Is My Portfolio Over-Diversified?

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As children, we learn there can be "too much of a good thing:" a lesson gleaned from too many gummy bears and the inevitable stomachache. With age we become more selective, often prioritizing quality over quantity. Yet, when it comes to managing our investments, why is it that portfolios often resemble an all-you-can-eat buffet rather than a curated meal of complementary flavors?

The problem of over-diversification in investment portfolios stems from the misapplication of Modern Portfolio Theory as well as a boom of exchange traded funds (ETFs) and mutual funds following the 2007-2008 Financial Crisis. The result is a dizzying array of investment options, from the broadest of market exposures to the narrowest of sectors, capitalizations, geographies and styles.

Modern Portfolio Theory (MPT), developed by economist Harry Markowitz in 1952, proposed that a diversified portfolio of lowly-correlated assets would produce an optimal "risk adjusted" outcome. In such a portfolio, Markowitz proffered, higher returns could be achieved without taking a commensurate amount of risk. By diversifying portfolios with investments that have little to no correlation, the portfolio would theoretically exhibit a lower variance of returns. Markowitz's key to diversification relies on a low relative correlation of assets to one another. A notable problem with investing in today's capital markets is that most assets have some degree of correlation to U.S. Large Cap stocks. In 1952, the investing world looked very different: only 4% of Americans owned stocks,1 and the value of marketable Treasury debt was approximately $142 billion.2 When the Dow Jones Industrial Average (in 1954) finally regained its pre-Depression peak, only about 100 mutual funds were in existence.3 By contrast, today nearly 60% of Americans own stocks, marketable Treasury debt is over $23 trillion, and investors have over 125,000 mutual funds4 and 7,600 exchange traded funds (ETFs)5 from which to choose.

Moreover, while government issued bonds tend to offer the highest degree of negative correlation to the broad, domestic stock market,6 government bonds primarily serve as a resource for wealth preservation and volatility dampening. For a portfolio with any return target more aggressive than a stable value objective, the assets are likely to have a high probability of exhibiting some correlation to large cap U.S. stocks (and to each other).

In practice, a higher correlation of assets within a portfolio means that the portfolio benefits less from risk reduction, even as more assets are added. In concrete terms, this means that there is little difference in risk reduction between a highly correlated portfolio with 10 assets and a similarly correlated portfolio with 30 assets. Therefore, adding unnecessary assets that are highly correlated may not only increase market beta and reduce the possibility of outperformance, but also may not meaningfully reduce portfolio volatility.

While risk reduction can be furthered when constructing a portfolio through thoughtful stock selection, even those benefits will ultimately be subject to a diminishing risk benefit given the overall correlation of those stocks. Using a hypothetical stock portfolio as an example, a single stock within a portfolio carries a standard deviation (i.e., risk) of nearly 50%. With each additional stock added, the portfolio's risk can decline significantly, up to about 20 stocks. Risk can continue to decline for a portfolio with as many as 40 stocks, but after that risk reduction is nearly flat.

This begs the question: if the benefits of diversification diminish as securities are added, how should portfolio construction be viewed?

At Chilton Trust, we recognize that over-diversification occurs when portfolio construction is driven by a generic goal of "gaining exposure" rather than by personalized investor objectives. Such model portfolios aimed at "filling buckets" resemble collections of every asset class and sub-asset class imaginable and are frequently assembled with miniscule allocations to individual securities, funds and managers. The result is often a portfolio that yields little more than market beta (i.e., market risk), leaving investors exposed to systematic risk without the potential for outperformance.

We believe that diversification has its benefits, but we are mindful of its limits. While today's investor has the broadest possible menu of investment vehicles from which to choose, selecting them all does not optimize the risk/return profile. Following a thoughtful and goal-oriented process with a focus on quality over quantity and high conviction investment decisions, portfolio construction becomes more effective at achieving goals customized to the investor; the asset classes and the underlying securities then become a dish of harmonious flavors working together to achieve specific objectives. Adhering to those investment objectives — the difference between optimal and sub-optimal asset allocation — is the flexibility to invest in anything without the compulsion to be invested in everything.

1) Wattenberg, Ben. *The First Measured Century*, "Business." pbs.org/fmc/book/14business.htm.

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3) Bianco Research. "A Brief History of Equity Mutual Funds," August 20, 2018. https://www.biancoresearch.com/a-brief-history-of-equity-mutual-funds-2/.

4) Norrestad, F. "Number of mutual funds worldwide 2007-2020," January 11, 2022. Statista. https://www.statista.com/statistics/278303/number-of-mutual-funds-worldwide/.

5) Statista, "Number of exchange traded funds (ETFs) worldwide from 2003 to 2020," https://www.statista.com/statistics/278249/global-number-of-etfs/, © Statista 2021

6) Arnott, Amy C.. July 19, 2020. "Diversify, but Not Too Much." © 2021 Morningstar, Inc. https://www.morningstar.com/articles/988703/diversify-but-not-too-much

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