SANDHILL
INVESTMENT MANAGEMENT

Diversification Decay

“It’s absolute insanity to think owning 100 stocks instead of five makes you a better investor.” –Charlie Munger

Key Highlights

Diminishing Marginal Benefit: Increasing the number of stocks in a portfolio initially reduces volatility significantly, but research shows that beyond 20-30 stocks, this effect diminishes, indicating limited risk reduction from over-diversification.

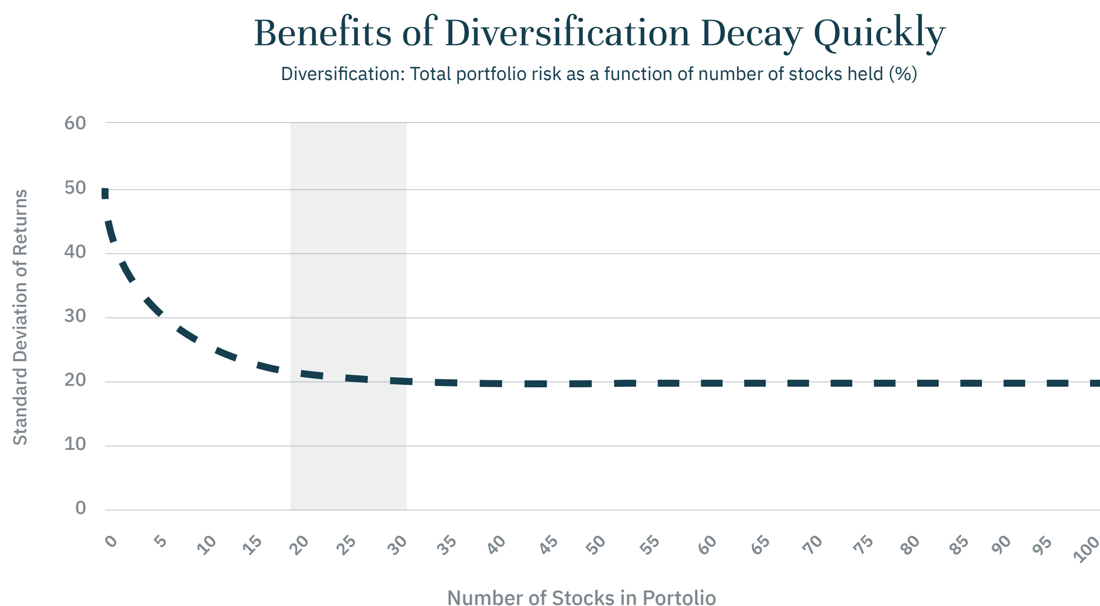
Reduction of Active Share: Top heavy indices, driven by a small number of large-cap stocks, constrain active managers’ diversification options and hinder their ability to deviate from benchmark composition, potentially limiting their flexibility and introducing tracking error challenges.

Top quartile of concentrated portfolios outperformed 7 of 9 Morningstar styles and all three growth categories in annualized returns (1994-2018). This underscores how excessive portfolio diversification can challenge active managers, hindering research on individual stocks and impeding timely reactions to market opportunities.

Diminishing Marginal Benefit

Despite the sense of reassurance that a broadly spread portfolio might bring by mirroring the market’s movements, it is crucial to recognize that this approach does not inherently safeguard your principal or cultivate your wealth. The relationship between the number of stocks in a portfolio and the reduction in portfolio volatility is not linear. Research has shown that adding stocks to a portfolio does lead to a significant decrease in volatility initially. However, beyond a certain point—often estimated to be around 20 to 30 stocks—the decline in portfolio volatility flattens. The marginal benefit of diversification diminishes as the portfolio becomes more diversified.

Exhibit 1: Diversification starts to plateau as portfolio count nears 20 holdings



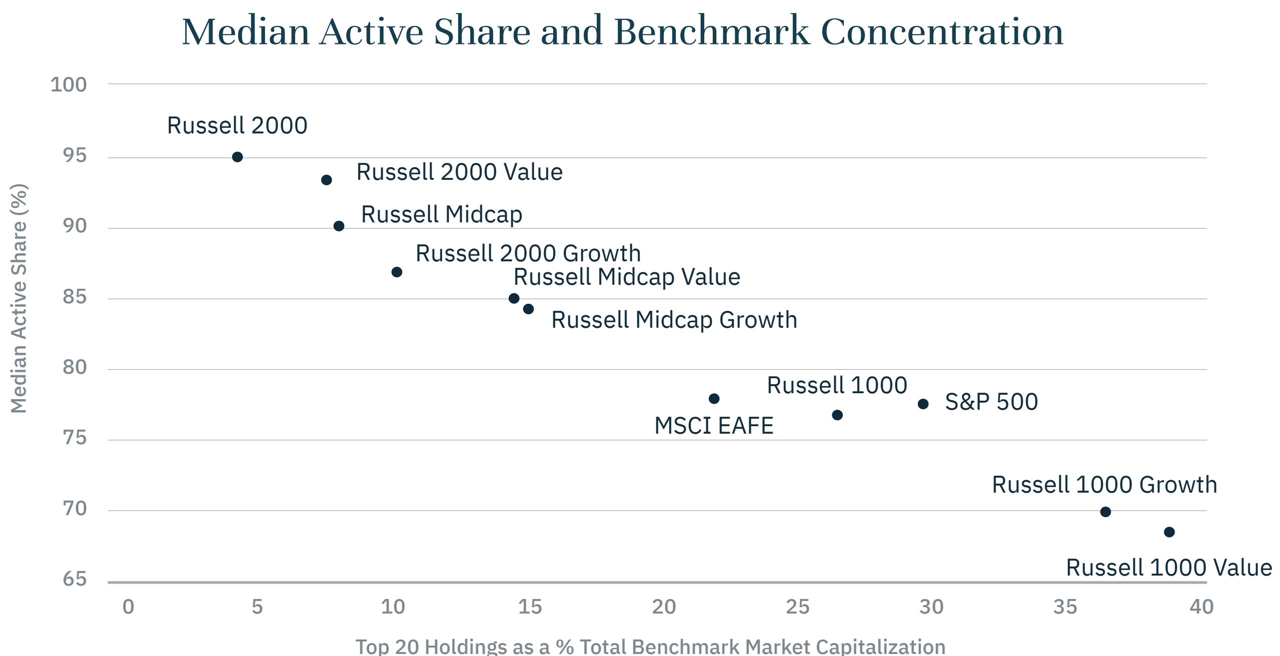
Source: J. Evans and S. Archer, “Diversification and the Reduction of Dispersion - an Empirical Analysis” Journal of Finance 12/1968; E. Elton and M. Gruber, “Risk Reduction and Portfolio Size: An Analytical Solution” The Journal of Business 10/1977

Reduction in Active Share

Active share is a measure of a portfolio's differentiation from a benchmark index; it does not serve as a proxy for excess return or manager skill. Top heavy indices, dominated by a few large-cap stocks, can limit the diversification potential for active managers attempting to beat their benchmarks. These indices often have a significant weighting assigned to a handful of prominent companies, which can hinder active managers' ability to deviate significantly from the benchmark composition.

Active managers benchmarked against such indices might find it challenging to deviate substantially from the benchmark's structure, as any deviation could result in significant tracking error. This constraint can reduce the active manager's flexibility to pursue potentially rewarding investment opportunities outside the highly concentrated top stocks.

Exhibit 2: Active share and concentration



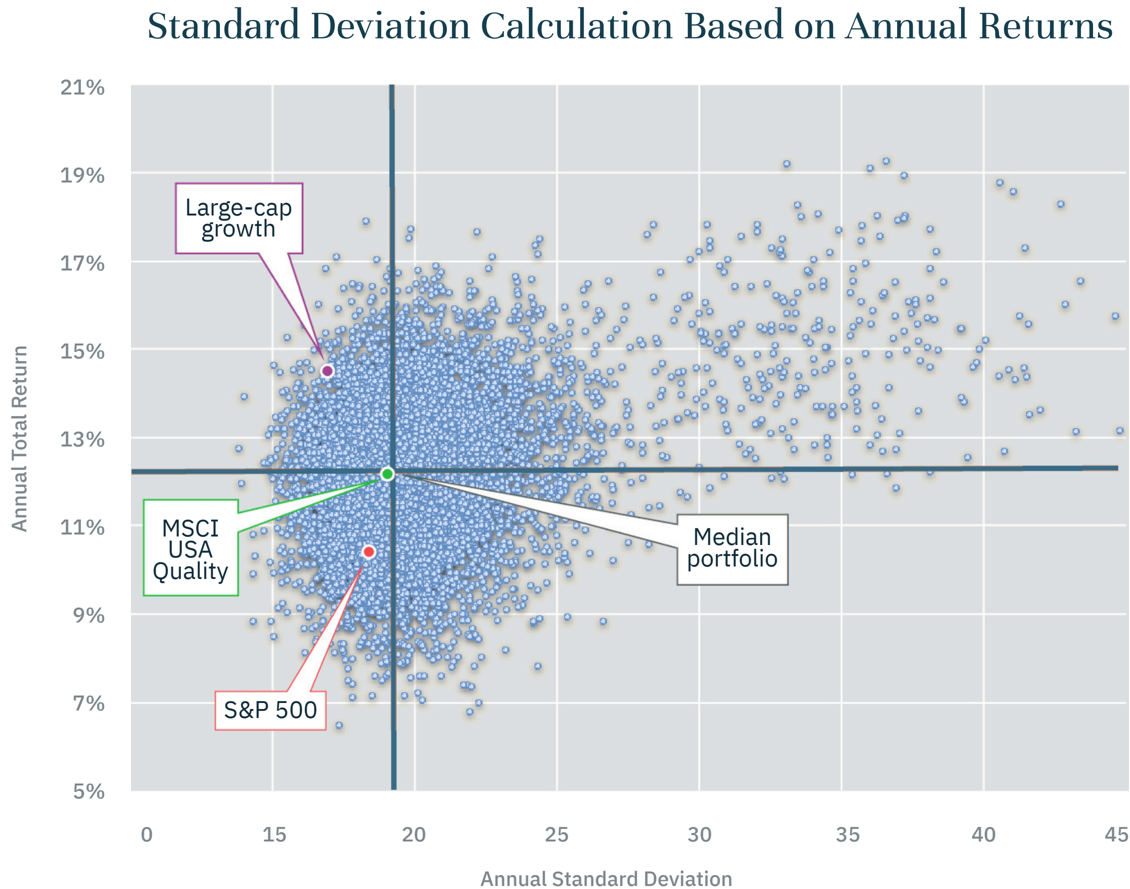
Benchmark concentrations and active share medians are a snapshot as of Mar. 28 2013. See appendix for important defnitions, data selection process, and calculation methodology. Source: Morningstar Direct (fund data, EAFE data), Thomson Reuters (fund holdings), FactSet (benchmark constituents, returns), RIMES (benchmark consitiuents), Fidelity Investments.

The Case for Concentration

The perception of concentrated investment managers as riskier is evolving. While concentrated portfolios may initially appear more volatile, they can achieve superior risk-adjusted returns. Combining concentration and quality in equity portfolios offers an optimal framework for competitive returns without excessive volatility.

From 1989 to 2014, FactSet conducted a study, revealing that even randomly constructed concentrated portfolios can outperform the market with reasonable volatility. This challenges the notion that quality must come at a premium, underscoring a changing view on concentration and risk.

Exhibit 3: Risk-reward study of highly concentrated 20 stock portfolios from 1989 to 2014



In a 2019 Morningstar study, an intriguing discovery emerged: portfolios that fell within the upper quartile of concentration—representing the top 25%—exhibited a remarkable prowess by outperforming a substantial majority of their counterparts.

Specifically, these focused portfolios surpassed the returns of 7 out of the 9 Morningstar style boxes, which serve as quintessential benchmarks for assessing investment strategies. Additionally, their superiority extended to all three growth categories. This performance assessment was conducted based on the lens of annualized returns, spanning the timeframe from 1994 to 2018.

In a world where every basis point matters, the study highlights potential drawbacks of an excessively diversified portfolio. While diversification is often touted as a prudent risk management strategy, the study's findings unveil a thought-provoking caveat for active managers.

Exhibit 4: Portfolio returns by concentration quartile

	Q1	Q2	Q3	Q4	Q4-Q1
Large Blend	8.97	8.48	8.37	8.64	-0.33
Large Growth	9.07	9.53	8.79	9.97	0.90
Large Value	9.22	8.91	8.82	9.40	0.18
Mid-Cap Blend	10.55	10.19	10.85	10.57	0.02
Mid-Cap Growth	9.87	10.17	9.68	10.16	0.29
Mid-Cap Value	10.37	10.88	10.63	10.34	-0.03
Small Blend	10.04	9.82	10.99	11.89	1.85
Small Growth	10.02	10.44	10.30	10.98	0.96
Small Value	10.31	10.65	10.75	11.36	1.04

Source: Morningstar. Data as of 12/31/2018

The Sandhill Difference

Our approach focuses intently on our most promising investment concepts those we perceive as offering the utmost security and the potential for optimal returns on our capital. The bedrock of investment security is built upon robust research, logical analysis, financial resilience, unwavering competitive footing, and astute valuation practices.

While diversification remains a fundamental concept in investment, our research highlights the diminishing benefits beyond a certain threshold. A strategic approach to portfolio construction that balances diversification with the ability to actively manage holdings is crucial for optimizing risk-return profiles.

Emphasizing a manageable number of holdings within the range of 20 to 30 stocks can potentially provide more pronounced risk reduction benefits and improved potential for active management effectiveness.

Conclusion

- Increasing stocks in a portfolio initially reduces volatility, but this benefit slows around 20-30 stocks, highlighting limited gains from over-diversification.
- Active share doesn't directly indicate returns; indices dominated by few large stocks limit diversification, hindering active managers' flexibility and increasing tracking error.
- Investors should strive for a balanced approach, focusing on maintaining a manageable number of holdings that allow for effective management and thoughtful decision-making.

References

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- https://www.fidelity.com/bin-public/060_www_fidelity_com/documents/leadership-series_active-share.pdf

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Definitions

Active share is a measure of the difference between a portfolio's holdings and its benchmark index.

Standard deviation measures the risk or volatility of an investment's return over a particular time period; the greater the number, the greater the risk.

All indexes are unmanaged and an individual cannot invest directly in an index. Index returns do not include fees or expenses.

The MSCI EAFE Index is an equity index which captures large and mid-cap representation across 21 Developed Markets countries* around the world, excluding the U.S. and Canada. With 798 constituents, the index covers approximately 85% of the free float adjusted market capitalization in each country.
The Russell 1000 Index measures the performance of the 1,000 largest companies in the Russell 3000.
The Russell 1000 Growth Index measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.
The Russell 1000 Value Index measures the performance of those Russell 1000 companies with lower price to-book ratios and lower forecasted growth values.
The Russell Midcap Index measures the performance of the mid-cap segment of the U.S. equity universe. The Russell Midcap Index is a subset of the Russell 1000 Index. It includes approximately 800 of the smallest securities based on a combination of their market cap and current index membership.
The Russell Midcap Growth Index measures the performance of the midcap growth segment of the U.S. equity universe. It includes those Russell Midcap Index companies with relatively higher price-to-book ratios, higher I/B/E/S forecast, medium-term (2 year) growth, and higher sales per share historical growth (5 years).
The Russell Midcap Value Index measures the performance of the midcap value segment of the US equity universe. It includes those Russell Midcap Index companies with relatively lower price-to-book ratios, lower I/B/E/S forecast, medium-term (2 year) growth, and lower sales per share historical growth (5 years).
The Russell 2000 Index measures the performance of the 2,000 smallest companies in the Russell 3000 Index.
The Russell 2000 Growth Index measures the performance of those Russell 2000 companies with higher price-to-book ratios and higher forecasted growth values.
The Russell 2000 Value Index measures the performance of those Russell 2000 companies with lower price to-book ratios and lower forecasted growth values.
The S&P 500 Index is widely regarded as the best single gauge of the U.S. equities market. This market capitalization-weighted index includes a representative sample of 500 leading companies in the foremost industries of the U.S. economy and provides over 80% coverage of U.S. equities.
The S&P 500 Growth and Value Indices form an exhaustive, multi-factor style series covering the entire market capitalization of the S&P 500. Constituents, weighted according to market capitalization, are classified as growth, value or a mix of growth and value.

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