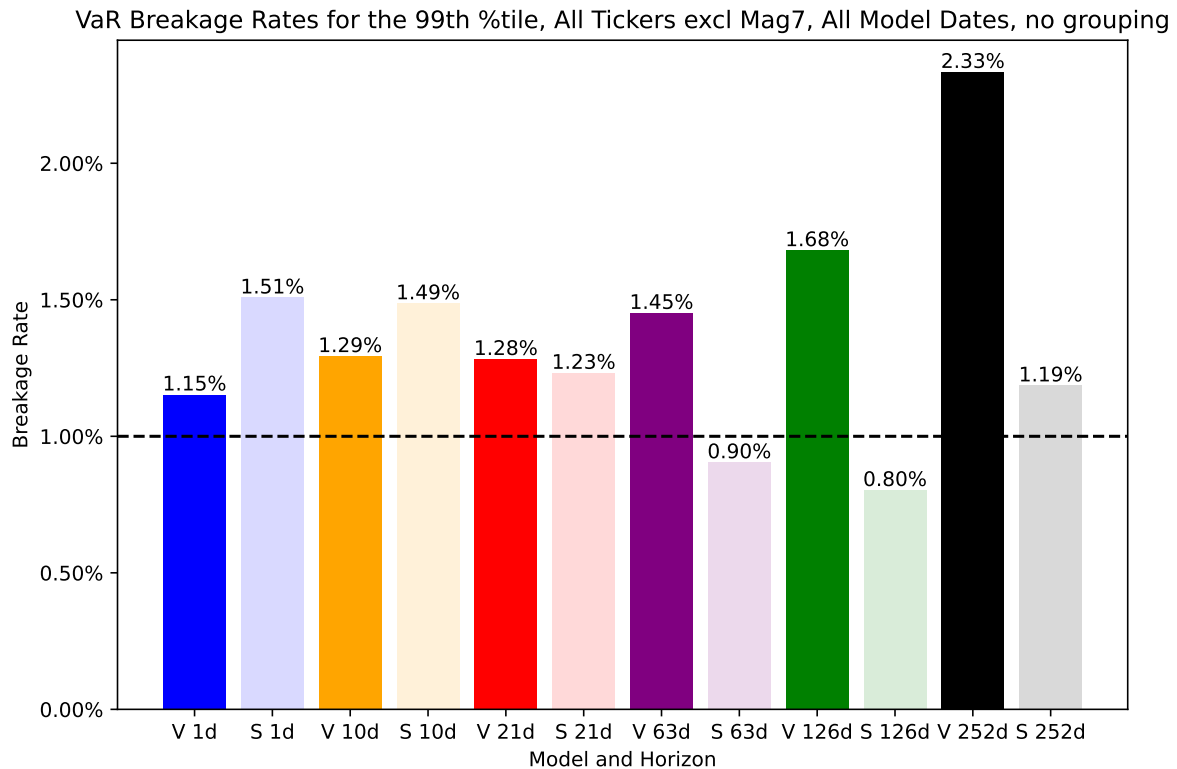


APPENDIX 10: 99% VaR Performance excluding “Mag 7” stocks

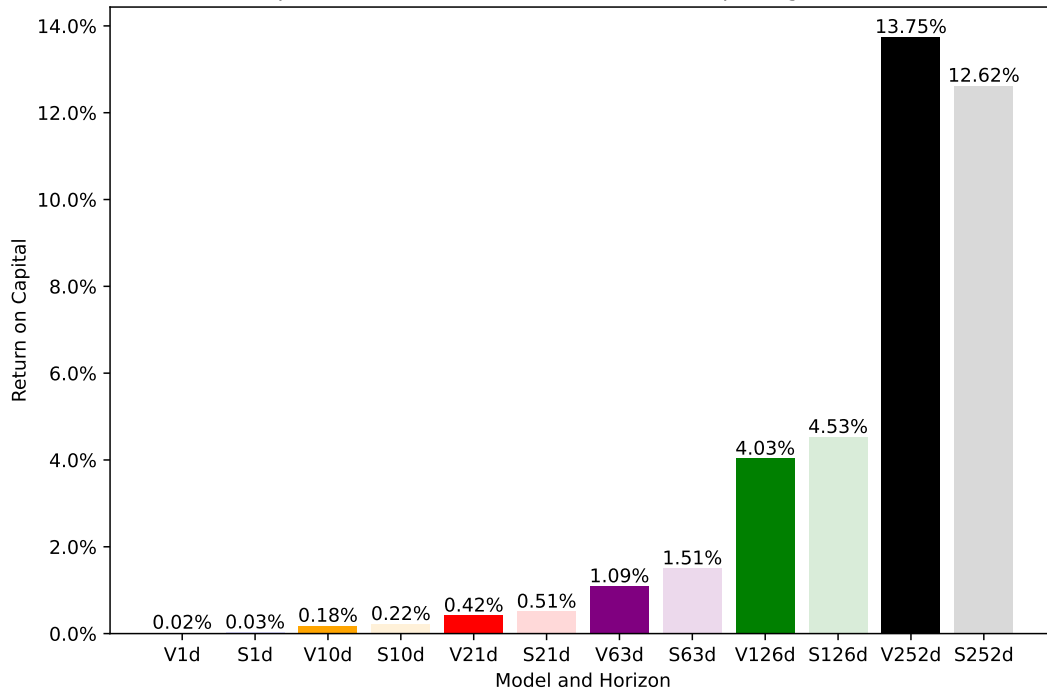
Here we repeat the performance comparison of 99% VaR estimates generated by the Vector Model (“V”, presented with dark shading) and Sigma (“S”, presented with light shading) that was provided earlier but exclude tickers AAPL, AMZN, GOOGL, META, NFLX, NVDA, and TSLA from all model dates. We refer to these tickers as the “Mag7” basket.

All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-03-28



Return on VaR Based Capital for the 99th %tile, All Tickers Except Mag7 and Model Dates, no grouping



Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's:

	1d	10d	21d	63d	126d	252d
intercept	-0.00%	-0.07%	-0.14%	-0.58%	-1.25%	-1.47%
intercept_p_value	38.72%	0.03%	0.00%	0.00%	0.00%	0.00%
slope	88.13%	110.00%	111.04%	110.49%	116.87%	120.14%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

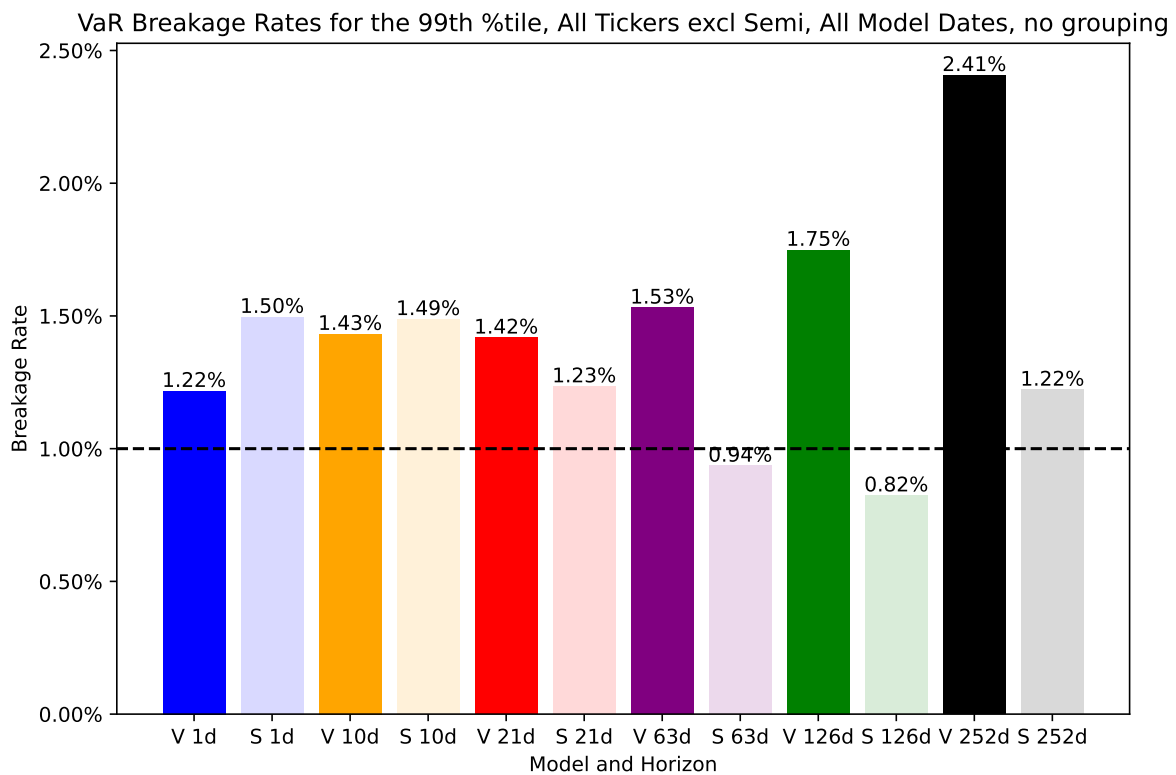


APPENDIX 11: 99% VaR Performance excluding “Semiconductor” stocks

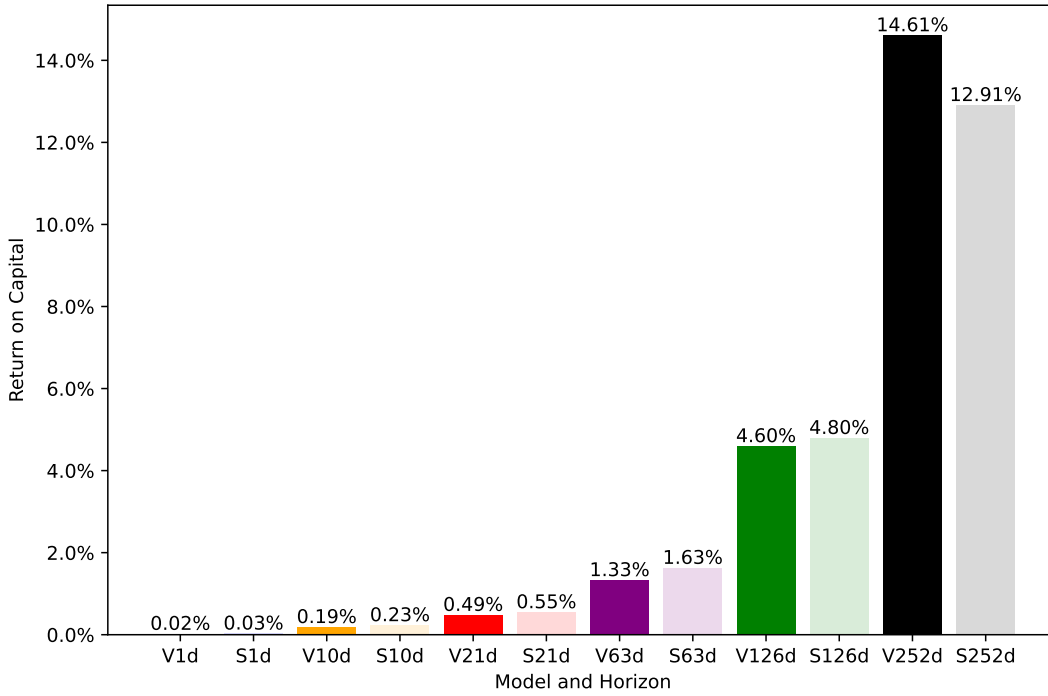
Here we repeat the performance comparison of 99% VaR estimates generated by the Vector Model (“V”, presented with dark shading) and Sigma (“S”, presented with light shading) that was provided earlier but exclude tickers ‘NVDA’, ‘AMD’, ‘AVGO’, ‘MU’, ‘AMAT’, ‘CDNS’, ‘TXN’, ‘ON’, ‘QCOM’, and ‘INTC’ from all model dates. We refer to these tickers as the “Semi” basket.

All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-03-28



Return on VaR Based Capital for the 99th %tile, All Tickers Except Semi and Model Dates, no grouping



Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's:

	1d	10d	21d	63d	126d	252d
intercept	-0.00%	-0.08%	-0.15%	-0.53%	-1.23%	-1.21%
intercept_p_value	44.96%	0.01%	0.00%	0.00%	0.00%	0.00%
slope	91.00%	113.89%	114.58%	113.68%	121.46%	122.58%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



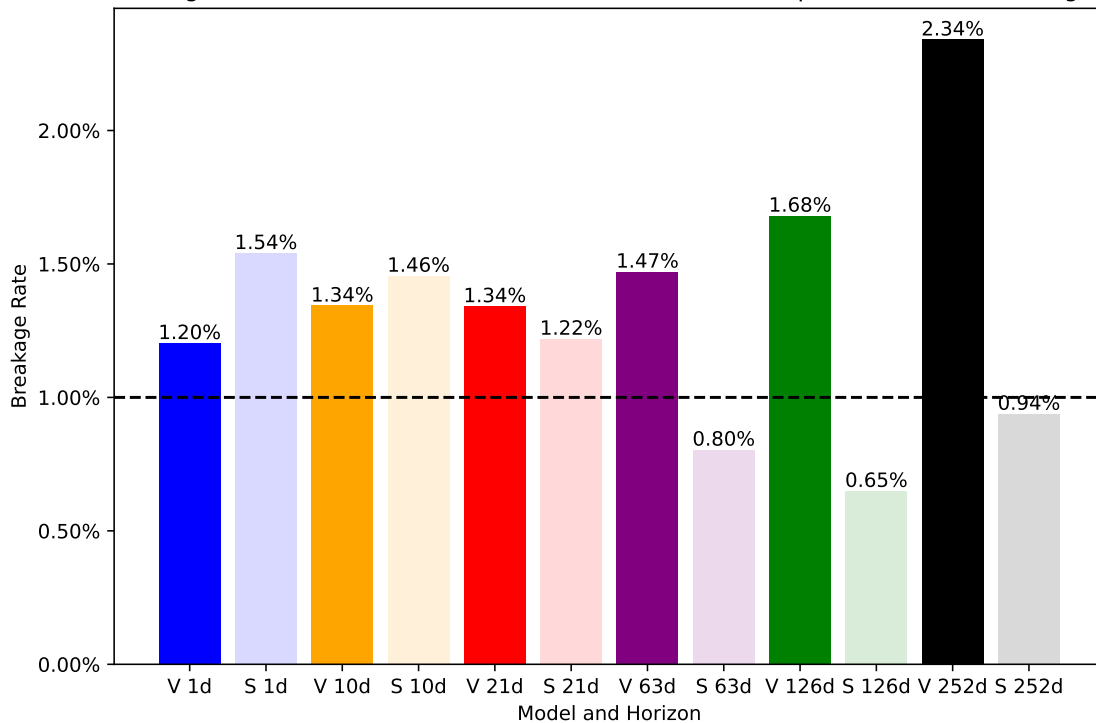
APPENDIX 12: 99% VaR Performance excluding Small Cap stocks

Here we repeat the performance comparison of 99% VaR estimates generated by the Vector Model (“V”, presented with dark shading) and Sigma (“S”, presented with light shading) that was provided earlier but exclude tickers ‘NAVJ’, ‘LUMN’, ‘CYH’, ‘NWL’, ‘KALU’, ‘IEP’, ‘POST’, ‘GT’, and ‘BHC’ from all model dates. We refer to these tickers as the “SmallCap” basket.

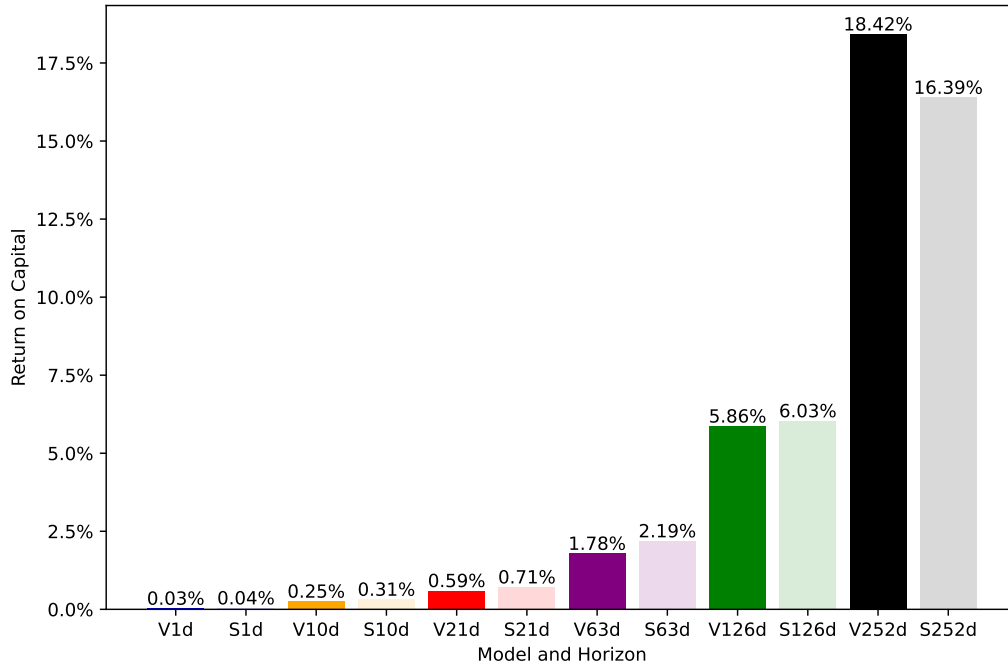
All Out of Sample Model Dates

Period examined: All model dates from 2022-01-31 through 2025-03-28

VaR Breakage Rates for the 99th %tile, All Tickers excl SmallCap, All Model Dates, no grouping



Return on VaR Based Capital for the 99th %tile, All Tickers Except SmallCap and Model Dates, no grouping



Alpha (intercept) and Beta (slope) of Vector Model ROVBC regressed upon corresponding actual returns across TMD's:

	1d	10d	21d	63d	126d	252d
intercept	-0.01%	-0.10%	-0.21%	-0.71%	-1.48%	-1.59%
intercept_p_value	19.09%	0.00%	0.00%	0.00%	0.00%	0.00%
slope	90.02%	113.30%	113.31%	112.98%	121.28%	121.74%
slope_p_value	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%



Appendix 13: Top & Bottom 25 Ticker Level Differences in 95% VaR

All Out of Sample Model Dates: 1d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 95% VaR exceeds Sigma 95% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
1.0	GME	9.02%	GBTC	-9.07%
1.0	SBNY	3.68%	NVDA	-8.17%
1.0	MSTR	3.16%	AMAT	-8.07%
1.0	UAA	2.21%	VNO	-6.25%
1.0	SIVBQ	2.11%	CCL	-6.25%
1.0	CHTR	1.84%	LUMN	-6.23%
1.0	AAP	1.79%	PHM	-6.01%
1.0	META	1.32%	CZR	-5.8%
1.0	BALL	1.07%	CYH	-5.31%
1.0	VFC	1.04%	MS	-5.07%
1.0	KALU	1.02%	PWR	-4.92%
1.0	CMA	0.86%	GT	-4.76%
1.0	EXPE	0.72%	THC	-4.38%
1.0	GOLD	0.7%	MSFT	-4.21%
1.0	FRCB	0.67%	MOS	-4.04%
1.0	OXY	0.67%	QQQ	-3.88%
1.0	AMZN	0.62%	LLY	-3.8%
1.0	QCOM	0.44%	X	-3.79%
1.0	JAZZ	0.44%	AMC	-3.75%
1.0	BIIB	0.4%	ETRN	-3.66%
1.0	BUD	0.38%	TRGP	-3.66%
1.0	HD	0.35%	VST	-3.64%
1.0	SLV	0.32%	PCG	-3.6%
1.0	SBUX	0.32%	TEVA	-3.41%
1.0	GNRC	0.29%	FSUGY	-3.37%



All Out of Sample Model Dates: 10d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 95% VaR exceeds Sigma 95% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
10.0	GME	30.91%	AMAT	-14.19%
10.0	AMC	25.76%	NVDA	-12.72%
10.0	SBNY	11.94%	LUMN	-12.42%
10.0	MSTR	11.25%	PHM	-11.85%
10.0	SIVBQ	8.28%	GBTC	-11.8%
10.0	AAP	8.14%	MSFT	-10.07%
10.0	UAA	6.85%	PWR	-9.81%
10.0	GNRC	6.46%	CPRT	-9.78%
10.0	CHTR	5.89%	VNO	-9.2%
10.0	KALU	5.76%	GT	-8.17%
10.0	META	5.58%	ACGL	-8.01%
10.0	BHC	4.12%	MU	-7.9%
10.0	BIIB	4.1%	CCL	-7.59%
10.0	OXY	3.91%	MS	-7.32%
10.0	VFC	3.72%	FSUGY	-7.31%
10.0	CMA	3.68%	QQQ	-7.18%
10.0	AA	3.65%	TRGP	-7.03%
10.0	CTLT	3.63%	CITI	-6.78%
10.0	GOLD	3.6%	PCG	-6.75%
10.0	TSLA	3.24%	LLY	-6.42%
10.0	AMZN	3.12%	TXN	-6.26%
10.0	ZTS	2.71%	MNST	-6.24%
10.0	SLV	2.61%	ETRN	-6.19%
10.0	BUD	2.57%	CSCO	-6.12%
10.0	KEY	2.56%	THC	-6.09%



All Out of Sample Model Dates: 21d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 95% VaR exceeds Sigma 95% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
21.0	GME	42.39%	AMAT	-15.9%
21.0	AMC	30.99%	PHM	-14.43%
21.0	MSTR	20.0%	CPRT	-14.1%
21.0	SBNY	17.57%	NVDA	-13.63%
21.0	UAA	12.0%	MSFT	-12.9%
21.0	GNRC	11.84%	PWR	-12.82%
21.0	AAP	11.63%	MU	-11.99%
21.0	SIVBQ	11.06%	ACGL	-10.25%
21.0	CHTR	9.32%	VNO	-9.7%
21.0	AA	9.17%	FSUGY	-9.49%
21.0	KALU	9.15%	USB	-9.27%
21.0	META	9.09%	MS	-9.13%
21.0	BHC	8.4%	TRGP	-8.56%
21.0	CTLT	7.65%	X	-8.52%
21.0	VFC	7.47%	CSCO	-8.45%
21.0	BIIB	6.51%	IEP	-8.44%
21.0	TSLA	6.14%	CMG	-8.23%
21.0	CMA	5.88%	TXN	-7.99%
21.0	GOLD	5.72%	MNST	-7.96%
21.0	OXY	5.62%	QQQ	-7.86%
21.0	NEM	4.48%	CITI	-7.77%
21.0	BUD	4.34%	THC	-7.75%
21.0	AMZN	4.28%	GT	-7.43%
21.0	FRCB	4.18%	CCL	-6.98%
21.0	BHP	3.99%	COST	-6.67%



All Out of Sample Model Dates: 63d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 95% VaR exceeds Sigma 95% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
63.0	GME	55.42%	PHM	-25.98%
63.0	AMC	39.54%	PWR	-22.57%
63.0	SBNY	32.29%	MU	-20.2%
63.0	MSTR	29.62%	CPRT	-17.46%
63.0	UAA	24.64%	NVDA	-16.7%
63.0	GNRC	24.0%	CSCO	-16.34%
63.0	AA	20.54%	ACGL	-16.07%
63.0	AAP	19.59%	FSUGY	-16.04%
63.0	BHC	19.27%	WRK	-15.31%
63.0	SIVBQ	19.21%	AMAT	-14.6%
63.0	META	18.52%	X	-14.37%
63.0	CTLT	17.55%	MSFT	-14.08%
63.0	KALU	17.16%	MNST	-13.92%
63.0	CHTR	17.12%	ON	-13.44%
63.0	VFC	16.26%	ADBE	-13.43%
63.0	TSLA	15.03%	CDNS	-12.99%
63.0	NFLX	14.33%	UNH	-12.64%
63.0	OXY	13.39%	GT	-12.3%
63.0	ZION	11.9%	ELAN	-11.96%
63.0	BIIB	11.81%	JPM	-11.7%
63.0	CLF	11.59%	CITI	-11.24%
63.0	CMA	11.23%	USB	-11.22%
63.0	GOLD	10.5%	HLT	-10.59%
63.0	FIS	10.26%	TXN	-10.48%
63.0	NEM	10.1%	DHI	-10.39%



All Out of Sample Model Dates: 126d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 95% VaR exceeds Sigma 95% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
126.0	GME	43.68%	PHM	-25.94%
126.0	SBNY	43.48%	CSCO	-23.8%
126.0	MSTR	40.51%	PWR	-20.9%
126.0	GNRC	39.67%	CPRT	-20.61%
126.0	AMC	35.94%	TXN	-18.66%
126.0	UAA	35.8%	JPM	-17.9%
126.0	AA	32.69%	ACGL	-16.83%
126.0	CTLT	32.0%	MU	-16.59%
126.0	SIVBQ	30.45%	UNH	-16.25%
126.0	AAP	29.81%	MNST	-15.49%
126.0	META	28.17%	WRK	-13.15%
126.0	VFC	28.15%	X	-13.02%
126.0	NFLX	27.55%	ADBE	-12.41%
126.0	CHTR	26.29%	CDNS	-12.37%
126.0	TSLA	25.69%	CITI	-12.13%
126.0	KALU	22.86%	BBY	-12.09%
126.0	OXY	21.16%	CMG	-11.22%
126.0	BHC	20.54%	MS	-11.11%
126.0	BIIB	19.97%	DHI	-11.0%
126.0	ZION	19.68%	MSFT	-10.91%
126.0	CMA	19.65%	LW	-10.75%
126.0	CLF	18.71%	HLT	-10.29%
126.0	FIS	18.29%	FSUGY	-9.45%
126.0	FRCB	15.56%	AMAT	-8.73%
126.0	CZR	15.36%	VICI	-8.2%



All Out of Sample Model Dates: 252d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 95% VaR exceeds Sigma 95% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
252.0	SBNY	59.62%	CSCO	-22.96%
252.0	GNRC	55.38%	PHM	-22.7%
252.0	SIVBQ	48.55%	TXN	-19.17%
252.0	MSTR	46.02%	CPRT	-16.75%
252.0	META	44.32%	JPM	-16.11%
252.0	NFLX	43.3%	PWR	-14.96%
252.0	AMC	39.84%	MNST	-14.86%
252.0	OXY	39.44%	MS	-12.03%
252.0	UAA	39.37%	MU	-9.19%
252.0	TSLA	39.19%	EMB	-8.5%
252.0	CHTR	38.85%	ACGL	-8.44%
252.0	AAP	38.21%	GLD	-7.87%
252.0	KALU	37.89%	UNH	-7.64%
252.0	CTLT	36.82%	WRK	-6.92%
252.0	CMA	36.72%	ABBV	-6.55%
252.0	AA	35.55%	CDNS	-6.37%
252.0	FIS	35.07%	USB	-5.95%
252.0	BIIB	34.59%	BBY	-5.07%
252.0	AMZN	33.99%	HLT	-4.75%
252.0	ZION	33.68%	LW	-4.29%
252.0	VFC	31.84%	CITI	-4.15%
252.0	EXPE	31.49%	LUMN	-4.14%
252.0	INTU	30.97%	MRK	-3.91%
252.0	GME	30.14%	MUB	-3.22%
252.0	WDC	28.34%	PEP	-2.89%



P365D: 1d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 95% VaR exceeds Sigma 95% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
1.0	GME	8.53%	AMC	-19.99%
1.0	CHTR	1.76%	NVDA	-12.06%
1.0	MSTR	1.62%	PHM	-10.52%
1.0	UAA	1.15%	LUMN	-10.39%
1.0	AAP	1.15%	AMAT	-9.65%
1.0	GOLD	1.1%	GT	-9.14%
1.0	CZR	0.98%	QQQ	-7.07%
1.0	QCOM	0.86%	VST	-6.76%
1.0	ON	0.86%	TRGP	-6.32%
1.0	EXPE	0.84%	ETRN	-6.14%
1.0	ZTS	0.76%	GBTC	-6.11%
1.0	PRGO	0.74%	IEP	-5.82%
1.0	CMA	0.65%	VNO	-5.73%
1.0	VFC	0.62%	SPY	-5.57%
1.0	BHC	0.61%	MOS	-5.13%
1.0	SBUX	0.6%	MS	-5.05%
1.0	UNH	0.46%	COST	-4.48%
1.0	BALL	0.44%	TEVA	-4.47%
1.0	NFLX	0.39%	CYH	-4.42%
1.0	CNC	0.37%	AVGO	-4.39%
1.0	INTC	0.36%	LLY	-4.25%
1.0	AMZN	0.31%	THC	-4.13%
1.0	GNRC	0.27%	PCG	-4.03%
1.0	CMCSA	0.27%	CCL	-3.99%
1.0	GILD	0.14%	X	-3.63%



P365D: 10d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 95% VaR exceeds Sigma 95% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
10.0	GME	26.74%	GT	-23.45%
10.0	AMC	16.27%	AMAT	-19.38%
10.0	MSTR	9.75%	NVDA	-19.01%
10.0	AAP	7.6%	PHM	-17.88%
10.0	CHTR	5.65%	GBTC	-16.46%
10.0	TSLA	4.89%	LUMN	-14.76%
10.0	CZR	4.55%	IEP	-14.55%
10.0	INTC	4.21%	ISRG	-13.54%
10.0	GNRC	4.1%	CPRT	-13.36%
10.0	GOLD	3.94%	TRGP	-12.5%
10.0	ZTS	3.53%	COST	-11.31%
10.0	VFC	3.08%	CITI	-11.3%
10.0	CMA	2.95%	CMG	-11.22%
10.0	EXPE	2.8%	LLY	-10.36%
10.0	SLV	2.58%	QQQ	-10.35%
10.0	CVS	2.51%	LEN	-10.17%
10.0	NEM	2.4%	VST	-9.69%
10.0	LW	2.38%	SPY	-9.36%
10.0	KALU	2.23%	VNO	-8.58%
10.0	SNY	2.17%	FCX	-8.28%
10.0	BHC	2.17%	MSI	-8.14%
10.0	BIIB	1.97%	MOS	-7.89%
10.0	UAA	1.78%	FIS	-7.81%
10.0	NAVI	1.63%	CYH	-7.27%
10.0	PRGO	1.57%	CSCO	-7.11%



P365D: 21d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 95% VaR exceeds Sigma 95% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
21.0	GME	38.82%	GT	-27.4%
21.0	MSTR	14.23%	AMAT	-24.94%
21.0	AAP	11.03%	IEP	-23.92%
21.0	CHTR	9.92%	ISRG	-21.36%
21.0	TSLA	8.82%	PHM	-21.01%
21.0	CZR	7.65%	NVDA	-18.93%
21.0	GNRC	7.16%	CPRT	-18.32%
21.0	VFC	7.02%	TRGP	-16.51%
21.0	INTC	6.89%	CMG	-16.23%
21.0	GOLD	6.27%	COST	-15.3%
21.0	ZTS	5.41%	GBTC	-15.04%
21.0	UAA	5.39%	QQQ	-14.45%
21.0	BXP	4.61%	LEN	-13.82%
21.0	BHC	4.23%	CITI	-13.26%
21.0	KALU	3.89%	VST	-12.97%
21.0	NEM	3.89%	FIS	-12.47%
21.0	LW	3.89%	LLY	-12.24%
21.0	AA	3.84%	LUMN	-12.04%
21.0	CVS	3.81%	SPY	-11.34%
21.0	AMC	3.72%	IRM	-11.1%
21.0	CMA	3.69%	VNO	-10.66%
21.0	SNY	3.58%	CYH	-10.52%
21.0	EXPE	3.52%	FCX	-10.49%
21.0	PRGO	3.41%	CSCO	-10.0%
21.0	SLV	3.3%	MU	-9.78%



P365D: 63d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 95% VaR exceeds Sigma 95% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
63.0	GME	52.47%	GT	-45.33%
63.0	MSTR	21.5%	XOM	-29.97%
63.0	AAP	20.59%	IEP	-29.09%
63.0	UAA	16.65%	AMAT	-29.03%
63.0	CHTR	16.52%	PHM	-28.97%
63.0	GNRC	14.41%	LEN	-24.68%
63.0	BHC	14.38%	ADBE	-24.58%
63.0	BXP	12.89%	CPRT	-23.74%
63.0	CZR	12.86%	CMG	-23.11%
63.0	TSLA	12.32%	GBTC	-22.59%
63.0	KALU	11.4%	ISRG	-22.59%
63.0	VFC	11.39%	FSUGY	-20.61%
63.0	CVS	10.75%	CDNS	-20.51%
63.0	GOLD	9.59%	NVDA	-19.2%
63.0	EXPE	9.51%	SPY	-18.96%
63.0	PRGO	9.32%	QQQ	-18.54%
63.0	NEM	9.13%	MS	-17.35%
63.0	CLF	8.13%	MOS	-17.34%
63.0	BUD	6.94%	TRGP	-17.26%
63.0	AA	6.43%	ACGL	-16.79%
63.0	NWL	6.34%	CSCO	-16.72%
63.0	BIIB	6.22%	VNO	-16.71%
63.0	META	6.13%	CITI	-16.66%
63.0	CMA	5.72%	VST	-16.56%
63.0	ZTS	5.6%	DHI	-16.55%



P365D: 126d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 95% VaR exceeds Sigma 95% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
126.0	GME	48.2%	MOS	-44.7%
126.0	MSTR	36.53%	GT	-39.96%
126.0	AAP	34.35%	LVS	-34.76%
126.0	UAA	32.05%	AMAT	-33.35%
126.0	GNRC	28.59%	VICI	-30.01%
126.0	CZR	25.73%	ADBE	-29.84%
126.0	BXP	25.53%	XOM	-28.86%
126.0	VFC	25.01%	CDNS	-26.52%
126.0	CHTR	24.84%	PHM	-25.29%
126.0	AA	21.78%	CCL	-24.31%
126.0	CTLT	21.6%	CPRT	-24.29%
126.0	TSLA	21.29%	LEN	-24.2%
126.0	PRGO	20.21%	FSUGY	-24.04%
126.0	EXPE	16.55%	CSCO	-23.36%
126.0	CVS	16.19%	CMG	-22.42%
126.0	KALU	14.42%	TRGP	-22.23%
126.0	NWL	14.09%	WFC	-21.63%
126.0	OXY	13.97%	GBTC	-21.1%
126.0	NEM	12.85%	MS	-20.9%
126.0	BHC	11.76%	TXN	-20.79%
126.0	BIIB	11.7%	JPM	-19.1%
126.0	META	11.54%	ACGL	-18.48%
126.0	ZION	11.48%	X	-18.47%
126.0	ZTS	11.3%	ISRG	-16.98%
126.0	GILD	11.3%	TEVA	-16.41%



P90D: 1d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 95% VaR exceeds Sigma 95% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
1.0	AMC	12.29%	NVDA	-9.8%
1.0	GME	5.97%	PHM	-8.88%
1.0	INTC	2.86%	GT	-8.62%
1.0	TSLA	2.47%	LUMN	-8.38%
1.0	MSTR	1.96%	QQQ	-7.91%
1.0	CZR	1.76%	PCG	-6.75%
1.0	AAP	1.67%	TRGP	-6.62%
1.0	CSTM	1.57%	MS	-5.44%
1.0	MU	1.55%	VST	-5.21%
1.0	CHTR	1.52%	GLD	-5.15%
1.0	MSFT	1.41%	MOS	-5.05%
1.0	ZTS	1.4%	CTLT	-4.9%
1.0	NAVI	1.28%	GS	-4.62%
1.0	GOLD	1.28%	GBTC	-4.36%
1.0	QCOM	1.22%	SPY	-3.93%
1.0	TXN	1.2%	X	-3.77%
1.0	BHC	1.18%	CAH	-3.76%
1.0	CDNS	1.16%	TEVA	-3.47%
1.0	CMA	1.15%	NWL	-3.41%
1.0	ON	1.03%	VNO	-3.27%
1.0	AMGN	0.98%	CCL	-3.23%
1.0	UNH	0.97%	THC	-3.1%
1.0	META	0.9%	HSBC	-3.02%
1.0	GOOGL	0.86%	LNC	-2.93%
1.0	SBUX	0.83%	LVS	-2.76%



P90D: 10d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 95% VaR exceeds Sigma 95% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
10.0	AMC	45.46%	GT	-27.8%
10.0	GME	17.23%	GBTC	-21.9%
10.0	MSTR	10.51%	TRGP	-17.28%
10.0	AAP	9.65%	NVDA	-15.19%
10.0	TSLA	9.09%	LUMN	-13.2%
10.0	IEP	8.9%	PCG	-12.44%
10.0	INTC	7.15%	PHM	-12.26%
10.0	ELAN	6.88%	QQQ	-10.45%
10.0	CZR	5.75%	ISRG	-10.4%
10.0	ON	5.3%	AMAT	-10.18%
10.0	CMA	4.97%	FCX	-10.11%
10.0	CHTR	4.86%	CPRT	-9.59%
10.0	CVS	4.54%	COST	-9.0%
10.0	KEY	4.5%	FIS	-8.92%
10.0	GNRC	4.28%	CTLT	-8.47%
10.0	AMD	4.14%	LNC	-8.26%
10.0	UNH	4.05%	NWL	-7.96%
10.0	ZTS	3.9%	USB	-7.87%
10.0	AMGN	3.25%	CSCO	-7.48%
10.0	GOLD	3.04%	MOS	-7.27%
10.0	SLV	3.01%	MSI	-7.13%
10.0	GOOGL	2.98%	SPY	-7.04%
10.0	CDNS	2.97%	LEN	-6.93%
10.0	MSFT	2.96%	GLD	-6.91%
10.0	NEM	2.75%	GS	-6.88%



P90D: 21d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 95% VaR exceeds Sigma 95% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
21.0	GME	24.29%	GT	-32.38%
21.0	AMC	14.86%	TRGP	-27.93%
21.0	AAP	14.11%	ISRG	-23.68%
21.0	TSLA	13.37%	AMAT	-21.26%
21.0	MSTR	11.79%	GBTC	-20.21%
21.0	ELAN	11.27%	PHM	-17.71%
21.0	ON	10.65%	NVDA	-15.2%
21.0	CHTR	10.38%	FIS	-14.82%
21.0	INTC	9.94%	COST	-14.78%
21.0	CVS	8.15%	QQQ	-13.91%
21.0	CZR	7.91%	MNST	-12.97%
21.0	CMA	7.81%	LEN	-12.95%
21.0	IEP	7.65%	CPRT	-12.81%
21.0	GNRC	6.79%	PCG	-12.2%
21.0	KEY	6.34%	MOS	-11.56%
21.0	ZTS	6.3%	NFLX	-10.85%
21.0	LW	5.98%	AMZN	-10.77%
21.0	AA	5.96%	X	-10.62%
21.0	UNH	5.96%	LVS	-10.46%
21.0	GOLD	5.87%	FCX	-9.6%
21.0	NAVI	5.86%	SPY	-9.51%
21.0	AMGN	5.85%	LUMN	-9.22%
21.0	GOOGL	5.58%	CSCO	-8.92%
21.0	META	4.86%	MS	-8.86%
21.0	AMD	4.77%	MSI	-8.62%



P30D: 1d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 95% VaR exceeds Sigma 95% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
1.0	AMC	30.7%	VST	-13.92%
1.0	GME	7.44%	NVDA	-11.4%
1.0	CYH	4.27%	PHM	-8.23%
1.0	MSTR	3.06%	GT	-7.96%
1.0	WDC	2.43%	LUMN	-7.28%
1.0	MU	2.41%	NWL	-6.71%
1.0	INTC	2.34%	PCG	-6.68%
1.0	UNH	1.73%	TRGP	-5.97%
1.0	GNRC	1.72%	GLD	-5.83%
1.0	INTU	1.55%	MOS	-5.46%
1.0	ELAN	1.51%	QQQ	-5.16%
1.0	TXN	1.51%	CAH	-4.03%
1.0	ZTS	1.5%	SPY	-3.96%
1.0	BHC	1.47%	VNO	-3.66%
1.0	CHTR	1.46%	LNC	-3.61%
1.0	MSFT	1.42%	X	-3.55%
1.0	GOLD	1.38%	HSBC	-3.18%
1.0	SBUX	1.31%	MS	-2.91%
1.0	QCOM	1.27%	USB	-2.66%
1.0	CDNS	1.06%	HLT	-2.6%
1.0	AMGN	1.06%	LVS	-2.5%
1.0	CSTM	1.05%	BXP	-2.48%
1.0	TSLA	1.03%	TMUS	-2.43%
1.0	NAVI	1.0%	CCL	-2.41%
1.0	META	0.95%	WYNN	-2.39%



P30D: 10d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 95% VaR exceeds Sigma 95% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
10.0	AMC	83.9%	GT	-28.18%
10.0	GME	22.19%	GBTC	-15.92%
10.0	WDC	12.23%	TRGP	-14.68%
10.0	ELAN	10.29%	LUMN	-14.38%
10.0	IEP	9.73%	NWL	-13.49%
10.0	AAP	9.0%	PHM	-12.0%
10.0	GNRC	7.79%	PCG	-11.67%
10.0	AMD	7.56%	NVDA	-10.51%
10.0	CYH	6.98%	VST	-10.48%
10.0	MU	6.8%	LNC	-10.09%
10.0	INTC	6.79%	ISRG	-8.86%
10.0	UNH	6.76%	LEN	-8.61%
10.0	MSTR	6.63%	FIS	-8.44%
10.0	ON	5.08%	GLD	-8.28%
10.0	VFC	4.8%	CSCO	-7.98%
10.0	CHTR	4.76%	MOS	-7.82%
10.0	LW	4.68%	USB	-7.48%
10.0	QCOM	4.44%	COST	-7.41%
10.0	ZTS	4.28%	QQQ	-7.33%
10.0	NEM	3.92%	TMUS	-6.97%
10.0	CMCSA	3.87%	LVS	-6.58%
10.0	IRM	3.72%	AZO	-6.46%
10.0	CVS	3.71%	NFLX	-5.84%
10.0	META	3.2%	HON	-5.67%
10.0	CZR	3.09%	MNST	-5.26%



Appendix 14: Top & Bottom 25 Ticker Level Differences in 99% VaR

All Out of Sample Model Dates: 1d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 99% VaR exceeds Sigma 99% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS VIEWED AS LESS RISKY BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS MORE RISKY ARE LISTED ON THE RIGHT.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
1.0	GME	10.28%	CCL	-29.65%
1.0	SBNY	3.59%	PCG	-24.29%
1.0	MSTR	1.98%	LUMN	-21.51%
1.0	AMC	1.59%	GBTC	-19.67%
1.0	SIVBQ	1.18%	VNO	-16.83%
1.0	CHTR	0.46%	NVDA	-16.33%
1.0	GOLD	-0.04%	GT	-16.25%
1.0	LQD	-0.21%	CYH	-14.91%
1.0	EXPE	-0.32%	AMAT	-13.75%
1.0	SLV	-0.42%	ELAN	-12.43%
1.0	VCSH	-0.48%	ETRN	-12.35%
1.0	JAZZ	-0.56%	NWL	-12.13%
1.0	FRA	-0.58%	PWR	-11.97%
1.0	MUB	-0.59%	DHI	-11.15%
1.0	BUD	-0.59%	MU	-10.78%
1.0	OXY	-0.64%	MSFT	-10.32%
1.0	ZTS	-0.68%	PHM	-10.21%
1.0	TLT	-0.79%	LEN	-10.2%
1.0	SNY	-0.81%	LNC	-10.08%
1.0	CDNS	-1.01%	CPRT	-9.77%
1.0	XOM	-1.13%	IEP	-9.48%
1.0	GILD	-1.14%	AVGO	-8.85%
1.0	GNRC	-1.2%	CMG	-8.79%
1.0	POST	-1.51%	CZR	-8.62%
1.0	BHP	-1.52%	LVS	-8.55%



All Out of Sample Model Dates: 10d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 99% VaR exceeds Sigma 99% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
10.0	GME	36.88%	PCG	-47.35%
10.0	AMC	28.08%	VNO	-37.46%
10.0	MSTR	14.2%	CCL	-36.24%
10.0	SBNY	10.74%	CPRT	-25.76%
10.0	SIVBQ	6.82%	PWR	-25.05%
10.0	GNRC	5.3%	LUMN	-24.59%
10.0	CHTR	5.18%	AMAT	-24.3%
10.0	META	3.37%	CITI	-23.09%
10.0	GOLD	3.11%	PHM	-23.04%
10.0	OXY	2.74%	GT	-22.51%
10.0	ZTS	1.43%	THC	-22.41%
10.0	BUD	1.21%	ADBE	-22.22%
10.0	BHP	0.97%	GBTC	-21.54%
10.0	KALU	0.93%	LNC	-20.69%
10.0	LQD	0.36%	CYH	-20.61%
10.0	FRCB	0.35%	MNST	-20.59%
10.0	SNY	0.31%	NVDA	-20.3%
10.0	CTLT	0.09%	MU	-19.3%
10.0	VCSH	0.0%	CSCO	-19.09%
10.0	GSK	-0.05%	LVS	-18.95%
10.0	NEM	-0.13%	IEP	-18.04%
10.0	CLF	-0.44%	LEN	-17.4%
10.0	TSLA	-1.01%	CMG	-17.32%
10.0	MUB	-1.06%	X	-17.1%
10.0	TLT	-1.12%	T	-16.96%



All Out of Sample Model Dates: 21d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 99% VaR exceeds Sigma 99% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
21.0	GME	42.68%	PCG	-52.49%
21.0	AMC	35.42%	VNO	-38.22%
21.0	MSTR	18.01%	PHM	-37.78%
21.0	SBNY	14.77%	CCL	-37.38%
21.0	GNRC	13.32%	FSUGY	-35.97%
21.0	CHTR	9.56%	CPRT	-33.92%
21.0	META	8.78%	CSCO	-32.89%
21.0	OXY	6.83%	PWR	-31.08%
21.0	CTLT	5.86%	MU	-30.87%
21.0	KALU	4.97%	DHI	-29.41%
21.0	CLF	3.64%	ADBE	-29.13%
21.0	ZTS	3.56%	AMAT	-27.76%
21.0	GOLD	3.05%	MNST	-27.08%
21.0	BHP	2.4%	BBY	-26.79%
21.0	NEM	1.8%	CDNS	-26.62%
21.0	BUD	1.32%	X	-26.6%
21.0	SIVBQ	1.28%	T	-25.3%
21.0	KEY	1.17%	ON	-25.23%
21.0	AA	1.01%	CITI	-25.06%
21.0	FRCB	0.98%	WRK	-24.73%
21.0	TSLA	0.21%	NVDA	-24.65%
21.0	VCSH	0.1%	LEN	-24.62%
21.0	BIIB	-0.36%	THC	-24.62%
21.0	GSK	-0.38%	CMG	-23.94%
21.0	LQD	-0.63%	UNH	-23.94%



All Out of Sample Model Dates: 63d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 99% VaR exceeds Sigma 99% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
63.0	SBNY	31.01%	PCG	-50.37%
63.0	GME	29.06%	PHM	-44.26%
63.0	AMC	27.77%	CSCO	-40.9%
63.0	GNRC	25.11%	CPRT	-39.25%
63.0	CTLT	18.74%	CDNS	-35.7%
63.0	AA	18.4%	JPM	-33.24%
63.0	META	18.31%	UNH	-33.22%
63.0	MSTR	18.17%	IEP	-33.03%
63.0	CHTR	17.66%	FSUGY	-32.21%
63.0	OXY	15.93%	X	-31.02%
63.0	AAP	15.23%	VNO	-30.19%
63.0	SIVBQ	15.02%	ON	-30.17%
63.0	CLF	12.56%	TXN	-29.98%
63.0	KALU	11.35%	ADBE	-29.74%
63.0	FRCB	9.5%	BBY	-29.35%
63.0	VFC	9.23%	MU	-29.08%
63.0	ZTS	8.57%	CITI	-29.06%
63.0	CZR	8.18%	MNST	-28.36%
63.0	BHP	8.03%	PWR	-28.13%
63.0	NEM	7.64%	DHI	-26.66%
63.0	BUD	6.79%	CMG	-22.8%
63.0	ZION	6.54%	ACGL	-22.61%
63.0	KEY	6.22%	TRGP	-22.0%
63.0	TMUS	4.91%	T	-21.93%
63.0	AMZN	4.26%	WFC	-21.11%



All Out of Sample Model Dates: 126d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 99% VaR exceeds Sigma 99% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
126.0	SBNY	48.96%	PCG	-39.7%
126.0	GNRC	39.09%	CSCD	-35.5%
126.0	CHTR	29.32%	CPRT	-34.53%
126.0	OXY	28.89%	CDNS	-34.43%
126.0	AAP	28.89%	PHM	-32.73%
126.0	SIVBQ	28.72%	UNH	-31.12%
126.0	META	27.5%	JPM	-29.76%
126.0	CTLT	26.37%	IEP	-28.21%
126.0	AA	25.06%	TXN	-27.82%
126.0	KALU	24.56%	MNST	-26.43%
126.0	MSTR	24.19%	MS	-23.5%
126.0	AMC	24.05%	CMG	-22.05%
126.0	GME	23.64%	VICI	-21.33%
126.0	CZR	19.38%	ACGL	-21.26%
126.0	BHP	19.37%	ADBE	-20.04%
126.0	CMA	18.46%	PWR	-19.12%
126.0	TSLA	17.88%	CITI	-18.99%
126.0	ZION	17.83%	BBY	-17.26%
126.0	VFC	17.62%	FSUGY	-17.2%
126.0	NFLX	17.17%	ABBV	-16.39%
126.0	NEM	16.85%	CMCSA	-16.33%
126.0	AMZN	16.52%	PEP	-16.26%
126.0	BIIB	16.22%	T	-15.96%
126.0	EXPE	16.1%	BAC	-15.85%
126.0	INTU	14.92%	X	-15.69%



All Out of Sample Model Dates: 252d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 99% VaR exceeds Sigma 99% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
252.0	OXY	55.47%	CSCO	-27.88%
252.0	CHTR	47.48%	IEP	-27.13%
252.0	SBNY	46.39%	CPRT	-25.05%
252.0	AMZN	42.79%	PCG	-23.69%
252.0	INTU	42.05%	MS	-21.04%
252.0	BHP	40.38%	UNH	-20.77%
252.0	AAP	35.46%	TXN	-17.5%
252.0	BIIB	34.98%	JPM	-17.48%
252.0	CMA	34.39%	MNST	-16.97%
252.0	SIVBQ	34.23%	ACGL	-16.27%
252.0	ZION	34.12%	PHM	-14.49%
252.0	ISRG	32.63%	LLY	-13.93%
252.0	FITB	32.43%	FRA	-13.46%
252.0	KALU	30.97%	VICI	-13.08%
252.0	META	30.28%	CMG	-12.94%
252.0	GNRC	29.46%	ABBV	-11.87%
252.0	NEM	28.84%	EMB	-10.59%
252.0	BA	28.08%	CDNS	-10.38%
252.0	JAZZ	27.1%	VZ	-10.29%
252.0	BXP	26.73%	GLD	-9.78%
252.0	XOM	26.0%	PWR	-9.67%
252.0	EXPE	24.95%	T	-8.85%
252.0	FIS	23.37%	SPY	-8.73%
252.0	CTLT	23.02%	CITI	-7.92%
252.0	AA	22.41%	TRGP	-7.54%



P365D: 1d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 99% VaR exceeds Sigma 99% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
1.0	GME	7.4%	GT	-26.75%
1.0	CHTR	1.71%	LUMN	-24.05%
1.0	MSTR	1.61%	NVDA	-21.86%
1.0	GOLD	0.49%	GBTC	-21.35%
1.0	QCOM	0.39%	IEP	-19.78%
1.0	GNRC	-0.03%	AMAT	-18.71%
1.0	EXPE	-0.14%	ISRG	-18.43%
1.0	BUD	-0.25%	NWL	-15.92%
1.0	CZR	-0.53%	PHM	-15.73%
1.0	VCSH	-0.55%	TRGP	-14.97%
1.0	LQD	-0.81%	AMC	-14.91%
1.0	NAVI	-0.91%	CITI	-14.67%
1.0	MUB	-0.92%	LVS	-14.36%
1.0	SLV	-1.08%	SPY	-12.8%
1.0	GSK	-1.09%	LEN	-12.78%
1.0	ZTS	-1.12%	CYH	-12.72%
1.0	FRA	-1.27%	VST	-12.4%
1.0	NEM	-1.27%	CMG	-12.11%
1.0	SNY	-1.35%	VNO	-11.23%
1.0	CDNS	-1.44%	LLY	-11.14%
1.0	GILD	-1.46%	QQQ	-10.9%
1.0	NVS	-1.46%	ETRN	-10.34%
1.0	POST	-1.68%	COST	-10.18%
1.0	AMGN	-1.7%	MOS	-10.13%
1.0	EMB	-1.73%	T	-10.03%



P365D: 10d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 99% VaR exceeds Sigma 99% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
10.0	GME	28.47%	GT	-53.08%
10.0	MSTR	10.06%	IEP	-42.69%
10.0	AMC	7.93%	AMAT	-39.7%
10.0	CHTR	5.5%	LVS	-35.13%
10.0	ZTS	3.68%	CCL	-33.71%
10.0	CZR	1.86%	GBTC	-29.54%
10.0	GOLD	1.59%	ISRG	-28.91%
10.0	BUD	1.35%	TRGP	-27.4%
10.0	BXP	1.35%	PHM	-25.53%
10.0	SNY	1.31%	UAA	-25.16%
10.0	GNRC	1.25%	LEN	-24.83%
10.0	NEM	0.97%	CPRT	-24.7%
10.0	CVS	0.87%	VST	-24.46%
10.0	TSLA	0.79%	LUMN	-24.38%
10.0	SLV	0.58%	CYH	-24.37%
10.0	NAVI	0.15%	CMG	-23.51%
10.0	VCSH	-0.23%	INTC	-23.5%
10.0	LQD	-0.49%	MOS	-23.3%
10.0	MUB	-0.72%	MNST	-23.23%
10.0	GSK	-0.75%	CITI	-22.66%
10.0	KALU	-0.94%	ADBE	-22.12%
10.0	BHP	-1.4%	QQQ	-21.92%
10.0	EXPE	-1.46%	CSCO	-21.41%
10.0	EMB	-1.56%	T	-20.93%
10.0	GE	-1.61%	TEVA	-20.52%



P365D: 21d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 99% VaR exceeds Sigma 99% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
21.0	GME	32.38%	GT	-55.58%
21.0	CHTR	8.98%	CCL	-48.26%
21.0	MSTR	7.91%	AMAT	-45.79%
21.0	GNRC	7.32%	LEN	-42.02%
21.0	CVS	4.95%	IEP	-40.87%
21.0	BXP	4.71%	FSUGY	-38.52%
21.0	ZTS	4.3%	LVS	-37.28%
21.0	BHC	4.03%	PHM	-36.94%
21.0	NEM	2.67%	MOS	-35.61%
21.0	CZR	2.53%	CPRT	-33.28%
21.0	KALU	2.28%	VST	-32.76%
21.0	AMC	2.23%	CDNS	-32.32%
21.0	SNY	2.08%	ISRG	-32.2%
21.0	BUD	1.99%	TRGP	-31.81%
21.0	GOLD	1.47%	QQQ	-31.78%
21.0	GSK	1.01%	CSCO	-31.67%
21.0	KEY	0.39%	DHI	-31.38%
21.0	OXY	0.1%	MU	-30.87%
21.0	GE	-0.16%	T	-30.79%
21.0	TSLA	-0.26%	XOM	-30.69%
21.0	VCSH	-0.33%	GBTC	-30.37%
21.0	LQD	-0.55%	ADBE	-30.33%
21.0	MUB	-0.62%	CMG	-30.27%
21.0	BHP	-0.68%	TFC	-29.71%
21.0	EMB	-0.97%	INTC	-29.63%



P365D: 63d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 99% VaR exceeds Sigma 99% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
63.0	BXP	15.13%	CCL	-45.31%
63.0	GME	14.52%	TEVA	-44.45%
63.0	AAP	11.96%	MOS	-43.81%
63.0	CHTR	11.06%	CDNS	-41.56%
63.0	CVS	11.0%	XOM	-41.22%
63.0	ZTS	9.12%	JPM	-41.06%
63.0	NEM	8.75%	PCG	-40.68%
63.0	AA	8.19%	AMAT	-39.93%
63.0	KALU	8.16%	LEN	-39.56%
63.0	MSTR	7.6%	FSUGY	-38.75%
63.0	VFC	7.17%	LVS	-38.74%
63.0	CZR	6.7%	GT	-37.42%
63.0	ELAN	6.34%	MSI	-37.15%
63.0	OXY	6.34%	VICI	-37.14%
63.0	GOLD	5.21%	PHM	-35.87%
63.0	CTLT	4.38%	RIO	-34.55%
63.0	CLF	3.47%	CMG	-34.39%
63.0	BUD	3.22%	ADBE	-34.12%
63.0	GILD	2.36%	CSCO	-33.92%
63.0	BMJ	2.35%	TRGP	-33.06%
63.0	SLV	1.41%	VNO	-32.78%
63.0	TSLA	1.36%	GBTC	-32.75%
63.0	KEY	0.86%	X	-32.4%
63.0	LUMN	0.06%	CITI	-31.46%
63.0	AMC	0.0%	AMD	-30.32%



P365D: 126d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 99% VaR exceeds Sigma 99% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
126.0	BXP	35.28%	MS	-51.21%
126.0	AAP	30.17%	VICI	-42.09%
126.0	CTLT	26.21%	CDNS	-41.1%
126.0	CZR	25.06%	RIO	-39.73%
126.0	UAA	24.87%	XOM	-38.82%
126.0	VFC	23.74%	TEVA	-37.31%
126.0	CVS	21.46%	AMAT	-37.0%
126.0	CHTR	18.78%	LVS	-36.56%
126.0	TSLA	18.6%	JPM	-35.72%
126.0	AA	17.95%	LEN	-35.6%
126.0	GME	17.5%	MSI	-35.37%
126.0	OXY	17.31%	PCG	-34.4%
126.0	KALU	16.98%	BAC	-33.4%
126.0	NEM	16.95%	TXN	-33.38%
126.0	NFLX	15.38%	FSUGY	-32.68%
126.0	GILD	14.93%	CSCO	-29.61%
126.0	GNRC	12.93%	TRGP	-28.63%
126.0	ZTS	12.45%	ADBE	-28.48%
126.0	PRGO	10.75%	CMG	-28.44%
126.0	BIIB	10.4%	MOS	-28.1%
126.0	KEY	9.97%	CCL	-27.21%
126.0	MSTR	9.52%	PHM	-26.02%
126.0	EXPE	9.23%	WFC	-24.77%
126.0	BHC	8.36%	QQQ	-24.35%
126.0	USB	8.22%	POST	-24.31%



P90D: 1d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 99% VaR exceeds Sigma 99% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
1.0	AMC	13.72%	TRGP	-27.85%
1.0	NAVI	1.7%	GBTC	-27.37%
1.0	CSTM	1.54%	BIIB	-23.3%
1.0	ZTS	1.45%	LUMN	-20.69%
1.0	GNRC	1.29%	NVDA	-18.27%
1.0	CHTR	1.19%	IEP	-16.47%
1.0	QCOM	1.06%	VST	-15.76%
1.0	CDNS	1.06%	GT	-15.67%
1.0	TXN	0.81%	PCG	-14.12%
1.0	GOLD	0.79%	INTU	-14.06%
1.0	CMA	0.78%	PHM	-13.79%
1.0	MSTR	0.75%	NWL	-13.62%
1.0	CMCSA	0.52%	MOS	-12.39%
1.0	CZR	0.24%	LNC	-12.18%
1.0	GME	0.03%	MSI	-11.46%
1.0	AMGN	-0.1%	LEN	-11.36%
1.0	ORLY	-0.17%	AMAT	-11.27%
1.0	GOOGL	-0.25%	MNST	-10.86%
1.0	LQD	-0.31%	SPY	-10.74%
1.0	EXPE	-0.32%	QQQ	-10.46%
1.0	ON	-0.34%	FIS	-10.14%
1.0	NVS	-0.47%	CMG	-9.78%
1.0	HCA	-0.62%	CLF	-9.59%
1.0	VCSH	-0.7%	CTLT	-9.51%
1.0	BUD	-0.77%	LLY	-9.43%



P90D: 10d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 99% VaR exceeds Sigma 99% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
10.0	AMC	29.42%	GT	-60.77%
10.0	GME	17.33%	GBTC	-46.48%
10.0	CMA	5.23%	UAA	-45.9%
10.0	CZR	5.08%	IEP	-44.09%
10.0	ELAN	4.82%	BIIB	-41.48%
10.0	CVS	4.51%	TRGP	-38.03%
10.0	CHTR	4.42%	INTC	-37.25%
10.0	ZTS	4.24%	LVS	-35.15%
10.0	NAVI	4.05%	LEN	-33.89%
10.0	CMCSA	3.51%	MNST	-31.79%
10.0	MSTR	2.79%	PCG	-31.04%
10.0	ON	2.62%	CPRT	-29.44%
10.0	BUD	2.6%	ISRG	-28.58%
10.0	GNRC	2.44%	VST	-28.2%
10.0	GE	2.04%	AMAT	-28.07%
10.0	SLV	1.89%	MOS	-27.96%
10.0	GOLD	1.43%	DHI	-24.44%
10.0	NEM	1.09%	ACGL	-23.51%
10.0	BHP	0.84%	LUMN	-22.9%
10.0	AMGN	0.82%	QQQ	-21.35%
10.0	EXPE	0.73%	NWL	-20.98%
10.0	TSLA	0.09%	T	-20.82%
10.0	SNY	0.06%	MSI	-19.95%
10.0	LW	-0.1%	CNC	-18.85%
10.0	VCSH	-0.34%	COST	-18.21%



P90D: 21d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 99% VaR exceeds Sigma 99% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
21.0	ELAN	12.38%	GT	-63.05%
21.0	AMC	11.32%	GBTC	-58.08%
21.0	CVS	9.39%	VST	-51.38%
21.0	CMA	7.82%	AMAT	-49.84%
21.0	ZTS	7.63%	TRGP	-47.35%
21.0	LW	6.58%	INTC	-45.58%
21.0	GNRC	6.17%	LEN	-43.97%
21.0	BUD	5.6%	RIO	-42.04%
21.0	ON	5.32%	BIIB	-41.86%
21.0	CMCSA	5.13%	LVS	-40.97%
21.0	BHC	5.11%	JPM	-40.74%
21.0	CHTR	5.02%	UAA	-38.7%
21.0	CZR	4.7%	PCG	-36.74%
21.0	KEY	4.6%	ISRG	-36.14%
21.0	AMGN	4.5%	T	-35.79%
21.0	GE	4.13%	CPRT	-34.91%
21.0	SNY	3.94%	QQQ	-33.36%
21.0	GOLD	3.09%	IEP	-32.3%
21.0	GSK	1.38%	MNST	-31.64%
21.0	MSTR	1.33%	ACGL	-30.54%
21.0	EXPE	1.04%	XOM	-30.2%
21.0	SLV	0.99%	CNC	-29.82%
21.0	META	0.92%	TFC	-29.21%
21.0	QCOM	0.26%	COST	-27.28%
21.0	KALU	0.24%	MOS	-26.76%



P30D: 1d

The columns labeled “VaR_VmS” represent the average amount by which Vector Model 99% VaR exceeds Sigma 99% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Note that VaR is stated as a negative return. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
1.0	AMC	41.11%	VST	-26.58%
1.0	GNRC	2.2%	TRGP	-22.08%
1.0	GME	1.78%	GBTC	-20.9%
1.0	ZTS	1.63%	BIIB	-20.14%
1.0	MSTR	1.5%	LUMN	-17.8%
1.0	QCOM	1.41%	NVDA	-17.22%
1.0	MU	1.35%	INTU	-17.0%
1.0	GOLD	1.28%	NWL	-16.74%
1.0	CHTR	1.25%	LNC	-14.21%
1.0	AMGN	1.17%	MSI	-14.04%
1.0	NAVI	1.08%	GT	-13.93%
1.0	TXN	1.03%	PCG	-13.01%
1.0	CSTM	1.0%	MOS	-13.01%
1.0	WDC	0.63%	AAP	-12.26%
1.0	CMCSA	0.54%	PHM	-12.25%
1.0	VZ	0.43%	CLF	-12.18%
1.0	LQD	0.17%	LLY	-10.69%
1.0	GOOGL	-0.12%	SPY	-10.42%
1.0	CDNS	-0.29%	VFC	-10.4%
1.0	ORLY	-0.42%	FIS	-9.78%
1.0	EXPE	-0.44%	JAZZ	-9.62%
1.0	HCA	-0.48%	AMZN	-9.56%
1.0	BMJ	-0.51%	UAA	-9.42%
1.0	UNH	-0.57%	VNO	-8.96%
1.0	NEM	-0.58%	CAH	-8.72%



P30D: 10d

“VaR_VmS” is the average amount by which Vector Model 99% VaR exceeds Sigma 99% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Thus, TICKERS THE VECTOR MODEL INDICATES AS HAVING LESS DOWNSIDE AT THE 99%Tile ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE ARE LISTED ON THE RIGHT.

“VaR_VmS” is the average amount by which Vector Model 99% VaR exceeds Sigma 99% VaR for the given ticker for the model dates in the period indicated for which forward horizon performance is known. Thus, TICKERS WITH LESS DOWNSIDE BY THE VECTOR MODEL ARE LISTED ON THE LEFT, THOSE VIEWED AS HAVING MORE DOWNSIDE LISTED ON THE RIGHT.

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker	VaR_VmS	Ticker	VaR_VmS
10.0	AMC	80.52%	GT	-59.74%
10.0	GME	17.46%	UAA	-56.17%
10.0	GNRC	8.89%	IEP	-52.93%
10.0	UNH	7.54%	GBTC	-45.04%
10.0	ELAN	6.64%	INTC	-39.2%
10.0	CMCSA	5.18%	BIIB	-36.18%
10.0	QCOM	4.96%	LVS	-34.6%
10.0	CHTR	4.95%	ACGL	-32.25%
10.0	ZTS	4.91%	AAP	-29.91%
10.0	NAVI	4.2%	MNST	-28.92%
10.0	BHC	4.12%	ABBV	-27.12%
10.0	NEM	3.96%	TRGP	-26.34%
10.0	AMGN	3.95%	NWL	-26.19%
10.0	FSUGY	3.72%	LEN	-25.58%
10.0	ON	3.71%	ISRG	-25.4%
10.0	MU	3.2%	CDNS	-23.4%
10.0	EXPE	3.18%	MOS	-23.32%
10.0	GE	2.86%	WDC	-22.42%
10.0	CMA	2.52%	QQQ	-21.9%
10.0	MSTR	2.05%	LUMN	-21.71%
10.0	KALU	1.87%	CPRT	-21.41%
10.0	CZR	1.65%	CNC	-20.46%
10.0	BMJ	1.6%	MSI	-18.76%
10.0	BUD	1.32%	AMZN	-18.58%
10.0	LW	0.93%	HYG	-18.41%



Appendix 15: Top & Bottom 30 Ticker Level Differences in 95% VaR Breakage

All Out of Sample Model Dates: 1d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 95% VaR breakage exceeds Sigma 95% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
1.0	SBNY	22.68%	PHM	-5.19%
1.0	SIVBQ	13.51%	VST	-5.12%
1.0	TSLA	13.44%	NVDA	-5.11%
1.0	CHTR	13.43%	TRGP	-4.85%
1.0	GME	11.93%	QQQ	-4.42%
1.0	LQD	11.59%	MS	-4.4%
1.0	UAA	8.57%	MOS	-4.34%
1.0	MSTR	7.95%	IRM	-4.26%
1.0	GOLD	7.85%	AMAT	-4.23%
1.0	AMC	7.45%	PCG	-4.12%
1.0	AAP	7.21%	CCL	-4.1%
1.0	FRCB	7.19%	THC	-3.88%
1.0	BALL	6.69%	HYG	-3.69%
1.0	META	6.26%	VNO	-3.56%
1.0	GNRC	6.03%	FSUGY	-3.51%
1.0	VFC	5.66%	CAH	-3.39%
1.0	SLV	5.52%	AMD	-3.33%
1.0	KEY	5.46%	LLY	-3.09%
1.0	BUD	5.11%	DHI	-3.08%
1.0	NFLX	5.07%	PWR	-3.0%
1.0	JAZZ	4.99%	WRK	-2.94%
1.0	ZTS	4.92%	CPRT	-2.94%
1.0	PRGO	4.78%	GS	-2.81%
1.0	OXY	4.74%	X	-2.8%
1.0	SBUX	4.73%	CSCO	-2.74%
1.0	VCSH	4.59%	TXN	-2.7%
1.0	CMA	4.42%	MNST	-2.68%
1.0	HD	4.32%	MRK	-2.55%
1.0	KALU	4.29%	LEN	-2.47%
1.0	FIS	4.15%	ACGL	-2.46%



All Out of Sample Model Dates: 10d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 95% VaR breakage exceeds Sigma 95% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
10.0	SBNY	29.37%	MS	-6.45%
10.0	GME	15.63%	MUB	-5.34%
10.0	TSLA	14.75%	NVDA	-4.97%
10.0	CHTR	13.65%	X	-4.38%
10.0	AMC	13.64%	CITI	-4.3%
10.0	GOLD	12.92%	BAC	-4.24%
10.0	AAP	12.4%	AZN	-4.21%
10.0	SIVBQ	12.36%	IRM	-4.12%
10.0	TLT	9.88%	PCG	-3.99%
10.0	BUD	9.81%	UNH	-3.88%
10.0	ZTS	9.69%	COST	-3.84%
10.0	LQD	9.28%	MU	-3.8%
10.0	MSTR	8.61%	HON	-3.73%
10.0	KALU	7.9%	CSCO	-3.64%
10.0	SLV	7.81%	QQQ	-3.63%
10.0	PRGO	7.6%	THC	-3.48%
10.0	JAZZ	7.33%	AMAT	-3.45%
10.0	VFC	6.95%	MNST	-3.43%
10.0	NEM	6.49%	PWR	-3.39%
10.0	BIIB	6.01%	VST	-3.32%
10.0	VCSH	5.97%	TRGP	-3.31%
10.0	ISRG	5.95%	PHM	-3.23%
10.0	KEY	5.73%	WRK	-3.16%
10.0	META	5.72%	HLT	-3.08%
10.0	GSK	5.65%	CMG	-2.96%
10.0	OXY	5.64%	VNO	-2.86%
10.0	GILD	5.53%	FSUGY	-2.85%
10.0	FRCB	5.4%	JPM	-2.82%
10.0	UAA	5.34%	ABBV	-2.45%
10.0	GNRC	5.17%	CPRT	-2.43%



All Out of Sample Model Dates: 21d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 95% VaR breakage exceeds Sigma 95% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
21.0	SBNY	46.84%	MUB	-9.74%
21.0	TSLA	15.9%	TEVA	-5.67%
21.0	CHTR	15.78%	MS	-5.4%
21.0	AMC	13.67%	ABBV	-4.87%
21.0	GOLD	13.16%	COST	-4.83%
21.0	AAP	13.0%	QQQ	-4.76%
21.0	TLT	12.43%	IRM	-3.95%
21.0	GME	11.99%	FSUGY	-3.83%
21.0	SIVBQ	10.42%	WRK	-3.41%
21.0	MSTR	9.99%	AZN	-3.39%
21.0	LQD	9.73%	MNST	-3.37%
21.0	ZTS	9.63%	THC	-3.29%
21.0	BUD	9.49%	TRGP	-3.25%
21.0	JAZZ	9.49%	PEP	-3.14%
21.0	PRGO	9.26%	PWR	-3.05%
21.0	KALU	9.13%	CMG	-3.02%
21.0	BIIB	8.81%	NVDA	-2.99%
21.0	NEM	8.36%	SPY	-2.85%
21.0	UAA	8.19%	LUMN	-2.8%
21.0	VCSH	8.17%	GE	-2.77%
21.0	VFC	7.82%	HLT	-2.49%
21.0	BXP	7.8%	AMAT	-2.48%
21.0	GSK	7.48%	USB	-2.41%
21.0	META	7.44%	CPRT	-2.34%
21.0	ISRG	7.43%	MU	-2.08%
21.0	GNRC	6.99%	CSCO	-1.99%
21.0	CVS	6.68%	UNH	-1.98%
21.0	OXY	6.28%	JPM	-1.97%
21.0	EXPE	5.91%	ORLY	-1.95%
21.0	CMA	5.56%	GT	-1.88%



All Out of Sample Model Dates: 63d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 95% VaR breakage exceeds Sigma 95% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
63.0	SBNY	52.42%	MUB	-6.59%
63.0	AAP	27.94%	LEN	-5.7%
63.0	CHTR	23.98%	USB	-5.38%
63.0	AMC	20.49%	CSCO	-3.94%
63.0	BIIB	17.8%	IRM	-3.9%
63.0	TSLA	17.4%	X	-3.6%
63.0	KALU	17.06%	FSUGY	-3.22%
63.0	VFC	15.99%	AZN	-3.17%
63.0	GOLD	13.94%	CMG	-2.92%
63.0	SIVBQ	11.58%	GE	-2.8%
63.0	FIS	9.92%	THC	-2.51%
63.0	AMZN	9.9%	LUMN	-2.37%
63.0	TLT	9.79%	DHI	-2.21%
63.0	META	9.69%	SBUX	-2.06%
63.0	GNRC	9.49%	TRGP	-2.06%
63.0	MSTR	8.36%	CZR	-2.01%
63.0	LQD	7.13%	ACGL	-1.96%
63.0	BUD	7.02%	MSI	-1.95%
63.0	JAZZ	6.8%	NVDA	-1.93%
63.0	BXP	6.76%	MS	-1.81%
63.0	LNC	6.61%	UNH	-1.81%
63.0	OXY	6.34%	SPY	-1.78%
63.0	BHC	6.32%	LW	-1.56%
63.0	CCL	5.78%	PWR	-1.54%
63.0	ZTS	5.73%	QQQ	-1.54%
63.0	GME	5.36%	PHM	-1.54%
63.0	AA	5.25%	PCG	-1.43%
63.0	VCSH	5.21%	SLV	-1.38%
63.0	FITB	5.11%	MNST	-1.37%
63.0	CVS	4.98%	COST	-1.1%



All Out of Sample Model Dates: 126d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 95% VaR breakage exceeds Sigma 95% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
126.0	SBNY	52.79%	MUB	-8.1%
126.0	CHTR	33.43%	LW	-7.41%
126.0	AMC	30.0%	LUMN	-5.48%
126.0	VFC	29.17%	BALL	-3.99%
126.0	AAP	22.26%	VZ	-3.5%
126.0	TSLA	20.23%	LEN	-3.35%
126.0	TLT	16.01%	IRM	-2.29%
126.0	SIVBQ	15.44%	INTC	-2.0%
126.0	BIIB	15.17%	FSUGY	-1.97%
126.0	GNRC	14.78%	CSTM	-1.53%
126.0	OXY	13.43%	WRK	-1.1%
126.0	CVS	13.31%	X	-1.1%
126.0	ZION	12.72%	NVDA	-0.9%
126.0	AMZN	12.35%	GOOGL	-0.62%
126.0	BUD	11.88%	CSCO	-0.62%
126.0	BXP	10.15%	PCG	-0.35%
126.0	FIS	9.31%	SPY	-0.3%
126.0	GOLD	9.06%	EMB	-0.3%
126.0	CCL	8.77%	CLF	-0.16%
126.0	META	8.15%	USB	-0.16%
126.0	EXPE	7.96%	ABBV	-0.15%
126.0	BMJ	7.68%	BAC	-0.15%
126.0	CMA	7.5%	AMGN	-0.15%
126.0	NEM	7.37%	TRGP	0.0%
126.0	SNY	6.9%	BBY	0.0%
126.0	ZTS	6.73%	GBTC	0.0%
126.0	MSTR	6.42%	AVGO	0.0%
126.0	FITB	6.07%	INTU	0.0%
126.0	VCSH	5.55%	CMG	0.0%
126.0	CNC	5.14%	JPM	0.0%



All Out of Sample Model Dates: 252d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 95% VaR breakage exceeds Sigma 95% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
252.0	AMC	57.43%	LUMN	-16.9%
252.0	AAP	45.34%	LW	-15.43%
252.0	CHTR	44.19%	VZ	-8.61%
252.0	VFC	39.78%	BMJ	-2.78%
252.0	BIIB	29.62%	IEP	-2.76%
252.0	CMA	28.08%	INTC	-0.56%
252.0	ZION	27.5%	PWR	0.0%
252.0	FIS	20.83%	AZN	0.0%
252.0	SBNY	18.59%	CMG	0.0%
252.0	CVS	16.45%	ON	0.0%
252.0	TLT	14.07%	RIO	0.0%
252.0	BHC	11.51%	X	0.0%
252.0	GNRC	9.94%	SIVBQ	0.0%
252.0	NWL	9.77%	FCX	0.0%
252.0	EXPE	9.71%	HSBC	0.0%
252.0	ELAN	9.05%	NVS	0.0%
252.0	CTLT	9.05%	BAC	0.0%
252.0	PRGO	7.98%	BBY	0.0%
252.0	BXP	7.53%	NAVI	0.0%
252.0	LQD	6.84%	ETRN	0.0%
252.0	OXY	6.67%	WYNN	0.0%
252.0	VNO	6.63%	MS	0.0%
252.0	FITB	6.55%	SNY	0.0%
252.0	KEY	6.54%	LVS	0.0%
252.0	LNC	6.04%	AZO	0.0%
252.0	AMZN	5.92%	UAA	0.0%
252.0	NEM	5.65%	TRGP	0.0%
252.0	CLF	4.8%	HON	0.0%
252.0	VCSH	4.62%	AMGN	0.0%
252.0	TFC	4.41%	PEP	0.0%



P365D: 1d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 95% VaR breakage exceeds Sigma 95% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
1.0	TSLA	12.88%	VST	-10.0%
1.0	UAA	8.7%	NVDA	-9.21%
1.0	GOLD	8.62%	QQQ	-7.98%
1.0	CHTR	8.23%	TRGP	-7.88%
1.0	UNH	8.05%	PHM	-7.47%
1.0	CLF	7.93%	SPY	-7.05%
1.0	NFLX	7.23%	CCL	-6.8%
1.0	GME	6.12%	LEN	-6.36%
1.0	MSFT	5.91%	IRM	-6.22%
1.0	QCOM	5.86%	GLD	-5.81%
1.0	BHC	5.53%	GBTC	-5.45%
1.0	INTC	5.33%	CMG	-5.44%
1.0	KHC	5.13%	THC	-5.42%
1.0	SBUX	4.98%	HLT	-5.39%
1.0	AAP	4.76%	MS	-5.39%
1.0	ON	4.68%	AMAT	-5.06%
1.0	ZTS	4.58%	HSEC	-4.98%
1.0	VFC	4.52%	GS	-4.98%
1.0	BALL	4.35%	PCG	-4.83%
1.0	PRGO	4.17%	WRK	-4.62%
1.0	LQD	4.15%	CPRT	-4.6%
1.0	CZR	4.07%	CAH	-4.58%
1.0	CNC	3.85%	MSI	-4.39%
1.0	BUD	3.73%	TMUS	-3.83%
1.0	KEY	3.51%	MOS	-3.77%
1.0	MSTR	3.37%	AZN	-3.75%
1.0	CMA	3.35%	JPM	-3.73%
1.0	CVS	3.33%	AVGO	-3.59%
1.0	GSK	3.33%	USB	-3.39%
1.0	AMZN	3.02%	GT	-3.35%



P365D: 10d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 95% VaR breakage exceeds Sigma 95% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
10.0	TSLA	19.07%	NVDA	-9.54%
10.0	BUD	11.11%	LEN	-8.37%
10.0	GOLD	11.11%	IRM	-7.82%
10.0	AAP	10.9%	CMG	-7.47%
10.0	MSTR	10.48%	MSI	-7.42%
10.0	ZTS	10.33%	HON	-7.41%
10.0	GSK	9.5%	MU	-7.23%
10.0	PRGO	8.29%	AMAT	-7.11%
10.0	VZ	7.92%	QQQ	-7.08%
10.0	SLV	7.44%	VST	-7.02%
10.0	CZR	7.21%	TRGP	-7.0%
10.0	KEY	6.52%	PHM	-7.0%
10.0	CMA	6.22%	PCG	-6.86%
10.0	UAA	6.03%	HD	-6.72%
10.0	GILD	5.81%	BAC	-6.22%
10.0	CHTR	5.15%	JPM	-6.17%
10.0	LW	4.7%	CNC	-5.93%
10.0	ON	4.64%	CPRT	-5.88%
10.0	KALU	4.6%	LLY	-5.69%
10.0	BIIB	4.55%	GT	-5.69%
10.0	INTC	4.39%	MS	-5.35%
10.0	NEM	4.17%	COST	-5.35%
10.0	CVS	4.13%	SPY	-5.35%
10.0	GNRC	3.9%	LVS	-5.19%
10.0	LQD	3.7%	FSUGY	-5.11%
10.0	BALL	3.45%	ETRN	-5.08%
10.0	AMZN	3.4%	DHI	-4.98%
10.0	NAVI	3.32%	GS	-4.94%
10.0	GME	3.03%	CCL	-4.93%
10.0	BMJ	2.89%	FIS	-4.62%



P365D: 21d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 95% VaR breakage exceeds Sigma 95% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
21.0	TSLA	12.22%	TEVA	-10.91%
21.0	GSK	12.0%	FSUGY	-10.86%
21.0	AAP	11.98%	FIS	-9.91%
21.0	BUD	11.01%	GT	-9.18%
21.0	ZTS	10.62%	IRM	-8.37%
21.0	PRGO	10.5%	CMG	-8.0%
21.0	GOLD	10.45%	QQQ	-7.59%
21.0	ON	10.36%	COST	-7.49%
21.0	CMA	8.89%	CDNS	-6.82%
21.0	KHC	8.6%	LVS	-6.09%
21.0	BIIB	8.41%	MS	-5.73%
21.0	LQD	7.49%	SPY	-5.73%
21.0	LW	7.34%	MSI	-5.61%
21.0	CHTR	6.88%	AMZN	-5.43%
21.0	CZR	6.76%	AMAT	-5.38%
21.0	KEY	5.61%	ABBV	-5.29%
21.0	UAA	5.56%	LLY	-5.13%
21.0	BALL	5.56%	ACGL	-4.89%
21.0	OXY	5.41%	CCL	-4.74%
21.0	GNRC	4.63%	PCG	-4.64%
21.0	MSTR	4.52%	UNH	-4.5%
21.0	NAVI	4.44%	HD	-4.48%
21.0	BHC	4.3%	CPRT	-4.44%
21.0	NEM	3.96%	LEN	-4.44%
21.0	CLF	3.7%	THC	-4.42%
21.0	AA	3.67%	GS	-4.41%
21.0	GOOGL	3.6%	JPM	-4.41%
21.0	INTC	3.33%	PHM	-4.41%
21.0	EXPE	3.08%	AZN	-3.98%
21.0	SNY	3.08%	TRGP	-3.96%



P365D: 63d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 95% VaR breakage exceeds Sigma 95% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
63.0	AAP	46.54%	LEN	-28.65%
63.0	BIIB	27.03%	FSUGY	-15.17%
63.0	KALU	21.98%	IRM	-15.14%
63.0	OXY	17.49%	AZN	-12.5%
63.0	ON	17.32%	CMG	-11.48%
63.0	GNRC	14.53%	FIS	-9.44%
63.0	BHC	12.24%	DHI	-8.65%
63.0	INTC	10.86%	MSI	-7.91%
63.0	KHC	10.56%	ACGL	-7.61%
63.0	PEP	10.27%	NVS	-7.57%
63.0	LW	10.17%	PHM	-6.49%
63.0	CVS	8.65%	PWR	-6.04%
63.0	LQD	8.11%	UNH	-6.01%
63.0	MRK	8.11%	PCG	-5.73%
63.0	CSTM	7.73%	FRA	-5.41%
63.0	GOLD	7.3%	CYH	-4.52%
63.0	AMGN	7.03%	HCA	-3.31%
63.0	BUD	7.03%	TEVA	-2.79%
63.0	GWW	5.98%	QCOM	-2.19%
63.0	GSK	5.95%	GT	-1.97%
63.0	VFC	5.88%	THC	-1.63%
63.0	CNC	5.62%	ADBE	-1.12%
63.0	CLF	5.14%	BHP	-1.08%
63.0	NWL	4.92%	CCL	-0.65%
63.0	TSLA	4.4%	CDNS	-0.56%
63.0	GOOGL	3.91%	HD	-0.56%
63.0	PRGO	3.47%	AMAT	-0.55%
63.0	AMZN	3.33%	ABBV	-0.54%
63.0	BXP	3.28%	MNST	-0.54%
63.0	CMCSA	3.26%	HSBC	0.0%



P365D: 126d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 95% VaR breakage exceeds Sigma 95% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
126.0	AAP	69.44%	LEN	-17.89%
126.0	OXY	62.81%	IRM	-12.2%
126.0	BIIB	49.59%	CSTM	-8.13%
126.0	BUD	45.53%	FSUGY	-2.44%
126.0	CNC	22.22%	PCG	-2.0%
126.0	DHI	16.26%	LW	-1.67%
126.0	GSK	13.82%	AVGO	0.0%
126.0	PRGO	12.5%	GLD	0.0%
126.0	INTC	11.11%	JAZZ	0.0%
126.0	MU	9.09%	TMUS	0.0%
126.0	CVS	8.94%	MNST	0.0%
126.0	KHC	7.38%	ORCL	0.0%
126.0	CLF	5.13%	GWV	0.0%
126.0	CZR	4.31%	BA	0.0%
126.0	WDC	3.39%	CMCSA	0.0%
126.0	MRK	3.25%	HYG	0.0%
126.0	UAA	2.65%	POST	0.0%
126.0	CYH	1.69%	MSTR	0.0%
126.0	AMGN	1.63%	WYNN	0.0%
126.0	KALU	0.83%	EMB	0.0%
126.0	VCSH	0.0%	SLV	0.0%
126.0	MNST	0.0%	LQD	0.0%
126.0	LQD	0.0%	VCSH	0.0%
126.0	EMB	0.0%	PHM	0.0%
126.0	UNH	0.0%	TDG	0.0%
126.0	HON	0.0%	AMC	0.0%
126.0	TMUS	0.0%	QCOM	0.0%
126.0	JAZZ	0.0%	MUB	0.0%
126.0	HYG	0.0%	TRGP	0.0%
126.0	WYNN	0.0%	ABBV	0.0%



P90D: 1d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 95% VaR breakage exceeds Sigma 95% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
1.0	TSLA	28.0%	TRGP	-12.73%
1.0	MSFT	21.82%	SPY	-12.73%
1.0	BAC	14.55%	QQQ	-12.73%
1.0	CZR	13.21%	MSI	-10.0%
1.0	BHC	12.0%	GS	-9.09%
1.0	AMZN	11.54%	HSBC	-9.09%
1.0	CLF	11.54%	MS	-9.09%
1.0	META	11.11%	LNC	-8.16%
1.0	CDNS	11.11%	LEN	-8.0%
1.0	ZTS	10.91%	VNO	-7.84%
1.0	CMA	10.91%	NVDA	-7.27%
1.0	NAVI	10.91%	HLT	-7.27%
1.0	UNH	9.62%	COST	-7.27%
1.0	GOLD	9.43%	PCG	-6.12%
1.0	AMC	9.26%	TMUS	-6.12%
1.0	TXN	9.09%	LVS	-6.0%
1.0	PWR	7.69%	CCL	-5.77%
1.0	AAP	7.55%	XOM	-5.66%
1.0	MU	7.55%	AZO	-5.56%
1.0	GOOGL	7.27%	HYG	-5.45%
1.0	LQD	7.27%	CMG	-5.45%
1.0	GWW	7.27%	PHM	-5.45%
1.0	PRGO	6.38%	CAH	-5.45%
1.0	GNRC	6.25%	AAPL	-5.45%
1.0	CYH	6.0%	BMJ	-5.45%
1.0	TLT	5.88%	OXY	-4.17%
1.0	KHC	5.66%	BXP	-3.85%
1.0	AMGN	5.45%	CPRT	-3.77%
1.0	ON	5.45%	USB	-3.7%
1.0	CSTM	5.45%	GT	-3.7%



P90D: 10d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 95% VaR breakage exceeds Sigma 95% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
10.0	TSLA	46.0%	MSI	-22.92%
10.0	GOOGL	24.07%	FIS	-20.37%
10.0	MSFT	20.37%	GS	-20.37%
10.0	AAP	19.61%	COST	-18.52%
10.0	KEY	18.87%	ISRG	-17.5%
10.0	MSTR	15.22%	SPY	-16.67%
10.0	CMA	14.81%	NVDA	-16.67%
10.0	ON	12.96%	QQQ	-16.67%
10.0	GNRC	12.5%	CNC	-16.67%
10.0	META	11.32%	HD	-14.81%
10.0	CDNS	11.11%	BAC	-14.81%
10.0	ZTS	11.11%	HON	-12.96%
10.0	AMC	10.0%	TRGP	-12.96%
10.0	NEM	9.43%	MS	-12.96%
10.0	AMZN	9.43%	JPM	-12.96%
10.0	BALL	8.33%	CCL	-12.24%
10.0	WDC	7.69%	LVS	-11.54%
10.0	NAVI	7.41%	GWV	-11.11%
10.0	INTC	6.12%	AAPL	-11.11%
10.0	UNH	5.88%	CPRT	-10.2%
10.0	AMD	5.66%	ADBE	-9.43%
10.0	SBUX	5.56%	PCG	-9.3%
10.0	AA	5.56%	CSCO	-9.26%
10.0	LLY	4.26%	BA	-7.55%
10.0	BHC	4.0%	USB	-7.55%
10.0	CHTR	3.77%	MRK	-7.41%
10.0	LQD	3.7%	FITB	-7.41%
10.0	CLF	3.7%	TFC	-5.88%
10.0	KALU	1.89%	TEVA	-5.66%
10.0	PEP	1.85%	MUB	-5.56%



P90D: 21d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 95% VaR breakage exceeds Sigma 95% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
21.0	CMA	32.56%	FIS	-51.16%
21.0	GOOGL	30.23%	TEVA	-47.62%
21.0	TSLA	27.5%	COST	-37.21%
21.0	AAP	27.03%	MSI	-32.43%
21.0	MSFT	25.58%	MS	-30.23%
21.0	KEY	23.81%	AMZN	-27.91%
21.0	ZTS	23.26%	IRM	-25.58%
21.0	BALL	21.62%	ISRG	-25.0%
21.0	GNRC	21.05%	JPM	-23.26%
21.0	SBUX	18.6%	GS	-23.26%
21.0	ON	18.6%	QQQ	-23.26%
21.0	VST	18.6%	HD	-23.26%
21.0	CZR	17.07%	SPY	-23.26%
21.0	EXPE	16.28%	TFC	-20.51%
21.0	UNH	12.5%	MRK	-16.28%
21.0	AMC	12.5%	CCL	-15.0%
21.0	MSTR	10.0%	CPRT	-12.2%
21.0	META	9.52%	HLT	-11.63%
21.0	ORCL	6.98%	PWR	-9.76%
21.0	CDNS	6.98%	AAPL	-9.3%
21.0	GME	4.88%	WFC	-9.3%
21.0	NAVI	4.65%	LVS	-7.14%
21.0	DHI	4.65%	BA	-6.98%
21.0	LLY	2.78%	FSUGY	-6.98%
21.0	ELAN	2.44%	BAC	-6.98%
21.0	VFC	2.44%	ZION	-6.98%
21.0	INTU	2.38%	PCG	-5.41%
21.0	CLF	2.33%	BBY	-4.88%
21.0	PEP	0.0%	MUB	-4.65%
21.0	CSTM	0.0%	FITB	-4.65%



P30D: 1d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 95% VaR breakage exceeds Sigma 95% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
1.0	TSLA	27.78%	HSEC	-20.0%
1.0	MSFT	25.0%	HLT	-20.0%
1.0	LQD	20.0%	VNO	-17.65%
1.0	GOLD	16.67%	GS	-15.0%
1.0	CDNS	15.79%	SPY	-15.0%
1.0	GWV	15.0%	QQQ	-15.0%
1.0	LLY	15.0%	BMV	-15.0%
1.0	ZTS	15.0%	MS	-15.0%
1.0	TXN	15.0%	AAPL	-10.0%
1.0	NAVI	15.0%	CSCO	-10.0%
1.0	BHC	11.76%	NVDA	-10.0%
1.0	AMZN	11.76%	LNC	-10.0%
1.0	CLF	11.76%	USB	-10.0%
1.0	MU	11.11%	COST	-10.0%
1.0	CYH	11.11%	JAZZ	-10.0%
1.0	GNRC	10.53%	GILD	-10.0%
1.0	TLT	10.53%	ORCL	-10.0%
1.0	SBUX	10.0%	TMUS	-6.67%
1.0	CVS	10.0%	LEN	-6.25%
1.0	AMC	10.0%	LVS	-6.25%
1.0	AMGN	10.0%	FSUGY	-5.56%
1.0	ISRG	7.14%	BXP	-5.56%
1.0	PRGO	5.88%	CCL	-5.56%
1.0	VFC	5.88%	KALU	-5.26%
1.0	INTC	5.56%	BA	-5.26%
1.0	UNH	5.26%	AZO	-5.26%
1.0	ADBE	5.26%	VST	-5.26%
1.0	WDC	5.0%	AZN	-5.0%
1.0	FCX	5.0%	AA	-5.0%
1.0	QCOM	5.0%	CAH	-5.0%



P30D: 10d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 95% VaR breakage exceeds Sigma 95% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
10.0	TSLA	40.0%	HD	-45.45%
10.0	SBUX	27.27%	ADBE	-40.0%
10.0	META	18.18%	COST	-36.36%
10.0	MU	10.0%	ISRG	-25.0%
10.0	WFC	9.09%	LVS	-20.0%
10.0	LQD	9.09%	MUB	-9.09%
10.0	KEY	9.09%	BAC	-9.09%
10.0	KALU	9.09%	CSCO	-9.09%
10.0	CMG	9.09%	MS	-9.09%
10.0	NAVI	9.09%	TFC	-9.09%
10.0	ZTS	9.09%	GS	-9.09%
10.0	CHTR	9.09%	KHC	-9.09%
10.0	AA	9.09%	AAPL	-9.09%
10.0	LLY	9.09%	HLT	-9.09%
10.0	GILD	9.09%	CNC	0.0%
10.0	ORLY	0.0%	HON	0.0%
10.0	BHP	0.0%	MSFT	0.0%
10.0	HON	0.0%	EXPE	0.0%
10.0	MSFT	0.0%	CCL	0.0%
10.0	CCL	0.0%	VICI	0.0%
10.0	HSBC	0.0%	HSBC	0.0%
10.0	TLT	0.0%	TLT	0.0%
10.0	BMY	0.0%	BMY	0.0%
10.0	TMUS	0.0%	TMUS	0.0%
10.0	VCSH	0.0%	DHI	0.0%
10.0	PCG	0.0%	AZN	0.0%
10.0	AZN	0.0%	ORLY	0.0%
10.0	MOS	0.0%	POST	0.0%
10.0	TRGP	0.0%	ELAN	0.0%
10.0	POST	0.0%	RIO	0.0%



Appendix 16: Top & Bottom 30 Ticker Level Differences in 95% VaR ROVBC

All Out of Sample Model Dates: 1d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 95% ROVBC(Return on VaR Based Capital, defined earlier) exceeds Sigma 95% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
1.0	MSTR	0.22%	SBNY	-0.64%
1.0	GME	0.16%	SIVBQ	-0.62%
1.0	INTC	0.16%	TSLA	-0.16%
1.0	NWL	0.15%	FRCB	-0.16%
1.0	NFLX	0.14%	VST	-0.15%
1.0	INTU	0.13%	CYH	-0.14%
1.0	AAPL	0.13%	NVDA	-0.13%
1.0	GNRC	0.1%	LUMN	-0.12%
1.0	BHC	0.1%	T	-0.11%
1.0	AA	0.1%	ELAN	-0.11%
1.0	META	0.09%	ETRN	-0.1%
1.0	HD	0.09%	LLY	-0.1%
1.0	ZTS	0.09%	AAP	-0.09%
1.0	BHP	0.07%	CSTM	-0.08%
1.0	XOM	0.07%	GBTC	-0.08%
1.0	CZR	0.06%	FIS	-0.08%
1.0	FITB	0.05%	PWR	-0.08%
1.0	AMZN	0.05%	TRGP	-0.07%
1.0	FSUGY	0.05%	GE	-0.07%
1.0	UNH	0.05%	GILD	-0.07%
1.0	TFC	0.04%	CHTR	-0.07%
1.0	GWW	0.04%	WFC	-0.06%
1.0	BA	0.04%	BXP	-0.06%
1.0	GOLD	0.04%	GSK	-0.06%
1.0	AMD	0.03%	PHM	-0.06%
1.0	BAC	0.03%	VZ	-0.05%
1.0	KHC	0.03%	VNO	-0.05%
1.0	NAVI	0.03%	WRK	-0.04%
1.0	NVS	0.03%	MSFT	-0.04%



1.0 VFC 0.03% X -0.04%



All Out of Sample Model Dates: 10d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 95% ROVBC(Return on VaR Based Capital, defined earlier) exceeds Sigma 95% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
10.0	GME	4.39%	SBNY	-9.66%
10.0	MSTR	3.72%	SIVBQ	-7.9%
10.0	CTLT	1.17%	FRCB	-4.17%
10.0	NFLX	1.16%	AMC	-2.15%
10.0	CZR	1.07%	TSLA	-1.59%
10.0	META	1.01%	AAP	-1.37%
10.0	UAA	0.92%	VST	-0.92%
10.0	INTC	0.77%	NVDA	-0.85%
10.0	AAPL	0.75%	GSK	-0.81%
10.0	SLV	0.75%	CHTR	-0.7%
10.0	INTU	0.73%	PWR	-0.68%
10.0	OXY	0.67%	LLY	-0.68%
10.0	HD	0.62%	TRGP	-0.68%
10.0	BA	0.61%	ELAN	-0.64%
10.0	GNRC	0.53%	CCL	-0.61%
10.0	SNY	0.51%	TDG	-0.53%
10.0	TEVA	0.51%	PHM	-0.51%
10.0	XOM	0.45%	PRGO	-0.51%
10.0	BHP	0.42%	BIIB	-0.48%
10.0	AA	0.42%	FIS	-0.47%
10.0	WRK	0.34%	BXP	-0.42%
10.0	ORCL	0.33%	ISRG	-0.4%
10.0	SBUX	0.33%	CPRT	-0.4%
10.0	GOOGL	0.32%	X	-0.38%
10.0	GWG	0.32%	TLT	-0.37%
10.0	KALU	0.31%	T	-0.33%
10.0	FSUGY	0.31%	IRM	-0.33%
10.0	HCA	0.28%	GOLD	-0.32%
10.0	CMCSA	0.27%	VNO	-0.32%
10.0	UNH	0.26%	VZ	-0.31%



All Out of Sample Model Dates: 21d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 95% ROVBC(Return on VaR Based Capital, defined earlier) exceeds Sigma 95% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
21.0	MSTR	10.35%	SBNY	-23.63%
21.0	GME	6.22%	SIVBQ	-14.86%
21.0	META	3.93%	FRCB	-7.12%
21.0	NFLX	2.93%	AMC	-3.89%
21.0	CTLT	2.37%	AAP	-2.83%
21.0	TEVA	1.9%	TSLA	-1.93%
21.0	CZR	1.69%	VST	-1.71%
21.0	UAA	1.61%	NVDA	-1.64%
21.0	GNRC	1.35%	ELAN	-1.62%
21.0	AA	1.34%	GSK	-1.61%
21.0	INTC	1.29%	CCL	-1.53%
21.0	INTU	1.26%	PWR	-1.31%
21.0	SLV	1.18%	TDG	-1.23%
21.0	OXY	1.15%	X	-1.22%
21.0	AAPL	1.14%	VFC	-1.07%
21.0	HD	1.07%	LLY	-1.02%
21.0	ORCL	1.0%	TRGP	-0.95%
21.0	XOM	0.95%	PHM	-0.92%
21.0	BHP	0.93%	VNO	-0.91%
21.0	CMA	0.87%	FIS	-0.89%
21.0	GILD	0.84%	BIIB	-0.88%
21.0	AMZN	0.84%	IRM	-0.87%
21.0	AMGN	0.8%	CPRT	-0.85%
21.0	CLF	0.8%	LW	-0.8%
21.0	GWG	0.79%	ON	-0.76%
21.0	KEY	0.77%	CHTR	-0.75%
21.0	GBTC	0.76%	PRGO	-0.71%
21.0	BA	0.7%	ISRG	-0.7%
21.0	HCA	0.65%	ACGL	-0.69%
21.0	SNY	0.63%	TLT	-0.63%



All Out of Sample Model Dates: 63d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 95% ROVBC(Return on VaR Based Capital, defined earlier) exceeds Sigma 95% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
63.0	MSTR	21.82%	SBNY	-75.1%
63.0	META	15.31%	SIVBQ	-46.87%
63.0	NFLX	11.95%	FRCB	-29.9%
63.0	CTLT	10.72%	AMC	-19.86%
63.0	CMA	6.1%	AAP	-7.74%
63.0	GME	5.37%	VFC	-5.41%
63.0	GNRC	4.35%	NVDA	-5.36%
63.0	INTU	3.77%	TSLA	-4.13%
63.0	ORCL	3.52%	ELAN	-3.68%
63.0	XOM	2.98%	VNO	-3.55%
63.0	TEVA	2.95%	PWR	-3.53%
63.0	SBUX	2.9%	ON	-3.29%
63.0	CZR	2.88%	GSK	-3.11%
63.0	SLV	2.86%	PHM	-2.89%
63.0	GILD	2.68%	CHTR	-2.86%
63.0	HD	2.68%	CCL	-2.54%
63.0	GOOGL	2.48%	CPRT	-2.4%
63.0	AAPL	2.46%	FIS	-2.38%
63.0	WRK	2.42%	TRGP	-2.3%
63.0	UAA	2.27%	VST	-2.03%
63.0	BA	2.2%	TLT	-1.85%
63.0	AMD	2.2%	MS	-1.78%
63.0	SNY	2.08%	MU	-1.76%
63.0	GW	1.77%	BIIB	-1.7%
63.0	AVGO	1.74%	BHC	-1.67%
63.0	LVS	1.73%	LLY	-1.64%
63.0	MSI	1.65%	JPM	-1.52%
63.0	EXPE	1.58%	IRM	-1.51%
63.0	WDC	1.57%	JAZZ	-1.5%
63.0	ABBV	1.48%	LNC	-1.47%



All Out of Sample Model Dates: 126d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 95% ROVBC(Return on VaR Based Capital, defined earlier) exceeds Sigma 95% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
126.0	MSTR	44.52%	SBNY	-119.63%
126.0	META	43.21%	SIVBQ	-89.53%
126.0	NFLX	31.08%	FRCB	-66.02%
126.0	ORCL	10.84%	AMC	-30.14%
126.0	AVGO	9.79%	VFC	-14.64%
126.0	INTU	9.49%	AAP	-14.05%
126.0	AMD	8.31%	PHM	-8.5%
126.0	GILD	8.28%	BHC	-6.54%
126.0	TEVA	7.41%	PWR	-6.53%
126.0	GNRC	7.27%	CCL	-6.09%
126.0	GME	6.96%	CPRT	-5.33%
126.0	LVS	6.95%	CHTR	-5.03%
126.0	BA	6.57%	ELAN	-4.91%
126.0	XOM	6.41%	TRGP	-4.89%
126.0	ISRG	6.38%	THC	-4.54%
126.0	AMZN	6.36%	JPM	-4.33%
126.0	CTLT	5.58%	GSK	-3.99%
126.0	WDC	5.42%	IEP	-3.84%
126.0	LEN	5.41%	JAZZ	-3.72%
126.0	GOOGL	5.38%	MS	-3.52%
126.0	AAPL	5.3%	IRM	-3.35%
126.0	WRK	5.12%	TLT	-3.29%
126.0	SBUX	4.92%	LNC	-3.06%
126.0	SLV	4.58%	NVDA	-2.85%
126.0	HCA	4.33%	HLT	-2.75%
126.0	TMUS	4.2%	CVS	-2.61%
126.0	EXPE	4.03%	PRGO	-2.6%
126.0	ADBE	3.85%	MOS	-2.38%
126.0	HD	3.8%	CMG	-2.31%
126.0	LLY	3.64%	BIIB	-2.17%



All Out of Sample Model Dates: 252d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 95% ROVBC(Return on VaR Based Capital, defined earlier) exceeds Sigma 95% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
252.0	MSTR	209.87%	SBNY	-170.04%
252.0	META	111.6%	SIVBQ	-122.31%
252.0	NFLX	72.41%	FRCB	-92.14%
252.0	AMZN	43.14%	AMC	-58.66%
252.0	AVGO	38.23%	AAP	-35.55%
252.0	INTU	36.59%	VFC	-22.8%
252.0	ORCL	34.96%	CHTR	-15.93%
252.0	VST	34.45%	PHM	-15.26%
252.0	ISRG	30.86%	IEP	-14.45%
252.0	TEVA	26.68%	BIIB	-11.54%
252.0	LLY	22.82%	AA	-11.42%
252.0	AMD	22.06%	NWL	-9.78%
252.0	WDC	20.78%	MOS	-9.61%
252.0	GNRC	20.39%	UAA	-9.54%
252.0	GOOGL	20.24%	PWR	-9.15%
252.0	LEN	19.86%	CVS	-9.11%
252.0	MSI	19.58%	BHC	-8.43%
252.0	BA	17.65%	PRGO	-7.42%
252.0	TDG	17.17%	OXY	-7.35%
252.0	CTLT	15.89%	JPM	-7.3%
252.0	EXPE	13.36%	TLT	-6.78%
252.0	AAPL	13.1%	JAZZ	-6.71%
252.0	AMAT	12.02%	BXP	-5.56%
252.0	CAH	11.28%	CCL	-5.5%
252.0	QQQ	11.24%	MS	-5.17%
252.0	THC	11.22%	CLF	-4.87%
252.0	HD	11.18%	ELAN	-4.72%
252.0	GILD	11.01%	GLD	-4.46%
252.0	CSTM	10.84%	LNC	-4.37%
252.0	TSLA	10.7%	CPRT	-4.28%



P365D: 1d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 95% ROVBC(Return on VaR Based Capital, defined earlier) exceeds Sigma 95% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
1.0	GME	0.66%	VST	-0.35%
1.0	BHC	0.49%	LUMN	-0.34%
1.0	INTC	0.49%	AVGO	-0.27%
1.0	NWL	0.41%	CSTM	-0.22%
1.0	PRGO	0.38%	AMC	-0.17%
1.0	VFC	0.27%	TRGP	-0.16%
1.0	CHTR	0.26%	TMUS	-0.14%
1.0	MSTR	0.24%	AAP	-0.14%
1.0	GOLD	0.24%	VNO	-0.13%
1.0	UNH	0.14%	CMA	-0.11%
1.0	GT	0.14%	HSBC	-0.11%
1.0	SLV	0.13%	T	-0.11%
1.0	ZTS	0.13%	ISRG	-0.11%
1.0	GBTC	0.13%	CZR	-0.1%
1.0	FSUGY	0.12%	NVDA	-0.1%
1.0	AMZN	0.12%	MS	-0.1%
1.0	AMD	0.12%	CVS	-0.09%
1.0	LNC	0.11%	CDNS	-0.09%
1.0	GNRC	0.09%	ON	-0.08%
1.0	FITB	0.06%	NFLX	-0.08%
1.0	MRK	0.06%	UAA	-0.08%
1.0	ABBV	0.06%	GLD	-0.08%
1.0	BIIB	0.06%	CLF	-0.08%
1.0	AMAT	0.05%	GS	-0.08%
1.0	HD	0.05%	GE	-0.07%
1.0	GWW	0.05%	COST	-0.07%
1.0	ADBE	0.04%	PEP	-0.07%
1.0	CNC	0.04%	CMCSA	-0.07%
1.0	LEN	0.04%	JAZZ	-0.07%
1.0	LW	0.04%	LLY	-0.07%



P365D: 10d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 95% ROVBC(Return on VaR Based Capital, defined earlier) exceeds Sigma 95% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
10.0	GME	15.09%	AAP	-2.72%
10.0	MSTR	4.06%	AMC	-2.45%
10.0	INTC	2.19%	LUMN	-2.42%
10.0	VFC	2.03%	VST	-2.19%
10.0	GOLD	1.66%	TSLA	-1.72%
10.0	CHTR	1.59%	TRGP	-1.58%
10.0	NWL	1.51%	CLF	-1.19%
10.0	MU	1.17%	ON	-1.12%
10.0	UAA	1.08%	TMUS	-1.12%
10.0	SNY	0.97%	ISRG	-0.93%
10.0	META	0.92%	T	-0.87%
10.0	UNH	0.91%	NVDA	-0.86%
10.0	GNRC	0.89%	ELAN	-0.84%
10.0	EXPE	0.86%	LLY	-0.76%
10.0	GBTC	0.86%	NFLX	-0.75%
10.0	SLV	0.82%	BIIB	-0.73%
10.0	TEVA	0.77%	COST	-0.72%
10.0	AMAT	0.7%	BALL	-0.71%
10.0	FSUGY	0.68%	GSK	-0.7%
10.0	GW	0.66%	HSBC	-0.67%
10.0	IEP	0.65%	MS	-0.63%
10.0	GT	0.63%	LW	-0.58%
10.0	ZTS	0.63%	CITI	-0.56%
10.0	AMD	0.61%	VNO	-0.54%
10.0	QCOM	0.6%	CMA	-0.53%
10.0	MRK	0.59%	MSI	-0.49%
10.0	LEN	0.59%	GLD	-0.47%
10.0	ABBV	0.57%	VZ	-0.46%
10.0	AMZN	0.57%	CSCO	-0.42%
10.0	BHC	0.5%	CZR	-0.4%



P365D: 21d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 95% ROVBC(Return on VaR Based Capital, defined earlier) exceeds Sigma 95% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
21.0	GME	26.9%	AAP	-5.34%
21.0	MSTR	12.15%	VST	-4.82%
21.0	CHTR	5.26%	ON	-3.59%
21.0	UAA	3.33%	LW	-3.39%
21.0	VFC	3.15%	LUMN	-3.32%
21.0	GOLD	2.95%	TRGP	-3.03%
21.0	TEVA	2.85%	ELAN	-2.57%
21.0	EXPE	2.53%	TMUS	-2.06%
21.0	INTC	2.15%	T	-1.97%
21.0	BXP	1.97%	ISRG	-1.96%
21.0	AMGN	1.92%	COST	-1.95%
21.0	IEP	1.86%	CZR	-1.8%
21.0	CVS	1.69%	NVDA	-1.68%
21.0	FSUGY	1.55%	NFLX	-1.6%
21.0	SNY	1.54%	BIIB	-1.6%
21.0	META	1.52%	IRM	-1.51%
21.0	AMZN	1.49%	CSTM	-1.44%
21.0	GT	1.46%	HSBC	-1.43%
21.0	GNRC	1.44%	MS	-1.39%
21.0	GILD	1.43%	VNO	-1.36%
21.0	BHC	1.33%	GSK	-1.3%
21.0	ZTS	1.3%	LLY	-1.27%
21.0	GBTC	1.23%	GOOGL	-1.25%
21.0	AMAT	1.23%	MSI	-1.18%
21.0	MU	1.21%	CLF	-1.08%
21.0	LEN	0.98%	AAPL	-0.96%
21.0	GW	0.98%	CSCO	-0.95%
21.0	QCOM	0.98%	THC	-0.93%
21.0	NVS	0.85%	KHC	-0.9%
21.0	ABBV	0.82%	GLD	-0.9%



P365D: 63d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 95% ROVBC(Return on VaR Based Capital, defined earlier) exceeds Sigma 95% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
63.0	GME	38.88%	AAP	-18.89%
63.0	MSTR	25.22%	ON	-9.77%
63.0	BXP	14.66%	TRGP	-8.57%
63.0	TSLA	14.35%	VNO	-8.13%
63.0	CHTR	13.79%	VST	-5.91%
63.0	UAA	13.45%	ISRG	-5.71%
63.0	GOLD	10.02%	T	-5.25%
63.0	VFC	7.52%	CLF	-5.24%
63.0	EXPE	6.76%	MS	-5.11%
63.0	NEM	6.11%	CSCO	-4.37%
63.0	GILD	6.01%	OXY	-4.35%
63.0	FSUGY	5.57%	BIIB	-4.26%
63.0	IEP	5.38%	KALU	-4.16%
63.0	CMA	5.23%	TMUS	-3.67%
63.0	GT	4.9%	HLT	-3.28%
63.0	META	4.82%	ELAN	-3.23%
63.0	AA	4.78%	NVDA	-3.18%
63.0	CVS	4.56%	CITI	-3.02%
63.0	GNRC	4.36%	IRM	-3.02%
63.0	ZTS	3.98%	COST	-2.95%
63.0	SBUX	3.63%	PRGO	-2.8%
63.0	ABBV	3.62%	MSI	-2.66%
63.0	AMAT	3.61%	AMZN	-2.59%
63.0	SNY	3.3%	HSBC	-2.57%
63.0	CMG	2.59%	NFLX	-2.32%
63.0	LEN	2.46%	AAPL	-2.3%
63.0	AZO	2.43%	JPM	-2.26%
63.0	CYH	1.95%	QQQ	-2.19%
63.0	GWV	1.94%	SPY	-2.09%
63.0	AZN	1.93%	HCA	-1.98%



P365D: 126d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 95% ROVBC(Return on VaR Based Capital, defined earlier) exceeds Sigma 95% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
126.0	MSTR	76.05%	AAP	-43.75%
126.0	GME	53.77%	TRGP	-22.36%
126.0	TSLA	39.55%	BIIB	-16.47%
126.0	CHTR	32.34%	OXY	-14.29%
126.0	GILD	24.89%	VST	-13.84%
126.0	BXP	24.78%	MS	-12.55%
126.0	UAA	24.21%	CSCO	-11.55%
126.0	EXPE	22.96%	WFC	-10.33%
126.0	VFC	21.23%	T	-9.6%
126.0	META	10.14%	PRGO	-9.04%
126.0	GNRC	9.58%	JPM	-8.52%
126.0	ZION	8.01%	CCL	-8.48%
126.0	FITB	7.57%	ISRG	-8.25%
126.0	AMAT	7.28%	VNO	-8.08%
126.0	NFLX	7.01%	HLT	-7.23%
126.0	AZO	6.53%	BUD	-6.71%
126.0	FSUGY	6.47%	CLF	-6.12%
126.0	GT	6.13%	KALU	-5.85%
126.0	CTLT	5.66%	GBTC	-5.76%
126.0	BMJ	5.45%	INTC	-5.33%
126.0	ZTS	5.21%	NVDA	-4.92%
126.0	GOLD	5.12%	SPY	-4.51%
126.0	KEY	5.07%	QQQ	-4.18%
126.0	AA	5.03%	DHI	-3.97%
126.0	CMA	4.55%	LVS	-3.9%
126.0	NWL	4.12%	IRM	-3.72%
126.0	CSTM	4.09%	BAC	-3.67%
126.0	MOS	3.97%	COST	-3.56%
126.0	SBUX	3.79%	CPRT	-3.44%
126.0	BHC	3.64%	GSK	-3.41%



P90D: 1d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 95% ROVBC(Return on VaR Based Capital, defined earlier) exceeds Sigma 95% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
1.0	INTC	1.8%	TSLA	-1.66%
1.0	PRGO	1.12%	AMC	-0.72%
1.0	GOLD	0.58%	CLF	-0.7%
1.0	BHC	0.54%	VST	-0.62%
1.0	ZTS	0.35%	GME	-0.45%
1.0	TEVA	0.34%	CYH	-0.41%
1.0	TXN	0.25%	CZR	-0.39%
1.0	BALL	0.22%	AAP	-0.38%
1.0	CHTR	0.21%	TMUS	-0.33%
1.0	ORCL	0.2%	AVGO	-0.29%
1.0	UNH	0.18%	GOOGL	-0.29%
1.0	BMJ	0.18%	BAC	-0.29%
1.0	SBUX	0.17%	ON	-0.28%
1.0	OXY	0.16%	CSTM	-0.27%
1.0	NWL	0.16%	LLY	-0.25%
1.0	AMGN	0.16%	VFC	-0.24%
1.0	MSI	0.14%	GLD	-0.22%
1.0	GBTC	0.14%	HSBC	-0.22%
1.0	BUD	0.14%	CDNS	-0.21%
1.0	ELAN	0.14%	MSFT	-0.2%
1.0	LUMN	0.13%	GT	-0.19%
1.0	QCOM	0.13%	BBY	-0.19%
1.0	CCL	0.13%	META	-0.18%
1.0	KEY	0.13%	CAH	-0.16%
1.0	LVS	0.13%	T	-0.15%
1.0	WDC	0.12%	TDG	-0.14%
1.0	FITB	0.12%	MNST	-0.13%
1.0	GNRC	0.12%	ISRG	-0.13%
1.0	NVDA	0.12%	WYNN	-0.11%
1.0	MRK	0.11%	VNO	-0.1%



P90D: 10d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 95% ROVBC(Return on VaR Based Capital, defined earlier) exceeds Sigma 95% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
10.0	INTC	6.64%	TSLA	-15.81%
10.0	CVS	5.79%	AAP	-6.57%
10.0	BUD	5.62%	AMC	-5.82%
10.0	AVGO	4.4%	MSTR	-3.79%
10.0	GOLD	4.12%	GME	-3.22%
10.0	UNH	3.0%	ON	-3.11%
10.0	AMGN	2.55%	LLY	-2.64%
10.0	TEVA	2.19%	GOOGL	-2.62%
10.0	VFC	2.05%	TMUS	-2.35%
10.0	GBTC	1.98%	CLF	-2.12%
10.0	META	1.96%	T	-1.92%
10.0	SNY	1.86%	CDNS	-1.78%
10.0	SLV	1.79%	CZR	-1.74%
10.0	MRK	1.67%	HSBC	-1.58%
10.0	TXN	1.67%	GT	-1.58%
10.0	NEM	1.56%	GLD	-1.55%
10.0	MU	1.49%	CMA	-1.54%
10.0	CMCSA	1.48%	MNST	-1.49%
10.0	AMAT	1.35%	VST	-1.48%
10.0	NWL	1.34%	GNRC	-1.31%
10.0	NVDA	1.29%	BALL	-1.23%
10.0	UAA	1.28%	MSFT	-1.23%
10.0	GSK	1.19%	BHC	-1.15%
10.0	FIS	1.18%	ELAN	-1.14%
10.0	MSI	1.14%	KEY	-0.97%
10.0	OXY	1.09%	NFLX	-0.9%
10.0	CCL	1.08%	NAVI	-0.74%
10.0	QCOM	1.07%	X	-0.74%
10.0	LEN	1.0%	RIO	-0.71%
10.0	BBY	0.98%	AZO	-0.66%



P90D: 21d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 95% ROVBC(Return on VaR Based Capital, defined earlier) exceeds Sigma 95% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
21.0	CVS	13.36%	TSLA	-24.06%
21.0	BUD	12.17%	AAP	-18.7%
21.0	AMGN	8.56%	GME	-8.82%
21.0	GOLD	8.45%	ON	-8.17%
21.0	AVGO	4.99%	GOOGL	-7.08%
21.0	TEVA	4.58%	CZR	-6.83%
21.0	GBTC	4.24%	GNRC	-5.9%
21.0	AMAT	4.12%	MSTR	-5.42%
21.0	INTC	3.93%	ELAN	-5.18%
21.0	SNY	3.84%	TMUS	-5.08%
21.0	AMZN	3.6%	CMA	-5.03%
21.0	META	3.56%	VST	-4.67%
21.0	FIS	3.46%	MNST	-3.83%
21.0	WDC	3.19%	T	-3.45%
21.0	LEN	2.95%	HSBC	-3.2%
21.0	SLV	2.92%	AMC	-3.1%
21.0	NVDA	2.85%	MSFT	-2.7%
21.0	CHTR	2.61%	LLY	-2.58%
21.0	PHM	2.58%	GLD	-2.56%
21.0	PRGO	2.56%	KEY	-2.23%
21.0	MSI	2.53%	AA	-2.07%
21.0	MRK	2.48%	X	-2.06%
21.0	HD	2.46%	CDNS	-1.99%
21.0	CMG	2.4%	INTU	-1.9%
21.0	ABBV	2.39%	LW	-1.86%
21.0	UAA	2.28%	AMD	-1.74%
21.0	IRM	2.17%	NAVI	-1.71%
21.0	ISRG	1.97%	JAZZ	-1.69%
21.0	GS	1.9%	BALL	-1.67%
21.0	USB	1.88%	ORLY	-1.5%



P30D: 1d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 95% ROVBC(Return on VaR Based Capital, defined earlier) exceeds Sigma 95% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
1.0	UNH	1.0%	TSLA	-3.64%
1.0	PWR	0.68%	CLF	-1.31%
1.0	GME	0.66%	ISRG	-0.9%
1.0	LUMN	0.55%	LLY	-0.74%
1.0	INTU	0.49%	BBY	-0.69%
1.0	TEVA	0.49%	AVGO	-0.58%
1.0	LVS	0.38%	AMC	-0.57%
1.0	GOLD	0.38%	VFC	-0.55%
1.0	ADBE	0.37%	MOS	-0.44%
1.0	AMD	0.37%	GOOGL	-0.43%
1.0	CHTR	0.36%	MSFT	-0.39%
1.0	UAA	0.34%	INTC	-0.38%
1.0	CCL	0.32%	NAVI	-0.36%
1.0	GNRC	0.32%	BHC	-0.35%
1.0	MSTR	0.31%	META	-0.34%
1.0	FITB	0.3%	GT	-0.31%
1.0	MS	0.3%	AMZN	-0.26%
1.0	BHP	0.29%	GLD	-0.26%
1.0	IEP	0.29%	SBUX	-0.24%
1.0	COST	0.29%	AZO	-0.24%
1.0	OXY	0.27%	FCX	-0.23%
1.0	GS	0.27%	CSTM	-0.22%
1.0	ELAN	0.24%	CAH	-0.21%
1.0	USB	0.22%	XOM	-0.16%
1.0	QQQ	0.19%	TDG	-0.15%
1.0	LNC	0.19%	VZ	-0.15%
1.0	WDC	0.18%	FIS	-0.14%
1.0	QCOM	0.17%	ON	-0.14%
1.0	HLT	0.16%	MU	-0.13%
1.0	ZION	0.15%	X	-0.12%



P30D: 10d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 95% ROVBC(Return on VaR Based Capital, defined earlier) exceeds Sigma 95% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
10.0	UNH	11.21%	TSLA	-11.45%
10.0	INTC	9.33%	TRGP	-4.52%
10.0	AMD	6.76%	MOS	-4.01%
10.0	MSTR	5.49%	PCG	-2.6%
10.0	NEM	4.64%	FIS	-2.6%
10.0	AAP	3.85%	GLD	-2.38%
10.0	MU	3.64%	LLY	-2.35%
10.0	LUMN	2.81%	VFC	-2.33%
10.0	LVS	2.63%	META	-2.1%
10.0	COST	2.55%	XOM	-1.73%
10.0	CMCSA	2.21%	MNST	-1.7%
10.0	OXY	1.86%	FCX	-1.62%
10.0	BA	1.84%	VST	-1.57%
10.0	UAA	1.61%	CAH	-1.49%
10.0	LW	1.57%	AZO	-1.44%
10.0	CVS	1.46%	T	-1.36%
10.0	GNRC	1.45%	SBUX	-1.3%
10.0	VZ	1.45%	LNC	-1.21%
10.0	GE	1.34%	ZTS	-1.14%
10.0	ISRG	1.3%	NFLX	-1.08%
10.0	ADBE	1.28%	CPRT	-1.07%
10.0	WDC	1.21%	NAVI	-0.98%
10.0	HD	1.2%	AMGN	-0.8%
10.0	LEN	1.18%	CMG	-0.76%
10.0	IRM	1.14%	KALU	-0.76%
10.0	GME	1.14%	GILD	-0.71%
10.0	GOLD	1.12%	ACGL	-0.69%
10.0	TXN	1.09%	MSI	-0.65%
10.0	HLT	1.07%	BIIB	-0.61%
10.0	PWR	1.0%	GOOGL	-0.6%



Appendix 17: Top & Bottom 30 Ticker Level Differences in 99% VaR Breakage

All Out of Sample Model Dates: 1d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 99% VaR breakage exceeds Sigma 99% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
1.0	SBNY	12.27%	IRM	-2.45%
1.0	SIVBQ	8.11%	CMG	-2.45%
1.0	TSLA	6.72%	VST	-2.43%
1.0	LQD	5.35%	QQQ	-2.34%
1.0	GOLD	4.97%	NVDA	-2.3%
1.0	GME	4.58%	PWR	-2.22%
1.0	FRCB	3.6%	TRGP	-2.17%
1.0	JAZZ	2.89%	LEN	-1.95%
1.0	AMC	2.81%	MS	-1.94%
1.0	ISRG	2.45%	AMAT	-1.92%
1.0	ZTS	2.33%	SPY	-1.91%
1.0	MSTR	2.19%	MOS	-1.84%
1.0	BUD	2.17%	PHM	-1.82%
1.0	AAP	2.0%	ACGL	-1.81%
1.0	GNRC	1.96%	GS	-1.79%
1.0	CHTR	1.83%	GBTC	-1.78%
1.0	KALU	1.69%	CCL	-1.69%
1.0	FRA	1.66%	THC	-1.68%
1.0	EXPE	1.45%	DHI	-1.67%
1.0	CDNS	1.43%	PEP	-1.67%
1.0	TLT	1.43%	NVS	-1.66%
1.0	PRGO	1.34%	PCG	-1.62%
1.0	SLV	1.28%	AMD	-1.6%
1.0	BXP	1.14%	GOOGL	-1.57%
1.0	ELAN	0.99%	CAH	-1.56%
1.0	OXY	0.92%	UNH	-1.56%
1.0	GSK	0.77%	HLT	-1.55%
1.0	CMA	0.65%	ORLY	-1.53%
1.0	BIIB	0.39%	EMB	-1.53%
1.0	UAA	0.27%	HSBC	-1.53%



All Out of Sample Model Dates: 10d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 99% VaR breakage exceeds Sigma 99% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
10.0	SBNY	13.75%	MUB	-4.71%
10.0	TSLA	9.43%	PCG	-3.4%
10.0	AMC	8.3%	COST	-2.81%
10.0	SIVBQ	7.72%	BAC	-2.57%
10.0	GOLD	6.92%	WDC	-2.45%
10.0	LQD	5.72%	ABBV	-2.45%
10.0	AAP	5.47%	VST	-2.3%
10.0	CHTR	5.07%	MRK	-2.29%
10.0	GME	3.73%	WRK	-2.28%
10.0	MSTR	3.55%	WFC	-2.2%
10.0	ZTS	3.23%	HCA	-2.2%
10.0	ISRG	2.84%	MS	-2.19%
10.0	GNRC	2.79%	IRM	-2.19%
10.0	BIIB	2.61%	JPM	-2.18%
10.0	VCSH	2.16%	X	-2.12%
10.0	KALU	2.07%	ADBE	-2.02%
10.0	META	1.82%	SBUX	-1.91%
10.0	CVS	1.79%	TRGP	-1.91%
10.0	OXY	1.7%	CSTM	-1.81%
10.0	JAZZ	1.31%	HLT	-1.8%
10.0	TLT	1.3%	AZN	-1.79%
10.0	SNY	1.27%	CCL	-1.7%
10.0	CMA	1.17%	GT	-1.7%
10.0	ORCL	1.14%	MU	-1.63%
10.0	AAPL	1.06%	USB	-1.57%
10.0	BHC	0.95%	FIS	-1.55%
10.0	WYNN	0.94%	MSI	-1.43%
10.0	NEM	0.93%	CMCSA	-1.42%
10.0	EXPE	0.79%	BBY	-1.41%
10.0	GSK	0.77%	QQQ	-1.3%



All Out of Sample Model Dates: 21d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 99% VaR breakage exceeds Sigma 99% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
21.0	SBNY	17.1%	MUB	-4.94%
21.0	AMC	10.07%	LW	-4.56%
21.0	CHTR	9.81%	COST	-2.87%
21.0	TSLA	9.62%	PCG	-2.55%
21.0	SIVBQ	6.95%	USB	-2.54%
21.0	VCSH	6.74%	TEVA	-2.49%
21.0	GOLD	5.32%	WDC	-2.22%
21.0	BIIB	4.94%	AZN	-2.21%
21.0	LQD	4.41%	INTC	-2.15%
21.0	GNRC	4.28%	CMG	-1.71%
21.0	META	2.92%	TFC	-1.63%
21.0	AAP	2.74%	FCX	-1.59%
21.0	MSTR	2.36%	HLT	-1.57%
21.0	GME	2.26%	MU	-1.52%
21.0	ORCL	2.2%	IRM	-1.45%
21.0	KALU	1.98%	X	-1.36%
21.0	ZTS	1.98%	CCL	-1.3%
21.0	BUD	1.69%	FRA	-1.3%
21.0	OXY	1.47%	ADBE	-1.24%
21.0	CMA	1.46%	NFLX	-1.22%
21.0	FIS	1.45%	MS	-1.19%
21.0	BHP	1.3%	JPM	-1.18%
21.0	KEY	1.29%	BAC	-1.18%
21.0	TLT	1.19%	TRGP	-1.17%
21.0	FRCB	1.08%	VNO	-1.11%
21.0	ON	1.05%	PWR	-1.06%
21.0	CZR	0.95%	CDNS	-1.06%
21.0	AAPL	0.95%	HCA	-1.05%
21.0	NEM	0.94%	GSK	-1.05%
21.0	EXPE	0.81%	AA	-0.94%



All Out of Sample Model Dates: 63d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 99% VaR breakage exceeds Sigma 99% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
63.0	SBNY	27.51%	IEP	-8.63%
63.0	CHTR	19.78%	MUB	-5.49%
63.0	AMC	14.57%	PCG	-5.25%
63.0	AAP	10.17%	BHC	-3.53%
63.0	VCSH	7.0%	USB	-3.4%
63.0	LQD	5.9%	HCA	-2.52%
63.0	GNRC	5.57%	GSK	-2.49%
63.0	MSTR	5.13%	X	-2.45%
63.0	ZION	5.03%	VZ	-2.36%
63.0	GOLD	4.65%	AZN	-2.07%
63.0	BMY	4.26%	TFC	-2.0%
63.0	SIVBQ	4.25%	AA	-1.84%
63.0	TLT	4.06%	CLF	-1.72%
63.0	META	3.79%	CTLT	-1.69%
63.0	BXP	3.38%	IRM	-1.11%
63.0	BIIB	3.11%	SNY	-0.96%
63.0	VNO	3.08%	HYG	-0.96%
63.0	ON	3.07%	MU	-0.73%
63.0	NWL	2.4%	LW	-0.71%
63.0	BUD	2.2%	NEM	-0.57%
63.0	CMA	1.82%	EMB	-0.55%
63.0	FRA	1.65%	GT	-0.31%
63.0	BA	1.59%	MOS	-0.28%
63.0	CVS	1.38%	FSUGY	-0.28%
63.0	TSLA	1.33%	WDC	-0.15%
63.0	AAPL	1.15%	INTU	-0.14%
63.0	FITB	1.14%	GILD	-0.14%
63.0	NFLX	0.86%	WYNN	0.0%
63.0	FRCB	0.72%	T	0.0%
63.0	KEY	0.61%	CPRT	0.0%



All Out of Sample Model Dates: 126d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 99% VaR breakage exceeds Sigma 99% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
126.0	AAP	26.58%	IEP	-18.93%
126.0	SBNY	24.54%	BALL	-3.69%
126.0	AMC	23.44%	LW	-3.24%
126.0	CHTR	21.12%	GSK	-3.03%
126.0	BXP	9.98%	VZ	-1.83%
126.0	VFC	9.72%	EMB	-1.05%
126.0	VCSH	7.5%	MUB	-0.9%
126.0	GNRC	6.31%	INTC	-0.46%
126.0	CTLT	5.76%	NEM	-0.31%
126.0	TLT	5.29%	CSCO	0.0%
126.0	CMA	5.21%	VICI	0.0%
126.0	OXY	4.01%	PWR	0.0%
126.0	ZION	3.92%	HON	0.0%
126.0	GOLD	3.38%	CITI	0.0%
126.0	VNO	2.66%	MU	0.0%
126.0	LQD	2.4%	ETRN	0.0%
126.0	BIIB	2.17%	GS	0.0%
126.0	SNY	2.1%	CMCSA	0.0%
126.0	META	2.0%	PRGO	0.0%
126.0	SIVBQ	1.54%	CZR	0.0%
126.0	FIS	1.22%	VST	0.0%
126.0	CNC	0.96%	MSI	0.0%
126.0	HYG	0.9%	ADBE	0.0%
126.0	BHC	0.8%	ACGL	0.0%
126.0	MSTR	0.8%	UAA	0.0%
126.0	EXPE	0.78%	ZTS	0.0%
126.0	CYH	0.47%	BUD	0.0%
126.0	KEY	0.34%	KHC	0.0%
126.0	ELAN	0.33%	PEP	0.0%
126.0	CLF	0.31%	FCX	0.0%



All Out of Sample Model Dates: 252d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 99% VaR breakage exceeds Sigma 99% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
252.0	AMC	43.38%	IEP	-37.8%
252.0	AAP	32.65%	FRCB	-1.08%
252.0	SBNY	22.68%	LW	-0.19%
252.0	BXP	18.06%	META	0.0%
252.0	VFC	16.77%	GE	0.0%
252.0	CHTR	15.92%	GT	0.0%
252.0	BIIB	11.92%	HSBC	0.0%
252.0	CMA	9.87%	KHC	0.0%
252.0	VNO	7.2%	ON	0.0%
252.0	ZION	7.12%	CMCSA	0.0%
252.0	KEY	3.89%	HYG	0.0%
252.0	CTLT	3.88%	MOS	0.0%
252.0	GNRC	3.73%	UAA	0.0%
252.0	BHC	3.58%	TSLA	0.0%
252.0	BMJ	2.78%	ZTS	0.0%
252.0	VCSH	2.77%	MSFT	0.0%
252.0	MRK	2.04%	SPY	0.0%
252.0	FIS	1.69%	MNST	0.0%
252.0	EMB	1.66%	UNH	0.0%
252.0	GSK	1.31%	CYH	0.0%
252.0	ELAN	1.21%	VICI	0.0%
252.0	TLT	1.11%	CCL	0.0%
252.0	FITB	0.77%	MUB	0.0%
252.0	NEM	0.39%	ETRN	0.0%
252.0	CVS	0.19%	SIVBQ	0.0%
252.0	CMCSA	0.0%	X	0.0%
252.0	UAA	0.0%	LNC	0.0%
252.0	LLY	0.0%	HON	0.0%
252.0	MOS	0.0%	LQD	0.0%
252.0	HYG	0.0%	GOLD	0.0%



P365D: 1d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 99% VaR breakage exceeds Sigma 99% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
1.0	GOLD	4.31%	VST	-6.25%
1.0	TSLA	2.58%	NVDA	-5.44%
1.0	GME	2.55%	AMAT	-4.64%
1.0	NAVI	2.51%	CMG	-4.6%
1.0	MSTR	2.4%	IRM	-4.56%
1.0	CHTR	2.16%	JPM	-4.15%
1.0	LW	2.16%	TMUS	-3.83%
1.0	AMC	1.83%	QQQ	-3.78%
1.0	CMA	1.67%	TRGP	-3.73%
1.0	GSK	1.67%	PWR	-3.42%
1.0	BUD	1.66%	CCL	-3.4%
1.0	QCOM	1.26%	LEN	-3.39%
1.0	LQD	1.24%	GS	-3.32%
1.0	CZR	0.9%	SPY	-3.32%
1.0	SBUX	0.83%	HLT	-3.32%
1.0	EXPE	0.83%	MS	-3.32%
1.0	AAP	0.48%	LLY	-3.27%
1.0	NWL	0.43%	MSI	-3.07%
1.0	VZ	0.42%	GBTC	-2.97%
1.0	CVS	0.42%	INTU	-2.94%
1.0	AMGN	0.41%	THC	-2.92%
1.0	POST	0.0%	GLD	-2.9%
1.0	ELAN	0.0%	PEP	-2.9%
1.0	WRK	0.0%	WDC	-2.64%
1.0	CTLT	0.0%	META	-2.56%
1.0	ETRN	0.0%	BAC	-2.51%
1.0	TLT	0.0%	AAPL	-2.51%
1.0	OXY	0.0%	CAH	-2.5%
1.0	KALU	0.0%	NVS	-2.49%
1.0	BXP	0.0%	WYNN	-2.3%



P365D: 10d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 99% VaR breakage exceeds Sigma 99% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
10.0	TSLA	7.2%	MRK	-7.41%
10.0	AAP	4.74%	WDC	-6.55%
10.0	ZTS	4.55%	PCG	-5.88%
10.0	CMA	3.73%	SBUX	-5.76%
10.0	GOLD	3.42%	CCL	-5.42%
10.0	GSK	2.89%	VST	-5.37%
10.0	BIIB	2.89%	FIS	-5.04%
10.0	CVS	2.48%	GT	-4.74%
10.0	AMC	2.28%	CSTM	-4.55%
10.0	CZR	2.25%	MSI	-4.37%
10.0	CLF	1.72%	AZN	-4.13%
10.0	ON	1.69%	ABBV	-4.12%
10.0	LQD	1.65%	CDNS	-3.83%
10.0	MSTR	1.43%	MU	-3.83%
10.0	CHTR	1.29%	JPM	-3.7%
10.0	KHC	1.27%	COST	-3.7%
10.0	LNC	0.92%	WFC	-3.32%
10.0	LW	0.85%	CMG	-3.32%
10.0	BXP	0.83%	BAC	-3.32%
10.0	BUD	0.82%	MS	-3.29%
10.0	LLY	0.47%	IRM	-3.29%
10.0	NAVI	0.41%	ISRG	-3.2%
10.0	SLV	0.41%	NWL	-2.99%
10.0	EXPE	0.41%	TEVA	-2.97%
10.0	KEY	0.0%	BBY	-2.95%
10.0	RIO	0.0%	QQQ	-2.92%
10.0	GE	0.0%	HLT	-2.88%
10.0	AMZN	0.0%	INTC	-2.63%
10.0	ZION	0.0%	ADBE	-2.56%
10.0	CPRT	0.0%	UNH	-2.52%



P365D: 21d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 99% VaR breakage exceeds Sigma 99% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
21.0	TSLA	6.33%	PCG	-8.76%
21.0	AAP	6.25%	WDC	-7.41%
21.0	ON	5.86%	TEVA	-7.27%
21.0	CMA	5.78%	INTC	-7.14%
21.0	BIIB	5.31%	AZN	-6.19%
21.0	BUD	5.29%	VFC	-5.24%
21.0	BALL	3.7%	MU	-5.0%
21.0	GSK	3.56%	CMG	-4.89%
21.0	CZR	3.38%	HLT	-4.85%
21.0	KHC	2.71%	CCL	-4.74%
21.0	LQD	2.2%	IRM	-3.96%
21.0	AMC	1.48%	FRA	-3.96%
21.0	CVS	1.33%	JPM	-3.96%
21.0	BHC	1.08%	CDNS	-3.64%
21.0	AA	0.92%	AMAT	-3.14%
21.0	KALU	0.9%	COST	-3.08%
21.0	BMY	0.88%	GT	-3.06%
21.0	PRGO	0.55%	UNH	-2.7%
21.0	GME	0.54%	FIS	-2.7%
21.0	CHTR	0.46%	QCOM	-2.67%
21.0	GOLD	0.45%	CNC	-2.27%
21.0	OXY	0.45%	FSUGY	-2.26%
21.0	GOOGL	0.45%	LEN	-2.22%
21.0	GILD	0.44%	PHM	-2.2%
21.0	SLV	0.44%	GS	-2.2%
21.0	ORLY	0.0%	NVS	-2.2%
21.0	USB	0.0%	MRK	-2.2%
21.0	GE	0.0%	MSI	-1.87%
21.0	VZ	0.0%	NWL	-1.84%
21.0	RIO	0.0%	AMZN	-1.81%



P365D: 63d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 99% VaR breakage exceeds Sigma 99% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
63.0	AAP	12.58%	PCG	-21.02%
63.0	ON	12.29%	AZN	-8.15%
63.0	BUD	8.65%	IRM	-4.32%
63.0	BMY	2.72%	MU	-2.79%
63.0	CVS	2.7%	HCA	-2.76%
63.0	GSK	2.7%	FSUGY	-1.12%
63.0	CNC	2.25%	WDC	-0.58%
63.0	LQD	2.16%	POST	0.0%
63.0	OXY	1.64%	LLY	0.0%
63.0	GOLD	1.12%	NFLX	0.0%
63.0	UAA	0.57%	DHI	0.0%
63.0	CLF	0.57%	GME	0.0%
63.0	CMCSA	0.54%	WRK	0.0%
63.0	LLY	0.0%	TSLA	0.0%
63.0	NFLX	0.0%	LNC	0.0%
63.0	DHI	0.0%	TXN	0.0%
63.0	TSLA	0.0%	HD	0.0%
63.0	THC	0.0%	GS	0.0%
63.0	HD	0.0%	THC	0.0%
63.0	WRK	0.0%	FITB	0.0%
63.0	NVS	0.0%	BBY	0.0%
63.0	GS	0.0%	NVS	0.0%
63.0	LNC	0.0%	HON	0.0%
63.0	TXN	0.0%	VCSH	0.0%
63.0	POST	0.0%	EXPE	0.0%
63.0	HYG	0.0%	MSFT	0.0%
63.0	FITB	0.0%	ETRN	0.0%
63.0	USB	0.0%	PWR	0.0%
63.0	BBY	0.0%	USB	0.0%
63.0	TDG	0.0%	LUMN	0.0%



P365D: 126d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 99% VaR breakage exceeds Sigma 99% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
126.0	AAP	38.89%	GME	0.0%
126.0	OXY	20.66%	NVDA	0.0%
126.0	BIIB	8.94%	UNH	0.0%
126.0	CNC	5.13%	HD	0.0%
126.0	CLF	1.71%	CMCSA	0.0%
126.0	GSK	1.63%	CVS	0.0%
126.0	MRK	0.81%	GOOGL	0.0%
126.0	AVGO	0.0%	ZTS	0.0%
126.0	CVS	0.0%	HYG	0.0%
126.0	HON	0.0%	HON	0.0%
126.0	HYG	0.0%	ELAN	0.0%
126.0	ZTS	0.0%	MNST	0.0%
126.0	GOOGL	0.0%	POST	0.0%
126.0	HD	0.0%	TXN	0.0%
126.0	CMCSA	0.0%	ABBV	0.0%
126.0	UNH	0.0%	LUMN	0.0%
126.0	MNST	0.0%	TEVA	0.0%
126.0	NVDA	0.0%	NVS	0.0%
126.0	ORLY	0.0%	AMGN	0.0%
126.0	BUD	0.0%	TDG	0.0%
126.0	ELAN	0.0%	CDNS	0.0%
126.0	TXN	0.0%	QCOM	0.0%
126.0	POST	0.0%	AMC	0.0%
126.0	KHC	0.0%	IEP	0.0%
126.0	AMC	0.0%	ORLY	0.0%
126.0	IEP	0.0%	PHM	0.0%
126.0	PHM	0.0%	SLV	0.0%
126.0	VCSH	0.0%	NEM	0.0%
126.0	SLV	0.0%	KHC	0.0%
126.0	NEM	0.0%	EMB	0.0%



P90D: 1d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 99% VaR breakage exceeds Sigma 99% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
1.0	NAVI	12.73%	MSI	-10.0%
1.0	AMC	7.41%	HLT	-9.09%
1.0	TSLA	6.0%	AAPL	-9.09%
1.0	AMGN	5.45%	CCL	-7.69%
1.0	QCOM	5.45%	PEP	-7.27%
1.0	GNRC	4.17%	GS	-7.27%
1.0	GOLD	3.77%	IRM	-7.27%
1.0	CDNS	3.7%	QQQ	-7.27%
1.0	LQD	3.64%	TMUS	-6.12%
1.0	VZ	3.64%	META	-5.56%
1.0	TXN	3.64%	BIIB	-5.56%
1.0	MSTR	2.13%	JPM	-5.45%
1.0	GME	1.92%	MS	-5.45%
1.0	CZR	1.89%	AMAT	-5.45%
1.0	AAP	1.89%	COST	-5.45%
1.0	CHTR	1.85%	NVDA	-5.45%
1.0	GOOGL	1.82%	ISRG	-5.26%
1.0	CMA	1.82%	LLY	-3.85%
1.0	HCA	1.82%	XOM	-3.77%
1.0	ZTS	1.82%	KHC	-3.77%
1.0	AVGO	1.17%	USB	-3.7%
1.0	HYG	0.0%	VST	-3.7%
1.0	ON	0.0%	BAC	-3.64%
1.0	KALU	0.0%	CMG	-3.64%
1.0	UAA	0.0%	TRGP	-3.64%
1.0	SLV	0.0%	GWV	-3.64%
1.0	CVS	0.0%	CNC	-3.64%
1.0	CPRT	0.0%	MRK	-3.64%
1.0	CTLT	0.0%	SPY	-3.64%
1.0	HON	0.0%	THC	-3.64%



P90D: 10d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 99% VaR breakage exceeds Sigma 99% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
10.0	AAP	15.69%	FIS	-22.22%
10.0	TSLA	14.0%	MSI	-20.83%
10.0	ZTS	12.96%	ISRG	-17.5%
10.0	CMA	12.96%	TEVA	-16.98%
10.0	AMC	10.0%	MRK	-16.67%
10.0	CZR	9.62%	COST	-16.67%
10.0	LLY	8.51%	WDC	-15.38%
10.0	ON	5.56%	NWL	-14.89%
10.0	BALL	4.17%	CCL	-14.29%
10.0	BHC	2.0%	BBY	-13.46%
10.0	UNH	1.96%	MS	-12.96%
10.0	EXPE	1.85%	JPM	-12.96%
10.0	CLF	1.85%	HLT	-12.96%
10.0	CSTM	0.0%	GS	-11.11%
10.0	LQD	0.0%	PCG	-9.3%
10.0	TXN	0.0%	VFC	-8.16%
10.0	FCX	0.0%	SBUX	-7.41%
10.0	NVS	0.0%	AAPL	-7.41%
10.0	EMB	0.0%	SPY	-7.41%
10.0	GME	0.0%	BAC	-7.41%
10.0	CHTR	0.0%	CDNS	-5.56%
10.0	HYG	0.0%	QQQ	-5.56%
10.0	MSFT	0.0%	IRM	-5.56%
10.0	TLT	0.0%	TFC	-3.92%
10.0	GE	0.0%	PWR	-3.92%
10.0	BHP	0.0%	HD	-3.7%
10.0	GNRC	0.0%	TRGP	-3.7%
10.0	ABBV	0.0%	OXY	-2.04%
10.0	AZN	0.0%	KHC	-1.92%
10.0	VCSH	0.0%	LVS	-1.92%



P90D: 21d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 99% VaR breakage exceeds Sigma 99% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
21.0	CMA	30.23%	TEVA	-33.33%
21.0	CZR	17.07%	VFC	-26.83%
21.0	AMC	7.5%	HLT	-25.58%
21.0	AAP	5.41%	WDC	-24.39%
21.0	ON	4.65%	CCL	-22.5%
21.0	TSLA	2.5%	JPM	-20.93%
21.0	GOOGL	2.33%	COST	-16.28%
21.0	CYH	0.0%	FIS	-13.95%
21.0	GE	0.0%	IRM	-13.95%
21.0	EMB	0.0%	GS	-11.63%
21.0	IEP	0.0%	MRK	-11.63%
21.0	LQD	0.0%	NWL	-11.43%
21.0	INTU	0.0%	MSI	-10.81%
21.0	PEP	0.0%	ISRG	-9.38%
21.0	MSFT	0.0%	MS	-9.3%
21.0	VCSH	0.0%	HD	-9.3%
21.0	BMY	0.0%	BAC	-9.3%
21.0	ZTS	0.0%	PCG	-8.11%
21.0	TLT	0.0%	PWR	-7.32%
21.0	KEY	0.0%	CDNS	-4.65%
21.0	KALU	0.0%	WFC	-4.65%
21.0	NAVI	0.0%	META	-2.38%
21.0	MSTR	0.0%	QQQ	-2.33%
21.0	BHP	0.0%	SPY	-2.33%
21.0	THC	0.0%	AMZN	-2.33%
21.0	MUB	0.0%	ZTS	0.0%
21.0	BXP	0.0%	CSCO	0.0%
21.0	HYG	0.0%	KEY	0.0%
21.0	FCX	0.0%	KHC	0.0%
21.0	CLF	0.0%	TLT	0.0%



P30D: 1d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 99% VaR breakage exceeds Sigma 99% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
1.0	NAVI	15.0%	HLT	-20.0%
1.0	AMC	10.0%	META	-15.0%
1.0	QCOM	10.0%	GS	-15.0%
1.0	LQD	10.0%	COST	-15.0%
1.0	VZ	10.0%	CCL	-11.11%
1.0	MSTR	6.67%	JPM	-10.0%
1.0	TSLA	5.56%	HSBC	-10.0%
1.0	MU	5.56%	SPY	-10.0%
1.0	UNH	5.26%	QQQ	-10.0%
1.0	GNRC	5.26%	AAPL	-10.0%
1.0	HCA	5.0%	BAC	-10.0%
1.0	CHTR	5.0%	MS	-10.0%
1.0	AMGN	5.0%	ISRG	-7.14%
1.0	TXN	5.0%	TMUS	-6.67%
1.0	PCG	0.0%	AMZN	-5.88%
1.0	PRGO	0.0%	VFC	-5.88%
1.0	BBY	0.0%	BA	-5.26%
1.0	ZTS	0.0%	GBTC	-5.26%
1.0	HON	0.0%	AZO	-5.26%
1.0	VCSH	0.0%	PWR	-5.26%
1.0	LW	0.0%	VST	-5.26%
1.0	PHM	0.0%	ABBV	-5.0%
1.0	TDG	0.0%	FCX	-5.0%
1.0	POST	0.0%	NFLX	-5.0%
1.0	LEN	0.0%	T	-5.0%
1.0	BUD	0.0%	LNC	-5.0%
1.0	HYG	0.0%	LLY	-5.0%
1.0	MSI	0.0%	INTU	-5.0%
1.0	AZN	0.0%	ZION	-5.0%
1.0	BALL	0.0%	WFC	-5.0%



P30D: 10d

The columns labeled “VaRBreak_VmS” represent the average amount by which Vector Model 99% VaR breakage exceeds Sigma 99% VaR breakage for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker	VaRBreak_VmS	Ticker	VaRBreak_VmS
10.0	LLY	18.18%	COST	-36.36%
10.0	EXPE	9.09%	HLT	-27.27%
10.0	CZR	0.0%	VFC	-25.0%
10.0	ELAN	0.0%	ISRG	-25.0%
10.0	TMUS	0.0%	KHC	-9.09%
10.0	BHP	0.0%	SBUX	-9.09%
10.0	CCL	0.0%	AAPL	-9.09%
10.0	PWR	0.0%	BBY	-9.09%
10.0	TEVA	0.0%	TMUS	0.0%
10.0	UNH	0.0%	BHP	0.0%
10.0	VCSH	0.0%	CCL	0.0%
10.0	THC	0.0%	PWR	0.0%
10.0	RIO	0.0%	TEVA	0.0%
10.0	HON	0.0%	UNH	0.0%
10.0	KEY	0.0%	HSBC	0.0%
10.0	BXP	0.0%	RIO	0.0%
10.0	NFLX	0.0%	HON	0.0%
10.0	GT	0.0%	KEY	0.0%
10.0	HSBC	0.0%	BXP	0.0%
10.0	BHC	0.0%	NFLX	0.0%
10.0	BMY	0.0%	CZR	0.0%
10.0	GILD	0.0%	THC	0.0%
10.0	LQD	0.0%	BHC	0.0%
10.0	CVS	0.0%	VCSH	0.0%
10.0	CSTM	0.0%	EMB	0.0%
10.0	DHI	0.0%	KALU	0.0%
10.0	NVDA	0.0%	GWV	0.0%
10.0	MSFT	0.0%	HYG	0.0%
10.0	ZION	0.0%	ZION	0.0%
10.0	HYG	0.0%	MSFT	0.0%



Appendix 18: Top & Bottom 30 Ticker Level Differences in 99% VaR ROVBC

All Out of Sample Model Dates: 1d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 99% ROVBC (Return on VaR Based Capital, defined earlier) exceeds Sigma 99% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
1.0	GME	0.27%	SIVBQ	-0.63%
1.0	NWL	0.2%	SBNY	-0.43%
1.0	UAA	0.14%	NVDA	-0.14%
1.0	GNRC	0.13%	VST	-0.13%
1.0	INTU	0.12%	PWR	-0.11%
1.0	BALL	0.11%	GBTC	-0.1%
1.0	CZR	0.1%	LLY	-0.1%
1.0	AAPL	0.09%	GOLD	-0.1%
1.0	ZTS	0.07%	TRGP	-0.09%
1.0	CTLT	0.07%	GE	-0.09%
1.0	MSTR	0.06%	LUMN	-0.08%
1.0	KEY	0.06%	TSLA	-0.08%
1.0	QCOM	0.05%	AVGO	-0.07%
1.0	IEP	0.05%	CDNS	-0.07%
1.0	AA	0.05%	CAH	-0.06%
1.0	AMC	0.05%	PHM	-0.06%
1.0	HD	0.04%	ETRN	-0.06%
1.0	SBUX	0.04%	GS	-0.06%
1.0	CMA	0.04%	ACGL	-0.06%
1.0	UNH	0.04%	GILD	-0.06%
1.0	BHP	0.04%	TEVA	-0.06%
1.0	XOM	0.03%	FRCB	-0.06%
1.0	CYH	0.03%	ELAN	-0.06%
1.0	FITB	0.03%	CMG	-0.06%
1.0	MOS	0.03%	PRGO	-0.05%
1.0	NAVI	0.03%	T	-0.05%
1.0	META	0.03%	BXP	-0.05%
1.0	FSUGY	0.03%	FIS	-0.05%
1.0	GT	0.03%	WDC	-0.05%



1.0 LNC 0.02% GLD -0.05%



All Out of Sample Model Dates: 10d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 99% ROVBC (Return on VaR Based Capital, defined earlier) exceeds Sigma 99% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
10.0	MSTR	3.53%	SIVBQ	-7.76%
10.0	GME	3.11%	SBNY	-5.38%
10.0	CTLT	1.21%	TSLA	-1.17%
10.0	GNRC	1.09%	AMC	-1.12%
10.0	CMA	0.78%	FRCB	-1.03%
10.0	INTU	0.75%	NVDA	-0.98%
10.0	AAPL	0.67%	VST	-0.92%
10.0	AA	0.66%	PWR	-0.83%
10.0	UAA	0.64%	AVGO	-0.81%
10.0	CZR	0.49%	TRGP	-0.76%
10.0	XOM	0.47%	AAP	-0.76%
10.0	CVS	0.39%	X	-0.64%
10.0	IEP	0.39%	LLY	-0.63%
10.0	CSTM	0.37%	PHM	-0.61%
10.0	BALL	0.34%	CMG	-0.53%
10.0	SLV	0.34%	GE	-0.52%
10.0	LNC	0.34%	CPRT	-0.51%
10.0	KALU	0.32%	GSK	-0.5%
10.0	ZTS	0.32%	ISRG	-0.48%
10.0	NFLX	0.31%	ACGL	-0.47%
10.0	FSUGY	0.28%	EXPE	-0.46%
10.0	WRK	0.26%	GBTC	-0.46%
10.0	INTC	0.25%	COST	-0.44%
10.0	WDC	0.24%	TDG	-0.42%
10.0	BHP	0.24%	THC	-0.42%
10.0	KEY	0.22%	ORLY	-0.4%
10.0	QCOM	0.2%	TFC	-0.38%
10.0	SBUX	0.19%	T	-0.37%
10.0	OXY	0.19%	CAH	-0.36%
10.0	LUMN	0.19%	IRM	-0.33%



All Out of Sample Model Dates: 21d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 99% ROVBC (Return on VaR Based Capital, defined earlier) exceeds Sigma 99% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
21.0	MSTR	8.5%	SIVBQ	-11.31%
21.0	GME	6.18%	SBNY	-10.59%
21.0	CTLT	2.54%	AMC	-5.28%
21.0	GNRC	2.0%	NVDA	-2.19%
21.0	NFLX	2.0%	FRCB	-1.94%
21.0	AA	1.86%	PWR	-1.63%
21.0	META	1.48%	VST	-1.63%
21.0	CMA	1.36%	PHM	-1.5%
21.0	UAA	1.35%	TRGP	-1.45%
21.0	INTU	1.3%	X	-1.43%
21.0	XOM	1.2%	TSLA	-1.38%
21.0	CLF	1.06%	LLY	-1.33%
21.0	INTC	0.99%	COST	-1.31%
21.0	CZR	0.99%	AVGO	-1.29%
21.0	CVS	0.98%	ELAN	-1.07%
21.0	IEP	0.93%	GE	-1.01%
21.0	KALU	0.93%	ORLY	-1.01%
21.0	LUMN	0.84%	TDG	-1.0%
21.0	ZTS	0.83%	CPRT	-0.99%
21.0	CYH	0.8%	ACGL	-0.98%
21.0	CSTM	0.72%	ETRN	-0.97%
21.0	FSUGY	0.68%	CMG	-0.97%
21.0	BHP	0.54%	CDNS	-0.89%
21.0	AAPL	0.51%	HSBC	-0.83%
21.0	SLV	0.48%	JPM	-0.79%
21.0	TEVA	0.48%	IRM	-0.79%
21.0	MOS	0.45%	THC	-0.77%
21.0	CMCSA	0.42%	PRGO	-0.76%
21.0	SBUX	0.42%	ISRG	-0.76%
21.0	NAVI	0.42%	GWW	-0.75%



All Out of Sample Model Dates: 63d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 99% ROVBC (Return on VaR Based Capital, defined earlier) exceeds Sigma 99% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
63.0	META	11.02%	SBNY	-45.4%
63.0	CTLT	10.14%	SIVBQ	-40.67%
63.0	MSTR	6.13%	FRCB	-19.7%
63.0	GME	5.54%	AMC	-14.44%
63.0	CMA	4.75%	PHM	-4.87%
63.0	IEP	3.44%	VST	-4.29%
63.0	GNRC	3.03%	TRGP	-4.19%
63.0	AMZN	2.88%	NVDA	-4.14%
63.0	KALU	2.86%	GE	-3.42%
63.0	NFLX	2.85%	PWR	-3.39%
63.0	INTC	2.61%	CPRT	-3.3%
63.0	CZR	2.23%	DHI	-3.02%
63.0	GILD	1.97%	CDNS	-2.7%
63.0	ZTS	1.96%	JPM	-2.69%
63.0	BXP	1.96%	CHTR	-2.53%
63.0	XOM	1.95%	COST	-2.53%
63.0	WRK	1.91%	THC	-2.35%
63.0	USB	1.68%	IRM	-2.24%
63.0	NEM	1.66%	ELAN	-2.14%
63.0	GOOGL	1.65%	GWW	-2.08%
63.0	LUMN	1.65%	GBTC	-1.91%
63.0	CVS	1.64%	ORLY	-1.89%
63.0	SNY	1.59%	ACGL	-1.85%
63.0	LVS	1.5%	PCG	-1.7%
63.0	BA	1.49%	ON	-1.69%
63.0	CYH	1.41%	VNO	-1.64%
63.0	HD	1.38%	MS	-1.47%
63.0	SBUX	1.34%	GS	-1.46%
63.0	VZ	1.31%	MSI	-1.4%
63.0	SLV	1.29%	GLD	-1.38%



All Out of Sample Model Dates: 126d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 99% ROVBC (Return on VaR Based Capital, defined earlier) exceeds Sigma 99% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
126.0	META	33.5%	SBNY	-88.93%
126.0	MSTR	23.03%	SIVBQ	-70.28%
126.0	AMZN	9.71%	FRCB	-51.59%
126.0	NFLX	9.02%	AMC	-17.28%
126.0	AVGO	8.13%	AAP	-9.74%
126.0	GILD	7.99%	CHTR	-8.56%
126.0	GOOGL	7.04%	PHM	-8.53%
126.0	IEP	6.58%	TRGP	-6.45%
126.0	LLY	6.3%	CPRT	-6.28%
126.0	INTU	5.99%	GE	-5.59%
126.0	BA	5.95%	JPM	-5.36%
126.0	ISRG	5.23%	VFC	-4.83%
126.0	WRK	5.14%	CDNS	-4.78%
126.0	TEVA	4.8%	ACGL	-4.76%
126.0	TSLA	4.56%	PWR	-4.72%
126.0	GME	4.51%	MS	-4.5%
126.0	ORCL	4.45%	THC	-4.21%
126.0	KALU	4.36%	PCG	-3.89%
126.0	AMD	4.05%	DHI	-3.81%
126.0	LVS	3.99%	AA	-3.78%
126.0	XOM	3.86%	NVDA	-3.57%
126.0	TMUS	3.65%	VST	-3.51%
126.0	SBUX	3.62%	FIS	-3.51%
126.0	CSTM	3.6%	GS	-3.14%
126.0	WDC	3.34%	CMG	-2.72%
126.0	BXP	3.32%	JAZZ	-2.64%
126.0	SNY	3.23%	IRM	-2.59%
126.0	INTC	3.19%	MSFT	-2.46%
126.0	TFC	2.99%	ELAN	-2.34%
126.0	LW	2.96%	CCL	-2.16%



All Out of Sample Model Dates: 252d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 99% ROVBC (Return on VaR Based Capital, defined earlier) exceeds Sigma 99% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2022-01-31 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
252.0	META	58.25%	SBNY	-94.3%
252.0	MSTR	50.25%	SIVBQ	-72.59%
252.0	AMZN	42.07%	FRCB	-48.39%
252.0	VST	37.27%	AAP	-29.04%
252.0	AVGO	34.59%	AMC	-23.4%
252.0	INTU	33.36%	VFC	-15.02%
252.0	ISRG	29.33%	CHTR	-14.78%
252.0	ORCL	24.45%	BIIB	-12.03%
252.0	GOOGL	22.22%	AA	-9.62%
252.0	NFLX	20.43%	FIS	-9.03%
252.0	TDG	16.61%	LLY	-8.21%
252.0	COST	14.6%	CPRT	-7.98%
252.0	IEP	14.35%	KEY	-7.6%
252.0	TEVA	13.64%	JAZZ	-7.32%
252.0	MSI	12.6%	PHM	-7.3%
252.0	LEN	12.1%	JPM	-7.07%
252.0	TMUS	12.0%	ACGL	-6.19%
252.0	QQQ	11.99%	ZION	-5.39%
252.0	LW	11.0%	OXY	-5.38%
252.0	GILD	10.19%	ELAN	-5.18%
252.0	CAH	10.1%	NWL	-5.16%
252.0	HD	9.64%	PWR	-4.98%
252.0	THC	9.52%	GS	-4.7%
252.0	GWW	9.44%	MS	-4.6%
252.0	WDC	8.01%	TRGP	-4.18%
252.0	BA	7.71%	PRGO	-3.9%
252.0	WRK	7.38%	NVDA	-3.8%
252.0	AAPL	7.36%	CMG	-3.71%
252.0	SLV	7.11%	GLD	-3.34%
252.0	XOM	6.44%	CDNS	-3.14%



P365D: 1d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 99% ROVBC (Return on VaR Based Capital, defined earlier) exceeds Sigma 99% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
1.0	GME	0.77%	LUMN	-0.38%
1.0	NWL	0.43%	AVGO	-0.18%
1.0	MSTR	0.19%	VST	-0.17%
1.0	UNH	0.16%	TMUS	-0.16%
1.0	GT	0.14%	TRGP	-0.16%
1.0	LW	0.13%	T	-0.15%
1.0	FSUGY	0.12%	VNO	-0.14%
1.0	QCOM	0.11%	HSBC	-0.13%
1.0	IEP	0.1%	GS	-0.12%
1.0	AMD	0.1%	GE	-0.12%
1.0	GBTC	0.1%	AMC	-0.11%
1.0	BIIB	0.09%	NVDA	-0.1%
1.0	ZTS	0.09%	NFLX	-0.1%
1.0	MSFT	0.09%	MS	-0.09%
1.0	SBUX	0.07%	BMJ	-0.09%
1.0	MRK	0.07%	GLD	-0.08%
1.0	UAA	0.07%	CDNS	-0.08%
1.0	ADBE	0.07%	ISRG	-0.08%
1.0	AMAT	0.06%	AAPL	-0.08%
1.0	VFC	0.06%	PWR	-0.08%
1.0	SLV	0.06%	INTC	-0.08%
1.0	PRGO	0.06%	CMA	-0.07%
1.0	CZR	0.06%	GILD	-0.07%
1.0	AMZN	0.05%	COST	-0.07%
1.0	GNRC	0.05%	THC	-0.07%
1.0	CLF	0.05%	TSLA	-0.07%
1.0	CNC	0.05%	CCL	-0.06%
1.0	GW	0.05%	CITI	-0.06%
1.0	CHTR	0.05%	AMGN	-0.06%
1.0	META	0.05%	CSCO	-0.06%



P365D: 10d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 99% ROVBC (Return on VaR Based Capital, defined earlier) exceeds Sigma 99% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
10.0	GME	10.52%	AAP	-2.39%
10.0	MSTR	5.7%	LUMN	-2.35%
10.0	MU	1.59%	TRGP	-1.63%
10.0	CHTR	1.34%	T	-1.48%
10.0	CVS	1.17%	VST	-1.47%
10.0	IEP	1.1%	TMUS	-1.21%
10.0	CSTM	1.07%	ISRG	-1.05%
10.0	FSUGY	1.06%	AVGO	-1.02%
10.0	AMD	1.0%	TSLA	-0.87%
10.0	BHC	0.8%	HSBC	-0.84%
10.0	MRK	0.8%	NFLX	-0.8%
10.0	WDC	0.79%	BMJ	-0.76%
10.0	LEN	0.79%	COST	-0.76%
10.0	UAA	0.78%	AMC	-0.73%
10.0	AMAT	0.75%	VNO	-0.69%
10.0	ZTS	0.74%	JAZZ	-0.66%
10.0	QCOM	0.73%	MS	-0.65%
10.0	GT	0.7%	ON	-0.64%
10.0	TEVA	0.65%	LLY	-0.63%
10.0	GNRC	0.64%	NVDA	-0.6%
10.0	GBTC	0.62%	CITI	-0.59%
10.0	AA	0.59%	CCL	-0.59%
10.0	GOLD	0.55%	ORLY	-0.57%
10.0	BA	0.51%	CSCO	-0.57%
10.0	SNY	0.47%	CMA	-0.55%
10.0	DHI	0.47%	CLF	-0.55%
10.0	LNC	0.45%	GILD	-0.55%
10.0	ADBE	0.38%	GLD	-0.53%
10.0	UNH	0.37%	CZR	-0.51%
10.0	FCX	0.34%	MSI	-0.51%



P365D: 21d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 99% ROVBC (Return on VaR Based Capital, defined earlier) exceeds Sigma 99% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
21.0	GME	26.04%	T	-3.3%
21.0	MSTR	12.61%	TRGP	-3.17%
21.0	CHTR	4.18%	AAP	-3.02%
21.0	CVS	2.9%	VST	-2.99%
21.0	GOLD	2.2%	ELAN	-2.69%
21.0	FSUGY	2.07%	ISRG	-2.41%
21.0	IEP	2.02%	TMUS	-2.26%
21.0	UAA	1.63%	ON	-2.15%
21.0	TEVA	1.6%	VNO	-2.15%
21.0	GT	1.59%	AVGO	-2.12%
21.0	ZTS	1.59%	CCL	-2.05%
21.0	CSTM	1.57%	COST	-2.03%
21.0	BXP	1.54%	HSBC	-1.99%
21.0	GNRC	1.4%	NFLX	-1.99%
21.0	AMD	1.37%	WRK	-1.96%
21.0	AMAT	1.3%	LW	-1.8%
21.0	TSLA	1.23%	CZR	-1.76%
21.0	LEN	1.23%	NVDA	-1.75%
21.0	WDC	1.17%	THC	-1.72%
21.0	AA	1.05%	MS	-1.65%
21.0	BHC	0.97%	LUMN	-1.54%
21.0	MRK	0.92%	CSCO	-1.43%
21.0	GBTC	0.92%	JAZZ	-1.33%
21.0	ABBV	0.88%	ORLY	-1.32%
21.0	SNY	0.86%	IRM	-1.3%
21.0	AMGN	0.85%	JPM	-1.18%
21.0	MOS	0.8%	MSI	-1.17%
21.0	BUD	0.8%	AAPL	-1.14%
21.0	QCOM	0.79%	LLY	-1.03%
21.0	NEM	0.74%	X	-1.02%



P365D: 63d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 99% ROVBC (Return on VaR Based Capital, defined earlier) exceeds Sigma 99% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
63.0	GME	33.87%	AAP	-10.31%
63.0	BXP	11.9%	TRGP	-9.9%
63.0	GOLD	7.34%	VNO	-8.43%
63.0	UAA	6.8%	CCL	-7.85%
63.0	CSTM	6.7%	T	-6.28%
63.0	FSUGY	6.09%	JPM	-5.51%
63.0	VFC	5.17%	CSCO	-5.27%
63.0	GT	4.63%	ON	-5.27%
63.0	NEM	4.52%	ISRG	-5.05%
63.0	CHTR	4.46%	OXY	-4.63%
63.0	CVS	3.74%	MS	-4.57%
63.0	GILD	3.69%	MSI	-4.53%
63.0	MU	3.66%	COST	-4.06%
63.0	AMAT	3.59%	HSBC	-3.94%
63.0	ZTS	3.54%	WFC	-3.79%
63.0	LEN	3.37%	AAPL	-3.56%
63.0	AMD	3.3%	HLT	-3.5%
63.0	META	2.97%	CITI	-3.47%
63.0	CYH	2.92%	IRM	-3.32%
63.0	CMG	2.86%	ORLY	-3.26%
63.0	ABBV	2.58%	CLF	-3.2%
63.0	AA	2.27%	VST	-3.17%
63.0	CZR	2.25%	ELAN	-3.05%
63.0	MSTR	2.21%	BAC	-2.92%
63.0	INTC	2.14%	JAZZ	-2.64%
63.0	MRK	1.93%	ZION	-2.62%
63.0	MOS	1.88%	GNRC	-2.55%
63.0	PCG	1.75%	GWW	-2.54%
63.0	LW	1.72%	QQQ	-2.45%
63.0	AZN	1.7%	BUD	-2.37%



P365D: 126d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 99% ROVBC (Return on VaR Based Capital, defined earlier) exceeds Sigma 99% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2024-04-02 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
126.0	GME	26.97%	AAP	-32.9%
126.0	BXP	25.74%	TRGP	-21.64%
126.0	GILD	24.07%	MS	-16.52%
126.0	TSLA	23.24%	OXY	-12.71%
126.0	VFC	15.86%	CCL	-12.19%
126.0	MSTR	14.99%	CSCO	-10.79%
126.0	NFLX	14.07%	JPM	-10.35%
126.0	EXPE	10.76%	WFC	-9.31%
126.0	CSTM	10.47%	T	-8.05%
126.0	GOLD	7.38%	BIIB	-8.0%
126.0	CHTR	7.24%	MSI	-6.97%
126.0	UAA	7.01%	VST	-6.34%
126.0	FSUGY	6.79%	BAC	-6.33%
126.0	AMAT	6.35%	VNO	-6.33%
126.0	META	5.44%	COST	-6.21%
126.0	CTLT	4.56%	HLT	-5.63%
126.0	MU	4.41%	ISRG	-5.09%
126.0	LEN	4.1%	QQQ	-4.66%
126.0	GT	3.77%	CAH	-4.23%
126.0	AZN	3.75%	PRGO	-4.09%
126.0	USB	3.49%	SPY	-3.71%
126.0	CMA	3.21%	ORCL	-3.46%
126.0	GNRC	3.01%	AMZN	-3.39%
126.0	ADBE	2.95%	AAPL	-3.31%
126.0	KEY	2.85%	LVS	-3.3%
126.0	ZION	2.73%	GLD	-3.24%
126.0	ON	2.66%	GWV	-3.09%
126.0	AMD	2.48%	IRM	-3.04%
126.0	FIS	2.41%	DHI	-2.75%
126.0	PEP	2.32%	GS	-2.67%



P90D: 1d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 99% ROVBC (Return on VaR Based Capital, defined earlier) exceeds Sigma 99% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
1.0	UNH	0.46%	TSLA	-0.68%
1.0	UAA	0.25%	AMC	-0.61%
1.0	NWL	0.23%	TMUS	-0.34%
1.0	VST	0.21%	CLF	-0.33%
1.0	BBY	0.2%	CDNS	-0.27%
1.0	GBTC	0.2%	INTC	-0.26%
1.0	TEVA	0.19%	AAP	-0.25%
1.0	IRM	0.18%	T	-0.24%
1.0	ISRG	0.18%	HSBC	-0.24%
1.0	AMZN	0.17%	GLD	-0.22%
1.0	MSFT	0.17%	MSTR	-0.21%
1.0	MSI	0.17%	GT	-0.21%
1.0	BUD	0.15%	MNST	-0.17%
1.0	LVS	0.15%	GOOGL	-0.17%
1.0	NVDA	0.14%	GE	-0.16%
1.0	PRGO	0.14%	CAH	-0.16%
1.0	ZTS	0.14%	KHC	-0.16%
1.0	ELAN	0.14%	CSTM	-0.16%
1.0	BHC	0.14%	X	-0.14%
1.0	CCL	0.14%	VICI	-0.14%
1.0	BIIB	0.13%	AZO	-0.13%
1.0	MRK	0.13%	LNC	-0.13%
1.0	TXN	0.13%	NAVI	-0.12%
1.0	LUMN	0.12%	HCA	-0.11%
1.0	META	0.12%	VNO	-0.11%
1.0	VFC	0.12%	XOM	-0.11%
1.0	QCOM	0.12%	LLY	-0.1%
1.0	ORCL	0.11%	NFLX	-0.1%
1.0	SBUX	0.1%	AZN	-0.1%
1.0	KEY	0.1%	PWR	-0.09%



P90D: 10d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 99% ROVBC (Return on VaR Based Capital, defined earlier) exceeds Sigma 99% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
10.0	CVS	5.73%	TSLA	-6.27%
10.0	AVGO	3.5%	AAP	-5.32%
10.0	WDC	3.38%	INTC	-4.43%
10.0	UAA	3.07%	T	-3.08%
10.0	VST	2.99%	TMUS	-2.9%
10.0	BUD	2.86%	AMC	-2.37%
10.0	NWL	2.63%	LLY	-2.13%
10.0	TEVA	2.62%	GME	-2.05%
10.0	UNH	2.56%	MNST	-2.04%
10.0	MU	2.14%	GT	-1.8%
10.0	GBTC	2.07%	HSBC	-1.7%
10.0	CCL	2.02%	ON	-1.64%
10.0	LVS	1.78%	CLF	-1.62%
10.0	AMAT	1.74%	BMJ	-1.43%
10.0	LEN	1.72%	LNC	-1.41%
10.0	MRK	1.72%	GLD	-1.39%
10.0	IRM	1.71%	ORLY	-1.33%
10.0	AMZN	1.56%	CZR	-1.32%
10.0	CMG	1.5%	NFLX	-1.22%
10.0	QCOM	1.43%	VICI	-1.2%
10.0	LUMN	1.38%	CMA	-1.17%
10.0	GOLD	1.24%	X	-1.17%
10.0	MSI	1.22%	AZO	-1.1%
10.0	NVDA	1.18%	CAH	-0.93%
10.0	FIS	1.14%	GILD	-0.93%
10.0	DHI	1.14%	VZ	-0.91%
10.0	ADBE	1.05%	HCA	-0.88%
10.0	BA	1.01%	XOM	-0.82%
10.0	HD	0.98%	PRGO	-0.78%
10.0	BBY	0.98%	MOS	-0.75%



P90D: 21d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 99% ROVBC (Return on VaR Based Capital, defined earlier) exceeds Sigma 99% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-01-02 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
21.0	CVS	11.68%	T	-6.86%
21.0	BUD	10.16%	TMUS	-5.45%
21.0	VST	7.66%	HSBC	-5.1%
21.0	TEVA	7.02%	CMA	-5.07%
21.0	NWL	6.17%	CZR	-4.77%
21.0	AVGO	5.96%	MNST	-4.45%
21.0	GBTC	5.45%	INTC	-3.91%
21.0	WDC	5.37%	ELAN	-3.34%
21.0	CCL	5.15%	ORLY	-3.05%
21.0	UAA	4.81%	GNRC	-3.01%
21.0	AMAT	4.81%	ON	-2.98%
21.0	GOLD	4.72%	X	-2.92%
21.0	IRM	4.54%	JAZZ	-2.88%
21.0	CDNS	4.51%	LNC	-2.48%
21.0	LEN	4.49%	VICI	-2.47%
21.0	AMGN	3.91%	PRGO	-2.45%
21.0	VFC	3.84%	AMC	-2.44%
21.0	AMZN	3.43%	GLD	-2.41%
21.0	MSI	3.34%	NFLX	-2.35%
21.0	DHI	3.34%	LW	-2.24%
21.0	GWV	3.13%	VZ	-2.22%
21.0	CMG	3.05%	AZO	-1.89%
21.0	FIS	2.95%	LLY	-1.77%
21.0	HD	2.85%	GILD	-1.72%
21.0	TFC	2.63%	AZN	-1.66%
21.0	QCOM	2.6%	RIO	-1.64%
21.0	BAC	2.57%	POST	-1.61%
21.0	PHM	2.47%	GME	-1.39%
21.0	PWR	2.42%	COST	-1.27%
21.0	NVDA	2.38%	HCA	-1.23%



P30D: 1d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 99% ROVBC (Return on VaR Based Capital, defined earlier) exceeds Sigma 99% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
1.0	UNH	0.64%	TSLA	-1.37%
1.0	VFC	0.58%	CLF	-0.76%
1.0	LUMN	0.54%	MSTR	-0.59%
1.0	ADBE	0.48%	MOS	-0.49%
1.0	LVS	0.41%	AMC	-0.47%
1.0	CCL	0.39%	NAVI	-0.41%
1.0	BBY	0.37%	INTC	-0.37%
1.0	HLT	0.37%	AZO	-0.34%
1.0	GNRC	0.36%	FCX	-0.33%
1.0	GS	0.34%	XOM	-0.27%
1.0	AMZN	0.34%	GOOGL	-0.26%
1.0	CZR	0.33%	GLD	-0.26%
1.0	COST	0.32%	X	-0.22%
1.0	MS	0.32%	CAH	-0.21%
1.0	JAZZ	0.3%	AAP	-0.18%
1.0	BAC	0.3%	CDNS	-0.18%
1.0	IRM	0.3%	GT	-0.17%
1.0	ISRG	0.29%	THC	-0.17%
1.0	GBTC	0.29%	OXY	-0.17%
1.0	TXN	0.28%	HCA	-0.15%
1.0	ELAN	0.27%	DHI	-0.14%
1.0	IEP	0.27%	ACGL	-0.14%
1.0	GOLD	0.25%	SLV	-0.12%
1.0	GME	0.25%	FIS	-0.12%
1.0	HD	0.22%	CSTM	-0.11%
1.0	PWR	0.21%	CVS	-0.11%
1.0	UAA	0.21%	KHC	-0.11%
1.0	USB	0.21%	MNST	-0.1%
1.0	JPM	0.2%	CPRT	-0.1%
1.0	AAPL	0.2%	TRGP	-0.1%



P30D: 10d

The columns labeled “ROVBC_VmS” represent the average amount by which Vector Model 99% ROVBC (Return on VaR Based Capital, defined earlier) exceeds Sigma 99% ROVBC (the underlying ticker return) for the given ticker for the model dates in the period indicated for which forward horizon performance is known.

Period examined: All model dates from 2025-03-03 through 2025-03-28

Horizon	Ticker	ROVBC_VmS	Ticker	ROVBC_VmS
10.0	UNH	8.43%	INTC	-6.22%
10.0	VFC	5.72%	MOS	-6.09%
10.0	LVS	4.84%	TRGP	-4.65%
10.0	UAA	4.6%	CDNS	-4.27%
10.0	ADBE	4.24%	XOM	-3.21%
10.0	NEM	3.07%	CAH	-2.8%
10.0	COST	2.93%	MNST	-2.78%
10.0	LUMN	2.89%	AAP	-2.78%
10.0	HLT	2.29%	PCG	-2.73%
10.0	SBUX	2.0%	FIS	-2.26%
10.0	CMCSA	1.99%	GLD	-2.19%
10.0	HD	1.73%	ACGL	-2.11%
10.0	PEP	1.71%	LLY	-2.09%
10.0	LEN	1.67%	T	-1.87%
10.0	AAPL	1.61%	FCX	-1.71%
10.0	TSLA	1.53%	WFC	-1.7%
10.0	GOOGL	1.47%	AZO	-1.58%
10.0	BA	1.45%	VST	-1.52%
10.0	JAZZ	1.43%	BAC	-1.52%
10.0	BIIB	1.4%	OXY	-1.5%
10.0	ISRG	1.39%	CHTR	-1.49%
10.0	ABBV	1.27%	CPRT	-1.46%
10.0	CLF	1.27%	MSI	-1.3%
10.0	KHC	1.24%	LNC	-1.22%
10.0	GNRC	1.14%	HCA	-1.2%
10.0	SNY	1.06%	X	-1.19%
10.0	AMZN	0.98%	ORLY	-1.12%
10.0	META	0.97%	NAVI	-1.02%
10.0	MS	0.95%	INTU	-0.99%
10.0	BBY	0.95%	JPM	-0.98%



Appendix 19: Kupiec and Christoferson Tests for Sigma

The Kupiec Proportion of Failures test statistic (listed as VaR_kStat in the table below), and its probability (VaR_pValK) are used to test the null hypothesis that the VaR model breakage is consistent with expectations. The test statistic is calculated by comparing the number of VaR breaks experienced to the expected number of breaks given the total number of observations and the specified probability level. Breakage was measured at the individual ticker-model date level. The probability of the Kupiec statistic occurring is obtained from the chi-squared distribution. The lower the statistic, the higher the p-Value, and the more likely that Sigma's VaR breakage is consistent with expectations.

The Christoferson VaR Violation Independence test statistic (listed as VaR_chrStat in the table below) and its probability (VaR_pValChr) are used to test the null hypothesis that the VaR model violations are independent. The test statistic focuses on consecutive breakages over time. We measure breakage at the portfolio level, with portfolio breakage for a given period defined as equally weighted ticker level breakage for that period being beyond expectation given the specified probability level. The probability of the Christoferson statistic occurring is obtained from the chi-squared distribution. The lower the statistic, the higher the p-Value, and the more likely that Sigma VaR breakage is independent.

Kupiec and Christoferson results for the Vector Model can be found in the Report Card section.

Period examined: 2022-01-31 through 2025-03-28. Note that for horizon periods greater than 1d we exclude enough model dates to assure no overlap between observation periods.

Model	Pctile	Horizon	VaR_kStat	VaR_pValK	VaR_chrStat	VaR_pValChr
Sigma	95	1	180.27	0	8.91	0
Sigma	95	10	1.5	0.22	0.07	0.8
Sigma	95	21	29.9	0	0.25	0.61
Sigma	95	63	12.46	0	nan	0
Sigma	95	126	19.23	0	nan	0
Sigma	95	252	13.73	0	nan	0
Sigma	99	1	261.69	0	29.13	0
Sigma	99	10	34.79	0	0.44	0.51
Sigma	99	21	0	0.98	1.67	0.2
Sigma	99	63	0	0.96	0.73	0.39
Sigma	99	126	0.31	0.58	nan	0
Sigma	99	252	0.44	0.51	nan	0

