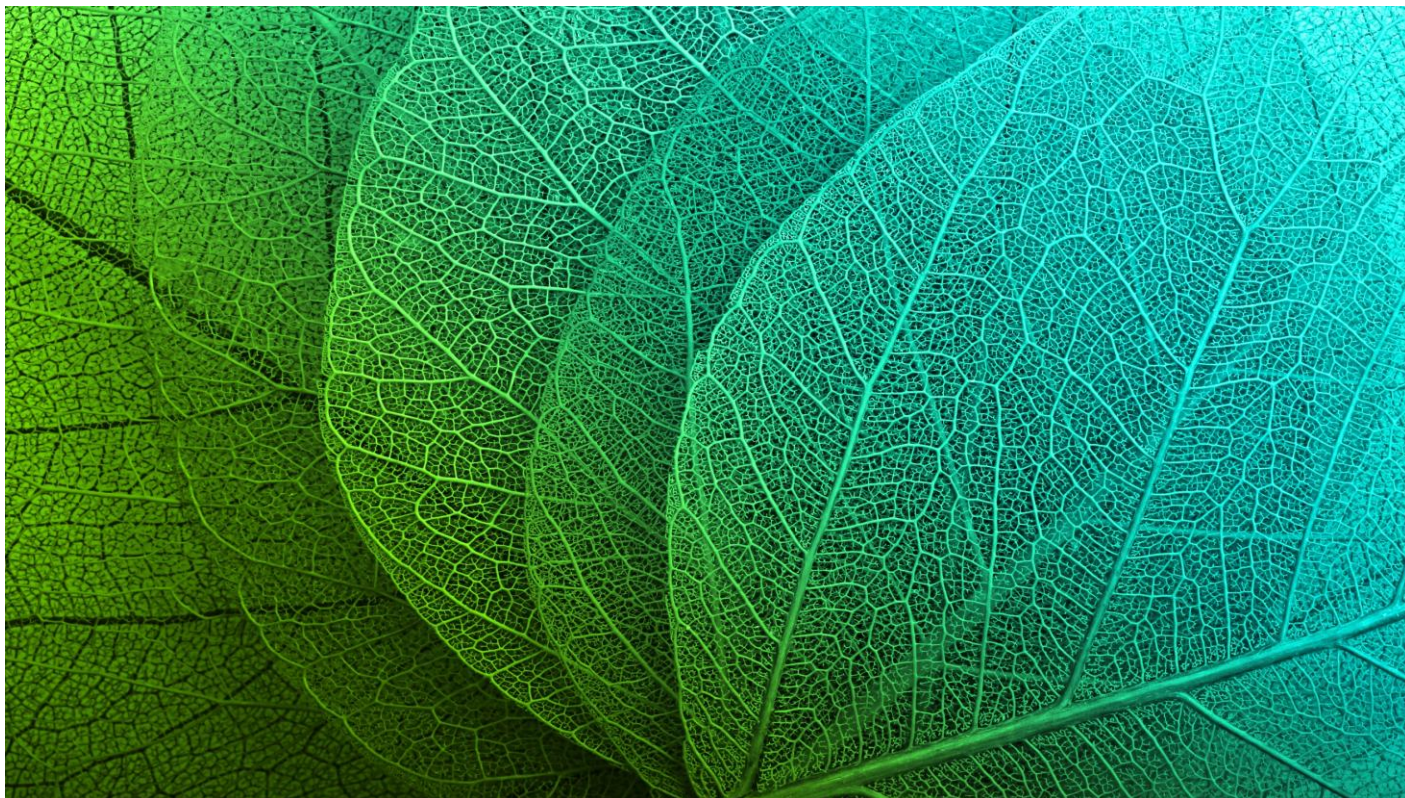




Index Research and Design | Equities

Revisiting the Value Factor

Value index construction is critical

July 2026

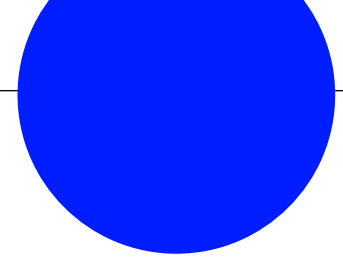
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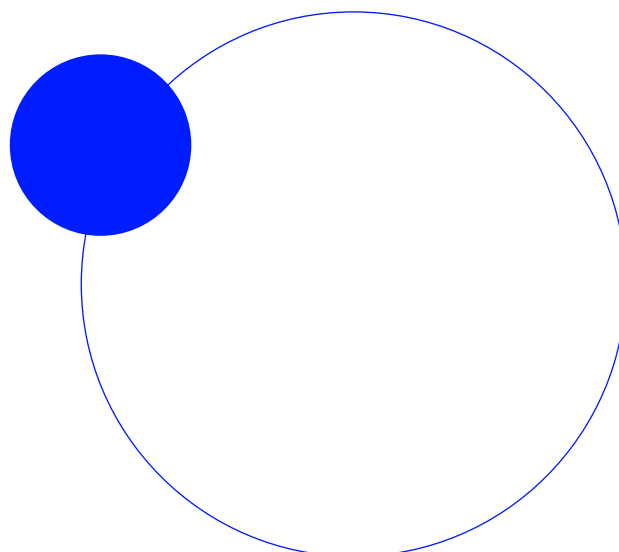
Overview

In response to a long period of Value factor underperformance, much has been published on a variety of approaches designed to “save” the Value factor. Our research suggests that the Value factor is fit for purpose and can provide significant excess return, provided the Value index is appropriately constructed. We recently demonstrated that our composite Value factor definition, unchanged since it launched in 2014, is still relevant, robust and aligned with the current academic and practitioner thinking.

Additionally, we illustrated that a correctly constructed Value index, with a Value target exposure of 0.4 and off-target exposures and industry/country bets neutralised produced a respectable information ratio of 0.43 compared to -0.03 for a non-neutralised version. While the excess return is only 0.32% pa for a Value exposure of 0.4, it rose to an economically significant and practical 1.43% at a Value exposure of 1.4.

This publication focuses on the FTSE Russell Value factor methodology; style index methodologies are outside its scope.

Our research does not simply validate whether the Value factor worked. It identifies the reasons why some traditional Value factor index definitions may be less effective, confirms the existing FTSE Russell definition of the Value factor, and demonstrates how benchmark-aware construction improves factor efficiency.



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1. Introduction

The value factor is one of the most extensively documented phenomena in empirical asset pricing. It is broadly defined as the tendency of stocks with low prices relative to fundamentals to outperform those with high relative valuations. Understanding of what constitutes “value,” and how it should be measured, has evolved considerably over time. The literature and practice have progressively moved from a reliance on single valuation ratios, most notably book-to-market, toward a more nuanced perspective emphasizing multi-dimensional and composite measures of value.

Early empirical asset pricing literature established the value effect using relatively simple metrics, with the book-to-price ratio (BPR) emerging as the dominant proxy. In their seminal contributions, Fama and French (1992, 1993) demonstrated that BPR, alongside firm size, can explain a substantial portion of the cross-section of average returns, which lead to the development of the three-factor model. In this framework, the value premium is captured by the high-minus-low (HML) factor, constructed using portfolios sorted on book-to-market. The findings proved remarkably robust across time and markets, established value as a unidimensional characteristic and positioned book-to-market as a sufficient statistic for capturing it. Subsequent work extended the evidence internationally (Fama and French, 1998; Rouwenhorst, 1999), and further reinforced the centrality of value in asset pricing.

Despite its empirical success, later research raised important questions regarding the adequacy of book-to-price as a standalone measure of value. One key issue concerns measurement error and accounting limitations, particularly as economic structures evolved. The increasing importance of intangible assets, such as intellectual property, brand capital, and R&D, have reduced the informativeness of book value as a proxy for firm fundamentals, thereby weakening the performance of traditional BP-based strategies in recent decades. At the same time, alternative valuation ratios, including earnings yield, cash flow yield, and enterprise value-based multiples, have been shown to contain distinct and incremental information about expected returns. Empirical evidence indicates that the magnitude and persistence of the value premium depend critically on how value is measured, with composite valuation measures producing more robust results than any single ratio.

Building on these insights, a growing strand of literature advocates for the use of multi-signal value measures, combining several valuation ratios to improve both statistical efficiency and economic performance. The rationale is that each valuation metric captures a different dimension of firm fundamentals and may be subject to idiosyncratic noise; aggregating them reduces measurement error and enhances signal quality. Evidence from valuation studies supports this view, demonstrating that composite multiples outperform individual metrics in predicting future prices and returns, particularly when weights reflect firm-specific characteristics. More recent empirical work further confirms that composite value factors, constructed from combinations of valuation ratios deliver superior risk-adjusted performance, including higher Sharpe ratios, relative to single-metric implementations.

The academic literature has evolved from viewing value as a single, well-defined anomaly captured by book-to-price, to recognizing it as a multi-faceted construct requiring composite measurement and interaction with other factors. The modern consensus thus emphasizes that the effectiveness of the value factor depends critically on how it is constructed, with multi-metric and multi-factor approaches providing a more robust and economically meaningful representation of value in financial markets.

A long period of underperformance of the Value factor relative to the market capitalisation indices gave rise to attempts to “fix” the Value factor and rising doubts that the Value premium exists.

In this paper we seek to substantiate and validate whether the FTSE Russell Value factor, designed in 2014 as a composite of three valuation ratios (cash flow yield, earning yield and sales-to-price), still serves its purpose and is in line with the current academic research and practice.

2. Data analysis

We limited our research to a popular universe of stocks: FTSE Developed Index over the period from 1 January 2006 to 31 December 2025. This covers a wide range of macroeconomic environments such as quantitative easing, falling and increasing interest rates, several market distress episodes, including the Global Financial Crisis and Covid-19.

We used the most recent historical data from Worldscope to calculate the history of the fundamental ratios: book-to-price, sales-to-price, cash flow-to-price, cash earnings to price, book-to-price, earnings yield (earnings-to-price) and our Value factor defined in FTSE Global Factor Index series ground rules.

The data coverage of the FTSE Developed Index universe is close to 100% for the whole period of our analysis, thus avoiding any bias that could result from filling in missing data or omitting stocks with missing data.

We noted that the valuation ratios have remarkable and quite stable country and industry biases.

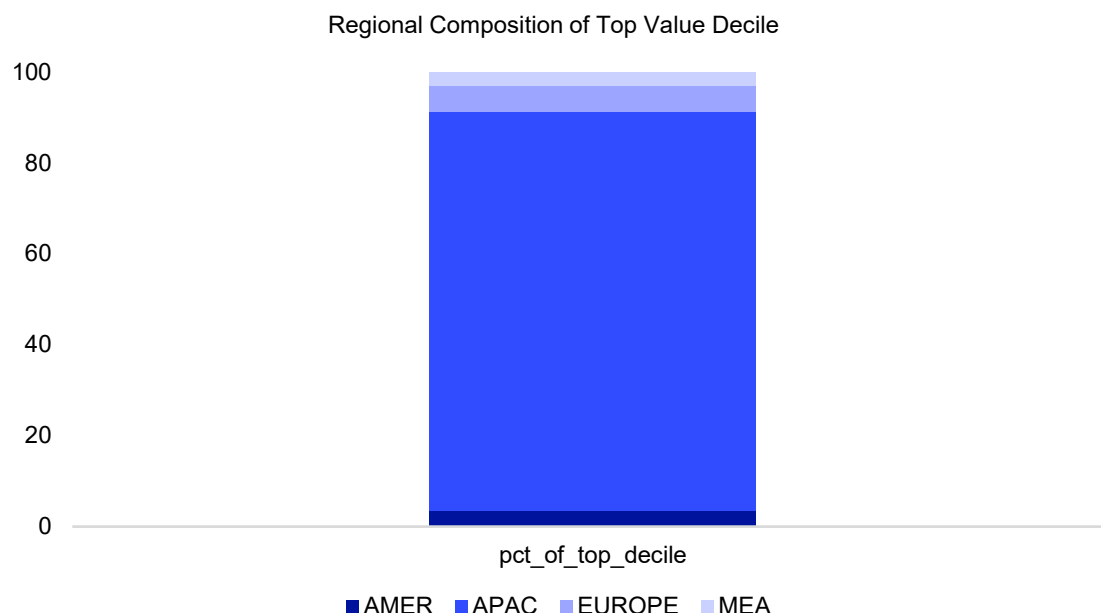
Chart 1 shows that, for example, PE ratios for industries remain mostly range bound over 20 years.

Chart 1: P/E Industry valuation rankings in 2006-2025

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Basic Materials	12.62	14.72	12.55	12.51	18.27	11.23	10.22	13.88	14.67	16.30	16.16	15.96	15.36	11.01	15.54	19.94	9.17	10.97	17.80	20.70
Consumer Discretionary	15.12	16.28	12.21	14.60	16.99	13.21	12.85	14.76	15.52	13.93	14.85	16.45	17.81	17.18	22.33	29.07	17.55	18.91	19.51	22.44
Consumer Staples	19.21	19.41	15.93	14.71	16.45	15.45	18.07	18.74	18.91	21.77	22.83	21.72	17.46	21.05	20.71	22.25	19.43	20.18	20.32	20.12
Energy	11.79	11.26	10.88	8.36	12.83	11.36	9.00	10.76	13.22	11.07	17.63	21.99	19.58	11.05	10.52	17.76	14.52	7.09	10.56	14.54
Financials	13.26	12.03	9.33	15.68	12.49	9.88	10.41	12.34	12.63	12.55	11.13	13.78	12.99	11.46	8.99	15.16	8.74	10.74	11.61	12.89
Health Care	19.82	18.27	15.61	13.33	11.77	12.95	13.92	16.23	20.41	20.44	17.64	18.22	19.97	20.23	21.72	25.67	17.13	18.28	24.70	21.58
Industrials	16.61	17.43	12.71	11.93	15.68	12.76	12.60	15.56	16.64	16.28	18.13	19.28	18.18	16.83	18.70	26.79	14.72	15.99	20.43	21.52
Real Estate	13.98	11.47	11.97	20.06	14.79	10.07	12.75	14.81	16.34	13.81	16.24	15.99	13.96	16.17	16.62	23.48	16.77	20.79	25.94	25.15
Technology	19.34	20.39	15.46	16.46	15.75	12.45	15.01	14.92	16.61	16.78	17.52	21.60	20.55	17.62	30.03	34.28	19.01	27.88	34.48	33.20
Telecommunications	14.22	17.49	10.96	10.98	10.62	9.91	11.84	13.82	11.65	13.21	13.54	13.71	12.79	12.21	12.24	12.41	9.28	10.02	13.58	14.53
Utilities	15.34	16.58	14.59	11.84	11.26	11.12	13.35	14.62	15.37	13.29	14.64	15.25	14.44	16.79	16.54	18.46	18.00	18.06	15.79	15.26

Source: FTSE Russell. FTSE Developed Index data from December 2005-December 2025. Past performance is no guarantee of future results

A combination of two valuation ratios produces even more stark regional bias as shown in Chart 2. It illustrates that the share of APAC in the “cheapest” 10% by combination of cash flow yield and earnings yield is almost 90% in 2025, a very strong geographical bias.

Chart 2: Geographical composition of top 10% of earnings yield and cash flow yield composite

Source: FTSE Russell. FTSE Developed Index data from December 2025. Past performance is no guarantee of future results

This observation is important in the context of Value index design and index performance.

Early approaches to the Value design did not distinguish between different industries or sectors, they were not assuming that there is cyclical or conversion of the average industry valuation ratios. That research was conducted almost exclusively on US stocks, so the country/regional variations were not covered or relevant.

As we see from Charts 1 and 2. Industry and country/regional variations are significant and need to be considered in index design.

If industry valuation rankings were highly cyclical, industry-agnostic Value might capture industry rotation. Instead, the charts suggest valuation rankings are persistent/range-bound, so industry tilts may represent structural exposure rather than clean Value alpha.

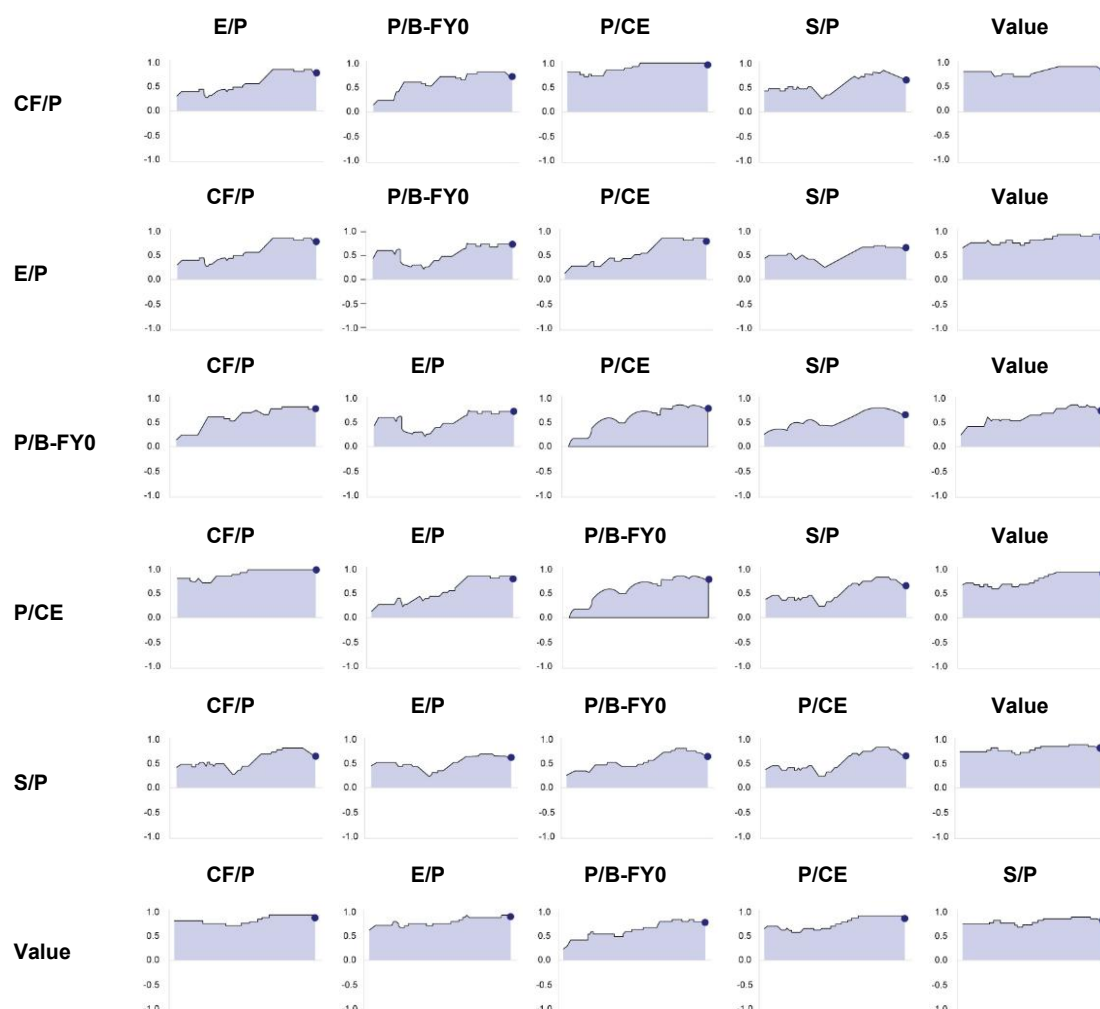
3. From valuation ratios to the Value factor

Using one or several ratios in the Value factor construction is another important consideration. As we mentioned in the introduction, a multi-ratio approach to the definition of the Value factor has mostly become the norm among practitioners.

Industry and country variations, as noted above is one of the reasons. Another good reason to combine several valuation ratios is that they do not necessarily point in the same direction as the performance correlation charts below illustrate. Note the correlations between sales to price (S/P) and earnings yield (E/P), where the correlation is hovering very low at around 0.5.

Chart 3: Performance correlation between valuation ratios and value factor

Rolling 3-Year Factor Correlations – AWD



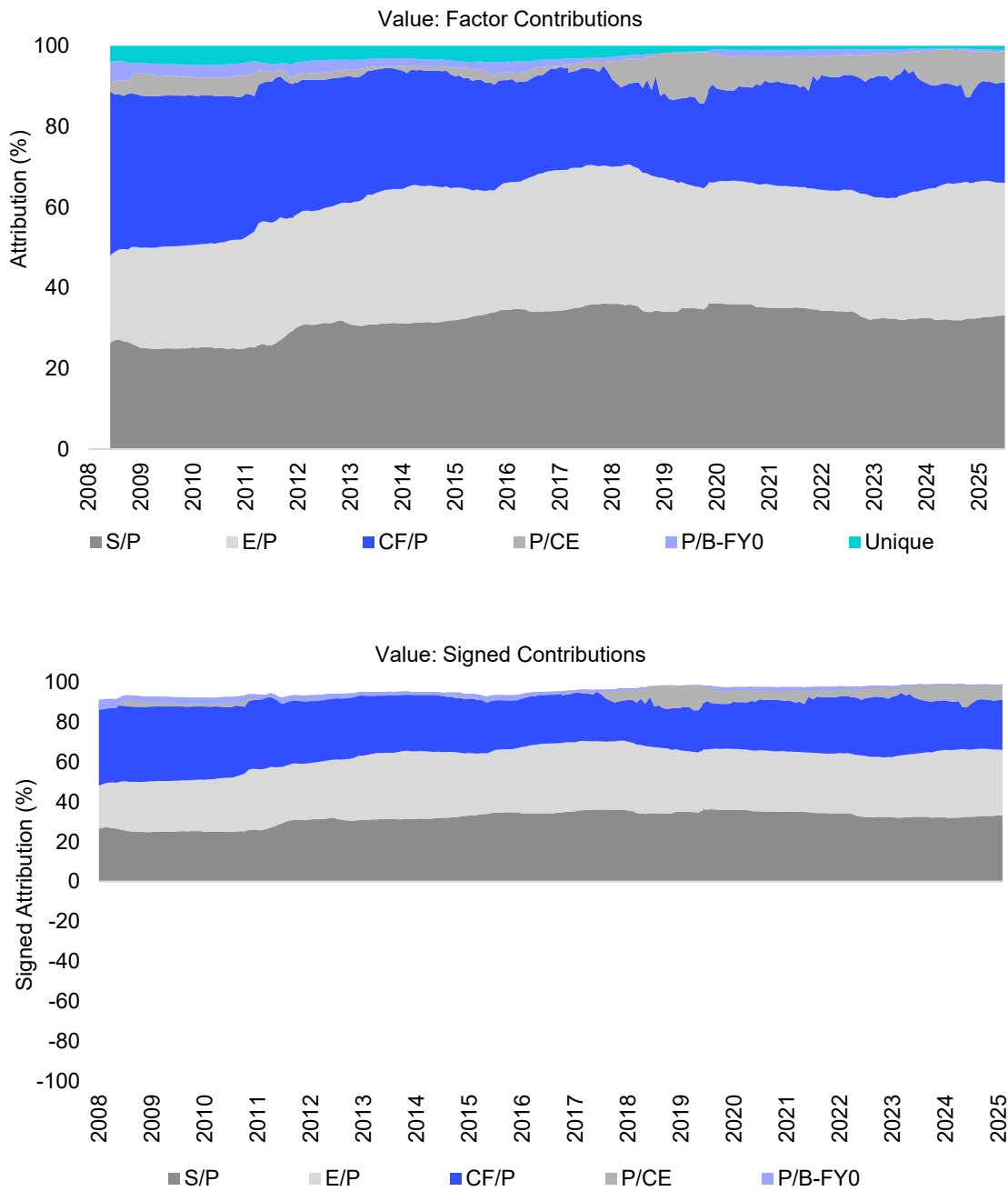
Source: FTSE Russell. FTSE Developed Index data from December 2006 to December 2025. Past performance is no guarantee of future results.

The low correlations mean that return patterns of Value factor indices defined by single ratios are quite different.

Another way to demonstrate the complementary nature of different valuation ratios is to decompose the returns of Value mimicking indices that were created using single valuation ratios and FTSE Russell's three-ratio Value index. Chart 4 vividly demonstrates the complementary nature of the returns of single ratio-based Value indices and FTSE Russell Value index. The charts show how much of the return of differently constructed Value index proxies can be explained by single ratio Value indices.

Chart 4: Return decomposition of the Value index using Value mimicking single ratio indices

Rolling 3- Year Factor Decomposition – AWD (2008-2025)

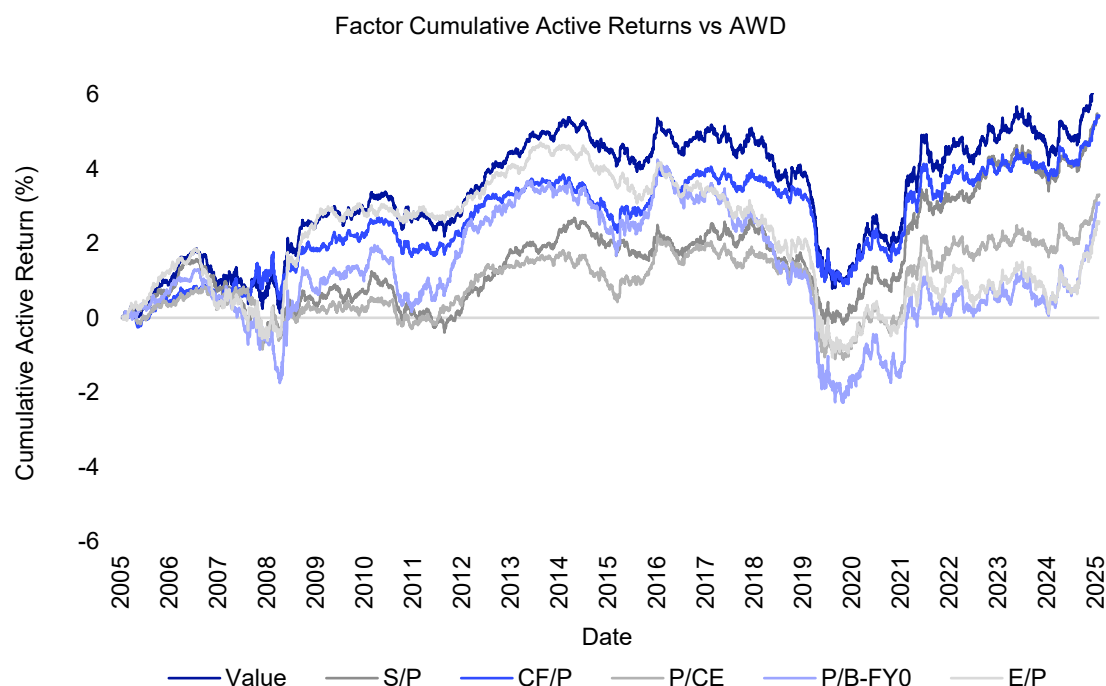


Source: FTSE Russell. FTSE Developed Index data from December 2005-December 2025. Past performance is no guarantee of future results.

Performance of our three-ratio Value factor is naturally almost fully explained by performance of the three components: earnings yield, cash-flow yield and sales-to-price. In our composite Value factor definition, we did not include traditional book-to-market measure, to make it less vulnerable to mismeasurement of intangibles and their accounting treatment. Consistent with expectations traditional book-to-market has an immaterial contribution to performance of our Value factor.

Although, it is not a selection criteria for the Value factor definition, incidentally, the performance of our composite Value index is superior to the single ratio indices, as indicated on Chart 5.

Chart 5: Performance of Value factor and single ratio value mimicking portfolios



Source: FTSE Russell. FTSE Developed index data from December 2005-December 2025. Past performance is no guarantee of future results.

4. Index design considerations

Having validated the complementary nature of different valuation ratios in our Value factor definition through their performance contributions, we move to index construction considerations.

In previous publications we noted that weighting methodology is not incidental to index design; it has profound impact on factor exposures and index performance. In the early days of factor research, it may have been easier to ignore as equity markets were less sophisticated at the time.

It can't be ignored now. To illustrate the point, we compared several indices constructed using the FTSE Russell multiple tilt methodology:

1. 0.75 Fixed tilt to Value (FT)
2. 0.4 Target exposure to Value (TE)
3. 0.4 Target exposure to Value with exposures to the other factors neutralised (TE_Fn)
4. 0.4 Target exposure to Value with exposures to the other factors neutralised and industry and country neutral exposures (TE_ICFn)

Table 1 below shows the performance characteristics of differently constructed Value indices compared to the underlying FTSE Developed index. They all have the same average exposure to Value. The difference in performance is dramatic.

Table 1: Performance characteristics of differently constructed value indices

	FTSE Developed Index	FT	TE	TE_Fn	TE_ICFn
Performance (USD)					
Geo. Return p.a. (%)	9.05	8.99	9.03	9.19	9.40
Volatility p.a. (%)	16.18	16.44	16.55	16.45	16.28
Risk/Reward Ratio	0.56	0.55	0.55	0.56	0.58
Max. Drawdown (%)	-57.37	-58.42	-59.07	-58.07	-57.78
Relative Return p.a. (%)	--	-0.05	-0.02	0.13	0.32
Tracking Error p.a. (%)	--	1.82	1.60	1.13	0.75
Information Ratio	--	-0.03	-0.01	0.11	0.43
Average Active Factor Exposures					
Value	--	0.41	0.40	0.40	0.40
Low Volatility	--	0.03	-0.01	-0.00	-0.00
Momentum	--	-0.11	-0.09	-0.00	-0.00
Size	--	0.02	0.03	0.00	0.00
Quality	--	-0.04	-0.05	-0.00	-0.00

Source: FTSE Russell. FTSE Developed index data from December 2005-December 2025. Past performance is no guarantee of future results

TE produces a small improvement to FT as they have similar factor exposures with fixed tilt of 0.75 and target exposure of 0.4 chosen so that the resulting factor exposures are similar on average. TE, however, has a more stable exposure to Value over time.

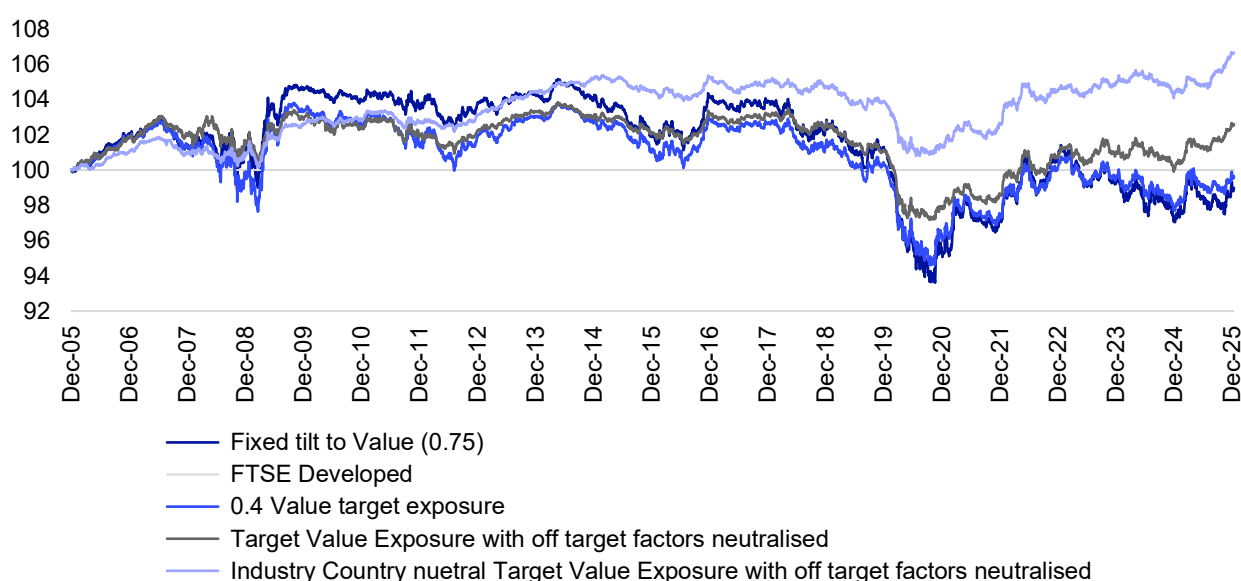
Neutralising target exposures in TE_Fn significantly improves performance as the off-target factor exposures were a drag on the index performance of TE.

As noted in section 2, Data analysis, industry valuations are range bound and a simple value sort brings in regional biases. Removal of Industry and country biases in TE_ICFn index further improves index performance.

Some practitioners appear to accept as fact that Value can be harvested through industry cycles. Using that assumption, the industry-agnostic implementation to index construction would be to overweight Financials and underweight Technology and the outcome of this approach is underperformance. Industry and country neutrality allow Value to be measured more cleanly within-peer stock-selection effect, rather than as a package of sector, regional and style bets.

Industry/country/factor neutralisation also reduces structural bias that can arise from intangible-heavy industries and regions. Although, the neutralisation does not fully resolve the intangible issue, but offers a practical, robust alternative to fixing pure book-value definition.

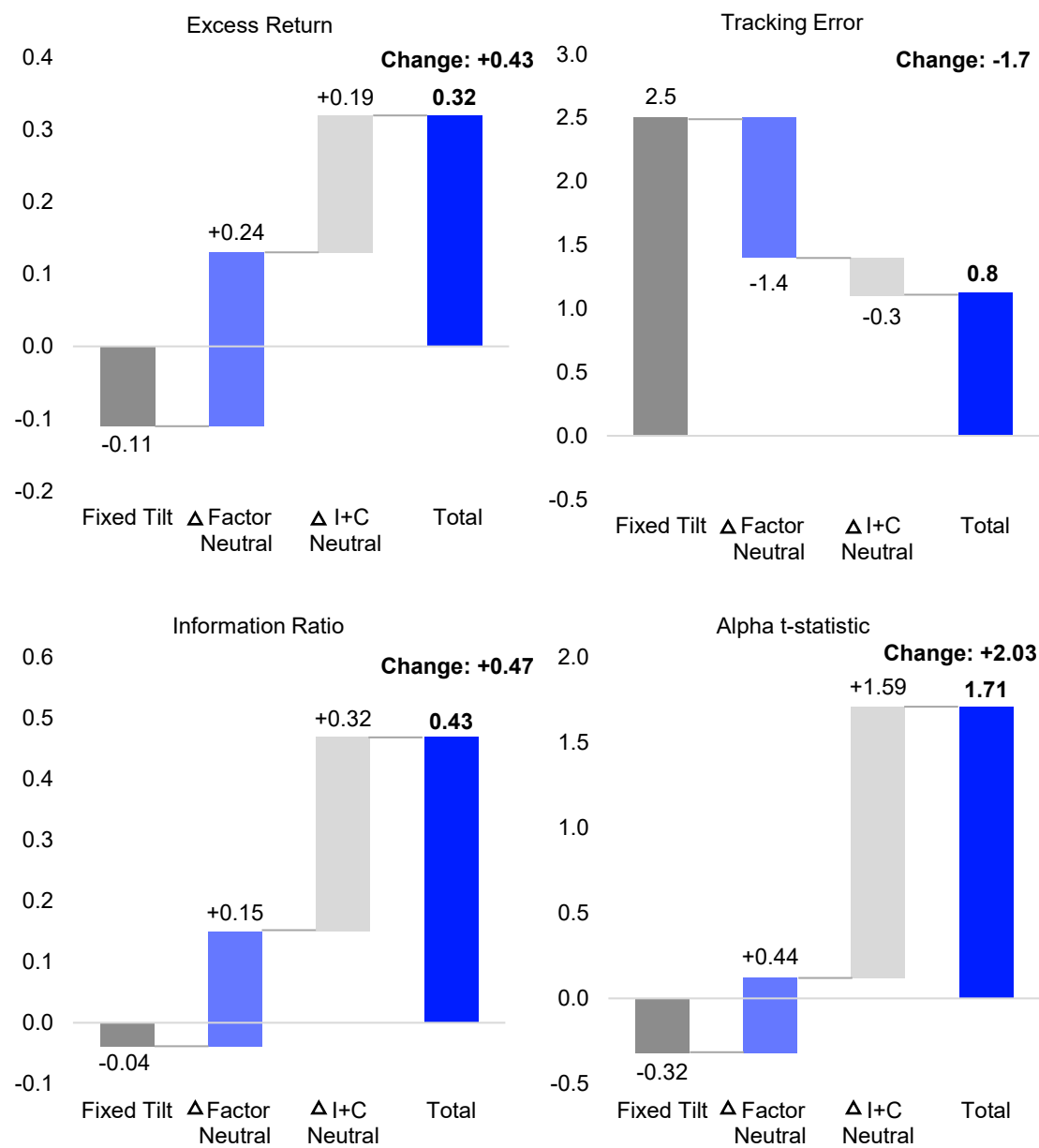
Chart 6: Relative performance of differently constructed Value factor indices



Source: FTSE Russell. FTSE Developed index data from December 2005-December 2025. Past performance is no guarantee of future results

It is remarkable that the performance of the Value index improves with neutralisation of factor, industry and country exposures and that tracking error also decreases and improves the information ratio from -0.04 to a notable 0.43 (Chart 7).

Chart 7: Incremental performance characteristics of differently constructed Value indices from unconstrained Fixed Tilt to neutralised Target Exposure



Source: FTSE Russell. FTSE Developed index data from December 2005-December 2025. Past performance is no guarantee of future results.

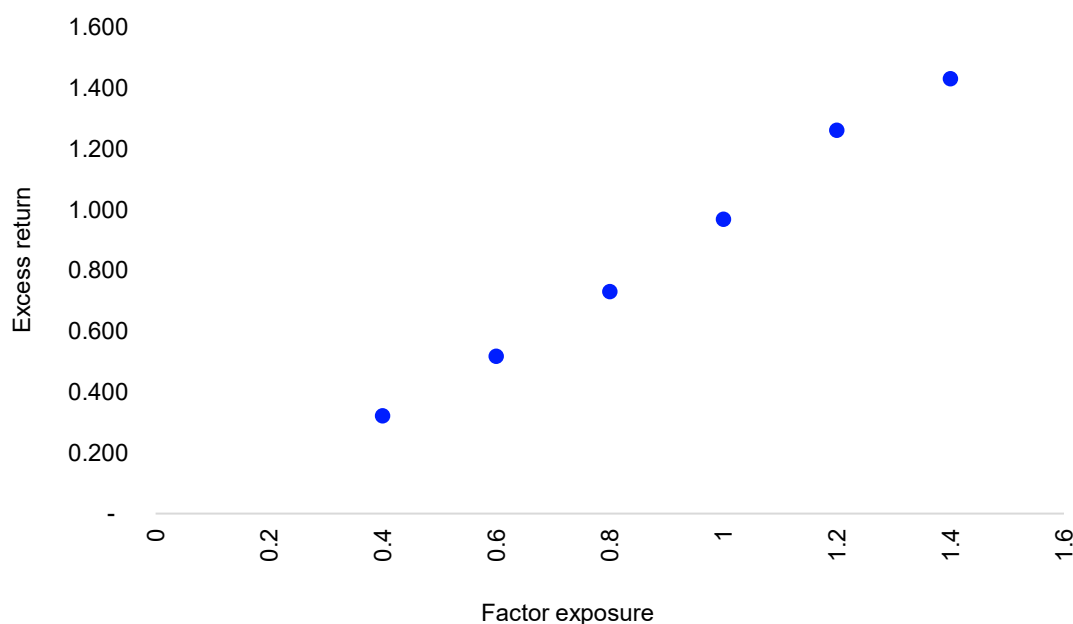
5. Practical implementation

Our research targeted a factor exposure of 0.4 (or fixed tilt to Value of 0.75, which produces similar factor exposure) and achieved excess return of 0.32% per annum over the market capitalisation benchmark. It can be argued that the target exposure is too small to be implemented in practice.

We therefore looked at increasing the target exposure to see if **a)** the excess return remains in place, and **b)** becomes large enough to be exploited.

Chart 8 illustrates that the correctly constructed (off -target factor exposures are removed and industry/country exposures neutralised) Value factor index maintains excess return with increased target factor exposures. The excess return monotonously increases from 0.32% pa for 0.4 Value target exposure to 1.43% pa for 1.4 Value target exposure. This return is large enough to be considered in a practical implementation. What is also remarkable, is that the information ratio increased for factor exposures up to 1.2 before decreasing.

Chart 8: Excess return of correctly constructed single factor Value index vs its target Value exposure



Source: FTSE Russell. FTSE Developed index data from December 2005-December 2025. Past performance is no guarantee of future results.

The trade-off of increased factor exposure for increase excess return is the portfolio turnover, as per Table 2. If we assume a reasonable 20bp trading cost for one way, for the developed universe, the return post trading costs maintains its significance and increases with increased factor exposure. Even after tripling the trading costs to 60bp, the excess return remains positive after the costs.

Table 2: Performance characteristic of Value factor indices with industry/country exposures and off-target factor exposures neutralised

Value Factor Exposure	Tracking error	Excess return, % pa	Information ratio	Alpha t-statistic	One way turnover, %	Excess return post trading costs (20bp)	Excess return post trading costs (60bp)
0.4	0.751	0.322	0.429	1.71	26.41	0.22	0.00
0.6	1.117	0.518	0.464	1.90	37.94	0.37	0.06
0.8	1.494	0.731	0.489	2.03	49.83	0.53	0.13
1.0	1.891	0.969	0.513	2.16	62.31	0.72	0.22
1.2	2.320	1.262	0.544	2.33	75.83	0.96	0.35
1.4	2.817	1.432	0.508	2.16	91.66	1.07	0.33

Source: FTSE Russell. FTSE Developed index data from December 2005-December 2025. Past performance is no guarantee of future results

6. Conclusion

After a long period of underperformance, we observed a recovery in the performance of the Value factor beginning in early 2020 and a resurgence in interest in Value investing in general.

FTSE Russell's Value factor definition, unchanged since 2014, remains topical and reflective of the Value factor performance. Moreover, our definition is in line with the academic research that supports combining multiple valuation ratios rather than using a single valuation ratio for factor definition. Our definition of value specifically does not include book-to-price ratio, which is vulnerable to treatment and valuation of intangibles.

Finally, construction of factor indices is critical for capturing factor performance. Neutrality on industry/country level and removal of the unintended factor exposures, other than Value, purifies the Value factor performance and results in significantly better performance.

Increasing Value exposure from 0.4 to 1-1.4 range with off-target factor exposures removed and industry/country exposures neutralised creates a Value index with robust performance statistics and economic material excess returns, after taking trading costs into consideration.

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