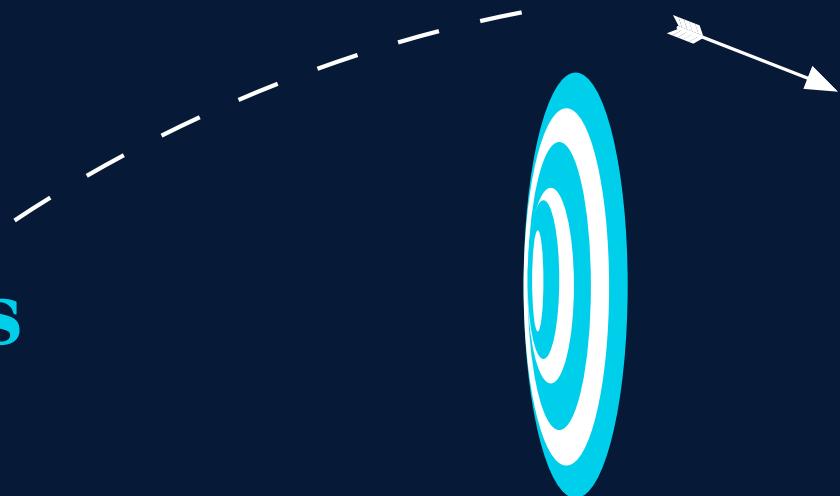


When valuation fails

From the Field



Key Insights

- Although the value style of equity investing has provided a return premium over the long run, that premium disappeared over the past two decades.
- U.S. value stock underperformance since the 2008–2009 financial crisis appears to stem from technological change and accounting practices for intangible assets.
- Relative valuation is still viable, but investors should consider the need to incorporate momentum, adjust for accounting, and follow technological trends.



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Understanding why investment strategies fail can provide valuable insights and help improve future investment approaches. To that end, we studied the failure of the relative valuation signal, which is used in many tactical asset allocation models.

Value and growth stocks often are distinguished by their book-to-market (B/M) ratios. Book value represents the company's worth according to accountants, while market value

represents investors' perceptions based on future earnings prospects. Stocks with high B/M ratios typically are viewed as "cheap," putting them in the value universe, while those with low ratios are "expensive"—a trait associated with growth companies. However, valuing a company is a complex task and requires forecasting future earnings potential and assessing risk.

From July 1926 through 2023, stocks with high B/M ratios outperformed those with

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Please refer to the full paper for specific study results and additional details on the methodology. On the web at: troweprice.com/content/dam/aem-email/ss/americas/pdf/2024/JPM_when_valuation_fails_Americas.pdf. The analysis performed is not based on actual investments. The analysis is for research purposes only.

low B/M ratios by an arithmetic average of 4.2% per year.¹ This return premium could be explained as compensation for risk, given that value stocks historically have tended to be more cyclical.

However, the value style has persistently underperformed since the 2008–2009 global financial crisis (GFC). As a result, over the past 20 years the value return premium has disappeared, with growth stocks outperforming value stocks by an average 1.4%² during that period, despite their low B/M ratios.

The apparent disappearance of the value premium has challenged tactical asset allocators who seek to use relative valuation metrics to overweight cheap and underweight expensive asset classes. This approach faces two big challenges:

- It isn't easy to catch turning points in relative valuation performance, which typically require some sort of external catalyst.
- Secular changes can create value traps. Relative to growth stocks, value stocks have gotten steadily cheaper over the last 20 years—a disheartening trend for investors counting on mean reversion.

Study methodology

Our study examined the implications of the failure of mean reversion for the value premium. We did this by back-testing 24 hypothetical portfolio scenarios that sought to overweight value stocks when they appeared relatively cheaper than growth stocks and vice versa. These hypothetical scenarios were derived from the size and style portfolios identified by Eugene Fama

and Kenneth French in their 1993 paper, "Common Risk Factors in the Returns of Stocks and Bonds."³

Each hypothetical scenario represented a different approach that a portfolio manager might take to valuation signals. Four of the scenarios focused on the rolling average of relative valuation over various periods. The other 20 were based on relative valuation percentiles. If the signal favored either value or growth, the hypothetical portfolio was fully allocated to that style. If the signal was neutral, the portfolio was assumed to be invested in a 50%/50% neutral mix. The relative valuation signal was lagged by one month.

Evaluating the results

For our study, we also developed a new methodology to evaluate back-tested performance. Traditional statistical measures are silent on the sensitivity of a model's performance to the choices of look-back periods and portfolio construction methodologies.

Our approach, which we call Data Mining Confidence Bands, complements traditional metrics. The upper and lower bounds of the bands correspond to the 10th and 90th percentiles of a scenario's hypothetical performance in any given month. Thus, they show the probable range of hypothetical performance at the 80% significance level. By not cherry-picking a favorable combination of hypothetical trading parameters, we believe this approach increased the transparency of our results.

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¹ Based on return data compiled by Professor Kenneth French, who sorted NYSE, AMEX, and Nasdaq stocks based on their book-to-market ratios to calculate a B/M return factor. The 30th and 70th percentiles of B/M ratios for NYSE stocks are the breakpoints used to sort stocks into the low B/M (growth) and high B/M (value) buckets. The 4.2% return premium for value stocks is an arithmetic mean calculated by subtracting the return factor for low B/M stocks from the return factor for high B/M stocks over the period shown.

² The 1.4% return premium for growth stocks over the past 20 years is also based on return data compiled by Professor Kenneth French.

³ Eugene F. Fama and Kenneth R. French, 1993, "Common Risk Factors in the Returns of Stocks and Bonds," *Journal of Financial Economics* 33 (1993) pp. 3–56.

Study results

We found that the back-tested scenarios delivered modest excess returns relative to the neutral mix after accounting for assumed trading costs. For purposes of the analysis, “outperformance” and “alpha” are the back-tested scenario’s performance relative to the neutral mix.⁴

A quarter of the hypothetical scenarios underperformed the benchmark over the full period. Most of the underperforming scenarios were characterized by long look-back periods—suggesting that investors should avoid comparing current valuations with the distant past.

The tectonic shift in style performance since the GFC highlights this lesson. Over the last 20 years, the average information ratio (IR) that we calculated across the 24 hypothetical scenarios indicated that the effectiveness of the relative valuation signal disappeared in the last two decades.

Taking momentum into account

We also tested whether accounting for momentum could have enhanced hypothetical performance, using 10 different momentum signals favoring whichever style (growth or value) outperformed the neutral mix in the recent past. The objective was to “buy” the relative valuation signal only if momentum supported it. The momentum signal also was lagged by one month.

We found that momentum adjustments improved the hypothetical performance of the relative valuation signals considerably. The most successful signals measured momentum in terms of trailing 6- and 12-month relative returns and the difference between 12- and 36-month relative returns. The worst outcome was based on rolling 36-month relative returns. This indicated that such a horizon likely is too long to capture momentum.

Momentum would have helped our hypothetical scenarios avoid value traps. Nonetheless, it was not enough to counter the structural headwinds in the post-GFC era. The average IR over the last 20 years was still low and close to the bottom of the historical range even after controlling for momentum.

What happened to value?

In our view, the underperformance of value stocks since the GFC can largely be attributed to technological advancement and the accounting treatment of intangible assets.

Growth companies, especially technology companies, tend to invest heavily in intangibles such as research and development. This can make their market value appear overvalued relative to their book value. Earnings and cash flows for many growth companies also have been understated because intangibles

are immediately expensed. Accounting practices have not adapted to this shift.⁵

Business fundamentals, like valuations, also have trended rather than mean reverted. Profitability in the growth universe steadily improved relative to the value universe over the past two decades as major tech platform companies operating in a digital world demonstrated sustained and exceptional growth.

Conclusions

Relative valuation models have failed over the last 20 years, partly due to technological progress and static accounting practices. However, while challenges remain, tactical allocation based on relative value is not dead. But it does require a more sophisticated approach, in our view.

Instead of following a rigid approach, we believe investors will need to make their own judgments about a variety of factors, including accounting adjustments, fundamental research, an understanding of technology trends, and macroeconomic and market sentiment indicators.

⁴ The time period covered by the analysis was August 1936 to March 2024. Results are as of March 2024.

⁵ See: Baruch Lev and Anup Srivastava, 2022, “Explaining the Recent Failure of Value Investing,” *Critical Finance Review*, Vol. 11, No. 2, pp. 333–360.

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