Diversification versus Overconfidence

A decision to take on portfolio concentration requires investors to be both skilled in forecasting returns and in appraising their ability to forecast.

If not, they will likely take more risk than they should.

Some famously successful investors downplay the case for diversification.

Warren Buffett, “Diversification is a protection against ignorance. It makes very little sense for those who know what they're doing.”

Jim Rogers, “If you want to make a lot of money, resist diversification.”

While catchy, these recommendations ignore a crucial point—under-diversified portfolios concentrate risk. As a result, they are inappropriate for investors acting as fiduciaries, e.g., employee benefit plans. Such investors must be especially careful in balancing risk against return, must be particularly honest with themselves in appraising their skill, and must avoid overconfidence. In short, attempt to master what behavioral finance theory and decades of empirical research suggest are the most difficult of all investment skills.

(650) 328-7283
www.alanbiller.com

Alan Biller and Associates
INVESTMENT CONSULTANTS

Overconfidence Bias

Extensive literature shows that most investors are overconfident, and the performance of their portfolios suffers as a result. Here are some thoughts from serious researchers in the field.

Daniel Kahneman, author of *Thinking, Fast and Slow*, and winner of the Nobel Prize for his work in behavioral economics: “We are prone to overestimate how much we understand about the world and to underestimate the role of chance in events.”

Richard Thaler, author of *Misbehaving: The Making of Behavioral Economics*: “What makes the bias particularly pernicious is that we all recognize this bias in others but not in ourselves.”

Annie Duke, author of *Thinking in Bets: Making Smarter Decisions When You Don't Have All the Facts*: “Incorporating uncertainty into the way we think about our beliefs comes with many benefits.” “We are discouraged from saying ‘I don’t know’ or ‘I’m not sure.’ Getting comfortable with ‘I’m not sure’ is a vital step in being a better decision-maker.”

Nassim Nicholas Taleb, author of *Fooled by Randomness and The Black Swan*: “People overvalue their knowledge and underestimate the probability of their being wrong.”

Terrance Odean, Chair of the Finance Group at the Haas School of Business, UC Berkeley: “Humans seem to be hardwired to expect success and to regard themselves as above average.” “For an individual to not believe that he's at an informational disadvantage when he's trading against guys from Goldman Sachs is naïve.”

Brad Barber and Terrance Odean, in *The Courage of Misguided Convictions*: “Overconfidence increases trading activity because it causes investors to be too certain about their own opinions and to not consider sufficiently the opinions of others.”

John R. Nofsinger, in *The Psychology of Investing*: “People can be overconfident. Psychologists have determined that overconfidence causes people to overestimate their knowledge, underestimate risks, and exaggerate their ability to control events.”

Harry Callahan, *Magnum Force*: “A man’s got to know his limitations.”

Folk saying: “ It ain’t what you don’t know that gets you into trouble. It’s what you know for sure that just ain’t so.”

Resulting: Overconfidence, Hindsight, and Confirmation Biases

Hindsight and confirmation biases contribute to overconfidence and the failure to recognize the magnitude of uncertainty in capital markets. Annie Duke uses the term *resulting* to describe the behavior of poker players who win a few hands and then conclude that they are pursuing the optimal strategy. Broadly, it is the tendency to pair the result of a decision with the quality of the decision; making the assumption that good outcomes were the result of good decisions.

Resulting: Overconfidence, Hindsight, and Confirmation Biases (cont.)

Poker players basing their strategy after winning a few hands and market strategists declaring themselves "gurus" based on one successful call are both guilty of hindsight and confirmation biases. They fail to recognize that whenever there is a great deal of uncertainty, it is very difficult to differentiate between luck and skill.

Annie Duke: "Outcomes don't tell us what's our fault and what isn't, what we should take credit for and what we shouldn't."

Nassim Nicholas Taleb: "We tend to mistake one realization among all possible random histories as the most representative one, forgetting that there may be others."

Brad Barber and Terrance Odean: "People overestimate their contributions to past positive outcomes. They recall information related to their successes more easily than information related to their failures."

One rigorous approach to incorporating forecast uncertainty into investment decisions was developed by Fisher Black and Robert Litterman. Their model blends the subjective view with the equilibrium view (e.g., base case) with the weights based on the confidence in the proprietary view. ("Asset Allocation: Combining Investor Views with Market Equilibrium", Journal of Fixed Income, September 1991, Vol. 1, No. 2: pp. 7-18).

Quantifying Diversification

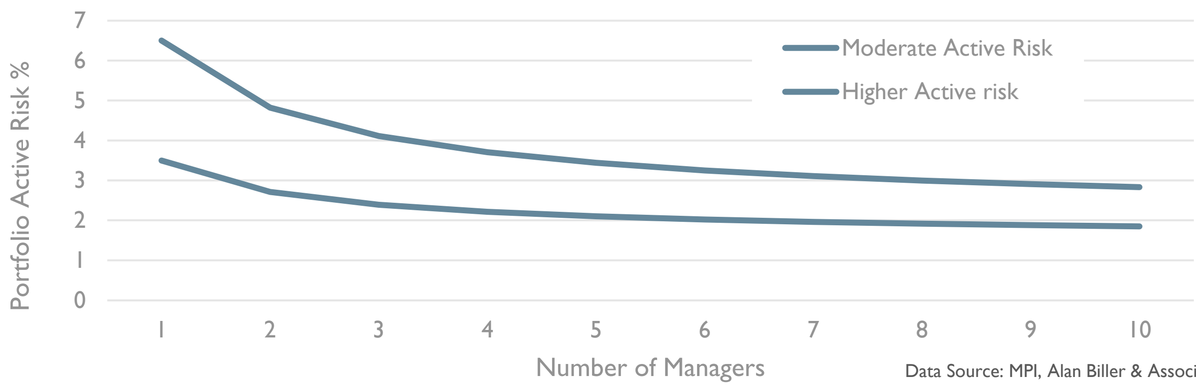
The danger of overconfidence is that it leads investors to under-diversify their portfolios. The risk-reducing benefit of diversification is most obvious when combining two investments with the same expected return and risks. A combination of the two will have the same expected return as the individual assets, but the portfolio will have lower risk than either one alone. Nobel laureate Harry Markowitz illustrated the arithmetic of diversification in his seminal paper "Portfolio Selection" (*Journal of Finance*, March 1952, 7 (1): 77–91).

Buffet's and Rogers's quotations in the introduction suggest that an average investor can skillfully forecast future returns. Evidence from behavioral finance have taught us otherwise. Investors holding an overly concentrated portfolio are ignoring the principles of diversification and are likely succumbing to overconfidence bias.

Quantifying Diversification (cont.)

Exhibit 1 illustrates the potential benefit from diversifying your active managers. The top orange line represents aggressive managers (tracking error or active risk of 6.5%). By hiring three managers rather than just one, the active risk declines to 4.1% — a 37% reduction. In this example, unless one has very high confidence that a single manager is significantly better than the next, it makes sense to diversify. The second blue line represents more conservative managers (tracking error or active risk of 3.5%). In this case, the active risk of a portfolio with three managers drops to 2.4% — a 32% reduction.

Exhibit 1: Portfolio Active Risk vs Number of Managers



Data Source: MPI, Alan Biller & Associates.

Investors' strategic asset allocations are based on their long-term expectations of risks and returns. Based on their shorter-term views, investors may take on a less diversified/more concentrated portfolio. The tactical asset allocation shifts should be evaluated using the same confidence-versus-risk framework as other investment decisions.

Exhibit 2

	Volatility of Relative Returns	Largest Outperformance	Largest Underperformance
International vs US Stocks	11.9%	*2002–2008*: +81%	*2008–2019*: -54%
Growth vs Value Stocks	10.1%	*2000–2007*: -63%	*2007–2019*: +70%
High Yield vs Core Bonds	8.46%	*1998–2002*: -34%	*2007–2008*: -38%

Source: MPI, Alan Biller & Associates. 1995–2019. International stocks: MSCI ACWI xUS, US Stocks: Russell 3000, Growth Stocks: Russell 1000 Growth, Value Stocks: Russell 1000 Value, Core Bonds: Bloomberg US Aggregate, High Yield Bonds: Bloomberg US High Yield.
Because high yield bonds generally outperform core, we show two periods when high yield underperformed core.

Exhibit 2 illustrates how three types of active asset allocation bets (deviation from the strategic asset allocation) contribute to a fund's tracking error (volatility of portfolio return versus benchmark return).

Quantifying Diversification (cont.)

The first column is the annual volatility of the difference in index returns, and active risk will be proportional to it (for example, based on these statistics, a 10% overweight to US stocks results in a tracking error of 1.2%.) The next two columns show the largest swings in the indices' relative performance over the last 25 years. If timed perfectly, a 10% overweight to international stocks would have added 8.1% to a fund's performance. On the other hand, investors unlucky enough to overweight international at exactly the wrong time would have lost 5.4% relative to the strategic mix.

These statistics illustrate why it is important for investors who sacrifice diversification by making tactical asset allocation decisions must balance their confidence in their short-term views with the risks of being wrong or being unlucky.

Summary

The quotes in the introduction come from extraordinarily successful professional investors with decades-long track records. However, their advice is not appropriate for trustees acting as fiduciaries. Because portfolio concentration can significantly increase overall risk, we prefer Harry Markowitz's, "diversification is the only free lunch in finance." Investors should diversify because the majority don't know where the next "hit" will come from.

Research and experience teach that investors tend to underestimate risks and overestimate their forecasting skill. Before deciding to deviate from their strategic allocation, investors should examine their own biases and consider whether they are succumbing to overconfidence or confirmation bias. If they do decide to take an active position, its size should be appropriate to the magnitude of potential outperformance, the downside if wrong, the investor's confidence in the forecasts, and an acknowledgement of the myriad risks that are lurking over the horizon.

Independence and objectivity underpin the fiduciary investment consulting services Alan Biller and Associates provides US institutional investors. An employee-owned firm focused exclusively on investment consulting since 1982, we are today one of the largest discretionary consultants in the US. For each of our clients, our experienced investment professionals deliver fiduciary stewardship, risk management, an informed perspective, straightforward communication, and impeccable execution.

Visit us at www.alanbiller.com

Call us at (650) 328-7283

Email us at info@alanbiller.com

ALAN BILLER AND ASSOCIATES

INVESTMENT CONSULTANTS