

Back to the Future

How the time dimension of momentum shapes future returns



Momentum investing is based on a simple but powerful idea - assets that have performed well recently tend to continue performing well. This tendency for price trends to persist—known as the momentum effect—has been one of the most robust and widely documented anomalies in global equity markets. Yet beneath its intuitive appeal lies a critical question: how far back should one look when defining ‘past performance’? This paper explores how variations in the lookback period—the time window used to measure prior returns—shape momentum’s results across global markets. By systematically comparing the standard 12-month-minus-one (12M1) approach with alternative lookback constructions, we aim to reveal how the time dimension of momentum influences future outcomes and the persistence of its edge.

Key Findings

- Over the full US sample (1986-2025), the traditional 12M1 construction produced higher excess returns with higher Sharpe and information ratios than alternative weighting schemes, confirming its historical robustness across large- and small-cap universes.
- However, in the US sub-sample (2005-2025), lookbacks with more emphasis on recent time periods (RW_LB, 3M, 6M, 9M) demonstrated higher excess returns with higher Sharpe and information ratios, particularly within large cap equities, suggesting market dynamics may have changed over the last two decades.
- Across global, non-US, and emerging markets, a recency-weighted approach (particularly RW_LB) more often achieved stronger performance and higher information ratios than 12M1 in the sample period (2005-2025).



Challenging 12-1M: A Study on Momentum's Lookback Period

Momentum investing remains one of the most persistent and empirically verified anomalies in global equity markets. The premise is intuitive: securities that have demonstrated superior past performance tend to continue outperforming over subsequent periods. Although the theoretical foundation of momentum is well established, implementing it as a practical investment strategy requires a series of deliberate design decisions—foremost among them, defining the lookback period used to evaluate prior performance.

The modern framework for momentum was established by Jegadeesh and Titman (1993), who documented that portfolios of stocks with the highest prior twelve-month returns (and over other time periods shorter than a year) significantly outperformed those with the lowest. Their research provided clear empirical evidence that price trends persist beyond the short term, contradicting the weak-form efficient market hypothesis and formalizing momentum as a systematic investment factor.

Subsequent studies refined this framework to account for short-term mean reversion effects and enhance portfolio construction. Jegadeesh (1990), Carhart (1997), and Asness (1994) each demonstrated that excluding the most recent month's return improved signal quality and stability. This adjustment, known as the 12M1 specification, became the prevailing standard for momentum factor design. Even so, later research and practical applications have shown that variations in how historical performance is weighted or blended across shorter intervals can meaningfully affect realized outcomes. For example, Li & Liu (2022) noted that a weighted average of past returns with higher weights on more recent returns might be more optimal. Similarly, Wang, Yan, and Zheng (2021) found that momentum is most pronounced in shorter, more recent lookback windows. Another form of recency weighting is found in the paper of Goulding, Harvey, and Mazzoleni (2023) which showed blending Slow (trailing 12M lookback) and Fast momentum (trailing 1M lookback) can improve portfolio outcomes.

This study systematically examines several alternative lookback constructions, including the standard 12M1 and a range of shorter time horizons and weighted variants, to evaluate how different temporal definitions affect momentum efficacy. The analysis spans multiple equity universes—US, global, and emerging markets—covering the period 1986–2025 for the United States and 2005–2025 for non-US and global markets. Both absolute and risk-adjusted measures are employed to assess how the choice of lookback structure shapes the behavior and persistence of momentum returns across regions and market capitalizations.

Definitions

The following definitions summarize the lookback constructions used in this study:

- **12M1** – Stocks sorted by trailing 12-month total return excluding the most recent month.
- **3M, 6M, 9M, and 12M** – Stocks sorted by their total return over the trailing 3-, 6-, 9-, or 12-month time periods.
- **RW_LB** (Recency Weighted Lookback) – Stocks sorted by their weighted average total return over the 3M, 6M, 9M, and 12M with weights of 40%, 20%, 20%, and 20% on each period, respectively.
- **EW_LB** (Equal Weighted Lookback) – Stocks sorted by their equally-weighted total return of the 3M, 6M, 9M, and 12M lookbacks.
- **LW_LB** (Linear Weighted Lookback) – Linear weighting of 4, 3, 2, and 1 applied to 3M, 6M, 9M, and 12M total return, respectively.
- **EXPW_LB** (Exponential Weighted Lookback) – Exponentially decaying weights of 1, 0.7, 0.49, and 0.343, applied to 3M, 6M, 9M and 12M, respectively -- corresponding to a half-life of approximately 1.94 quarters¹.
- **12M1 + RW_LB** – Equal-weighted combination of the traditional 12M1 and RW_LB measures.

Methodology

We constructed a series of long-only momentum strategies that varied by lookback period and weighting methodology used to rank securities prior to portfolio formation. Securities were sorted cross-sectionally by prior returns, and the top quintile of securities was selected to form portfolios. The analysis covered eight universes: US Large Cap, US Small Cap, Global Large/Mid Cap, Global Small Cap, Emerging Markets (EM) Large/Mid Cap, EM Small Cap, Non-US Large/Mid Cap, and Non-US Small Cap. For each universe, market-cap-weighted portfolios were created and rebalanced monthly (alternative weighting and rebalancing methodologies are detailed in the Appendix).

The US sample begins in 1986 (determined by availability of FactSet universe data), while non-US datasets begin in 2005, corresponding to the availability of MSCI index data. This structure ensures comparability across regions and provides sufficient time-series depth for evaluating the relative effects of lookback construction and weighting methodologies. Please see a discussion of full methodology in appendix.

¹ Assume that $A(t) = A_0 \cdot (0.7)^t$; and let t^* denote the half-life with t measured quarterly. Then $0.5 = (0.7)^{t^*}$ so that $-\ln(2) = t^* \ln(0.7)$ which implies that $t^* = 1.93$ qtrs.

Results and Discussion

US Equities

The US sample provides a long historical window from July 1986 through July 2025. Over this full period, the 12M1 specification outperformed all alternative weighting methods and lookback periods in both large and small cap universes (Tables 1 & 2). 12M1 also displayed the highest Sharpe and information ratios of all methodologies tested.

Table 1: US Large Cap
July 1986 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	12.74%	11.27%	10.58%	12.08%	12.20%	12.28%	12.24%	11.68%	11.94%	12.35%	11.02%
Trailing 1 Year Ann.	12.42%	17.19%	15.08%	18.45%	21.30%	15.22%	19.11%	8.67%	10.11%	15.52%	17.03%
Trailing 3 Year Ann.	19.52%	19.28%	22.97%	24.40%	22.89%	22.50%	22.27%	20.24%	20.59%	20.46%	17.20%
Trailing 5 Year Ann.	12.21%	19.67%	19.16%	15.97%	15.72%	16.90%	16.49%	16.09%	16.74%	13.11%	15.43%
Volatility Ann.	18.37%	16.84%	17.41%	17.84%	18.06%	17.63%	17.69%	17.59%	17.56%	18.13%	15.33%
Tracking Error	9.42%	8.50%	8.53%	9.35%	9.23%	9.21%	9.26%	9.06%	9.06%	9.31%	--
Sharpe Ratio	0.53	0.49	0.43	0.51	0.51	0.52	0.52	0.49	0.51	0.51	0.52
Information Ratio	0.18	0.03	-0.05	0.11	0.13	0.14	0.13	0.07	0.10	0.14	--
T-Stat	1.37	0.34	-0.05	0.92	1.03	1.03	1.00	0.66	0.82	1.13	--
Batting Average	55%	51%	50%	57%	55%	54%	55%	52%	52%	55%	--

Table 2: US Small Cap
July 1986 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	12.99%	9.90%	10.26%	11.76%	11.91%	11.80%	11.99%	11.51%	11.59%	12.36%	10.63%
Trailing 1 Year Ann.	2.51%	-0.81%	7.61%	8.21%	6.60%	8.32%	8.88%	6.51%	7.62%	6.71%	0.25%
Trailing 3 Year Ann.	9.76%	1.84%	6.48%	9.03%	9.66%	9.10%	9.37%	7.97%	7.83%	8.59%	6.75%
Trailing 5 Year Ann.	11.80%	5.99%	10.00%	12.38%	11.74%	11.73%	11.92%	10.86%	10.72%	11.23%	10.80%
Volatility Ann.	22.34%	21.35%	21.73%	21.91%	21.81%	21.89%	21.91%	21.78%	21.83%	21.99%	19.23%
Tracking Error	8.66%	8.38%	8.42%	8.69%	8.73%	8.81%	8.82%	8.63%	8.66%	8.89%	--
Sharpe Ratio	0.45	0.32	0.33	0.40	0.41	0.40	0.41	0.39	0.39	0.42	0.40
Information Ratio	0.27	-0.09	-0.04	0.13	0.15	0.13	0.15	0.10	0.11	0.19	--
T-Stat	2.00	-0.20	0.12	1.12	1.20	1.12	1.25	0.95	1.00	1.49	--
Batting Average	58%	50%	51%	56%	56%	53%	54%	54%	53%	56%	--

However, when the analysis is restricted to the 2005–2025 period, the relative performance observed changes meaningfully. Within the US Large Cap universe, methodologies that favor more recent lookback periods generate higher returns with superior Sharpe and information ratios than the standard 12M1 (Table 3). In the US Small Cap universe, both RW_LB and 12M1 produce similar results, each outperforming the benchmark by approximately 1.25% annually (Table 4). Yet, the RW_LB, which puts more weight on the recent 3M lookback, showed a higher Sharpe ratio.

Several structural factors may explain this reversal. Over the past two decades, trading efficiency, information dissemination, and investor responsiveness have accelerated, possibly compressing the time window over which price trends persist. Shorter and recency-weighted lookbacks, such as RW_LB, may therefore capture price continuation more effectively within faster-moving markets. Additionally, increased institutional participation and the growth of factor-based investing may have partially arbitrated slower-moving signals, further emphasizing the value of more responsive momentum measures.

Table 3: US Large Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	10.01%	12.84%	12.38%	12.58%	10.76%	12.17%	11.93%	12.15%	11.94%	10.48%	10.90%
Trailing 1 Year Ann.	11.39%	15.44%	17.59%	16.60%	19.75%	14.72%	17.50%	10.55%	11.40%	14.45%	16.87%
Trailing 3 Year Ann.	18.35%	19.40%	23.59%	23.56%	22.47%	22.15%	21.30%	21.53%	20.68%	19.77%	17.08%
Trailing 5 Year Ann.	10.91%	19.36%	20.41%	16.53%	14.26%	16.48%	15.98%	16.12%	15.71%	12.78%	15.32%
Volatility Ann.	16.92%	16.26%	16.55%	16.48%	16.53%	16.34%	16.36%	16.41%	16.43%	16.74%	15.38%
Tracking Error	7.63%	7.75%	7.59%	8.17%	7.67%	7.84%	7.90%	7.87%	7.82%	7.89%	--
Sharpe Ratio	0.50	0.69	0.65	0.67	0.56	0.65	0.63	0.64	0.63	0.53	0.61
Information Ratio	-0.12	0.25	0.20	0.21	-0.02	0.16	0.13	0.16	0.13	-0.05	--
T-Stat	-0.33	1.08	0.89	0.92	0.03	0.73	0.61	0.73	0.63	-0.09	--
Batting Average	51%	53%	55%	58%	54%	56%	56%	57%	58%	53%	--

Table 4: US Small Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	10.63%	8.92%	9.62%	10.67%	10.18%	10.63%	10.44%	10.44%	10.37%	10.54%	9.38%
Trailing 1 Year Ann.	9.50%	1.22%	12.68%	15.24%	13.83%	14.76%	15.55%	13.51%	14.17%	11.64%	2.51%
Trailing 3 Year Ann.	13.47%	3.38%	9.69%	12.79%	13.69%	12.55%	12.86%	11.74%	12.01%	12.69%	7.66%
Trailing 5 Year Ann.	14.30%	7.21%	12.75%	15.53%	14.77%	14.86%	14.50%	14.20%	14.31%	14.15%	11.25%
Volatility Ann.	20.92%	19.81%	20.14%	20.09%	20.37%	20.17%	20.24%	20.09%	20.18%	20.64%	20.30%
Tracking Error	7.21%	6.79%	7.14%	7.16%	7.55%	7.37%	7.41%	7.25%	7.28%	7.35%	--
Sharpe Ratio	0.43	0.37	0.40	0.45	0.42	0.45	0.44	0.44	0.44	0.43	0.38
Information Ratio	0.17	-0.07	0.03	0.18	0.11	0.17	0.14	0.15	0.14	0.16	--
T-Stat	0.78	-0.35	0.12	0.71	0.44	0.67	0.58	0.57	0.54	0.69	--
Batting Average	58%	52%	53%	57%	55%	55%	57%	55%	55%	56%	--

Global and Non-US Equities

In Global Small Cap, RW_LB (with more weight on the prior 3 months performance) generates the highest excess returns with superior Sharpe and information ratios than the 12M1 and all tested methodologies (Table 5).

Table 5: Global Small Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	10.45%	10.54%	10.36%	10.82%	10.74%	11.38%	11.27%	11.31%	11.29%	10.91%	7.88%
Trailing 1 Year Ann.	11.48%	14.92%	12.13%	14.53%	16.22%	15.08%	15.01%	14.50%	14.65%	13.45%	9.71%
Trailing 3 Year Ann.	14.26%	10.22%	11.34%	13.72%	15.45%	13.54%	13.89%	12.78%	12.89%	14.32%	10.64%
Trailing 5 Year Ann.	13.11%	10.80%	11.75%	12.78%	13.60%	13.17%	13.18%	12.63%	12.84%	13.12%	10.83%
Volatility Ann.	18.59%	17.41%	17.86%	17.41%	17.88%	17.46%	17.51%	17.51%	17.48%	18.08%	18.18%
Tracking Error	6.63%	5.76%	6.29%	6.59%	6.75%	6.36%	6.53%	6.28%	6.31%	6.57%	--
Sharpe Ratio	0.48	0.51	0.49	0.53	0.51	0.56	0.55	0.56	0.56	0.52	0.35
Information Ratio	0.39	0.46	0.39	0.45	0.42	0.55	0.52	0.55	0.54	0.46	--
T-Stat	1.64	1.77	1.57	1.74	1.70	2.15	2.04	2.14	2.11	1.88	--
Batting Average	56%	58%	58%	60%	57%	58%	59%	59%	58%	58%	--

In EM Small Cap, EW_LB and RW_LB vastly outperform the standard 12M1 lookback. In addition, each of those methodologies display stronger Sharpe and information ratios than all methodologies tested (Table 6).

Table 6: EM Small Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	13.09%	12.43%	14.84%	15.10%	14.39%	15.33%	15.54%	15.05%	15.24%	14.24%	8.32%
Trailing 1 Year Ann.	9.62%	8.24%	9.34%	8.26%	11.87%	8.71%	10.00%	9.48%	9.06%	8.90%	7.94%
Trailing 3 Year Ann.	22.10%	19.35%	20.62%	23.36%	24.31%	22.39%	23.04%	22.77%	22.80%	22.42%	13.34%
Trailing 5 Year Ann.	21.06%	18.27%	20.26%	21.96%	22.18%	21.25%	22.11%	21.39%	21.59%	21.85%	13.18%
Volatility Ann.	22.90%	21.95%	22.80%	22.40%	22.34%	22.61%	22.62%	22.61%	22.67%	22.69%	21.89%
Tracking Error	7.39%	6.75%	6.77%	7.41%	7.25%	7.04%	7.09%	6.94%	6.98%	7.11%	--
Sharpe Ratio	0.50	0.49	0.58	0.60	0.57	0.61	0.62	0.60	0.60	0.56	0.31
Information Ratio	0.64	0.61	0.96	0.91	0.84	1.00	1.02	0.97	0.99	0.83	--
T-Stat	2.78	2.47	4.01	3.75	3.46	4.10	4.20	4.01	4.10	3.49	--
Batting Average	63%	58%	67%	63%	63%	64%	64%	64%	63%	63%	--

In Non-US Small Cap, RW_LB significantly outperforms the 12M1 lookback and displays the highest Sharpe and information ratios than all methodologies tested (Table 7).

Table 7: Non-US Small Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	11.08%	11.34%	11.32%	11.73%	11.43%	12.39%	12.21%	12.31%	12.30%	11.64%	7.06%
Trailing 1 Year Ann.	16.46%	19.27%	18.59%	18.50%	19.39%	19.17%	19.20%	19.12%	19.10%	17.75%	13.81%
Trailing 3 Year Ann.	17.04%	15.14%	15.69%	17.05%	17.81%	17.16%	17.14%	16.66%	16.69%	17.18%	12.01%
Trailing 5 Year Ann.	14.02%	13.13%	14.28%	14.05%	14.63%	14.93%	14.90%	14.54%	14.67%	14.48%	10.51%
Volatility Ann.	19.05%	18.17%	18.59%	17.91%	18.31%	18.15%	18.20%	18.21%	18.17%	18.58%	18.55%
Tracking Error	6.76%	6.03%	6.54%	6.88%	6.95%	6.56%	6.74%	6.52%	6.53%	6.68%	--
Sharpe Ratio	0.50	0.54	0.52	0.57	0.54	0.60	0.58	0.59	0.59	0.54	0.30
Information Ratio	0.59	0.71	0.65	0.68	0.63	0.81	0.76	0.80	0.80	0.69	--
T-Stat	2.51	2.83	2.67	2.70	2.55	3.26	3.07	3.23	3.22	2.81	--
Batting Average	61%	60%	61%	62%	60%	59%	63%	60%	61%	61%	--

In Global Large/Mid Cap, methodologies that favor more recent lookback periods generate higher annualized returns than the standard 12M1 (Table 8).

Table 8: Global Large/Mid Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	8.15%	9.95%	8.89%	9.13%	8.96%	9.56%	9.52%	9.44%	9.31%	8.82%	8.06%
Trailing 1 Year Ann.	12.21%	12.50%	11.56%	19.47%	18.20%	17.46%	17.45%	15.75%	14.72%	14.78%	16.33%
Trailing 3 Year Ann.	12.60%	12.56%	12.61%	15.15%	14.87%	13.73%	13.59%	14.66%	13.80%	14.01%	13.69%
Trailing 5 Year Ann.	8.26%	11.44%	11.10%	10.87%	10.01%	10.48%	10.53%	11.44%	10.82%	9.65%	11.57%
Volatility Ann.	17.42%	16.36%	16.77%	16.21%	16.85%	16.46%	16.51%	16.47%	16.47%	16.99%	17.46%
Tracking Error	9.06%	8.55%	8.98%	9.21%	9.15%	9.02%	9.09%	9.01%	9.05%	9.13%	--
Sharpe Ratio	0.38	0.51	0.44	0.47	0.44	0.48	0.48	0.48	0.47	0.43	0.37
Information Ratio	0.01	0.22	0.09	0.12	0.10	0.17	0.16	0.15	0.14	0.08	--
T-Stat	0.04	0.80	0.31	0.37	0.35	0.59	0.58	0.54	0.48	0.30	--
Batting Average	53%	55%	50%	55%	56%	57%	55%	56%	56%	55%	--

In Non-US Large/Mid Cap, the LW_LB methodology results in the highest annualized return with the highest Sharpe and information ratios than all methodologies tested (Table 9).

Table 9: Non-US Large/Mid Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	6.71%	6.12%	6.15%	6.17%	6.54%	6.72%	6.61%	7.01%	6.98%	6.74%	5.65%
Trailing 1 Year Ann.	17.23%	13.29%	15.12%	13.91%	16.27%	15.35%	15.19%	16.17%	16.34%	16.94%	15.30%
Trailing 3 Year Ann.	9.90%	6.81%	7.50%	8.66%	9.64%	8.25%	8.58%	8.59%	8.55%	9.32%	10.06%
Trailing 5 Year Ann.	6.65%	4.34%	5.80%	6.07%	6.67%	5.87%	5.96%	6.18%	6.02%	6.42%	7.81%
Volatility Ann.	18.55%	17.48%	18.00%	17.20%	17.99%	17.70%	17.73%	17.65%	17.68%	18.02%	18.80%
Tracking Error	9.60%	9.29%	9.76%	9.93%	9.68%	9.76%	9.80%	9.79%	9.74%	9.60%	--
Sharpe Ratio	0.28	0.26	0.25	0.27	0.28	0.29	0.28	0.31	0.30	0.29	0.22
Information Ratio	0.11	0.05	0.05	0.05	0.09	0.11	0.10	0.14	0.14	0.11	--
T-Stat	0.45	0.09	0.15	0.09	0.33	0.37	0.32	0.49	0.48	0.42	--
Batting Average	55%	52%	56%	52%	56%	56%	55%	57%	56%	56%	--

In Emerging Markets Large/Mid Cap, we show a marginally different outcome; the 12M1 is tough to beat although it also displays the highest volatility of all methodologies tested (Table 10).

Table 10: Emerging Markets Large/Mid Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	7.92%	5.02%	7.67%	6.35%	7.81%	7.54%	7.75%	7.06%	7.33%	7.33%	6.11%
Trailing 1 Year Ann.	12.88%	9.34%	11.19%	11.67%	11.79%	11.18%	12.21%	10.54%	11.78%	12.25%	16.55%
Trailing 3 Year Ann.	4.50%	3.88%	1.59%	3.66%	5.47%	3.50%	3.53%	2.56%	3.04%	4.55%	7.21%
Trailing 5 Year Ann.	3.74%	1.36%	3.16%	3.95%	4.82%	4.24%	4.51%	3.61%	3.70%	4.16%	5.23%
Volatility Ann.	22.15%	21.10%	21.43%	20.87%	21.58%	21.44%	21.53%	21.42%	21.42%	21.81%	21.76%
Tracking Error	10.93%	10.73%	10.39%	10.97%	10.93%	10.76%	10.81%	11.01%	10.85%	10.84%	--
Sharpe Ratio	0.29	0.16	0.28	0.23	0.29	0.28	0.29	0.26	0.27	0.26	0.21
Information Ratio	0.17	-0.10	0.15	0.02	0.16	0.13	0.15	0.09	0.11	0.11	--
T-Stat	0.74	-0.50	0.59	0.01	0.64	0.53	0.61	0.33	0.44	0.49	--
Batting Average	54%	50%	49%	51%	54%	54%	54%	53%	54%	53%	--



Conclusion

Momentum remains one of the most persistent and reliable sources of excess returns across equity markets worldwide. The traditional 12M1 specification continues to demonstrate consistent strength over longer horizons, particularly within the US sample, reaffirming its role as a robust baseline for momentum-based strategies.

However, more recent data suggest that momentum dynamics may have evolved. In the US over the 2005–2025 period, the RW_LB construction performed competitively—outperforming traditional measures in large-cap equities and matching them in small caps—indicating that weighting more recent performance can improve signal efficiency in faster-moving markets. Similar patterns emerge outside the US, where recency-weighted approaches show stronger and more stable performance, especially within small cap and emerging market segments.

These results collectively suggest that momentum behavior varies across both regions and market capitalizations. While 12M1 remains a durable and academically grounded benchmark, alternative lookback structures like RW_LB offer a refined, adaptive complement—capturing shorter-term persistence in environments where information is processed and reflected in prices more rapidly. For practitioners, these findings highlight the value of tailoring momentum construction to regional characteristics and market structure, ensuring that implementation remains aligned with the evolving dynamics of global equity markets.

Appendix 1: Portfolio Construction

The US universe was constructed using proxies of the Russell 1000 Index for large cap and Russell 2000 Index for small cap for the period 1986 to July 2025. Stocks were ranked by market cap on annual basis (end of June) with the top 1000 largest stocks as large cap and the next 2000 largest stocks as small cap. We used a \$2 price screen to reduce the potential for data errors sometimes found in very low-priced stocks.

The Non-US and Global universes were constructed using holdings from corresponding MSCI indices: MSCI ACWI, ACWI Small Cap, Emerging Markets, Emerging Markets Small Cap, ACWI ex-US, and ACWI ex-US Small Cap for the 20-year period July 2005 to July 2025. For the MSCI indices we use the constituents at the end of each quarter as the universe of securities.

We show four sets of portfolio statistics for each market segment. We rebalance the factors for the quintile sorts on both a monthly and a quarterly frequency. For each of the factor rebalance schedules we display both market capitalization weighted and equal weighted returns. The alternative rebalance cadences and weighting schemes didn't materially change the main findings and are presented in Appendices 3 and 4.

We use the following four lookback periods for price momentum (total return): trailing 3M, 6M, 9M, 12M to rank the universe of stocks. Each of these lookback periods contains the most recent month and is nested within one another in the following way:

$$3M \in 6M \in 9M \in 12M.$$

We report results for the top quintile sorted by price momentum resulting from each of these four lookback periods. We also report results for four other top quintile portfolios that arise from sorts based on linear combinations of the original four (3M, 6M, 9M, and 12M) look back periods. These sorts are defined by the following equation:

$$LB_k := \beta_1 \cdot 3M + \beta_2 \cdot 6M + \beta_3 \cdot 9M + \beta_4 \cdot 12M,$$

with LB denoting the lookback period defined by the weighting schemes defined in Table A1.

Table A1: Weighting Schemes

	3M- β	6M- β	9M- β	12M- β
RW_LB	40%	20%	20%	20%
EW_LB	25%	25%	25%	25%
LW_LB	40%	30%	20%	10%
EXPW_LB	39%	28%	19%	14%

Appendix 3: Monthly Rebalanced, Equal-Weighted

Table A3: US Large Cap

July 1986 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	13.78%	10.88%	11.14%	12.34%	13.20%	12.48%	12.80%	12.25%	12.25%	13.54%	11.65%
Trailing 1 Year Ann.	14.32%	14.01%	14.14%	21.26%	19.44%	17.30%	18.29%	16.17%	15.54%	14.88%	10.49%
Trailing 3 Year Ann.	14.89%	8.56%	12.93%	16.13%	16.70%	14.43%	15.08%	13.36%	13.43%	14.25%	11.72%
Trailing 5 Year Ann.	13.10%	10.84%	13.24%	14.08%	14.24%	13.61%	14.09%	13.16%	13.07%	12.78%	12.12%
Volatility Ann.	19.33%	17.25%	18.00%	18.39%	18.79%	18.22%	18.35%	18.07%	18.04%	19.02%	17.51%
Tracking Error	10.37%	8.44%	9.70%	10.24%	10.47%	10.30%	10.44%	10.06%	10.11%	10.68%	--
Sharpe Ratio	0.56	0.45	0.45	0.51	0.54	0.52	0.53	0.51	0.51	0.55	0.49
Information Ratio	0.21	-0.09	-0.05	0.07	0.15	0.08	0.11	0.06	0.06	0.18	--
T-Stat	1.36	-0.56	-0.24	0.47	0.97	0.53	0.70	0.39	0.38	1.15	--
Batting Average	58%	51%	52%	55%	57%	54%	54%	54%	54%	56%	--

Table A4: US Small Cap

July 1986 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	14.82%	11.19%	12.30%	13.80%	13.83%	13.91%	14.10%	13.54%	13.58%	14.56%	12.16%
Trailing 1 Year Ann.	-1.55%	-2.54%	6.52%	4.63%	2.15%	4.84%	5.16%	4.74%	5.64%	2.56%	-0.76%
Trailing 3 Year Ann.	8.10%	2.12%	5.79%	7.67%	8.24%	8.64%	8.55%	7.81%	7.61%	7.68%	6.65%
Trailing 5 Year Ann.	13.33%	8.08%	12.33%	14.21%	13.78%	14.34%	14.16%	13.67%	13.33%	13.67%	11.21%
Volatility Ann.	21.93%	20.92%	21.28%	21.36%	21.38%	21.35%	21.43%	21.33%	21.39%	21.57%	20.25%
Tracking Error	9.48%	8.97%	9.71%	10.09%	9.92%	10.15%	10.26%	9.99%	10.07%	10.08%	--
Sharpe Ratio	0.54	0.39	0.44	0.50	0.50	0.51	0.52	0.49	0.49	0.53	0.45
Information Ratio	0.28	-0.11	0.01	0.16	0.17	0.17	0.19	0.14	0.14	0.24	--
T-Stat	1.80	-0.53	0.21	1.05	1.08	1.09	1.20	0.90	0.93	1.49	--
Batting Average	58%	47%	52%	54%	55%	54%	53%	53%	52%	55%	--

Table A5: US Large Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	9.74%	10.37%	10.45%	10.85%	10.37%	10.70%	10.72%	10.82%	10.74%	10.20%	10.17%
Trailing 1 Year Ann.	10.37%	12.12%	11.36%	16.90%	15.96%	14.18%	14.53%	13.14%	12.95%	11.49%	8.90%
Trailing 3 Year Ann.	12.40%	7.17%	11.22%	13.70%	15.00%	11.94%	12.44%	11.36%	11.26%	12.67%	11.05%
Trailing 5 Year Ann.	11.19%	10.04%	11.79%	12.40%	12.88%	11.48%	11.74%	11.34%	11.26%	11.34%	11.50%
Volatility Ann.	18.12%	16.64%	17.14%	17.07%	17.39%	17.02%	17.06%	16.86%	16.90%	17.61%	18.05%
Tracking Error	8.28%	6.89%	7.89%	8.53%	8.55%	8.32%	8.49%	8.10%	8.16%	8.56%	--
Sharpe Ratio	0.45	0.53	0.52	0.54	0.50	0.54	0.54	0.55	0.54	0.49	0.48
Information Ratio	-0.05	0.03	0.04	0.08	0.02	0.06	0.07	0.08	0.07	0.00	--
T-Stat	-0.20	-0.05	0.05	0.23	0.03	0.16	0.17	0.21	0.17	-0.03	--
Batting Average	54%	52%	55%	55%	56%	56%	55%	55%	56%	55%	--

Table A6: US Small Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_ LB	12M1 + RW_LB	Benchmark
Annualized Return	10.99%	9.18%	10.84%	11.35%	10.66%	11.63%	11.41%	11.44%	11.26%	11.19%	10.32%
Trailing 1 Year Ann.	3.57%	-1.79%	9.15%	10.93%	8.05%	10.29%	11.08%	9.63%	10.00%	6.44%	0.71%
Trailing 3 Year Ann.	9.30%	1.23%	7.54%	10.17%	10.73%	9.92%	10.04%	9.09%	9.23%	9.35%	5.99%
Trailing 5 Year Ann.	15.02%	8.14%	14.50%	16.57%	16.20%	15.92%	15.71%	15.40%	15.19%	15.12%	10.38%
Volatility Ann.	21.30%	20.41%	20.31%	20.12%	20.51%	20.24%	20.24%	20.26%	20.32%	20.84%	21.58%
Tracking Error	8.04%	6.90%	7.97%	8.25%	8.47%	8.21%	8.28%	8.11%	8.16%	8.15%	--
Sharpe Ratio	0.44	0.37	0.46	0.49	0.44	0.50	0.49	0.49	0.48	0.46	0.40
Information Ratio	0.08	-0.16	0.07	0.13	0.04	0.16	0.13	0.14	0.12	0.11	--
T-Stat	0.31	-0.84	0.13	0.35	0.05	0.50	0.39	0.41	0.33	0.35	--
Batting Average	57%	48%	53%	54%	53%	55%	54%	55%	56%	54%	--

Table A7: Global Small Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_ LB	12M1 + RW_LB	Benchmark
Annualized Return	9.87%	10.51%	10.51%	10.95%	10.43%	11.86%	11.60%	11.76%	11.79%	10.72%	6.99%
Trailing 1 Year Ann.	10.22%	12.53%	12.02%	13.02%	15.08%	13.56%	13.61%	12.99%	13.21%	12.04%	9.36%
Trailing 3 Year Ann.	13.88%	9.81%	11.16%	13.30%	15.36%	13.81%	13.93%	13.03%	13.24%	14.08%	9.51%
Trailing 5 Year Ann.	13.29%	11.01%	12.53%	13.18%	14.01%	14.17%	14.04%	13.56%	13.76%	13.54%	10.00%
Volatility Ann.	18.78%	17.95%	18.09%	17.45%	17.91%	17.63%	17.64%	17.69%	17.66%	18.20%	19.46%
Tracking Error	7.75%	6.42%	7.25%	7.99%	8.05%	7.52%	7.77%	7.40%	7.44%	7.69%	--
Sharpe Ratio	0.44	0.50	0.49	0.54	0.49	0.58	0.57	0.58	0.58	0.50	0.28
Information Ratio	0.37	0.55	0.49	0.50	0.43	0.65	0.59	0.64	0.65	0.49	--
T-Stat	1.47	2.05	1.84	1.84	1.61	2.46	2.24	2.44	2.45	1.87	--
Batting Average	58%	61%	61%	63%	58%	61%	61%	63%	62%	59%	--

Table A8: EM Small Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_ LB	12M1 + RW_LB	Benchmark
Annualized Return	11.75%	11.80%	14.24%	14.59%	13.27%	14.70%	14.82%	14.83%	14.78%	12.95%	7.41%
Trailing 1 Year Ann.	7.35%	9.46%	10.17%	9.03%	10.75%	8.49%	9.49%	9.39%	9.02%	7.97%	7.45%
Trailing 3 Year Ann.	19.58%	17.98%	18.68%	21.66%	22.51%	22.07%	21.92%	22.20%	22.40%	20.81%	10.91%
Trailing 5 Year Ann.	17.62%	15.55%	17.81%	19.14%	18.94%	19.32%	19.80%	19.48%	19.61%	18.81%	10.80%
Volatility Ann.	22.31%	21.74%	22.38%	21.80%	21.70%	22.04%	21.98%	22.15%	22.11%	22.10%	22.44%
Tracking Error	8.09%	7.54%	7.58%	8.14%	8.07%	8.00%	8.01%	7.94%	7.92%	7.85%	--
Sharpe Ratio	0.46	0.47	0.57	0.60	0.54	0.60	0.60	0.60	0.60	0.51	0.26
Information Ratio	0.54	0.58	0.90	0.88	0.73	0.91	0.93	0.94	0.93	0.71	--
T-Stat	2.22	2.30	3.65	3.51	2.89	3.65	3.70	3.75	3.73	2.86	--
Batting Average	62%	61%	66%	65%	63%	66%	66%	66%	67%	64%	--

Table A9: Non-US Small Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	10.15%	11.07%	11.62%	11.88%	10.96%	12.72%	12.39%	12.62%	12.65%	11.41%	6.26%
Trailing 1 Year Ann.	13.92%	17.14%	16.39%	17.13%	17.15%	16.54%	17.16%	16.48%	16.46%	15.51%	12.69%
Trailing 3 Year Ann.	15.78%	13.40%	14.37%	16.53%	17.18%	16.61%	16.58%	15.92%	16.04%	16.50%	10.62%
Trailing 5 Year Ann.	13.13%	12.00%	13.89%	13.71%	14.09%	14.74%	14.75%	14.19%	14.35%	14.12%	9.71%
Volatility Ann.	19.18%	18.52%	18.73%	18.03%	18.40%	18.27%	18.28%	18.34%	18.32%	18.72%	19.64%
Tracking Error	7.74%	6.65%	7.35%	8.06%	8.09%	7.58%	7.75%	7.47%	7.51%	7.66%	--
Sharpe Ratio	0.45	0.51	0.54	0.57	0.51	0.61	0.59	0.60	0.60	0.52	0.24
Information Ratio	0.50	0.72	0.73	0.70	0.58	0.85	0.79	0.85	0.85	0.67	--
T-Stat	2.04	2.82	2.88	2.70	2.28	3.34	3.09	3.33	3.33	2.67	--
Batting Average	61%	61%	63%	66%	61%	63%	64%	65%	64%	63%	--

Table A10: Global Large/Mid Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	8.72%	8.26%	8.64%	8.59%	8.80%	9.35%	9.42%	9.16%	9.20%	9.04%	7.11%
Trailing 1 Year Ann.	18.52%	17.41%	16.27%	15.75%	19.69%	18.40%	19.04%	17.57%	17.54%	18.59%	16.92%
Trailing 3 Year Ann.	10.93%	7.88%	8.51%	10.76%	11.07%	9.94%	10.80%	9.45%	9.35%	10.65%	9.46%
Trailing 5 Year Ann.	8.07%	6.10%	7.51%	7.25%	8.38%	7.68%	8.10%	7.65%	7.41%	8.34%	8.32%
Volatility Ann.	17.56%	16.59%	16.82%	16.29%	16.73%	16.51%	16.48%	16.45%	16.47%	17.01%	17.45%
Tracking Error	7.72%	6.47%	7.28%	7.87%	7.95%	7.56%	7.77%	7.44%	7.51%	7.84%	--
Sharpe Ratio	0.41	0.40	0.42	0.43	0.43	0.47	0.48	0.46	0.46	0.44	0.32
Information Ratio	0.21	0.18	0.21	0.19	0.21	0.30	0.30	0.28	0.28	0.25	--
T-Stat	0.89	0.63	0.80	0.67	0.82	1.13	1.13	1.03	1.05	0.98	--
Batting Average	58%	57%	54%	57%	55%	56%	58%	56%	56%	57%	--

Table A11: Non-US Large/Mid Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	8.35%	7.38%	7.90%	7.87%	7.94%	8.58%	8.64%	8.41%	8.49%	8.39%	6.23%
Trailing 1 Year Ann.	17.88%	17.78%	17.44%	15.48%	17.36%	16.96%	18.19%	16.81%	17.31%	17.70%	18.41%
Trailing 3 Year Ann.	9.40%	7.31%	7.39%	9.62%	9.01%	8.62%	9.71%	8.18%	8.37%	9.02%	8.89%
Trailing 5 Year Ann.	6.67%	4.29%	5.75%	5.56%	6.49%	6.10%	6.50%	5.80%	5.83%	6.84%	7.20%
Volatility Ann.	18.46%	17.46%	17.91%	17.23%	17.59%	17.45%	17.45%	17.45%	17.45%	17.90%	18.25%
Tracking Error	7.90%	6.70%	7.65%	8.06%	8.06%	7.81%	7.97%	7.69%	7.74%	7.97%	--
Sharpe Ratio	0.37	0.33	0.35	0.37	0.36	0.40	0.40	0.39	0.40	0.38	0.25
Information Ratio	0.27	0.17	0.22	0.20	0.21	0.30	0.30	0.28	0.29	0.27	--
T-Stat	1.15	0.61	0.87	0.75	0.83	1.17	1.18	1.09	1.13	1.10	--
Batting Average	61%	54%	56%	58%	58%	58%	59%	58%	58%	61%	--

Table A12: Emerging Markets Large/Mid Cap
Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_ LB	12M1 + RW_LB	Benchmark
Annualized Return	8.99%	7.00%	9.21%	8.58%	8.82%	9.20%	9.78%	9.12%	9.18%	8.96%	6.66%
Trailing 1 Year Ann.	13.82%	13.50%	14.43%	10.74%	12.98%	13.05%	14.39%	12.74%	13.19%	12.64%	19.22%
Trailing 3 Year Ann.	5.56%	4.42%	4.37%	7.43%	6.47%	6.32%	7.17%	5.81%	5.62%	5.75%	6.34%
Trailing 5 Year Ann.	5.20%	2.50%	4.10%	4.90%	5.30%	5.45%	6.02%	4.90%	4.82%	5.39%	5.22%
Volatility Ann.	21.37%	20.24%	20.81%	20.33%	20.55%	20.44%	20.50%	20.42%	20.43%	20.84%	20.97%
Tracking Error	9.00%	7.65%	8.67%	9.12%	9.23%	9.07%	9.18%	8.98%	9.02%	9.06%	--
Sharpe Ratio	0.35	0.27	0.37	0.34	0.35	0.37	0.40	0.37	0.37	0.35	0.24
Information Ratio	0.26	0.04	0.29	0.21	0.23	0.28	0.34	0.27	0.28	0.25	--
T-Stat	1.14	0.09	1.20	0.82	0.94	1.11	1.36	1.08	1.10	1.06	--
Batting Average	58%	53%	57%	60%	59%	58%	58%	58%	59%	59%	--

Appendix 4: Quarterly Rebalanced, Market Cap Weighted

Table A13: US Large Cap

July 1986 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	11.13%	9.35%	10.09%	12.05%	10.30%	10.61%	10.43%	10.69%	10.87%	11.16%	10.93%
Trailing 1 Year Ann.	21.26%	-0.02%	8.82%	2.96%	4.22%	1.82%	2.94%	4.46%	4.98%	12.51%	16.24%
Trailing 3 Year Ann.	22.60%	8.47%	21.63%	22.97%	17.04%	19.28%	18.83%	22.21%	22.52%	21.98%	19.93%
Trailing 5 Year Ann.	14.88%	13.13%	18.69%	15.51%	12.39%	15.83%	14.83%	17.95%	18.22%	15.30%	16.25%
Volatility Ann.	20.28%	19.88%	19.37%	20.06%	19.80%	20.02%	19.60%	20.30%	20.21%	20.19%	16.38%
Tracking Error	9.30%	9.12%	8.08%	9.38%	9.07%	9.06%	8.79%	9.16%	9.11%	9.24%	--
Sharpe Ratio	0.40	0.32	0.36	0.45	0.37	0.38	0.38	0.38	0.39	0.40	0.48
Information Ratio	0.02	-0.17	-0.10	0.12	-0.07	-0.04	-0.06	-0.03	-0.01	0.02	--
T-Stat	0.61	-0.56	-0.20	1.11	0.03	0.24	0.07	0.32	0.42	0.61	--
Batting Average	54%	44%	51%	54%	53%	54%	54%	52%	53%	56%	--

Table A14: US Small Cap

July 1986 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	11.13%	9.41%	10.20%	11.73%	10.63%	11.01%	11.11%	10.83%	10.85%	11.27%	10.35%
Trailing 1 Year Ann.	14.13%	-3.38%	9.16%	11.62%	11.56%	6.19%	7.14%	6.79%	6.01%	13.08%	7.42%
Trailing 3 Year Ann.	13.82%	3.58%	7.59%	13.17%	12.24%	10.18%	10.60%	9.73%	9.52%	11.89%	9.71%
Trailing 5 Year Ann.	12.64%	9.76%	11.76%	13.48%	11.94%	13.01%	13.24%	13.19%	12.88%	13.01%	10.84%
Volatility Ann.	23.12%	23.52%	22.98%	22.17%	22.50%	22.83%	22.74%	23.03%	23.00%	23.03%	21.06%
Tracking Error	8.48%	8.21%	7.52%	7.98%	8.70%	8.16%	8.23%	7.96%	8.02%	8.50%	--
Sharpe Ratio	0.35	0.27	0.31	0.39	0.34	0.35	0.36	0.34	0.34	0.36	0.35
Information Ratio	0.09	-0.11	-0.02	0.17	0.03	0.08	0.09	0.06	0.06	0.11	--
T-Stat	0.86	-0.26	0.23	1.18	0.41	0.76	0.80	0.68	0.68	0.93	--
Batting Average	55%	48%	52%	56%	54%	53%	52%	51%	51%	54%	--

Table A15: US Large Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	8.85%	9.56%	9.81%	10.74%	8.19%	9.49%	9.37%	10.40%	9.88%	8.67%	10.76%
Trailing 1 Year Ann.	20.19%	-0.06%	7.58%	2.88%	4.02%	1.92%	2.58%	3.53%	3.43%	12.28%	16.04%
Trailing 3 Year Ann.	21.30%	9.41%	21.00%	23.02%	17.76%	19.72%	19.32%	22.11%	21.80%	20.84%	19.81%
Trailing 5 Year Ann.	14.14%	13.69%	19.06%	15.75%	11.75%	15.90%	15.17%	18.21%	16.93%	13.64%	16.12%
Volatility Ann.	19.19%	19.46%	18.85%	19.07%	18.63%	19.14%	18.83%	19.39%	19.38%	19.03%	16.40%
Tracking Error	8.12%	8.87%	7.48%	8.42%	8.03%	8.06%	8.05%	8.03%	8.27%	8.24%	--
Sharpe Ratio	0.38	0.41	0.44	0.48	0.35	0.41	0.41	0.46	0.43	0.37	0.56
Information Ratio	-0.24	-0.14	-0.13	0.00	-0.32	-0.16	-0.17	-0.05	-0.11	-0.25	--
T-Stat	-0.70	-0.29	-0.28	0.24	-1.11	-0.38	-0.48	0.10	-0.16	-0.80	--
Batting Average	53%	47%	46%	54%	49%	54%	54%	51%	53%	56%	--

Table A16: US Small Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	8.95%	8.70%	8.64%	10.04%	8.54%	9.35%	9.13%	9.35%	9.32%	9.25%	9.09%
Trailing 1 Year Ann.	19.02%	-1.97%	12.49%	14.26%	15.26%	10.09%	10.64%	9.63%	8.99%	17.18%	9.15%
Trailing 3 Year Ann.	16.89%	3.60%	9.09%	14.87%	14.59%	11.69%	12.22%	11.14%	11.09%	14.81%	10.18%
Trailing 5 Year Ann.	15.57%	10.70%	13.81%	16.48%	14.84%	15.24%	15.10%	15.44%	14.98%	15.60%	11.46%
Volatility Ann.	23.14%	23.49%	22.64%	21.55%	22.12%	22.52%	22.44%	22.57%	22.61%	22.82%	21.92%
Tracking Error	7.75%	7.92%	7.16%	7.14%	8.06%	7.39%	7.30%	7.20%	7.15%	7.70%	--
Sharpe Ratio	0.32	0.30	0.31	0.39	0.32	0.35	0.34	0.34	0.34	0.34	0.34
Information Ratio	-0.02	-0.05	-0.06	0.13	-0.07	0.03	0.01	0.04	0.03	0.02	--
T-Stat	0.08	-0.03	-0.17	0.51	-0.25	0.22	0.10	0.23	0.22	0.20	--
Batting Average	58%	48%	47%	61%	54%	52%	54%	49%	49%	56%	--

Table A17: Global Small Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	8.74%	8.54%	8.67%	9.62%	8.48%	9.18%	9.11%	9.27%	9.19%	9.13%	7.79%
Trailing 1 Year Ann.	13.84%	9.98%	11.40%	13.56%	13.44%	11.33%	11.47%	11.63%	11.63%	12.45%	14.20%
Trailing 3 Year Ann.	17.03%	10.16%	11.65%	15.82%	15.87%	13.62%	14.14%	13.05%	13.36%	15.94%	12.97%
Trailing 5 Year Ann.	14.72%	11.48%	12.78%	14.43%	13.78%	13.69%	13.77%	13.51%	13.62%	14.45%	11.57%
Volatility Ann.	21.91%	22.03%	21.54%	20.67%	21.25%	21.45%	21.35%	21.39%	21.41%	21.67%	20.68%
Tracking Error	7.58%	5.87%	6.13%	7.32%	7.56%	6.82%	7.03%	6.59%	6.67%	7.18%	--
Sharpe Ratio	0.33	0.32	0.33	0.39	0.32	0.35	0.35	0.36	0.36	0.35	0.30
Information Ratio	0.13	0.13	0.14	0.25	0.09	0.20	0.19	0.22	0.21	0.19	--
T-Stat	0.71	0.75	0.76	1.08	0.49	0.99	0.91	1.07	1.01	0.95	--
Batting Average	63%	61%	58%	62%	62%	59%	59%	61%	61%	62%	--

Table A18: EM Small Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	12.46%	10.00%	12.38%	13.61%	12.31%	12.95%	13.15%	12.87%	12.96%	12.47%	8.31%
Trailing 1 Year Ann.	6.88%	10.57%	5.60%	4.80%	4.63%	6.51%	6.03%	7.95%	7.87%	4.23%	8.03%
Trailing 3 Year Ann.	22.77%	16.84%	18.20%	22.78%	21.20%	20.31%	20.37%	20.39%	20.88%	21.33%	14.19%
Trailing 5 Year Ann.	22.96%	17.26%	20.37%	23.65%	21.24%	21.29%	21.74%	21.11%	21.63%	22.10%	15.01%
Volatility Ann.	26.77%	26.00%	26.21%	26.28%	26.01%	26.14%	26.24%	26.48%	26.51%	26.34%	25.24%
Tracking Error	8.27%	7.74%	7.34%	8.79%	8.69%	8.39%	8.40%	8.03%	8.13%	8.48%	--
Sharpe Ratio	0.41	0.32	0.41	0.46	0.41	0.44	0.44	0.43	0.43	0.41	0.27
Information Ratio	0.50	0.22	0.55	0.60	0.46	0.55	0.58	0.57	0.57	0.49	--
T-Stat	2.36	1.09	2.52	2.69	2.08	2.48	2.58	2.59	2.61	2.25	--
Batting Average	63%	59%	71%	70%	67%	70%	71%	72%	72%	66%	--

Table A19: Non-US Small Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	9.60%	9.35%	9.38%	10.68%	9.52%	10.32%	10.27%	10.18%	10.25%	10.32%	7.08%
Trailing 1 Year Ann.	16.38%	17.71%	15.66%	17.97%	14.61%	15.85%	16.01%	16.62%	16.56%	16.26%	17.47%
Trailing 3 Year Ann.	19.64%	14.42%	14.90%	17.84%	18.34%	16.09%	16.75%	16.33%	16.60%	19.02%	13.84%
Trailing 5 Year Ann.	16.56%	14.25%	14.91%	15.80%	15.63%	15.67%	15.88%	15.70%	15.91%	16.79%	11.60%
Volatility Ann.	22.80%	22.90%	22.00%	21.56%	22.06%	22.11%	22.04%	22.17%	22.13%	22.51%	21.56%
Tracking Error	8.00%	6.24%	6.70%	7.97%	8.14%	7.33%	7.55%	7.06%	7.18%	7.65%	--
Sharpe Ratio	0.35	0.34	0.35	0.42	0.36	0.40	0.39	0.39	0.39	0.39	0.26
Information Ratio	0.31	0.36	0.34	0.45	0.30	0.44	0.42	0.44	0.44	0.42	--
T-Stat	1.51	1.74	1.54	1.92	1.36	1.96	1.87	1.96	1.96	1.93	--
Batting Average	63%	65%	62%	62%	65%	65%	66%	66%	65%	65%	--

Table A20: Global Large/Mid Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	7.15%	6.62%	7.85%	8.10%	6.84%	7.63%	7.71%	7.73%	7.71%	7.41%	8.00%
Trailing 1 Year Ann.	14.86%	1.65%	13.59%	6.41%	6.24%	5.95%	5.76%	6.87%	6.99%	12.62%	16.08%
Trailing 3 Year Ann.	14.67%	7.98%	16.46%	14.99%	11.75%	11.93%	13.33%	13.77%	13.48%	14.15%	15.00%
Trailing 5 Year Ann.	10.99%	10.26%	14.53%	11.98%	9.08%	10.93%	11.90%	12.31%	12.05%	11.27%	12.49%
Volatility Ann.	19.72%	19.84%	19.14%	19.20%	19.32%	19.56%	19.43%	19.63%	19.70%	19.60%	19.21%
Tracking Error	10.96%	10.68%	9.95%	10.47%	10.90%	10.55%	10.49%	10.53%	10.61%	10.77%	--
Sharpe Ratio	0.28	0.25	0.33	0.34	0.27	0.31	0.32	0.31	0.31	0.30	0.33
Information Ratio	-0.08	-0.13	-0.02	0.01	-0.11	-0.04	-0.03	-0.03	-0.03	-0.05	--
T-Stat	-0.24	-0.46	-0.03	0.09	-0.39	-0.07	-0.05	-0.03	-0.03	-0.15	--
Batting Average	53%	47%	48%	57%	51%	56%	53%	52%	52%	58%	--

Table A21: Non-US Large/Mid Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	5.68%	4.10%	4.86%	5.94%	5.60%	5.73%	5.72%	5.84%	5.83%	5.68%	5.66%
Trailing 1 Year Ann.	12.30%	9.58%	14.97%	15.31%	11.88%	14.85%	14.92%	15.30%	15.06%	14.02%	16.66%
Trailing 3 Year Ann.	11.36%	7.50%	7.66%	10.81%	10.92%	9.21%	10.15%	8.29%	8.42%	11.16%	10.45%
Trailing 5 Year Ann.	9.53%	5.95%	8.00%	9.52%	8.94%	8.23%	9.03%	7.95%	7.94%	9.58%	8.93%
Volatility Ann.	20.66%	21.06%	19.73%	20.04%	20.50%	20.66%	20.54%	20.55%	20.55%	20.59%	20.72%
Tracking Error	11.36%	11.17%	10.52%	11.06%	11.36%	10.92%	11.04%	10.94%	10.86%	11.06%	--
Sharpe Ratio	0.20	0.12	0.17	0.22	0.20	0.20	0.20	0.21	0.21	0.20	0.20
Information Ratio	0.00	-0.14	-0.08	0.03	-0.01	0.01	0.01	0.02	0.02	0.00	--
T-Stat	0.06	-0.53	-0.35	0.11	0.02	0.08	0.07	0.11	0.11	0.06	--
Batting Average	57%	43%	54%	57%	51%	57%	56%	57%	58%	57%	--

Table A22: Emerging Markets Large/Mid Cap
Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_ LB	12M1 + RW_LB	Benchmark
Annualized Return	6.54%	3.97%	6.69%	6.50%	6.49%	5.98%	6.23%	5.85%	5.81%	6.16%	6.02%
Trailing 1 Year Ann.	6.76%	4.57%	8.49%	6.37%	5.08%	6.34%	6.07%	4.86%	6.32%	6.31%	14.36%
Trailing 3 Year Ann.	5.93%	2.43%	2.80%	5.07%	5.82%	1.78%	2.63%	1.61%	1.46%	6.32%	5.82%
Trailing 5 Year Ann.	6.76%	1.83%	6.88%	5.60%	6.48%	3.83%	4.46%	3.90%	3.63%	6.04%	6.52%
Volatility Ann.	23.60%	23.92%	23.05%	23.29%	23.42%	23.31%	23.48%	23.37%	23.41%	23.77%	23.24%
Tracking Error	12.49%	12.36%	11.37%	12.34%	12.27%	12.61%	12.49%	12.88%	12.74%	12.63%	--
Sharpe Ratio	0.21	0.10	0.22	0.21	0.21	0.19	0.20	0.18	0.18	0.19	0.19
Information Ratio	0.04	-0.17	0.06	0.04	0.04	0.00	0.02	-0.01	-0.02	0.01	--
T-Stat	0.28	-0.61	0.28	0.23	0.24	0.04	0.15	0.00	-0.01	0.16	--
Batting Average	53%	46%	53%	54%	51%	56%	57%	54%	56%	48%	--

Appendix 4: Quarterly Rebalanced, Equal Weighted

Table A23: US Large Cap

July 1986 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	12.21%	10.02%	11.29%	12.81%	11.49%	11.51%	11.66%	11.52%	11.50%	12.15%	11.59%
Trailing 1 Year Ann.	20.08%	4.83%	13.11%	15.59%	14.69%	8.51%	11.07%	7.98%	8.55%	15.31%	14.89%
Trailing 3 Year Ann.	18.59%	8.48%	14.85%	18.77%	15.60%	14.08%	15.23%	13.89%	14.07%	16.96%	14.76%
Trailing 5 Year Ann.	14.39%	10.33%	15.26%	15.21%	12.36%	13.60%	13.76%	13.54%	13.45%	14.42%	12.79%
Volatility Ann.	21.71%	20.51%	20.14%	20.36%	21.21%	20.87%	20.68%	20.62%	20.71%	21.41%	18.81%
Tracking Error	10.79%	8.66%	8.79%	10.12%	11.01%	10.43%	10.37%	9.94%	10.10%	10.98%	--
Sharpe Ratio	0.42	0.34	0.41	0.48	0.40	0.41	0.42	0.41	0.41	0.43	0.45
Information Ratio	0.06	-0.18	-0.03	0.12	-0.01	-0.01	0.01	-0.01	-0.01	0.05	--
T-Stat	0.66	-0.80	-0.02	0.85	0.20	0.18	0.24	0.17	0.16	0.57	--
Batting Average	56%	48%	53%	54%	57%	50%	54%	51%	50%	56%	--

Table A24: US Small Cap

July 1986 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	12.22%	10.90%	11.76%	13.57%	11.77%	12.76%	12.87%	12.47%	12.50%	12.79%	11.65%
Trailing 1 Year Ann.	12.49%	-0.78%	7.98%	12.64%	10.87%	6.22%	7.60%	7.49%	7.01%	12.43%	7.71%
Trailing 3 Year Ann.	11.32%	3.17%	6.19%	12.54%	10.73%	8.60%	9.27%	8.55%	8.24%	10.51%	8.51%
Trailing 5 Year Ann.	13.28%	9.76%	12.37%	15.33%	12.98%	13.88%	14.51%	14.07%	13.89%	13.94%	10.27%
Volatility Ann.	23.56%	24.42%	23.47%	22.66%	23.00%	23.31%	23.14%	23.48%	23.47%	23.61%	22.85%
Tracking Error	9.33%	8.79%	8.70%	9.41%	10.14%	9.33%	9.54%	9.09%	9.20%	9.74%	--
Sharpe Ratio	0.39	0.32	0.37	0.46	0.38	0.42	0.42	0.40	0.40	0.41	0.38
Information Ratio	0.06	-0.09	0.01	0.20	0.01	0.12	0.13	0.09	0.09	0.12	--
T-Stat	0.48	-0.25	0.19	1.16	0.11	0.76	0.79	0.63	0.64	0.80	--
Batting Average	56%	48%	50%	58%	58%	54%	53%	55%	54%	56%	--

Table A25: US Large Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	8.53%	9.48%	9.59%	9.86%	8.01%	9.44%	9.22%	9.73%	9.66%	8.48%	10.17%
Trailing 1 Year Ann.	16.11%	3.10%	10.27%	12.35%	11.04%	6.67%	7.70%	5.69%	6.18%	11.44%	13.25%
Trailing 3 Year Ann.	16.14%	8.48%	13.70%	16.82%	13.93%	13.19%	13.70%	13.08%	13.05%	15.22%	14.23%
Trailing 5 Year Ann.	12.83%	9.51%	13.45%	13.82%	11.57%	12.41%	12.68%	12.44%	12.42%	12.63%	12.15%
Volatility Ann.	20.22%	20.09%	19.40%	18.86%	19.44%	19.57%	19.57%	19.58%	19.58%	19.80%	19.07%
Tracking Error	8.49%	7.19%	7.41%	8.48%	8.70%	8.17%	8.42%	8.00%	8.04%	8.62%	--
Sharpe Ratio	0.34	0.39	0.41	0.44	0.33	0.40	0.39	0.42	0.41	0.35	0.45
Information Ratio	-0.19	-0.10	-0.08	-0.04	-0.25	-0.09	-0.11	-0.06	-0.06	-0.20	--
T-Stat	-0.67	-0.28	-0.29	-0.16	-0.98	-0.31	-0.41	-0.17	-0.20	-0.73	--
Batting Average	49%	52%	52%	54%	53%	48%	51%	48%	48%	54%	--

Table A26: US Small Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	9.27%	9.08%	9.36%	10.74%	8.70%	10.09%	10.03%	10.03%	10.04%	9.92%	9.82%
Trailing 1 Year Ann.	15.84%	0.84%	11.13%	16.28%	12.68%	9.72%	11.75%	10.04%	10.07%	16.64%	7.93%
Trailing 3 Year Ann.	12.59%	3.05%	7.35%	14.10%	11.53%	9.77%	10.62%	9.31%	9.44%	12.71%	7.98%
Trailing 5 Year Ann.	14.88%	9.80%	14.11%	17.87%	14.38%	15.28%	16.11%	15.54%	15.08%	16.04%	9.55%
Volatility Ann.	23.45%	24.68%	23.05%	21.81%	22.19%	23.09%	22.84%	23.17%	23.21%	23.25%	23.55%
Tracking Error	8.53%	7.83%	8.20%	9.07%	9.22%	8.12%	8.39%	8.08%	7.93%	8.70%	--
Sharpe Ratio	0.33	0.30	0.34	0.42	0.32	0.37	0.37	0.36	0.36	0.36	0.35
Information Ratio	-0.07	-0.10	-0.06	0.10	-0.12	0.03	0.02	0.03	0.03	0.01	--
T-Stat	-0.26	-0.28	-0.28	0.26	-0.62	0.09	0.04	0.07	0.08	0.03	--
Batting Average	57%	49%	53%	65%	56%	54%	54%	54%	57%	59%	--

Table A27: Global Small Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	8.37%	8.79%	9.07%	9.96%	8.40%	9.61%	9.51%	9.72%	9.69%	9.18%	7.09%
Trailing 1 Year Ann.	13.54%	11.39%	12.01%	14.54%	12.88%	12.55%	12.84%	12.36%	12.31%	12.42%	14.07%
Trailing 3 Year Ann.	16.57%	10.59%	11.75%	16.24%	16.22%	14.32%	14.62%	13.80%	13.98%	16.18%	11.66%
Trailing 5 Year Ann.	14.37%	12.45%	13.83%	15.69%	14.20%	14.76%	14.88%	14.65%	14.66%	14.94%	10.55%
Volatility Ann.	22.16%	22.92%	22.01%	20.92%	21.31%	21.85%	21.71%	21.91%	21.89%	22.00%	22.26%
Tracking Error	9.24%	6.06%	7.38%	9.37%	9.48%	8.19%	8.61%	7.96%	8.03%	8.88%	--
Sharpe Ratio	0.31	0.32	0.34	0.40	0.32	0.37	0.37	0.37	0.37	0.35	0.25
Information Ratio	0.14	0.28	0.27	0.31	0.14	0.31	0.28	0.33	0.32	0.24	--
T-Stat	0.62	1.29	1.13	1.19	0.54	1.29	1.17	1.39	1.36	1.01	--
Batting Average	65%	65%	70%	67%	61%	63%	63%	66%	65%	65%	--

Table A28: EM Small Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	11.40%	9.83%	12.00%	13.21%	11.54%	12.55%	12.53%	12.59%	12.64%	11.47%	7.70%
Trailing 1 Year Ann.	3.55%	11.10%	6.62%	4.55%	3.00%	5.60%	5.32%	7.51%	7.15%	2.41%	6.80%
Trailing 3 Year Ann.	20.34%	16.15%	17.07%	21.34%	19.69%	19.82%	19.62%	19.37%	19.93%	19.91%	12.05%
Trailing 5 Year Ann.	19.19%	15.93%	18.23%	21.74%	18.36%	19.45%	19.63%	19.12%	19.71%	19.19%	12.68%
Volatility Ann.	25.62%	25.42%	25.58%	25.09%	24.89%	25.19%	25.17%	25.62%	25.60%	25.26%	25.45%
Tracking Error	8.91%	7.71%	7.94%	9.50%	9.35%	8.86%	9.05%	8.54%	8.70%	9.15%	--
Sharpe Ratio	0.38	0.32	0.41	0.46	0.40	0.44	0.44	0.43	0.43	0.39	0.24
Information Ratio	0.42	0.28	0.54	0.58	0.41	0.55	0.53	0.57	0.57	0.41	--
T-Stat	1.82	1.22	2.34	2.41	1.72	2.30	2.24	2.45	2.44	1.76	--
Batting Average	63%	61%	72%	75%	68%	70%	71%	73%	72%	67%	--

Table A29: Non-US Small Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	8.95%	9.46%	9.83%	11.00%	9.07%	10.71%	10.65%	10.65%	10.66%	10.06%	6.47%
Trailing 1 Year Ann.	12.76%	16.86%	13.92%	16.54%	11.80%	14.08%	14.39%	14.64%	14.34%	12.92%	15.70%
Trailing 3 Year Ann.	17.87%	13.59%	14.13%	17.70%	17.58%	16.00%	16.31%	15.91%	16.14%	17.74%	12.47%
Trailing 5 Year Ann.	14.80%	14.02%	15.03%	16.09%	14.77%	15.71%	15.80%	15.74%	15.90%	15.67%	10.64%
Volatility Ann.	22.78%	23.14%	22.22%	21.57%	21.98%	22.34%	22.19%	22.43%	22.43%	22.50%	22.79%
Tracking Error	9.36%	6.31%	8.09%	9.70%	9.79%	8.73%	9.07%	8.48%	8.58%	9.10%	--
Sharpe Ratio	0.32	0.34	0.37	0.44	0.34	0.41	0.41	0.40	0.40	0.38	0.21
Information Ratio	0.26	0.47	0.41	0.47	0.27	0.49	0.46	0.49	0.49	0.40	--
T-Stat	1.17	2.07	1.72	1.87	1.09	2.03	1.91	2.06	2.04	1.67	--
Batting Average	65%	67%	71%	73%	63%	66%	65%	68%	68%	68%	--

Table A30: Global Large/Mid Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	7.08%	6.21%	7.84%	8.54%	7.15%	7.92%	8.16%	8.11%	8.02%	7.53%	7.10%
Trailing 1 Year Ann.	17.62%	13.05%	16.49%	18.09%	16.43%	16.51%	17.02%	16.26%	16.20%	17.71%	18.61%
Trailing 3 Year Ann.	13.00%	6.11%	11.06%	14.06%	12.07%	11.08%	12.05%	10.82%	10.67%	12.95%	9.89%
Trailing 5 Year Ann.	10.17%	5.88%	10.69%	11.07%	9.67%	9.88%	10.67%	9.93%	9.59%	10.39%	9.14%
Volatility Ann.	19.78%	20.52%	19.39%	18.90%	19.26%	19.58%	19.41%	19.61%	19.64%	19.63%	18.88%
Tracking Error	8.39%	5.77%	6.62%	7.86%	8.37%	7.43%	7.63%	7.12%	7.27%	8.15%	--
Sharpe Ratio	0.28	0.23	0.32	0.37	0.29	0.32	0.34	0.33	0.33	0.30	0.29
Information Ratio	0.00	-0.15	0.11	0.18	0.01	0.11	0.14	0.14	0.13	0.05	--
T-Stat	0.12	-0.39	0.55	0.80	0.10	0.57	0.67	0.71	0.65	0.33	--
Batting Average	56%	49%	54%	59%	56%	57%	59%	58%	58%	57%	--

Table A31: Non-US Large/Mid Cap

Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_LB	12M1 + RW_LB	Benchmark
Annualized Return	6.76%	5.48%	7.04%	7.98%	6.70%	7.38%	7.48%	7.44%	7.41%	7.12%	6.19%
Trailing 1 Year Ann.	15.23%	16.31%	18.48%	17.48%	15.10%	17.60%	18.11%	17.91%	17.84%	16.96%	19.39%
Trailing 3 Year Ann.	11.16%	5.67%	9.91%	11.91%	10.57%	9.76%	10.58%	9.50%	9.60%	11.55%	8.67%
Trailing 5 Year Ann.	9.09%	4.11%	9.01%	9.56%	8.42%	8.52%	9.25%	8.51%	8.39%	9.24%	7.98%
Volatility Ann.	20.30%	21.56%	19.91%	19.66%	19.97%	20.36%	20.10%	20.36%	20.39%	20.26%	19.59%
Tracking Error	8.43%	6.15%	6.94%	7.97%	8.47%	7.49%	7.80%	7.28%	7.38%	8.19%	--
Sharpe Ratio	0.26	0.18	0.27	0.33	0.26	0.29	0.29	0.29	0.29	0.27	0.24
Information Ratio	0.07	-0.12	0.12	0.22	0.06	0.16	0.17	0.17	0.17	0.11	--
T-Stat	0.40	-0.20	0.58	0.98	0.33	0.79	0.79	0.84	0.82	0.59	--
Batting Average	59%	44%	58%	58%	58%	61%	58%	57%	57%	58%	--

Table A32: Emerging Markets Large/Mid Cap
Sept. 2005 – July 2025

	12M1	Trailing 3M	Trailing 6M	Trailing 9M	Trailing 12M	RW_LB	EW_LB	LW_LB	EXPW_ LB	12M1 + RW_LB	Benchmark
Annualized Return	7.14%	5.21%	8.48%	8.35%	7.17%	7.65%	8.00%	7.96%	7.75%	7.28%	6.50%
Trailing 1 Year Ann.	7.49%	13.98%	13.44%	8.73%	7.13%	10.31%	10.94%	11.60%	10.86%	9.14%	17.07%
Trailing 3 Year Ann.	6.26%	2.21%	7.14%	8.05%	6.18%	5.56%	6.71%	5.76%	5.16%	7.50%	4.81%
Trailing 5 Year Ann.	6.38%	1.37%	7.97%	7.47%	6.30%	6.09%	6.86%	6.44%	5.93%	6.91%	6.35%
Volatility Ann.	22.97%	23.92%	22.50%	22.49%	22.52%	22.63%	22.64%	22.60%	22.68%	23.00%	21.91%
Tracking Error	9.21%	7.15%	8.06%	8.79%	9.16%	8.52%	8.82%	8.36%	8.36%	9.05%	--
Sharpe Ratio	0.24	0.15	0.31	0.30	0.25	0.27	0.28	0.28	0.27	0.25	0.22
Information Ratio	0.07	-0.18	0.25	0.21	0.07	0.14	0.17	0.17	0.15	0.09	--
T-Stat	0.46	-0.47	1.13	0.99	0.42	0.69	0.83	0.84	0.75	0.53	--
Batting Average	56%	54%	61%	56%	58%	58%	59%	59%	61%	53%	--

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IMC is solely focused on helping clients build better portfolios through our Informed Momentum investment approach. This approach has been applied consistently across all strategies since the inception of the firm in 2007. The daily application of our systematic process is designed to deliver consistent and predictable results. Since our entire company works for a single objective, it only makes sense to align the name of our brand with exactly what we do every day.

We are the **Informed Momentum Company**.

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