

Morningstar Factor Monitor: Q4 2025

Value was the best-performing factor in the fourth quarter, while momentum was the worst—a sharp contrast with Q3.

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This is the latest installment of the Morningstar Quarterly Factor Monitor, which is designed to highlight factor performance trends. Factors are key drivers of stock returns. These are common security characteristics, such as low valuations or small size, that can help explain why one group of stocks performs differently from another. Factors provide an effective lens through which to understand market performance.

This publication tracks the Morningstar Global Factor Indexes, providing insights into their performance drivers and notable facets of their portfolio composition. These indexes are designed to deliver strong, investable exposure to their target factors. They apply a consistent framework, each covering stocks representing 30% of their parent benchmarks by market value and upweighting the constituents (from float market cap) that have the strongest factor characteristics. The appendix provides additional details on the index construction methodology.

Key Takeaways

- ▶ Factor leadership rotated sharply from the third quarter: Value led globally in the fourth quarter, while momentum lagged. Value, yield, and quality improved their relative standing, whereas low volatility and size stayed in the bottom half.
- ▶ Factor performance rankings were broadly consistent across regions, except in developed markets ex-US, where quality again ranked as the weakest factor for the quarter.
- ▶ All factors experience performance cyclicality. Because of their volatility, it is difficult to effectively time factor exposures.
- ▶ Factors are complementary and offer strong diversification benefits when combined in a portfolio; in other words, the correlation of market-relative performance between factors is low.
- ▶ Regardless of the market conditions, the Morningstar Global Factor Indexes are effective tools for monitoring factor trends.

Performance (Q4 2025)

Global

In a sharp reversal from the third quarter, momentum was the worst-performing factor globally in the fourth quarter, while value topped the rankings. The shift underscores how quickly leadership can rotate when markets move away from “trend-following” conditions. With the exception of the second quarter—when value ranked second to last—value placed in the top three for most of the year and finished 2025 as the best-performing factor, followed by momentum and yield. Momentum, which led the factor cohort in 2024, ended 2025 in second place. Quality’s modest performance in the fourth quarter was not enough to lift it out of the bottom half for the year, ending its strong run in 2023 and 2024, when it ranked first and second, respectively. Size and low volatility also finished the year in the bottom half, unchanged from 2024.

The unusually strong positive correlation between value and momentum observed during the third quarter did not persist in the fourth quarter consistent with the expectation that their market-relative performance tends to be negatively correlated. Momentum typically benefits from trend continuation, while value tends to benefit from mean reversion—an effect that is often less prevalent in strongly trending markets. For the full year, momentum’s strong outperformance (21.6% return) over value (6.9% return) in the second quarter pushed it to the top of the rankings along with value, suggesting that the third-quarter co-movement should not be viewed as representative across all quarters of the year.

Exhibit 1 Global Performance Summary

	Q4 2025		1 Year		5 Year		10 Year		Since Inception		
	Return	Std Dev	Return	Std Dev	Return	Std Dev	Return	Std Dev	Return	Std Dev	SR
Morningstar Gbl Low Vol Ftr	1.99	7.70	14.71	5.45	8.82	11.29	9.43	11.48	7.84	12.21	0.57
Morningstar Gbl Mtm Ftr	0.77	16.27	30.99	14.02	12.79	16.70	15.11	16.57	9.30	18.24	0.51
Morningstar Gbl Qual Ftr	3.88	12.52	19.98	10.62	10.65	16.03	12.45	15.37	9.83	16.24	0.58
Morningstar Gbl Size Ftr	1.60	11.93	16.92	8.24	8.77	14.98	9.72	16.10	7.95	17.96	0.44
Morningstar Gbl Val Ftr	8.34	12.01	32.58	8.67	14.49	13.99	11.63	14.91	8.48	16.90	0.49
Morningstar Gbl Yld Ftr	5.23	10.90	28.11	7.25	15.72	13.12	13.33	14.59	10.00	16.36	0.58
Morningstar Global Multifactor	3.18	8.63	21.17	6.07	12.55	12.68	11.76	12.75	9.83	13.78	0.65
Morningstar Global TME	3.44	12.00	22.74	8.78	11.70	13.86	12.26	14.40	8.86	16.16	0.53

Source: Morningstar Indexes. Performance shown in GR USD. Data as of Dec. 31, 2025.

Exhibit 2 Global Risk Summary (Since Inception)

	Tracking Error	Beta	Max Drawdown	Down Capture Ratio	Up Capture Ratio
Morningstar Global Low Volatility Factor	6.86	0.70	-30.68	68.25	74.41
Morningstar Global Momentum Factor	6.67	1.05	-53.92	106.70	106.29
Morningstar Global Quality Factor	3.39	0.98	-41.50	96.43	100.99
Morningstar Global Size Factor	3.73	1.09	-49.07	108.54	102.67
Morningstar Global Value Factor	4.93	1.00	-47.38	99.86	98.53
Morningstar Global Yield Factor	3.98	0.98	-45.44	94.15	100.01
Morningstar Global Multifactor	4.52	0.82	-36.90	80.76	90.10
Morningstar Global TME	0.00	1.00	-46.15	100.00	100.00

Source: Morningstar Indexes. Performance shown in GR USD. Data as of Dec. 31, 2025.

The Morningstar Global Value Factor Index posted strong performance, backed by strong intrasector stock exposure, particularly within the technology, communication-services, financial-services, and industrials sectors. Key contributors included overweight positions in Alphabet Class A, Micron Technology, and SK Hynix, alongside underweightings in Microsoft and Meta. In effect, the value portfolio benefited less from broad sector positioning and more from being differentiated within sectors—capturing relative winners and avoiding laggards while remaining close to benchmark sector weights. Because sector tilts are tightly constrained relative to the parent benchmark, sector allocation had limited impact on the value index's market-relative performance.

At the other end of the spectrum, the Morningstar Global Momentum Factor Index was hindered by stock selection within communication services and technology, including an overweight position in Netflix and an underweight position in Alphabet. As with value, sector tilts versus the parent benchmark (the Morningstar Global Target Market Exposure Index) did not meaningfully drive performance.

Exhibit 3 Global Attribution

	Top Contributors			Top Detractors			3-Month Returns	Contr. To Active Return
	Name	Active Weight	3-Month Returns	Effect	Name	Active Weight		
Morningstar Global Low Volatility Factor	Microsoft	-4.17	-6.45	0.28	Alphabet Class A	-1.80	28.84	-0.46
	Royal Bank of Canada	1.41	16.65	0.23	Alphabet Class C	-1.57	28.93	-0.40
	Meta Platforms Inc Class A	-1.62	-10.04	0.18	Apple	-4.38	6.87	-0.29
	Oracle	-0.45	-30.58	0.16	Eli Lilly and Co	-0.79	41.06	-0.28
	Cisco Systems	1.20	13.26	0.15	Taiwan Semiconductor Manufacturing Co	-1.22	15.60	-0.18
Morningstar Global Momentum Factor	Microsoft	-4.17	-6.45	0.28	Netflix	2.10	-21.80	-0.48
	Siemens Energy AG	1.10	21.05	0.22	Alphabet Class A	-1.80	28.84	-0.46
	Broadcom	4.09	5.11	0.18	Alphabet Class C	-1.57	28.93	-0.40
	Oracle	-0.45	-30.58	0.16	Strategy Class A	0.57	-52.84	-0.37
	Roche Holding AG	0.41	26.82	0.10	Rheinmetall AG	1.26	-21.38	-0.31
Morningstar Global Quality Factor	Alphabet Inc Class A	7.34	28.84	1.85	Alphabet Class C	-1.57	28.93	-0.40
	Taiwan Semiconductor Manufacturing Co	2.77	15.60	0.41	Apple	-4.38	6.87	-0.29
	SK Hynix	0.40	82.59	0.25	Eli Lilly and Co	-0.79	41.06	-0.28
	ASML Holding NV	1.88	11.41	0.21	Meta Platforms Inc Class A	1.88	-10.04	-0.21
	Oracle	-0.45	-30.58	0.16	Microsoft	2.69	-6.45	-0.18
Morningstar Global Size Factor	Microsoft	-4.17	-6.45	0.28	Alphabet Class A	-1.80	28.84	-0.46
	Western Digital	0.52	43.60	0.19	Alphabet Class C	-1.57	28.93	-0.40
	Meta Platforms Class A	-1.62	-10.04	0.18	Apple	-4.38	6.87	-0.29
	Warner Bros. Discovery Inc Class A	0.38	47.57	0.16	Eli Lilly and Co	-0.79	41.06	-0.28
	Oracle	-0.45	-30.58	0.16	Taiwan Semiconductor Manufacturing Co	-1.22	15.60	-0.18
Morningstar Global Value Factor	Alphabet Inc Class A	4.42	28.84	1.14	Alphabet Class C	-1.57	28.93	-0.40
	Micron Technology	1.55	70.75	0.91	Apple	-4.38	6.87	-0.29
	SK Hynix Inc	0.58	82.59	0.37	Eli Lilly and Co	-0.79	41.06	-0.28
	Western Digital	0.91	43.60	0.34	Strategy Class A	0.39	-52.84	-0.26
	Microsoft	-4.17	-6.45	0.28	Taiwan Semiconductor Manufacturing Co	-1.22	15.60	-0.18
Morningstar Global Yield Factor	Apple Inc	5.05	6.87	0.33	Alphabet Class A	-1.80	28.84	-0.46
	Microsoft	-4.17	-6.45	0.28	Alphabet Class C	-1.57	28.93	-0.40
	Novartis AG	1.98	9.94	0.20	Eli Lilly and Co	-0.79	41.06	-0.28
	General Motors	0.62	33.64	0.19	Fiserv	0.32	-47.90	-0.23
	Samsung Electronics	0.53	39.19	0.19	Taiwan Semiconductor Manufacturing Co	-1.22	15.60	-0.18

Source: Morningstar Indexes. Performance shown in GR USD. Data as of Dec. 31, 2025.

US

The results in the US mirrored the global trends, with value at the top of the rankings and momentum at the bottom. Low volatility and momentum delivered returns of negative 1.45% and negative 2.92%, respectively, versus a 2.45% gain for the Morningstar US TME Index. While size underperformed its parent benchmark in the US all-cap segment, it ranked as the second-best-performing factor in the small-cap segment.

Exhibit 4 US Performance Summary

	Q4 2025		1 Year		5 Year		10 Year		Since Inception		
	Return	Std Dev	Return	Std Dev	Return	Std Dev	Return	Std Dev	Return	Std Dev	SR
Morningstar US Low Vol Ftr	-1.45	10.98	7.53	7.48	9.13	12.85	10.77	12.65	9.93	12.25	0.73
Morningstar US Mtum Ftr	-2.92	19.74	21.88	17.88	13.86	18.83	17.10	18.15	12.26	18.62	0.64
Morningstar US Qual Ftr	1.79	14.70	16.17	12.60	14.82	17.91	15.26	16.65	13.56	16.13	0.79
Morningstar US Size Ftr	0.78	16.42	11.79	10.21	8.93	16.32	11.19	17.10	10.62	18.06	0.58
Morningstar US Yld Ftr	3.60	14.23	17.48	9.62	16.19	14.56	13.78	15.94	12.26	16.19	0.72
Morningstar US Val Ftr	6.24	16.00	23.12	10.78	13.55	15.91	11.83	16.59	10.37	17.14	0.58
Morningstar US Multifactor	0.18	11.54	15.59	8.18	13.86	14.13	13.70	13.96	12.43	13.81	0.82
Morningstar US TME	2.45	15.05	17.80	11.30	13.88	15.26	14.77	15.34	12.18	15.74	0.73
Morningstar US Small Low Vol Ftr	-0.78	12.39	4.21	7.90	6.60	14.47	8.66	14.46	10.06	14.14	0.66
Morningstar US Small Mtum Ftr	0.21	31.09	18.81	18.58	14.49	25.08	15.06	22.74	10.29	22.75	0.49
Morningstar US Small Quality Ftr	-0.02	19.13	6.66	10.66	7.90	18.37	11.82	17.51	10.88	17.34	0.61
Morningstar US Sml Cap Size Ftr	2.84	23.43	10.39	16.37	7.38	21.44	9.92	21.99	10.55	22.21	0.50
Morningstar US Small Value Ftr	4.46	22.03	15.36	15.26	11.43	21.44	10.57	22.72	10.67	22.90	0.50
Morningstar US Small Yield Ftr	1.89	17.98	9.12	12.13	11.84	18.87	11.64	20.73	12.37	19.98	0.62
Morningstar US Small TME	2.27	20.92	11.74	13.53	7.40	19.06	10.64	19.63	10.18	19.75	0.52

Source: Morningstar Indexes. Performance shown in GR USD. Data as of Dec. 31, 2025.

Exhibit 5 US Risk Summary (Since Inception)

	Tracking Error	Beta	Max Drawdown	Down Capture Ratio	Up Capture Ratio
Morningstar US Low Vol Ftr	7.88	0.68	-28.62	66.05	72.22
Morningstar US Mtum Ftr	7.46	1.09	-50.93	107.87	105.03
Morningstar US Qual Ftr	4.26	0.99	-37.20	96.15	102.17
Morningstar US Size Ftr	5.27	1.10	-46.51	112.04	102.15
Morningstar US Val Ftr	6.64	1.00	-44.76	103.69	96.25
Morningstar US Yld Ftr	5.06	0.98	-42.02	93.70	96.44
Morningstar US Multifactor	4.68	0.84	-32.73	79.30	88.34
Morningstar US TME	0.00	1.00	-41.49	100.00	100.00
Morningstar US Small Low Vol Ftr	8.51	0.66	-32.47	62.48	72.93
Morningstar US Small Mtum Ftr	9.68	1.04	-54.37	105.01	103.96
Morningstar US Small Quality Ftr	4.98	0.85	-36.42	83.76	90.39
Morningstar US Sml Cap Size Ftr	5.30	1.10	-46.23	113.17	110.66
Morningstar US Small Value Ftr	6.05	1.13	-49.74	113.75	111.44
Morningstar US Small Yield Ftr	4.64	0.98	-44.16	92.36	100.91
Morningstar US Small TME	0.00	1.00	-45.80	100.00	100.00

Source: Morningstar Indexes. Performance shown in GR USD. Data as of Dec. 31, 2025.

The strong performance of the Morningstar US Value Factor Index was largely driven by stock selection within the technology and financial-services sectors. Key positive effects included overweight positions in Micron Technology, Western Digital, and Wells Fargo, as well as underweight positions in laggards like Microsoft. Sector tilts did not materially impact performance.

The Morningstar US Momentum Factor Index lost its top position from the third quarter. Stock exposure weighed on returns, particularly within communication services and technology. Underweight positions in Alphabet and Apple, along with overweight positions in Netflix and Strategy, were among the leading detractors in the fourth quarter.

Developed Markets ex-US

The value factor was the top performer in developed markets outside the US, while yield continued its solid showings, beating the market and ranking second. Quality extended its poor run in this region, finishing as the worst-performing factor for the quarter.

The Morningstar Developed Markets ex-US Value Factor Index's strong performance was primarily driven by favorable stock selection within healthcare, consumer defensive, and financial services. Key contributors included overweight positions in Bayer, Teva Pharmaceutical, Roche Holdings, British American Tobacco, and HSBC Holdings.

The market-relative performance of value and quality has historically been negatively correlated, so the underperformance of the Morningstar Developed Markets ex-US Quality Factor Index is not surprising in a quarter when value led. The weak showing for quality was largely attributable to unfavorable stock selection in financial services and healthcare, including an overweight position in Tokio Marine Holdings and underweight positions in Roche Holdings and AstraZeneca.

Exhibit 6 Developed Markets ex-US Performance Summary

	Q4 2025		1 Year		5 Year		10 Year		Since Inception		
	Return	Std Dev	Return	Std Dev	Return	Std Dev	Return	Std Dev	Return	Std Dev	SR
Morningstar DM xUS Low Vol Ftr GR USD	5.15	7.95	30.16	7.65	10.27	12.11	8.61	12.03	6.63	13.33	0.45
Morningstar DM xUS Mtum Ftr GR USD	3.27	14.96	42.56	10.11	11.05	15.66	10.48	15.49	5.91	18.02	0.34
Morningstar DM xUS Qual Ftr GR USD	2.85	14.41	21.02	9.37	5.57	16.87	9.15	15.60	6.23	17.36	0.36
Morningstar DM xUS Size Ftr GR USD	4.80	11.30	32.12	7.47	8.60	15.06	8.53	15.95	6.11	18.35	0.34
Morningstar DM xUS Val Ftr GR USD	10.38	11.84	48.10	6.10	16.02	14.82	10.33	16.50	6.58	18.77	0.36
Morningstar DM xUS Yld Ftr GR USD	9.13	12.30	43.87	5.62	15.46	13.76	12.24	15.05	7.80	17.94	0.44
Morningstar DM xUS Multifactor GR USD	5.38	9.97	31.00	6.72	11.10	13.03	9.72	13.11	7.55	15.05	0.47
Morningstar DM xUS TME GR USD	5.54	12.12	32.67	6.92	10.10	14.21	9.21	14.76	5.73	17.18	0.33

Source: Morningstar Indexes. Performance shown in GR USD. Date as of Dec. 31, 2025.

Exhibit 7 Developed Markets ex-US Risk Summary (Since Inception)

	Tracking Error	Beta	Max Drawdown	Down Capture Ratio	Up Capture Ratio
Morningstar DM xUS Low Vol Ftr	6.78	0.72	-32.11	71.10	80.02
Morningstar DM xUS Mtum Ftr	6.54	0.98	-52.26	96.57	97.89
Morningstar DM xUS Qual Ftr	4.35	0.98	-46.02	97.05	99.48
Morningstar DM xUS Size Ftr	2.89	1.06	-49.83	102.72	103.64
Morningstar DM xUS Val Ftr	4.87	1.06	-45.20	105.72	107.84
Morningstar DM xUS Yld Ftr	3.55	1.02	-49.58	96.49	104.83
Morningstar DM xUS Multifactor	4.19	0.85	-39.37	81.72	91.92
Morningstar DM xUS TME	0.00	1.00	-48.51	100.00	100.00

Source: Morningstar Indexes. Performance shown in GR USD. Data as of Dec. 31, 2025.

Emerging Markets

Consistent with global trends, value was the best-performing factor in emerging markets in the fourth quarter, while momentum was the worst. The quality and yield also had a strong showing in this region, rounding out the top three factors in the region and reinforcing the broader value-led, momentum-weak pattern seen globally.

The Morningstar Emerging Markets Value Factor Index's strong performance was driven primarily by intrasector stock selection rather than sector allocation. The most favorable stock-level effects were concentrated in the technology, consumer cyclical, financial-services, basic materials, and communication-services sectors. Overweightings in SK Hynix, Samsung Electronics, Hyundai Motor, China Construction Bank, and Vale SA contributed, while an underweighting in Tencent Holdings also helped.

On the other end of the spectrum, the Morningstar Emerging Markets Momentum Factor Index was hurt by sector tilts, including underweight positions in strong-performing technology and consumer cyclicals. Unfavorable stock selection within these sectors, such as underweight positions in Taiwan Semiconductor Manufacturing, Samsung Electronics, and SK Hynix, alongside overweight positions in Alibaba Group, Pop Mart International, and Xiaomi, also weighed on performance.

Exhibit 8 Emerging Markets Performance Summary

	Q4 2025		1 Year		5 Year		10 Year		Since Inception		
	Return	Std Dev	Return	Std Dev	Return	Std Dev	Return	Std Dev	Return	Std Dev	SR
Morningstar EM Low Vol Ftr GR USD	5.51	7.57	11.74	7.80	8.77	10.77	9.65	12.04	6.65	14.96	0.42
Morningstar EM Mtum Ftr GR USD	1.03	17.14	31.98	13.00	4.29	15.72	10.96	17.19	5.06	21.30	0.28
Morningstar EM Qual Ftr GR USD	7.00	17.12	25.64	12.42	8.43	19.17	9.62	17.69	5.72	20.85	0.31
Morningstar EM Size Ftr GR USD	2.77	14.64	30.41	8.26	7.32	14.29	8.28	16.63	4.97	20.70	0.27
Morningstar EM Val Ftr GR USD	9.81	18.44	46.71	11.76	12.73	15.22	12.28	17.84	6.77	21.20	0.35
Morningstar EM Yld Ftr GR USD	6.08	12.91	28.42	5.62	11.95	13.65	10.81	15.27	6.44	18.91	0.35
Morningstar EM Multifactor GR USD	5.30	13.22	25.95	9.43	7.90	12.67	9.80	14.22	6.97	17.78	0.39
Morningstar EM TME GR USD	4.60	16.12	32.08	8.98	4.92	14.77	9.16	16.16	4.82	20.06	0.27

Source: Morningstar Indexes. Performance shown in GR USD. Data as of Dec. 31, 2025.

Exhibit 9 Emerging Markets Risk Summary (Since Inception)

	Tracking Error	Beta	Max Drawdown	Down Capture Ratio	Up Capture Ratio
Morningstar EM Low Vol Ftr	7.87	0.70	-41.20	60.45	72.52
Morningstar EM Mtum Ftr	7.74	0.99	-58.53	100.59	101.34
Morningstar EM Qual Ftr	13.05	0.83	-46.25	85.01	90.20
Morningstar EM Size Ftr	4.52	1.01	-51.16	96.55	97.53
Morningstar EM Val Ftr	5.63	1.02	-51.17	96.87	104.05
Morningstar EM Yld Ftr	4.78	0.92	-47.43	86.54	93.99
Morningstar EM Multifactor	4.89	0.86	-47.88	79.84	90.05
Morningstar EM TME	0.00	1.00	-53.11	100.00	100.00

Source: Morningstar Indexes. Performance shown in GR USD. Data as of Dec. 31, 2025.

Exhibit 10 Global Quilt Chart

2016	2017	2018	2019	2020	2021	2022	2023	2024	YTD	Q4 2025
Value Factor 15.9	Momentum Factor 34.8	Low Volatility Factor -4.5	Quality Factor 30.0	Momentum Factor 37.5	Yield Factor 22.2	Value Factor -5.1	Quality Factor 31.2	Momentum Factor 32.8	Value Factor 32.6	Value Factor 8.3
Yield Factor 14.4	Quality Factor 29.8	Momentum Factor -6.4	Momentum Factor 27.4	Quality Factor 23.9	Multifactor 22.1	Yield Factor -6.6	Yield Factor 24.0	Quality Factor 22.6	Momentum Factor 31.0	Yield Factor 5.2
Size Factor 9.8	Multifactor 26.4	Multifactor -8.4	Global TME 27.1	Global TME 16.4	Value Factor 20.0	Low Volatility Factor -9.1	Global TME 22.7	Multifactor 21.4	Yield Factor 28.1	Quality Factor 3.9
Low Volatility Factor 8.7	Global TME 24.5	Yield Factor -8.5	Size Factor 26.0	Multifactor 11.7	Size Factor 19.4	Multifactor -13.3	Value Factor 18.1	Global TME 17.7	Global TME 22.7	Global TME 3.4
Global TME 8.6	Size Factor 22.7	Global TME -8.7	Yield Factor 25.3	Size Factor 10.7	Global TME 19.1	Size Factor -15.0	Size Factor 16.3	Yield Factor 14.4	Multifactor 21.2	Multifactor 3.2
Multifactor 5.7	Low Volatility Factor 21.4	Value Factor -9.1	Multifactor 23.1	Low Volatility Factor 5.9	Quality Factor 18.3	Global TME -17.6	Multifactor 16.0	Low Volatility Factor 12.2	Quality Factor 20.0	Low Volatility Factor 2.0
Quality Factor 4.4	Yield Factor 21.3	Quality Factor -10.6	Low Volatility Factor 20.9	Yield Factor 5.8	Low Volatility Factor 18.2	Momentum Factor -18.9	Momentum Factor 11.6	Value Factor 10.4	Size Factor 16.9	Size Factor 1.6
Momentum Factor 1.2	Value Factor 19.2	Size Factor -11.7	Value Factor 20.7	Value Factor 0.7	Momentum Factor 16.0	Quality Factor -27.4	Low Volatility Factor 10.3	Size Factor 10.4	Low Volatility Factor 14.7	Momentum Factor 0.8

Source: Morningstar Indexes. Performance shown in GR USD. Data as of Dec. 31, 2025.

Performance Cyclical

While momentum sat at the top of the factor leaderboard in 2024 and 2025, it also went through stretches of terrible underperformance, such as 2021-23, as Exhibit 10 illustrates. Momentum is not the only factor to thrive in one period and struggle in the next. Notably, the quality factor moved from a strong position in 2023-24 to a more lackluster position in 2025.

The silver lining is that factors' market-relative returns are lowly correlated with each other, as Exhibit 11 shows. As such, they are complementary and can offer strong diversification benefits when combined in a portfolio.

Exhibit 11 Global Excess Return Correlation Matrix (10-yr)

1 Morningstar Gbl Low Vol Ftr	1.00						
2 Morningstar Gbl Mtum Ftr	-0.20	1.00					
3 Morningstar Gbl Qual Ftr	-0.48	0.15	1.00				
4 Morningstar Gbl Size Ftr	0.23	-0.24	-0.40	1.00			
5 Morningstar Gbl Val Ftr	0.46	-0.43	-0.62	0.53	1.00		
6 Morningstar Gbl Yld Ftr	0.62	-0.50	-0.56	0.55	0.90	1.00	
7 Morningstar Global Multifactor	0.75	0.23	-0.25	-0.01	0.24	0.33	1.00

Source: Morningstar Indexes. Excess return against Morningstar Global Target Market Exposure. Data as of Dec. 31, 2025.

Long-Term Performance

A long investment horizon can reduce timing risk but does not eliminate the risk of underperformance. From their inception in June 2008 through the end of 2025, three global factors (low volatility, size, and value) underperformed their parent benchmarks, and three (momentum, quality, and yield) outperformed.

The value factor has generated pain for many investors over its extended dry spell, particularly in the US. The Morningstar US Low Volatility Factor Index was the worst-performing factor since its inception, lagging its parent benchmark by 2.25 percentage points annualized. That margin of underperformance was even larger over the past decade. The global value factor also landed toward the bottom of the leaderboard but lagged the market benchmark by a smaller margin than the value factor in the US.

While the yield factor is highly correlated with value, it fared considerably better, ranking as the best-performing single factor index globally over its life, as well as in developed markets outside the US and among US small caps. The yield factor is similar to value in that stocks trading at lower valuations tend to offer higher yields, which the Morningstar yield factor indexes measure based on both net buybacks and dividend distributions. However, it offers distinct portfolio and performance characteristics.

High-yielding stocks tend to generate strong free cash flow, be more mature than their lower-yielding counterparts, and be more defensive. While the value factor may also pick up some of these companies, it also tends to include distressed stocks with weak or deteriorating cash flows. As such, the yield factor tends to exhibit lower volatility and sensitivity to market fluctuations (measured by beta) than the value factor.

Because of its strong performance in the fourth quarter, value surpassed the low-volatility factor index as the best-performing factor in emerging markets since inception; low volatility and yield made up the top three factors in emerging markets. Low volatility should not be expected to top the return leaderboards over the long run. If anything, lower-risk portfolios should be expected to deliver lower returns, as investors should be willing to accept lower compensation for lower risk. That said, the low-

volatility factor has consistently lived up to its name, providing a smoother ride than the market, which often sets up more attractive risk-adjusted performance, even if its raw returns do not always impress.

Portfolio Highlights

December Reconstitution

The Morningstar Global Factor Indexes reconstitute twice a year, in June and December. The momentum and low-volatility factor indexes often have the highest turnover, and this was observed at the December 2025 reconstitution, as shown in Exhibit 12. These are price-driven factors where leadership tends to rotate more quickly than it does among fundamental factors, like value and quality. The value and size factor indexes experienced the smallest changes during the December reconstitution.

Exhibit 12 December 2025 Reconstitution Summary: Largest Additions

Index	Additions	Turnover (%)
Morningstar Global Low Volatility Factor Index	Microsoft (7.87%), JPMorgan Chase & Co (2.52%), Tencent Holdings (1.68%), The Walt Disney Co (0.57%), HCL Technologies (0.41%)	33.59
Morningstar Global Momentum Factor Index	Nvidia (8.4%), Alphabet Inc Class A (7.71%), Micron Technology (2%), SK Hynix (1.75%), Advanced Micro Devices (1.31%)	52.56
Morningstar Global Quality Factor Index	AppLovin Class A (0.73%), Advantest (0.7%), Prosus N.V. Class N (0.66%), Comfort Systems USA (0.65%), Incyte (0.39%)	20.55
Morningstar Global Size Factor Index	Seagate Technology (0.31%), Automatic Data Processing (0.26%), Pure Storage (0.24%), Comcast (0.23%), Argenx SE (0.2%)	16.70
Morningstar Global Value Factor Index	Microsoft (6.57%), Adobe (0.62%), Salesforce (0.57%), Progressive (0.49%), Banca Monte dei Paschi di Siena (0.34%)	16.63
Morningstar Global Yield Factor Index	ExxonMobil (1.13%), Alibaba Group (0.82%), Accenture PLC (0.59%), Shin-Etsu Chemical (0.41%), ConocoPhillips (0.37%)	32.85

Source: Morningstar Indexes. Data as of Dec. 22, 2025.

There were a few notable additions to the Morningstar Global Factor Indexes at the December reconstitution, including Microsoft, which was added to the Morningstar Global Low Volatility Factor and Morningstar Global Value Factor indexes. Nvidia, despite being range-bound since the start of the fourth quarter, was added to the Momentum Factor Index. The momentum factor index measures performance from trailing 12 months through trailing 1 month (as of the reconstitution reference date). This means returns were measured from the end of November 2024 through the end of September 2025. During that time, Nvidia's stock price increased by 35%, which made it eligible for inclusion in the global momentum index. Alphabet Class A's steady appreciation since April 2025 supported its inclusion in the Morningstar Global Momentum Factor Index at the December reconstitution.

Microsoft, traditionally a growth stock, migrated toward the blend region as of the reconstitution reference date at the end of November to qualify for inclusion in the Morningstar Global Value Factor Index.

Microsoft, along with JPMorgan Chase, Tencent Holdings, and Walt Disney, were added to the Morningstar Global Low Volatility Factor Index, which selects stocks that exhibit low volatility based on their trailing six-month idiosyncratic volatility, total volatility, and MAX5 parameter.¹

Sectors

The Morningstar Global Factor Indexes anchor their regional and sector weightings to those of their parent benchmarks. The slower-moving, fundamental factor indexes of value, quality, size, and yield apply tighter sector and regional constraints and measure factor exposures on a sector-relative basis within each region to determine eligibility. This process is intended to mitigate unintended biases that might otherwise creep into the indexes and facilitate greater comparability. Consequently, these indexes share similar sector exposures to their benchmarks.

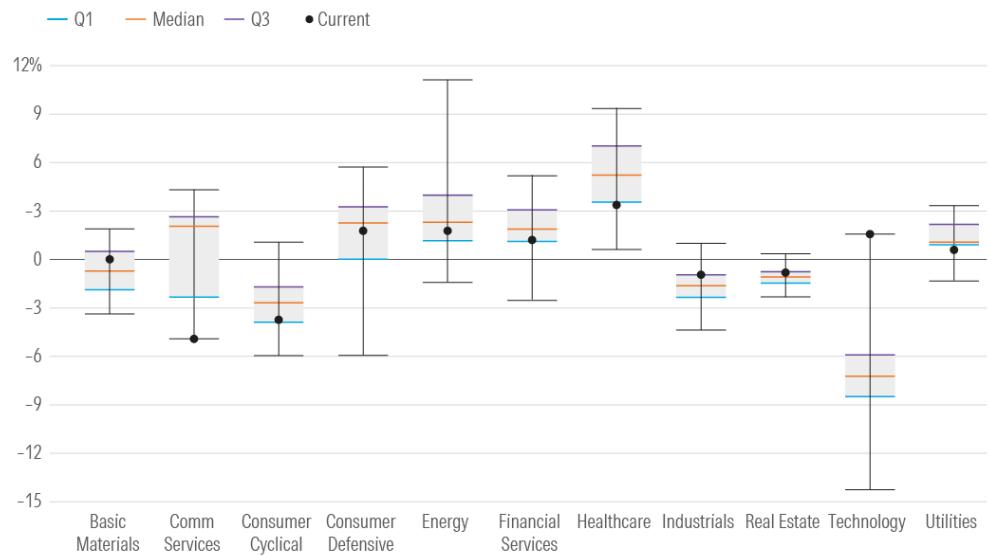
The faster-moving, price-driven, low-volatility, and momentum factor indexes apply looser regional and sector constraints. These indexes also measure factor exposures on a regional-relative basis without adjusting for sector membership. This approach is favorable because these price-driven factors are more comparable across sectors than the fundamental factors.

Not surprisingly, the Morningstar Low Volatility Factor Indexes tend to overweight more-defensive sectors, such as utilities, healthcare, and consumer defensive, and underweight technology, consumer cyclicals, and industrials.

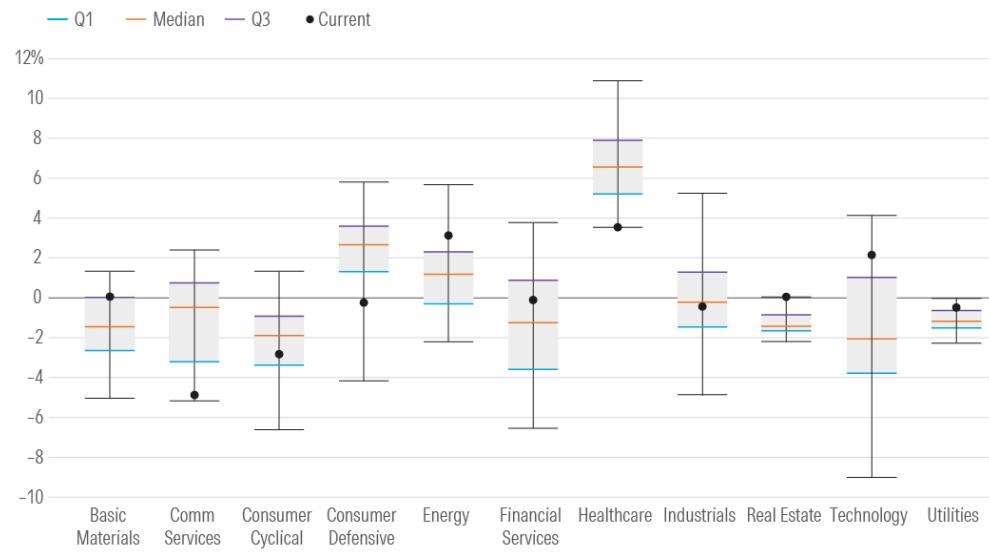
Over time, some of the low-volatility factor's sector tilts fluctuate. For example, financial-services stocks are currently more heavily represented in the Morningstar Global Low Volatility Factor Index than they are in the benchmark. But during the 2008-09 global financial crisis, this sector was one of the more volatile areas of the market and was underweight in the index.

The Morningstar Global Momentum Factor Index is overweight the technology sector on the back of artificial intelligence-driven sentiment. The index is underweight in the defensive sectors, including healthcare, consumer defensive, and energy.

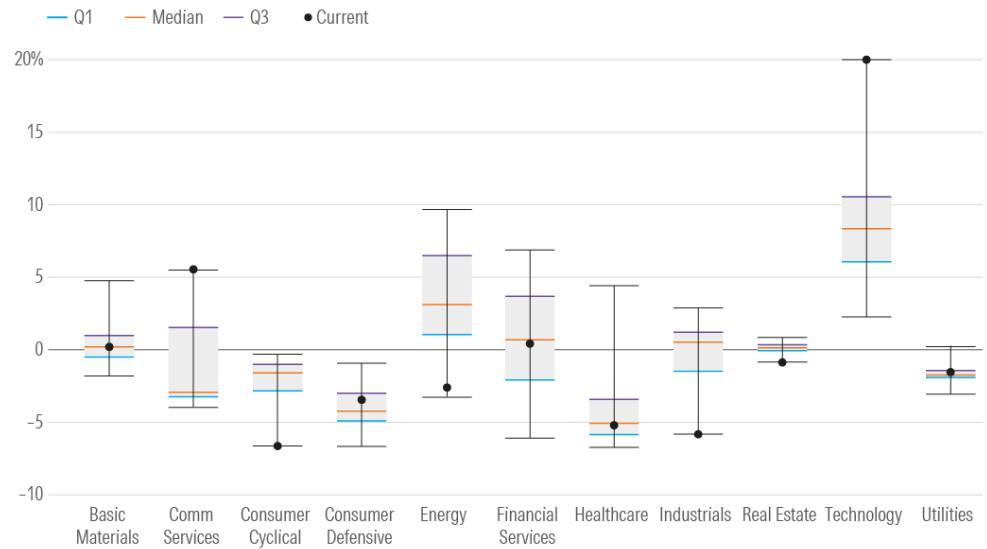
¹ <https://indexes.morningstar.com/docs/rulebook/morningstar-global-low-volatility-factor-FS0000HZEL>

Exhibit 13 Value Factor Active Sector Weights

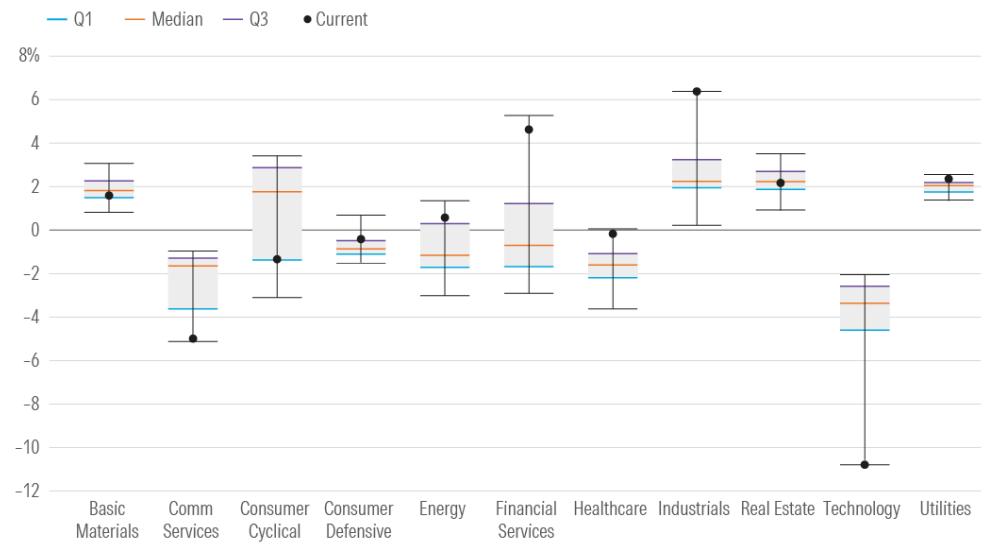
Source: Morningstar Indexes. Data as of Dec. 31, 2025.

Exhibit 14 Yield Factor Active Sector Weights

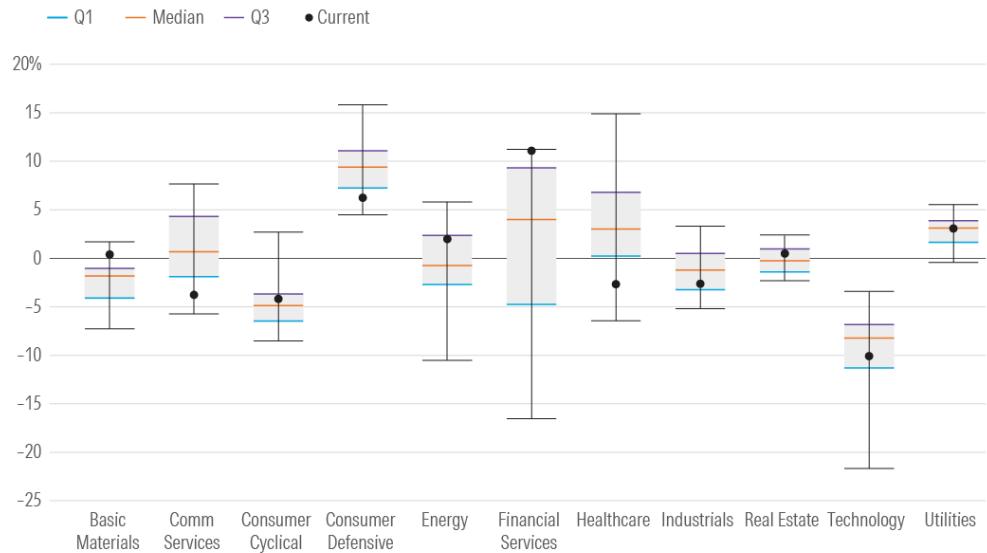
Source: Morningstar Indexes. Data as of Dec. 31, 2025.

Exhibit 15 Quality Factor Active Sector Weights

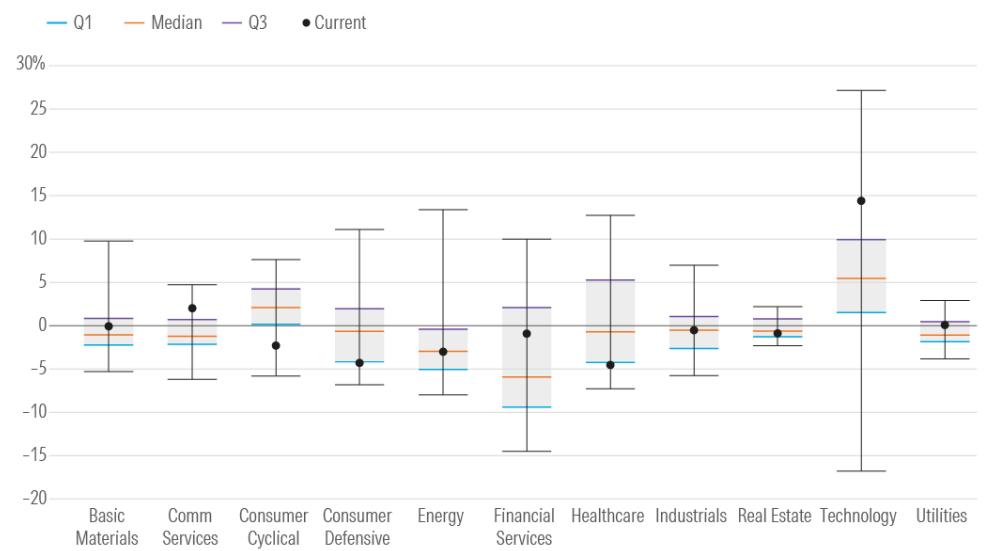
Source: Morningstar Indexes. Data as of Dec. 31, 2025.

Exhibit 16 Size Factor Active Sector Weights

Source: Morningstar Indexes. Data as of Dec. 31, 2025.

Exhibit 17 Low Volatility Factor Active Sector Weights

Source: Morningstar Indexes. Data as of Dec. 31, 2025.

Exhibit 18 Momentum Factor Active Sector Weights

Source: Morningstar Indexes. Data as of Dec. 31, 2025.

Factors Drive Performance

Factor leadership is volatile, but factors are key return drivers that can help explain variations in performance across the market, and as such, factor performance is crucial to understand.

Regardless of the market conditions, the Morningstar Global Factor Indexes are effective tools for monitoring factor trends. These indexes are designed to provide efficient, investable exposure to industry-standard factors with a consistent framework. They can facilitate precise performance benchmarking and efficient asset allocation. For more information, visit <https://indexes.morningstar.com/factors>.

Appendix

Factor Definitions

Low Volatility: This factor is the weighted average of idiosyncratic volatility over the past six months (50%), total volatility over the past six months (25%), and MAX5/lottery factor (25%), which is based on the highest five-day returns over the past month where lower values are favored. This composite provides a more complete view of risk than a security's total volatility alone.

Stocks with low past volatility tended to offer better risk-adjusted performance than those with high volatility. Unlike many of the other factors, there isn't a clear risk-based explanation for this effect. The anomaly is typically explained through investor behavior, given leverage and tracking-error constraints. Professional investors who are overly focused on returns and unable to leverage their portfolios might crowd into volatile stocks, which have greater upside potential than their more-staid counterparts. Retail investors looking for lotterylike upside might do the same. As a result, not only are low-volatility stocks more resilient during "risk-off" market environments, but they may also be priced to offer a more favorable risk/reward trade-off over the long term.

Momentum: This factor is measured as the trailing 12-month total return (in local currency), excluding the most recent month, minus the local risk-free rate. This definition aligns with the momentum factor as defined by the academic literature.

Momentum describes short-term performance persistence. Momentum strategies target stocks with strong recent returns, based on the premise that they are likely to continue to outperform. Prices may adjust more slowly than they should to new information, as investors often initially underreact. This alone can cause performance to persist. Once a trend is established, more investors may continue to buy, further fueling price momentum.

Quality: This is measured as the equally weighted z-score of a company's profitability (trailing 12-month return on assets) and the z-score of its financial leverage (trailing 12-month debt/invested capital).

The shares of companies with strong profitability and balance sheets performed better historically than less profitable and more highly indebted counterparts. They tended to hold up better than the market during downturns, which intuitively wouldn't lead to an expectation of higher returns. However, investors may have historically underestimated the long-term durability of these firms' strong cash flows, leading to an impressive long-term track record of risk-adjusted returns.

Value: This factor's definition aligns with the Morningstar Style Box methodology, which incorporates historical and forward-looking value and growth metrics. The actual factor is value-growth, where the value inputs include price/earnings (50.0%), price/book (12.5%), price/cash flow (12.5%), price/sales (12.5%), and dividend yield (12.5%).

The value factor targets stocks trading at low multiples on fundamental measures like earnings, book value, cash flow, sales, and dividends. Value investing is backed by strong economic rationale and empirical evidence. Lower valuations should reflect higher expected returns, either as compensation for risk or because investors may be overly pessimistic about these stocks' prospects.

Index Construction

Single-Factor Indexes

The Morningstar Global Factor Indexes are from a corresponding standard parent benchmark from the Morningstar Target Market Exposure Index family, which represents the top 85% of equity market capitalization in its segment. The focus on large- and mid-cap stocks facilitates high-investment capacity. To be eligible for inclusion, each stock must have valid factor exposure scores.

Within each parent index, constituents are ranked by their factor exposure. All factors are measured relative to each broad region. The quality, size, value, and yield factor exposures are also measured on a sector-relative basis. This improves comparability and mitigates persistent sector biases. For low volatility and momentum, no sector relative adjustments are made, as these price-driven signals tend to be more comparable across sectors. The highest ranking 30% of the parent index's float-adjusted market capitalization is targeted for inclusion in each index. Focusing on a percentage of the parent index as opposed to a fixed number of securities ensures that a consistent portion of the market is represented. Constituents are weighted by the product of their float-adjusted market capitalization and strength of their factor exposure, subject to constraints to limit unintended risk. The indexes are reconstituted and rebalanced semiannually.

For further details, please reference the [Construction Rules for the Morningstar Global Factor Indexes](#).

Multifactor Indexes

The Morningstar Global Multifactor Indexes use optimization to target low volatility, momentum, quality, and value. As a part of this optimization framework, the indexes aim to maximize portfolio-level factor characteristics under constraints to limit unintended risk and transaction costs while offering significant liquidity.

Morningstar Indexes offers multifactor indexes derived from various broad regional parent indexes, and the construction rules that follow are applied similarly for each variant.

Each multifactor index is derived from its corresponding standard parent benchmark from the Morningstar Target Market Exposure Indexes, representing the top 85% of equity market capitalization in its segment. The focus on large- and mid-cap stocks facilitates high-investment capacity.

The portfolios are long-only and enforce a minimum nonzero weight of 1 basis point (0.01%) to avoid economically insignificant allocations. To limit unintended active risk against the parent index, sector, and country constraints are enforced. This allows a bit of flexibility for the optimizer to over- and underweight securities relative to the parent indexes while limiting the deviations to mitigate unintended biases. Turnover is also controlled to mitigate transaction costs.

For further details, please reference the [Construction Rules for the Morningstar Global Multifactor Indexes](#).

About Morningstar Indexes

Morningstar Indexes was built to keep up with the evolving needs of investors—and to be a leading-edge advocate for them. Our rich heritage as a transparent, investor-focused leader in data and research uniquely equips us to support individuals, institutions, wealth managers and advisors in navigating investment opportunities across major asset classes, styles and strategies. From traditional benchmarks and unique IP-driven indexes, to index design, calculation and distribution services, our solutions span an investment landscape as diverse as investors themselves.

Please visit indexes.morningstar.com for more information.

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