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"History doesn't repeat itself, but it does rhyme." – Mark Twain

July 7, 2016

Dear Clients:

Global stock markets were rocked towards the end of the second quarter by the results of the June 23 referendum where the majority of voters favored Britain leaving the European Union ("Brexit"—see more below). Stocks, in general, performed well ahead of the referendum, as polls indicated the "Bremain" side was slightly ahead. KM client portfolios were also slowly making up lost relative ground. Stocks we own have less trading "liquidity" than the mega-capitalization stocks. Unfortunately, when bouts of panic selling set in, over the ***short-term*** the ***prices*** of our stocks tend to be negatively impacted more on a relative basis.

We are big believers in "eating our own cooking" and are ***heavily invested alongside you***. So, we share your disappointment and frustration this period of underperformance continues. However, we have experienced a number of these multi-year periods of underperformance in KM's forty-one years. The most recent were 2007-2008 and 1997-1999. ***Past performance is no guarantee of future results***, but the positive to come out of those gloomy periods was KM eventually emerged from the other side and resumed along its bumpy path to long-term outperformance.

If there's a "silver lining" in this current period of darkness, it's we think the stage could be in the process of being set for a similar recovery. ***First***, we've been able to find more good companies with cheap stocks than has been the case for a long while. ***Second***, with all of the uncertainty surrounding the economic impact of Brexit, we expect central banks around the globe to keep interest rates low for many months to come, a positive for stocks and favoring stocks vs. bonds. ***Third***, investor sentiment (even before Brexit) has fallen to pessimistic levels that have historically preceded good periods for stocks (see "Investors can't let fear drive their decisions"/ Indianapolis Business Journal--June 18, 2016). ***Finally***, while the U.S. certainly has plenty of warts, given the troubles popping up around the globe, we think the U.S. stock market is clearly the "best house on the world's block" and more funds will seek shelter here.

We believe brighter days are ahead, but obviously can't guarantee if or when. Talk is cheap, so we are ***putting our money where our mouths are by increasing our already substantial personal investment in our product by making a significant additional purchase today***.

Periods ending June 30, 2016
(Total Returns-Annualized*)

	Russell 3000 Index	S&P 500 Index
3-months	2.63%	2.46%
6-months	3.62%	3.84%
One-year*	2.14%	3.99%
Two-years*	4.68%	5.69%
Three-years*	11.13%	11.66%
Five-years*	11.60%	12.10%
Ten-Years*	7.40%	7.42%

The "Brexit Panic"—we've seen this movie before

You probably had heard of the upcoming June 23 referendum that would determine whether the United Kingdom ("UK") would remain a member of the European Union ("Bremain") or leave ("Brexit"), but chances are you were only peripherally aware of the issues driving the debate.

To understand the current problems and issues, you have to look at the past. The European Union (EU) is a confederation of 27 member countries. It was formed to promote economic cooperation and reduce conflict between neighbors. EU policies were designed to ensure the free movement of people, goods, services and capital across borders. A monetary union, the Eurozone, was formed and a single currency, the Euro, officially came into existence on January 1, 1999.

The Eurozone consists of 17 members of the EU that met the qualifying standards for budget deficits, inflation and interest rates. Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain entered at inception. Cyprus (2008), Estonia (2011), Greece (2001), Malta (2008), Slovakia (2009) and Slovenia (2007) were subsequently admitted. Interestingly, the United Kingdom and Denmark met the standards, but were allowed to opt-out (and thus still use their own currencies).

Proponents of Brexit argued the EU imposes too many rules and the financial costs of EU membership were better spent at home. In addition, concerns over border control and immigration were important factors.

Still, with global markets strong in anticipation of Bremain, you probably didn't care about the referendum when you went to bed that night. However, by the time you woke the next morning, you cared Brexit prevailed—a lot.

On Friday, June 24, stocks cratered worldwide. On cue, the talking heads and headlines poured gasoline onto the fire as they blared about "a Lehman Bros.-like contagion worse than 2008," and other dire warnings of impending apocalypse. Best of all, the various Drs. of Doom had all weekend to pile on and further heighten investor anxiety.

If we're going to call this movie the "Brexit Panic," then it is surely the sequel to the "Oil/Commodity Price Collapse Panic" (earlier 2016), the "China Currency Devaluation Panic " (2015) and the "Greek Default/'Grexit' Panic" (its own series). Actually, the current Panic is a sequel to all the Panics that preceded it. The Crandall, Pierce & Company graph on the following page lists 120 market calamities since 1896. Brexit will be #121. In addition, see "External shocks to stocks usually short-lived"/Indianapolis Business Journal--July 18, 2015.

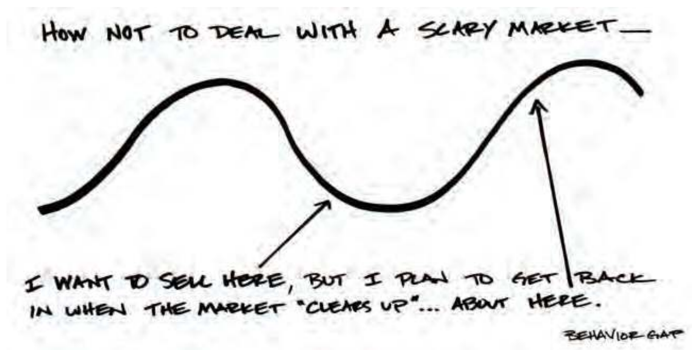
Panics are scary episodes that evoke your primal "fight or flight" survival instincts. When you're watching the Dow plunge hundreds of points in a matter of minutes, it's easy to believe you're staring into the abyss. We understand because we feel the same visceral fears and emotions.

At the same time, one of our primary roles as professional advisors is to put our emotions on the shelf and help prevent our clients from doing things harmful to their long-term financial future. In other words, we have to trust our experience and process (i.e. finding high quality companies whose stocks we believe are undervalued), no matter what.

If we're correct in our assessment of "high quality," then the businesses should not be materially negatively impacted by Brexit (or the panic du jour). Brexit will take years to unfold. Whether it ends up being more of a political vs. economic event, it will likely lead to increased volatility.

My friend Carl Richards of BehaviorGap.com recently published excellent advice on helping clients deal with "scary markets." First, be thankful you're the one they turn to in times of trouble (we are). Second, empathize with the very real emotions they are feeling (we do). Third, if they say they want to sell everything, ask if this is a permanent exit or, more likely, temporary.

If it's the latter, if you ask when they intend to get back in, you'll probably get some variation of "when the dust settles." If it follows prices will be higher when that happens, then that sounds a whole lot like selling low and buying high—not a recipe for long-term success.

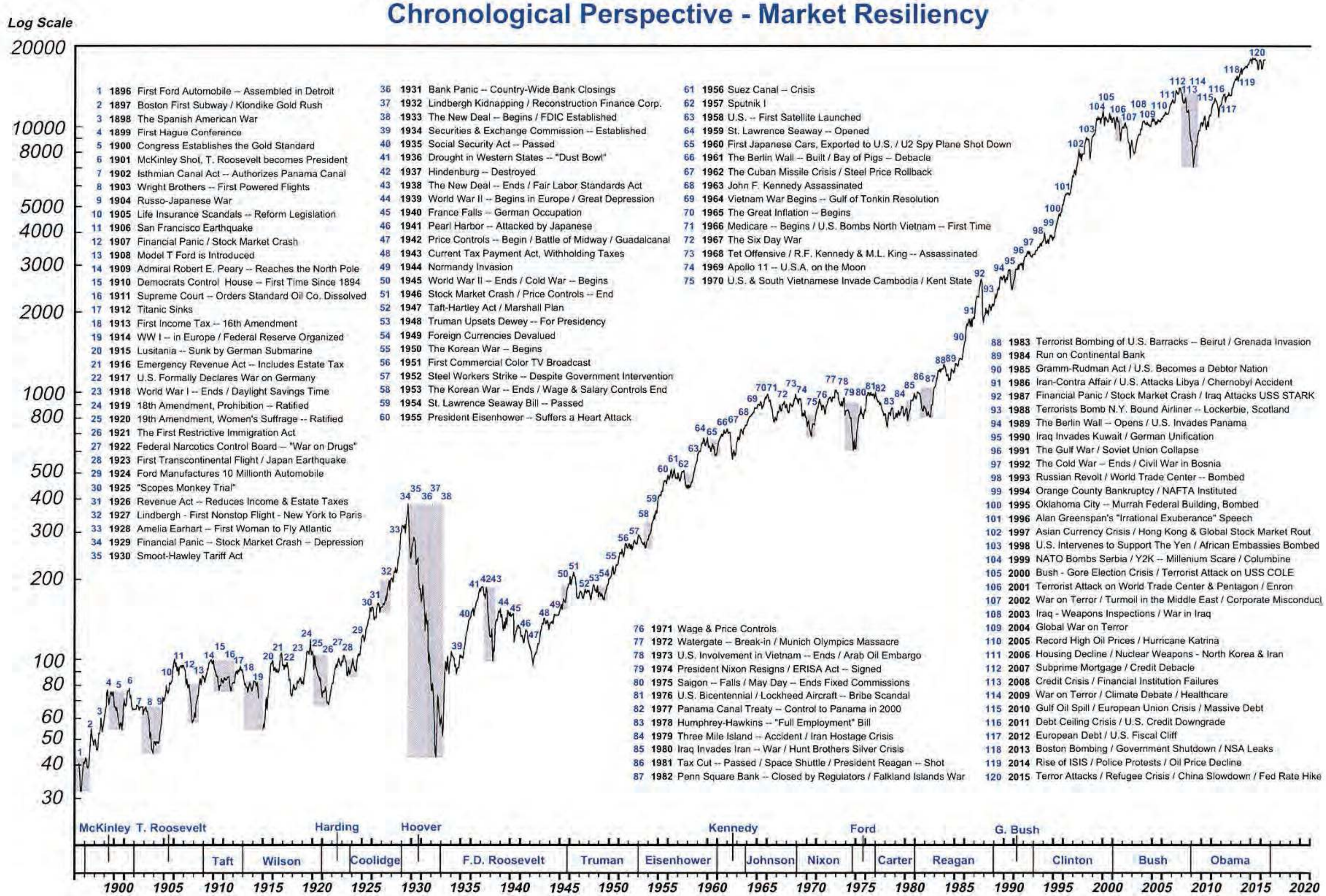


Investors didn't get Paul Revere's "the British are leaving" warning this time. Remember what Benjamin Graham (Warren Buffett's professor), said: "In the short run, the market is a voting machine (i.e. prices set by fear/greed) but in the long run, it is a weighing machine (i.e. prices set by company fundamentals)."

While the UK is the world's fifth largest economy and will probably suffer a Brexit-related hangover, estimates peg the UK's share of global Gross Domestic Product at just 3.5-4%. Brexit will likely cause continued heightened volatility, but we don't think it will impact the intrinsic value of the companies we own.

The Dow Jones Industrial Average: 1896-2016*

Chronological Perspective - Market Resiliency



Shaded areas represent recessionary periods. • *2016 data is preliminary through May.

Data Sources: Dow Jones & Company; The Federal Reserve Board; The National Bureau of Economic Research •

Active managers and "the bumpy road to outperformance"

Index funds mindlessly and mechanically seek to mimic the performance of a given index (like the S&P 500), less fees (which are low, relative to active managers). They have been in vogue and grown assets under "management" tremendously over the past couple years, as the majority of active managers (including KM) have failed to outperform their benchmark index. Further, decades of academic research also suggest it is not possible to consistently outperform.

We're "old school" stock pickers and think having the objective of underperforming the market by a little bit is the very definition of mediocrity. We reject the notion it's foolish to even try to outperform. We acknowledge the small universe of outperforming active managers who have a proven philosophy, follow a well-defined process and maintain discipline through the ups and downs constitutes a rare breed.

Ironically, index fund colossus Vanguard published a report, "The bumpy road to outperformance," that does an excellent job discussing both the promise and challenges of active management. Vanguard tracked the performance of all 1,540 actively managed U.S. stock funds at the start of 1998 through 2012. Only 55% survived the entire 15-year period. Only 275 funds (18%) both survived the full period and outperformed their benchmark index. These 275 funds outperformed by an average of 1.1% annualized (net of fees). Compounded over 15 years, this seemingly small performance differential translates into a huge dollar impact. A hypothetical $10,000 investment in the median outperforming fund and its corresponding benchmark index would have grown over 15 years to $24,900 and $19,490, respectively.

Shareholders of the vast majority of outperforming funds had their confidence tested numerous times during the 15 years. 97% of the outperforming funds experienced at least five calendar years of underperformance. More than 60% had seven or more bad years. Two-thirds experienced at least three consecutive years of underperformance, the point at which many investors will throw in the towel. Standardized fund performance reporting displays a single, average annualized return for 1-year, 3-year, 5-year, 10-year and Since Inception periods. For multiyear periods, this can mask what can be extended periods of underperformance.

Investors don't have to follow the herd and settle for the mediocrity of indexing. It's self-serving to say, but they do have to both find a skillful active manager and have the fortitude to stick with the manager during those inevitable periods of underperformance.

Interest Rates and the Bond Market

High-quality bonds were strong in the second quarter, with the yield on the 10-Year US Treasury Bond plunging from 1.77% to 1.47%, primarily due to uncertainty surrounding the outcome of the Brexit referendum and in the wake of Brexit prevailing. This "flight to quality/safety" benefitted the prices of bonds held in client accounts, but has made finding potential bond investments even more challenging.

Colin S. King, CPA, CFA
Promoted to Senior Research Analyst

Colin joined KM in 2012 after working in assurance services with Ernst & Young and business valuation with Blue & Co., both CPA firms. He passed the Certified Public Accountant Examination in 2012 with one of the Top 10 scores in the State of Indiana. Colin has been awarded the designation of Chartered Financial Analyst by the CFA Institute. Colin has done a terrific job as a key member of KM's Investment Team and was recently promoted to Senior Research Analyst.

Roger Lee, CFA, CPA
Joins KM as Senior Research Analyst

Roger joined KM in June after working for investment firms Pacific View Asset Management LLC, Artisan Partners LP, Nuveen Investments Inc. and CPA firm Ernst & Young LLP. Roger is a Certified Public Accountant (New York State) and was awarded the designation of Chartered Financial Analyst by the CFA Institute. Roger received a B.S. in Accounting (Magna Cum Laude) from the Binghamton University School of Management in 2008 and moved from San Francisco to Columbus, IN.

Regards,

Kirr, Marbach & Company, LLC

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KIM: Investors can't let fear drive their decisions

Mickey Kim
June 18, 2016

INVESTING
Mickey Kim

With investor confidence plunging to depths last seen during the global financial crisis, this seems like a good time to revisit one of Warren Buffett's foundations of investing: "Be fearful when others are greedy, and be greedy when others are fearful."

Economic growth has been subpar, corporate profits are challenged, and the political outlook is chaotic.

In addition, investors still carry the financial wounds and psychological scars of 50 percent-plus stock market collapses in both 2000-2002 and 2007-2009. Stocks have staged a strong recovery from their early 2016 collapse, but nobody wants to be Charlie Brown, believing this is the time Lucy doesn't yank the football away just as he's getting ready to kick it.

As a result, various readings of investor sentiment have reached multiyear lows and shareholders of stock mutual funds have yanked out more than $64 billion in 2016, the worst start for any year on record. In addition, activity in initial public offerings (a sign of investor exuberance) is tepid. Through May, only 31 U.S. companies went public, down from 69 and 115 in the same period in 2015 and 2014.

Trust me, I get it. Still, history suggests the greatest opportunity is when ominous storm clouds are everywhere and the biggest risk is when there is nothing but blue sky on the horizon.

Bank of America Merrill Lynch Global Research measures Wall Street's bullishness on stocks with its "Sell Side Indicator," which tracks the recommended stock allocations of a group of market strategists. At the end of May, the Sell Side Indicator fell to 51.6, its lowest level in 15 months and below its level at the market lows of March 2009.

This is important because the Sell Side Indicator has been a reliable contrarian indicator. Historically, it's been a bullish signal when Wall Street was extremely bearish and vice versa. When this indicator has been this low or lower, total returns over the subsequent 12 months have been positive 97 percent of the time, with median 12-month returns of 25 percent. Of course, past performance is no guarantee of future results.

Dalbar recently released its 22nd annual Quantitative Analysis of Investor Behavior study, which continued to show how poorly investors perform relative to market benchmarks over time and the reasons for consistent underperformance (primarily investors' tendency to buy high and sell low—i.e. the "behavior gap"). Their conclusion was, "Investment results are more dependent on investor behavior than on fund performance." Further, "mutual fund investors who hold onto their investments have been more successful than those who try to time the market."

Specifically, for the year ending Dec. 31, 2015, investors in stock funds had a return of -2.28 percent while the S&P 500 eked out a return of 1.38 percent, a negative behavior gap of 3.66 percentage points (which was an "improvement" over 2014's negative gap of 8.19 percentage points).

While a negative behavior gap is costly over the short term, it is devastating when compounded over many years. According to Dalbar, investors experienced 20-year average annualized returns of 4.67 percent vs. 8.19 percent for the S&P 500, a negative gap of 3.52 percentage points. That might not seem like a lot, but assuming an initial $1,000 investment, the average fund investor ended up with $2,491 vs. $4,827 in the S&P 500, a difference of $2,336, or 94 percent.•

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INVESTING

Mickey Kim

External shocks to stocks usually short-lived

Greece has been on the brink of default twice in the past five years, so a third visit to the edge of the cliff shouldn't be a surprise. While a default leading to an exit from the Eurozone would lead to tragic circumstances for the citizens of Greece, ***Greece accounts for only about 2% of the Eurozone economy***. Additionally, the contagion risk to the global financial system of a Greek default is materially lower than it was five years ago.

Sam Stovall, Chief Equity Strategist for S&P Capital IQ, wrote a terrific report in September 2013, "Shocks & Stocks." He noted the U.S. stock market has encountered a variety of unanticipated shocks over the past 70-years since World War II, including wars/near wars, assassinations/attempts, terrorist attacks and financial collapses. He graciously gave me permission to share the table below.

SHOCKS TO THE SYSTEM: Market Declines and Recoveries Since WWII

	Closing Levels			Bottom			Days to
Market Shock Events	**Prior Day**	**Next Day**	**% Chg.**	**Level**	**Days**	**% Chg.**	**Recover**
Japanese Tsunami: 3/11/11	1304.28	1296.39	(0.6)	1256.88	3	(3.6)	6
Flash Crash: 5/6/10	1165.87	1128.15	(3.2)	1110.88	1	(4.7)	4
Lehman Bankruptcy: 9/15/08	1251.70	1192.7	(4.7)	676.53	121	(46.0)	285
Madrid bombing: 3/10/04	1140.58	1123.89	(1.5)	1093.95	10	(4.1)	18
Terrorist Attacks: 9/11/01	1092.54	1038.77	(4.9)	965.80	5	(11.6)	19
Collapse of LTCM: 9/23/98	1066.09	1042.72	(2.2)	959.44	11	(10.0)	9
Iraq's Invasion of Kuwait: 8/2/90	355.52	351.48	(1.1)	295.46	49	(16.9)	82
Program Trading: 10/19/87	282.70	224.84	(20.5)	223.92	33	(20.8)	223
Reagan shooting: 3/30/81	136.30	134.7	(1.2)	134.70	1	(1.2)	4
Nixon Resignation: 8/8/74	82.65	81.57	(1.3)	62.28	39	(24.6)	143
OPEC oil embargo: 10/17/73	111.30	110.05	(1.1)	109.16	6	(1.9)	10
Kennedy assassination: 11/22/63	71.62	69.61	(2.8)	69.61	1	(2.8)	2
Cuban missile crisis: 10/22/62	54.96	53.49	(2.7)	53.49	1	(2.7)	5
Pearl Harbor Attack: 12/7/41	9.38	8.97	(4.4)	8.37	18	(10.8)	257
Medians			**(2.4)**		**6**	**(7.4)**	**14**

Source: S&P Capital IQ. Past performance is no guarantee of future results.

He said the initial shock sent the S&P 500 down a median of 2.4% during the subsequent trading day, took six days to reach bottom and fully recovered in the next 14 days. Some events obviously took much longer to play out than the medians would suggest. However, he noted those extreme situations generally occurred during long-term bear markets and did not precipitate the initial decline.

The lesson, according to Stovall, is "Should history repeat itself, and there is no guarantee it will, unanticipated events that occur within bull markets that throw markets for a loop are typically assessed for their economic impact in short order, allowing opportunistic traders to step in an quickly push share prices back to breakeven and beyond."

In other words, "Sell the scare, buy the bombs." You probably don't recall, but at the time of the report, investors were gripped with fear about the negative market fallout from the expected retribution targeting the government of Syria for its use of chemical weapons against its own people. Stovall said, "If so, it would probably be one of the most anticipated of unanticipated events in modern history." Sound familiar?

The bumpy road to outperformance

Vanguard research | July 2013

Executive summary. Considerable research shows that on average, actively managed equity mutual funds underperform their respective benchmarks. However, many investors remain drawn to active management because even a small amount of outperformance can have a meaningful impact on the value of their portfolios over time. These alpha-seeking investors may spend significant time and effort trying to identify potential winning managers.

The challenge of selecting managers can overshadow a less talked-about but equally important factor in active management success: an awareness of the inconsistency inherent in excess returns.[1] This is a particularly pertinent issue for any investors or investment committees who use historical returns as a primary basis for hiring and firing managers.

Authors

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1 We define excess returns as the difference between a fund's returns and the returns of a relevant Morningstar style-box benchmark.

In this paper, we confirm prior research indicating that only a minority of active managers outperform relevant style benchmarks, and then address the inconsistency in excess returns generated by even the most successful managers. Looking at the 15-year records of all the actively managed U.S. domestic equity funds that existed at the start of 1998, we find that not only are long-term outperformers rare, accounting for only 18% of those funds, but they also experience numerous and often extended periods of underperformance. Indeed, nearly every one of the successful funds underperformed in at least five of the 15 years through December 2012. Furthermore, two-thirds of them experienced at least three *consecutive* years of underperformance during that span.

We conclude from this analysis that investors pursuing outperformance not only have to identify winning managers, but historically have had to be very patient with those managers to collect on their success.

Studies published over two decades have demonstrated that the average actively managed fund lags its benchmark once costs are factored in.[2] At the same time, some managers have beaten the odds and outperformed over long periods, creating additional wealth for their investors.

For example, our research shows that over the 15 years through December 2012, the median *outperforming* equity manager produced excess returns (net of fees) averaging 1.1 percentage points annually. If we compare a hypothetical $10,000 investment in the median outperforming equity fund and its corresponding benchmark, the fund would have generated $5,410 more than the benchmark over 15 years (with ending portfolio values of $24,900 and $19,490, respectively).[3] Such an impact can be quite significant for investors, but it can be challenging to achieve. In this paper we explore why this is the case.

Long-term outperformance is rare

To quantify historical outperformance, we examined all of the 1,540 actively managed U.S. domestic equity mutual funds that were available to investors at the beginning of 1998. We analyzed the performance of these funds over the subsequent 15 calendar years.[4]

We first calculated the percentage of funds that survived the period and then the portion that also beat their respective style-box benchmarks. **Figure 1** illustrates the results, showing that of the 1,540 original funds, only 55% survived the entire 15-year period; the rest—nearly 700 funds—were merged or

Notes about risk and performance data: All investments are subject to risk, including the possible loss of the money you invest. Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

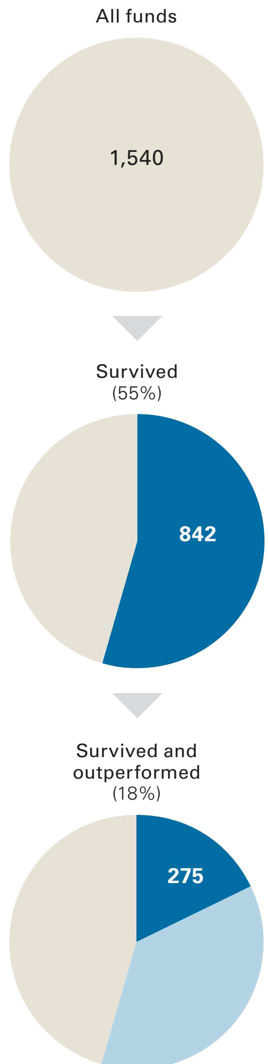
2 See, for example, Sharpe (1991) and Philips et al. (2013).

3 This hypothetical example does not represent the return on any particular investment.

4 We performed this analysis over time periods of various lengths and found similar results.

Figure 1. A small portion of active funds survived *and* outperformed over 15 years

The fate of 1,540 actively managed U.S. equity funds, 1998–2012



Note: The funds' returns were measured against the benchmarks listed on this page.

Source: Vanguard calculations using data from Morningstar.

Indexes used in our calculations

To measure the funds' performance against market benchmarks, we chose indexes appropriate to their Morningstar style boxes. When determining which index to use, we selected ones we deemed to fairly represent the characteristics of the relevant market, given the available choices during the period from January 1998 through December 2012. The indexes used for each style group are:

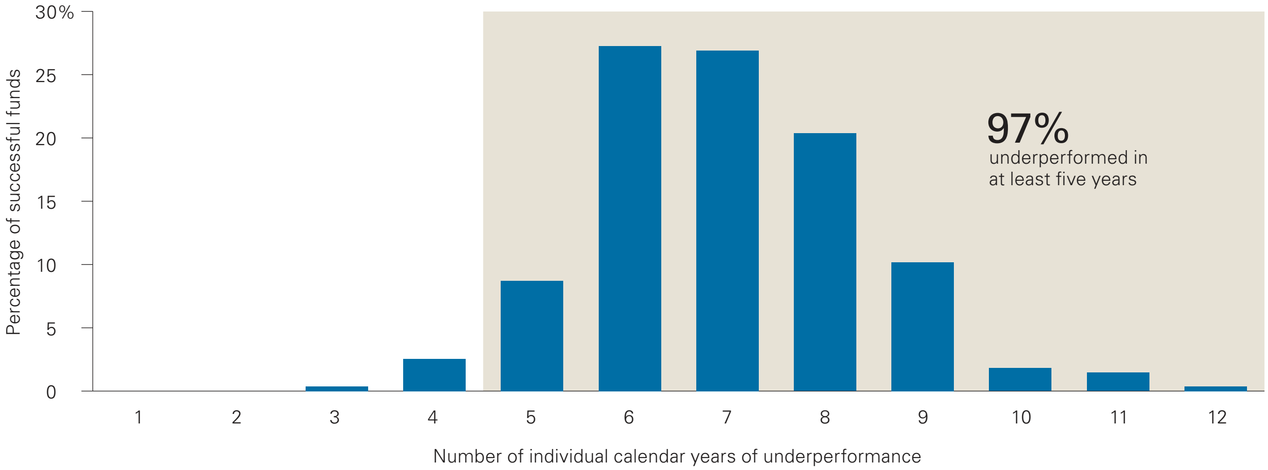
Large blend—Standard & Poor's 500 Index through November 2002, MSCI US Prime Market 750 Index thereafter. **Large value**—S&P 500 Value Index through November 2002, MSCI US Prime Market 750 Value Index thereafter. **Large growth**—S&P 500 Growth Index through November 2002, MSCI US Prime Market 750 Growth Index thereafter.

Medium blend—S&P MidCap 400 Index through November 2002, MSCI US Mid Cap 450 Index thereafter. **Medium value**—S&P MidCap 400 Value Index through November 2002, MSCI US Mid Cap 450 Value Index thereafter. **Medium growth**—S&P MidCap 400 Growth Index through November 2002, MSCI US Mid Cap 450 Growth Index thereafter.

Small blend—S&P Small Cap 600 Index through November 2002, MSCI US Small Cap 1750 Index thereafter. **Small value**—S&P Small Cap 600 Value Index through November 2002, MSCI US Small Cap 1750 Value Index thereafter. **Small growth**—S&P Small Cap 600 Growth Index through November 2002, MSCI US Small Cap 1750 Growth Index thereafter.

Figure 2. Even successful funds experienced multiple periods of underperformance

Distribution of the 275 successful funds by total calendar years of underperformance, 1998–2012



Note: Successful funds are those that survived for the 15 years and also outperformed their style benchmarks. The funds' returns were measured against the benchmarks listed on page 3.

Source: Vanguard calculations using data from Morningstar.

liquidated.[5] Furthermore, only 18% of the initial 1,540 funds both survived the full period *and* outperformed their style benchmarks. These findings are consistent with previous research—achieving outperformance is tough.[6]

Positive excess returns are inconsistent

As our results confirmed that successful active managers, although rare, have the potential to significantly enhance portfolio returns, we wanted to better understand the performance of that winning 18%. Some investors assume that if they are able to select a talented manager, a relatively smooth stream of excess returns awaits.

To test this assumption, we looked closely at the records of those 275 funds that both survived and outperformed their style benchmark over the 15 years through December 2012. We examined the yearly returns for each fund and aggregated the results, focusing on two dimensions:

1. The number of individual years of underperformance.
2. The portion of funds that avoided having three consecutive years of underperformance.

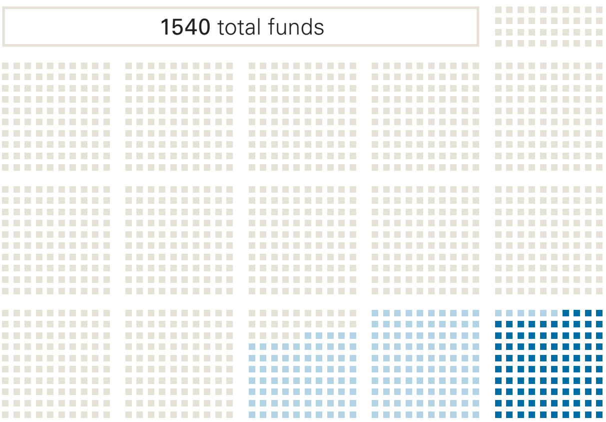
We found that almost all of the outperforming funds—267, or 97%—experienced at least five individual calendar years in which they lagged their style benchmarks. In fact, more than 60% had seven or more years of underperformance. The results are depicted in **Figure 2**, which shows the distribution of outperforming funds according to their number of individual years of underperformance.

5 See Schlanger and Philips (2013) for an in-depth discussion of mutual fund survivorship and the poor performance of funds subsequently merged or liquidated.

6 See Philips et al. (2013).

Figure 3. Few funds avoided three consecutive years of underperformance

Even among successful funds, two-thirds suffered such spells



(light blue)	12%	181 funds	Survived, outperformed, and experienced at least three consecutive years of underperformance
(dark blue)	6%	94 funds	Survived, outperformed, and never experienced three consecutive years of underperformance

Note: The funds' returns were measured against the benchmarks listed on page 3. Returns cover the period 1998–2012.

Source: Vanguard calculations using data from Morningstar.

Portfolio construction in light of our research

An investor's level of comfort with the inconsistency of excess returns and degree of desire for the potential to outperform are critical considerations when building a portfolio. Based on these considerations, portfolio strategies ranging from 100% passive to 100% active may be appropriate. For many investors, a combination of the two can be a reasonable solution.

For investors who want the chance to beat market benchmarks, a portfolio that uses broad-market index funds as the "core" and selected actively managed funds as "satellites" can moderate exposure to volatile relative returns while maintaining the potential for outperformance. See Philips et al. (2012) and Wallick et al. (2010) for further analysis and discussion about combining active and passive strategies in a portfolio.

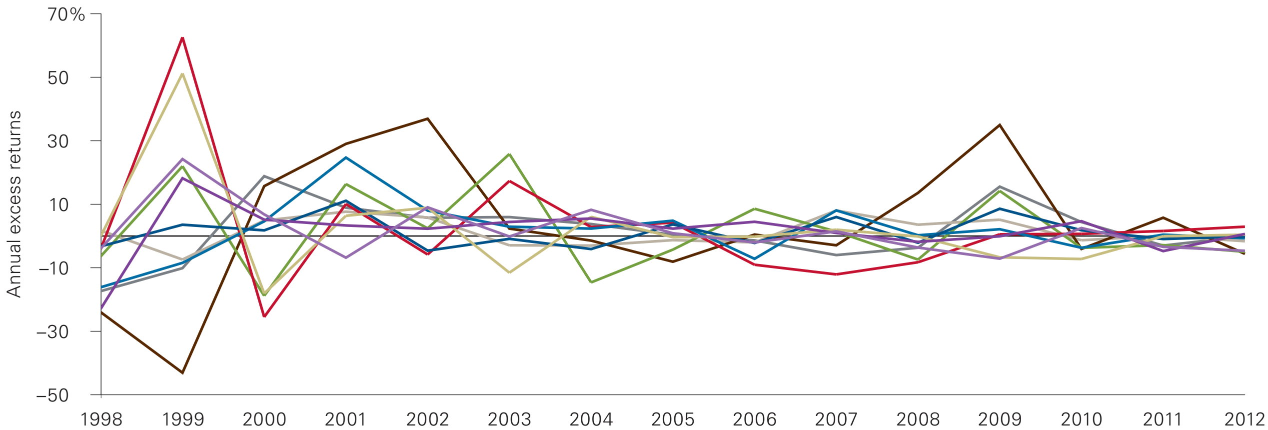
Next, we focused on consecutive years of underperformance. For many investors, three consecutive years of underperformance represents a breakpoint after which they will divest the fund. This can occur either for an explicit reason (for example, a requirement in an investment policy statement) or for psychological reasons (for example, an assumption that three years of underperformance indicates an unskilled manager). In **Figure 3** we show the portion of the original 1,540 funds that survived for 15 years, beat their benchmarks, *and* avoided three consecutive years of underperformance. The results are pronounced: Only 94—or 6%—of the initial 1,540 funds met these criteria. Stated differently, during this period, two-thirds of the outperforming funds experienced *at least* three consecutive years of underperformance.

Standardized performance reporting, which displays a single annualized return for a multiyear investment period, may mask these spells of underperformance. When investors simply see an average annualized 10- or 15-year rate of return, they may not be fully aware of the highs and lows that occurred along the path to that average.

In **Figure 4**, on page 6, we examine the relative performance of ten actively managed funds with annualized excess returns matching the median for

Figure 4. Yearly excess returns for ten median outperforming funds, 1998–2012

'Excess' returns were often negative: A jolting ride for investors



Note: The ten funds had annualized excess returns closely matching the median for all 275 successful funds: 1.1 percentage points above the relevant benchmark. Fund returns were measured against the benchmarks listed on page 3.

Source: Vanguard calculations using data from Morningstar.

the successful group: 1.1 percentage points annually over 15 years. The chart tracks the ten funds' calendar-year returns relative to their style benchmarks. It is clear that the ride was bumpy for investors in these funds. The random pattern of excess returns among the ten funds also highlights the challenge of "timing" managers, a strategy in which investors readily move from one fund manager to another in an attempt to improve performance. Manager timing can be very tempting to investors focused on short-term performance, but it's a strategy that prior research has shown to be generally unsuccessful.[7]

Conclusion

In this paper we examined the performance of all the actively managed U.S. domestic equity funds available to investors at the beginning of 1998. Assessing their fate over the 15 years through December 2012, we found that not only was the aggregate number of successful managers low, but the portion of those winning managers that were able to avoid short-term periods of underperformance was even lower. Indeed, only 6% of the initial 1,540 funds survived, outperformed, *and* avoided three consecutive years of underperformance.

Furthermore, our analysis illustrated that nearly all the funds that beat their benchmarks over that 15-year period suffered at least five individual years of underperformance. Our findings strongly suggest that investors should refrain from using short-term performance as the primary criterion for divesting (or investing in) an active mutual fund.

Short-term underperformance will likely accompany an active fund that achieves long-term outperformance. As a result, for those investors interested in pursuing active management, it is important to understand that to increase the odds of success they must be willing and able to endure numerous and potentially extended periods during which their fund will lag its benchmark.

7 See Goyal and Wahal (2008) for further analysis and discussion.

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