

**As much as any topic in finance, cargo ships of ink have been spilled on the topic of diversification.** It is unquestionably the anchor to designing an effective portfolio of investments. Though first formally articulated in Harry Markowitz's seminal 1952 paper on Modern Portfolio Theory (MPT), the idea is commonsense to all of us: Don't put all of your eggs in one basket.

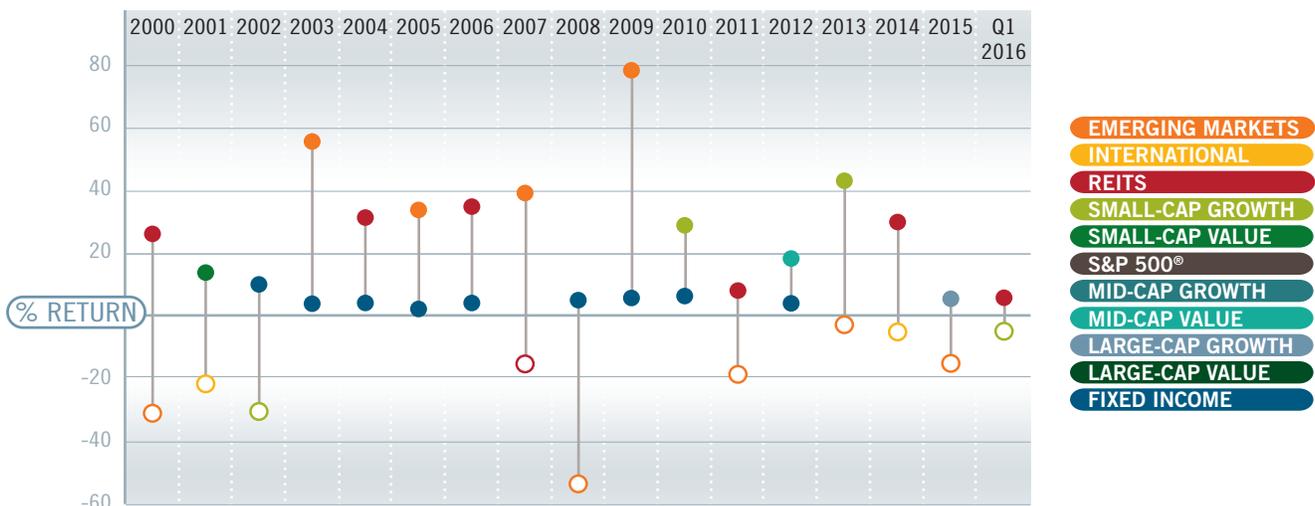
Because we don't know what's going to outperform, we spread our bets across a variety of investments. The trick, if it is one, as shown mathematically in MPT, is that we need to consider how the price of each investment varies in relation to the others. Assuming they don't move in lock step, there is inherent benefit in owning lower-correlated investments. Doing so allows us to hold a more "efficient" portfolio, meaning either: (1) for the same level of risk, we can earn higher returns or (2) we can achieve a similar return level but at reduced volatility.

Sounds good! But of course there's a catch — and one that few have actually commented on. Being truly diversified means that there almost always will be a part of your portfolio that is sucking wind.

If every piece of your portfolio is working really well, it means one of two things: you're incredibly lucky or you are not actually diversified. I would assume the latter.

But what's the big deal about that? Indeed, owning underperformers is built into the definition. While statistically true, there is an unspoken behavioral component to this experience: We hate owning losers. And, we fixate on the negative, drumming up feelings of regret and "if only" I (or my advisor) had tilted more toward a winner.

Look at the graphic below and consider the difference in the top performing investment class versus the bottom going back to 2000. That gap was the narrowest in 2012 and 2015.

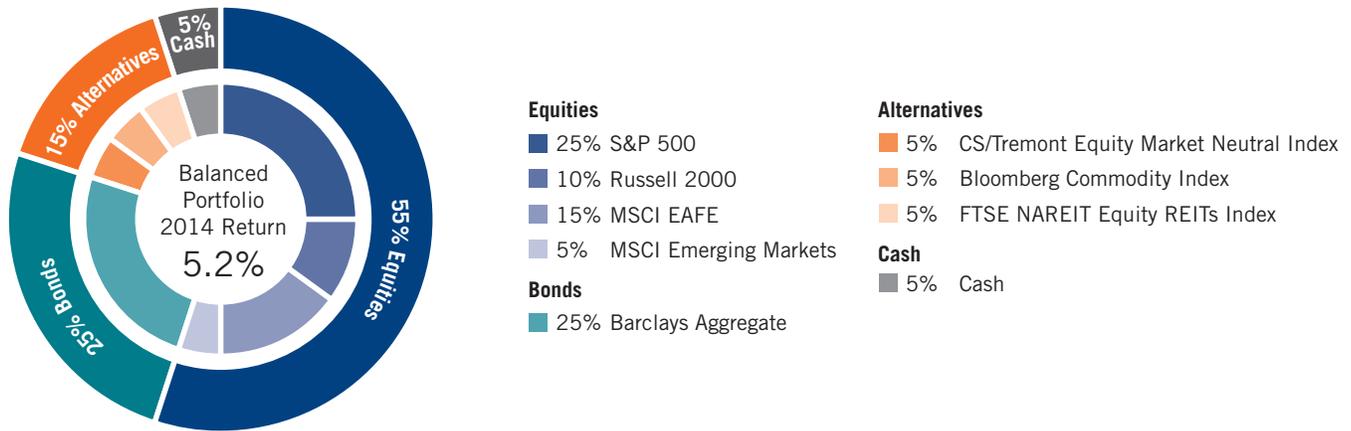


As of 3/31/16. **Past performance is no guarantee of future results and current performance may be higher or lower than the performance shown.** The above table is presented for informational purposes only and is not meant to represent the performance of any Virtus product. Please see page 4 for index definitions. Performance of all cited indexes is calculated on a total-return basis with dividends reinvested. Indexes are unmanaged and not available for direct investment.

Two things are clear. One, a diversified portfolio will often have outright losers in it. Two, the gap between the top dog and the mutt is often very wide, such as in 2007, 2008, and 2009.

## Diversification Means Always Having To Say You're Sorry

There is frequent opportunity to feel regret. Alas, diversification usually doesn't *feel* very good. Take 2014 as a good example of this discomfort. Consider the following balanced portfolio allocation<sup>1</sup>:



Plenty of asset classes performed poorly that year. The rub is that the S&P 500, by far the most popular proxy for “the market,” returned more than 13% in 2014. Many investors were still frustrated with their portfolio results. In 2015, the general lack of dispersion among asset classes also led investors to feel that diversification wasn't “working.”

For a financial advisor serving investors in or near retirement, this balanced portfolio — especially after a multi-year tear for equities — strikes me as reasonable. It is this sort of diversified portfolio that most Baby Boomer and even Gen X investors should own. That said, “the market” in 2014 nearly tripled the returns of this balanced portfolio; many folks weren't happy. The same feeling held true in 2015. For financial advisors as much as anyone, diversification almost always means having to say you're sorry.

I see behavioral explanations underlying these frustrations. I'd point to three behavioral quirks throwing sand in the gears: loss aversion, the fallacy of composition, and “if only” bias.

**1** **Loss Aversion** — The pain we feel with losses is disproportionately large compared to the joy we feel with gains.

Loss aversion states that the pain we feel with losses is disproportionately large compared to the joy we feel with gains. A standard example is to compare the utility of a \$100 loss versus a \$100 gain. According to many studies, even though the loss and gain are the same amount, we find the loss much more aggravating than we find the gain enjoyable.

Researchers often point to about a 2-to-1 ratio, meaning that we'd need to win \$200 to feel enough happiness to offset the annoyance of losing \$100.

Because we just showed that there are always losers in a portfolio, at least in a relative sense, but also often in the absolute sense, we're struck with the pain of knowing that something's not working — a pain that often overwhelms the fact that plenty of other pieces are working.

One could reply that this is exactly why we build diversified portfolios—the whole eggs-in-basket argument and the inability to know what will outperform tomorrow.

**2** **Fallacy of Composition** — We reflexively assign the attributes of one piece to the whole.

But that's where the second bias comes to bear. Our general cognitive tendency is to focus on pieces of the whole rather than the whole itself. Not only is it easier to focus on one versus many, it's then that much more taxing to take on the relationships between the various pieces. When given transparency, we are not wired to see the one portfolio; we are wired to see the individual investments that comprise it.

This is where the “fallacy of composition” kicks in — a bias in which we reflexively assign the attributes of one piece to the whole. Applied to our portfolios, if something's not working right now and perhaps losing a lot of money, then the portfolio overall is flawed, even “risky.”

<sup>1</sup>Indexes used in allocation are defined on Page 4.

## Diversification Means Always Having To Say You're Sorry

Take a silly example: A portfolio that's 98% in U.S. Treasuries and 2% in frontier market equities. You know the proportion, but as your advisor I show you a portfolio with just two line items. Assuming the bonds muddle along but the frontier exposure is extremely volatile, when the latter is down 40% (could happen), you will likely tell me I've built you a "risky" portfolio. But that's clearly not the case. Down 40%, the frontier exposure cost you 0.8 cents on the dollar. If the frontier fund goes to zero, you would've lost just 2 cents on the dollar. Thus, it's difficult to "see" that portfolios which are actually on track to meet one's financial goals are perceived as not on track and perhaps too risky.

**3** **If Only** — How we initially benchmark success will be a key determinant of happiness.

Finally, there is the phenomenon of "if only." The science of regret is complex, but a key takeaway is that how we initially benchmark success will be a key determinant of happiness.

In our portfolios, if we measure our success (by calendar year, no less) by comparing all of our investments to the top performer at that time, then we're doomed to be displeased. It is in fact natural to feel recently that "if only a lot more of my assets were investing in a S&P 500 Index fund...." But that mindset of chasing recent performance is a sure ticket to not meeting one's long-term financial objectives. "Woulda shoulda coulda" is not a strategy worth pursuing.

Ultimately, the math of diversification makes sense. It's the psychology of diversification that is muddled.

The path forward is not to rethink the former, but to accept and think through the latter. It is not a smart alternative to concentrate one's portfolio in what one predicts will be the hot dot. At the same, it's also unfair to ourselves to ignore that diversification is often a bitter pill to swallow — even when it's good for us.



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Mr. Portnoy is the author of *The Investor's Paradox: The Power of Simplicity in a World of Overwhelming Choice*, published in 2014. Through the lens of behavioral finance, the book provides a practical road map for navigating the complex landscape of countless traditional and alternative investment strategies. He is a regular contributor to *Forbes.com* and *Yahoo! Finance*, has spoken to audiences globally about investing and decision-making, and has lectured on the history and future of hedge funds at the U.S. Securities and Exchange Commission as part of its Leading Authors series.

Mr. Portnoy pursued his research and teaching interests in political economy at the University of Chicago, where he earned his doctorate. He earned a B.A. from the University of Michigan. Mr. Portnoy is a Chartered Financial Analyst® (CFA) charterholder and a member of the Economic Club of Chicago.

**To learn more about building a diversified portfolio,  
speak with your financial advisor, or  
call 800-243-4361 or visit us at Virtus.com.**

**Emerging Markets** is represented by the MSCI Emerging Markets Index (net): A free float-adjusted market capitalization-weighted index designed to measure equity market performance in the global emerging markets. The index is calculated on a total return basis with net dividends reinvested. **International** is represented by the MSCI EAFE® (Morgan Stanley Capital International Europe, Australasia, Far East) Index: A free float-adjusted market capitalization index that measures developed foreign market equity performance, excluding the U.S. and Canada. The index is calculated on a total return basis with net dividends reinvested. **Fixed Income** is represented by Barclays Capital U.S. Aggregate Index: Measures the U.S. investment grade fixed rate bond market. **Small-Cap Growth** is represented by the Russell 2000® Growth Index: A market capitalization-weighted index of growth-oriented stocks of the smallest 2,000 companies in the Russell Universe, which comprises the 3,000 largest U.S. companies. **Small-Cap Value** is represented by the Russell 2000® Value Index: A market capitalization-weighted index of value-oriented stocks of the smallest 2,000 companies in the Russell Universe, which comprises the 3,000 largest U.S. companies. **S&P 500®** is a free-float market capitalization-weighted index of 500 of the largest U.S. companies. The index is calculated on a total return basis with dividends reinvested. **Mid-Cap Growth** is represented by the Russell Midcap® Growth Index: A market capitalization-weighted index of medium-capitalization, growth-oriented stocks of U.S. companies. **Mid-Cap Value** is represented by the Russell Midcap® Value Index: A market capitalization-weighted index of medium-capitalization, value-oriented stocks of U.S. companies. **Large-Cap Growth** is represented by the Russell 1000® Growth Index: A market capitalization-weighted index of growth-oriented stocks of the 1,000 largest companies in the Russell Universe, which comprises the 3,000 largest U.S. companies. **Large-Cap Value** is represented by the Russell 1000® Value Index: A market capitalization-weighted index of value-oriented stocks of the 1,000 largest companies in the Russell Universe, which comprises the 3,000 largest U.S. companies. **REITs** are represented by the FTSE NAREIT Equity REITs Index: A free-float market capitalization-weighted index which measures equity tax-qualified REITs that meet minimum size and liquidity criteria and are listed on the New York Stock Exchange, the American Stock Exchange and the NASDAQ National Market System. The index is calculated on a total return basis with dividends reinvested.

**Index Definitions**—The **Dow Jones Industrial Average** is a price-weighted average of 30 significant stocks traded on the New York Stock Exchange and the NASDAQ. The **Russell 2000® Index** is a market capitalization-weighted index of the 2,000 smallest companies in the Russell Universe, which comprises the 3,000 largest U.S. companies. The **Barclays U.S. Aggregate Bond Index** is a broad-based benchmark that measures the investment grade, U.S. dollar-denominated, fixed-rate taxable bond market, including Treasuries, government-related and corporate securities, MBS (agency fixed-rate and hybrid ARM pass-throughs), ABS, and CMBS. The **Barclays Capital 1-3 Month U.S. Treasury Bill Index** includes all publicly issued zero-coupon U.S. Treasury Bills that have a remaining maturity of less than 3 months and more than 1 month, are rated investment grade, and have \$250 million or more of outstanding face value. In addition, the securities must be denominated in U.S. dollars and must be fixed rate and non convertible. The **CS/Tremont Equity Market Neutral Index** takes both long and short positions in stocks with the aim of minimizing exposure to the systematic risk of the market (i.e., a beta of zero). The **Bloomberg Commodity Index** is composed of futures contracts on physical commodities and represents twenty two separate commodities traded on U.S. exchanges, with the exception of aluminum, nickel, and zinc. The indexes are unmanaged, their returns do not reflect any fees, expenses, or sales charges, and they are not available for direct investment.

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