Principles of Intelligent Investors

By Bob French, CFA

12 PRINCIPLES OF INTELLIGENT INVESTORS

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Contents

Introduction

Want to get better at investing? Are you looking for simple, approachable ways to deepen your knowledge of the keys that create financial success? Using academic research and expert advice, this resource offers 12 principles for building wise, sustainable wealth.

At McLean, we take pride in helping investors who want to stop relying on guesswork. Our aim is to equip you with the skills you need to invest confidently, with thoroughly researched, evidence-based principles to guide you. These principles have emerged from decades of peer-reviewed study into how investors might best position themselves to capture the long-term wealth that capital markets can deliver.

We won't overwhelm you with technical calculations, we promise (although we're happy to provide details if you want them – just ask!). This resource is all about getting to the essential ideas you need to know – your bottom line – so you can put this information to work in your portfolio right away.

It's easy to think successful investors have advanced degrees in economics or a secret technique that makes them luckier than the rest of us. The truth is, becoming a savvier investor involves three simple ideas:

1. You don't need an economics Ph.D. to take advantage of the research offered by people who *do* have advanced degrees in finance.
2. Don't waste time and resources trying to outsmart the market. Organize your portfolio to play *with* the market, not against it.
3. Learn to identify the way your instincts can actually damage – rather than protect – your investments. These normal human impulses can wreak havoc on your portfolio, triggering the urge to make poor financial decisions at all the wrong times.

We've divided the principles into four chapters: chapter one deals with the basics of market pricing; chapter two explores the benefits of diversification; and chapter three is all about return factors. Chapter four explores how normal human impulses can hinder investment success and how to avoid those kinds of mistakes. Evidence-based principles offer a clear path to follow on the way to your investment goals, so let's get started.

Chapter 1

Market Pricing

Principle 1: Understand the Market and the Value of Group Intelligence

Understanding the basics of the market is an essential first step to realizing your financial goals. You – like all investors – are trying to buy low and sell high. At first, it may seem necessary to "beat the crowd," but research shows real returns come from flowing *with* market forces. The secret lies in understanding how market pricing occurs.

The Market: An Introduction

People often talk about "the market" as though it's a single entity. In fact, it's comprised of many markets – here and around the world – that trade stocks, bonds, sectors, commodities, real estate and more.

For the sake of simplicity, we'll think of the market as one place where a huge group of competing players are all attempting to buy low and sell high. Even though the members of the group are competing, they're also part of a cooperative process that moderates market prices and ensures they're fair.

World Equity Trading in 2014

	NUMBER OF TRADES	DOLLAR VOLUME
DAILY AVERAGE	60 MILLION	$302 BILLION

Source: World Federation of Exchanges. Global electronic order book figures gathered from the 59 WFE member exchanges.

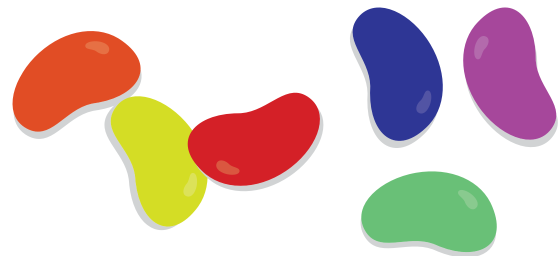
The Power of Group Intelligence: We're Better Together

For a long time, investors assumed the most efficient way to increase their gains in a market that *seemed* ungoverned was to be a good guesser – all they thought you could do was anticipate future prices and trade based on those assumptions. This strategy has been debunked by academic inquiry. A simple jar of jelly beans demonstrates why it's flawed (we'll get to that in a minute).

Research reveals that the market, while appearing to be chaotic when viewed up close, is not so ungoverned after all. In fact, studies show that it's subject to a number of clearly identifiable forces over the long term. Let's take a look at these forces and how they work in the market.

Group intelligence is one of the key forces in play. It simply means that, in situations when people are asked to correctly identify factual information, groups collectively arrive at accurate answers more consistently than even the smartest individuals in the same group. But there's an important stipulation: in order to achieve that outcome, the individuals in the study must be free to think independently, like they do in our free markets. If they don't have that independence, peer pressure can adversely influence the results.

Now, about that jar of jelly beans. James Surowiecki's groundbreaking book, *The Wisdom of Crowds*, tells the story of one study in which 56 students guessed how many jelly beans were in a jar containing 850 beans. The group's guess, which was the aggregated average of the students' individual guesses, came in close at 871, with just a single student guessing more accurately. Comparable studies done under various conditions have consistently demonstrated the same thing: group intelligence produced the most accurate results.



Let's bring this principle of group intelligence to bear on the market. Every day, scores of trades are made. A given trade may or may not be close to a "fair" price, but the aggregate average utilizes the data contributed by all the players, regardless of how skilled or knowledgeable they may be. Current prices are therefore set by a kind of collaboration within the market, providing the closest estimate for guiding trades. Although it's not foolproof, it offers a well-founded guideline for investors.

The Bottom Line

Savvy investors understand that the market forecasts prices more effectively than they ever could, and therefore trying to outsmart the market is a flawed strategy. The first step to more consistently buying low and selling high is simply to understand group intelligence and how it governs efficient market pricing. Now that studies have discredited the notion that you can outguess the market's collective wisdom, your job is to efficiently capture returns.

Next, we'll take a look at what causes prices to change.

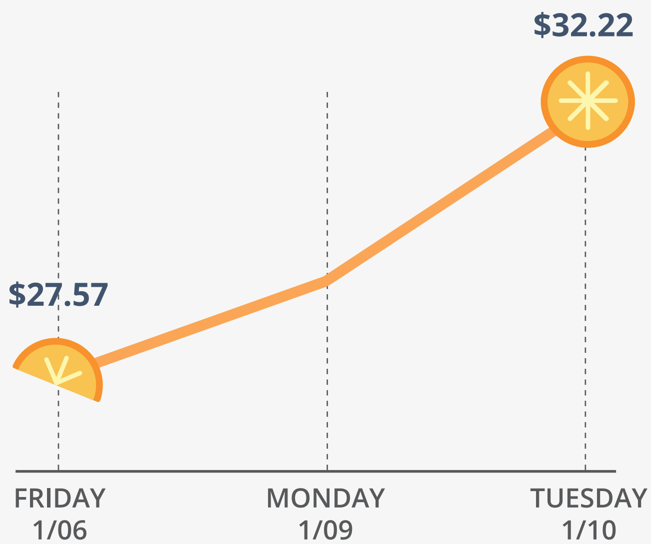
Principle 2: Ignore the Distraction of Daily Market Pricing

The previous point demonstrated how group intelligence makes for efficient markets (and accurately counted jelly beans). Now we'll consider how market prices are set. This information is essential to help you play with, rather than against, the wisdom of the market.

Markets React to Events

"Orange juice futures surge to record on fungicide fears"
- *Reuters*, January 10, 2012

Prices adjust when unexpected events alter the market's view of the future.



Source: Dow Jones-UBS Orange Juice Subindex. Dow Jones data provided by Dow Jones Indexes.

The 24-Hour News Cycle

One of the major reasons market prices change is the never-ending news cycle. We are continually exposed to reports of all kinds of events happening around the world. For example, when there are reports of blight impacting Florida's orange groves, orange futures might spike as the market anticipates a smaller supply.

You may wonder what all this global information means for you and your investment portfolio. Is it better to buy? Sell? Just ride it out? Instead of reacting to every trend that shows up on the cable news shows, you should know there is conclusive information available on how *not* to react. Statistical evidence reveals that you cannot consistently improve your investment results by changing your portfolio based on breaking news.

The News and Your Portfolio

Reacting to daily news is bad for your investments. The market adjusts its pricing faster than you can. Two principles are at work here.

First, it's less about an event happening and more about whether the market anticipated that event. The real factor influencing price is whether the news is better or worse than expected. If California's hypothetical almond blight is reported to be spreading, prices won't change sharply because the market was already prepared for bad news. A dramatic change may occur, on the other hand, if an effective new treatment is released that prevents further damage to almond trees, resolving the crisis.

So it's not just news that influences future pricing – it's unexpected news. Because market pricing is largely based on unforeseen events, it's impossible to consistently outsmart the market. Investors who think they can beat the market by forecasting future prices will always be thwarted by group intelligence.

The Horses Are Out of the Barn

Another reason to disregard breaking news is due to something known as "The Barn Door Principle." Because of today's micro-second electronic trading speed, by the time the news reaches you, market prices have already been affected by it. Researchers have determined that price-setting occurs nearly instantaneously (with U.S. markets moving even faster) during the first few post-announcement trades. There's simply no way to move faster than the market; the proverbial horses have already galloped out of the trading barn.

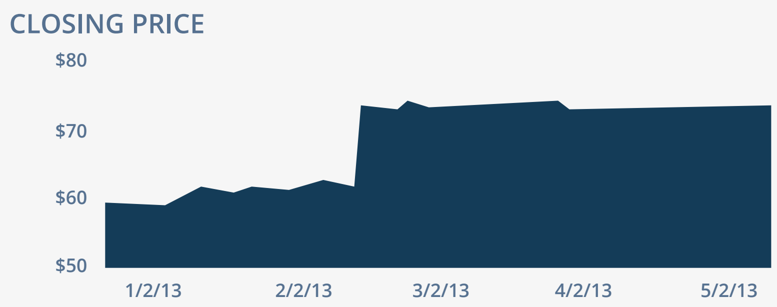
Stock Prices Adjust Quickly

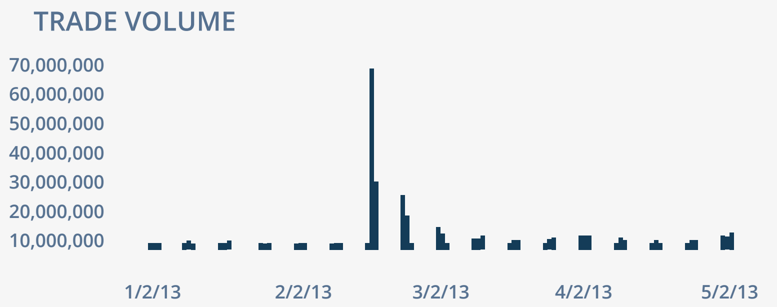
Heinz, 2/14/2013

"Heinz agrees to buyout by Berkshire Hathaway, 3G"

- *USA Today*, February 14, 2013

News travels quickly, and prices can adjust in an instant.





Source: Bloomberg
The security identified is shown for illustrative purposes only to demonstrate the investment philosophy described herein. These materials are not, and should not be construed as, a recommendation to purchase or sell the security identified or any other securities. Actual holdings will vary for each client, and there is no guarantee that any client will hold the security identified.

Because you're competing against automated traders who respond to breaking news in fractions of milliseconds, you'll always be at a disadvantage. In fact, trying to respond immediately to breaking news will often affect your profits negatively, effectively causing you to buy higher or sell lower than those who have already set new prices.

The Bottom Line

We recommend a better way to position your portfolio. The evidence shows you're better off opting out of the costly game of buying and selling based on rapidly-changing news. Instead, align your investing according to certain market factors you actually *can* manage to your advantage.

Before we look at those factors, you might be wondering why you shouldn't just hire an expert to compete against the market on your behalf. Many investors who don't feel like taking on the market themselves are attracted to the idea that a professional could do it for them. Let's look at the problematic reality behind this seemingly attractive option.

Principle 3: If It Seems Too Good To Be True, It Is

Now that we've seen why investors should resist the impulse to react to breaking news, let's look at why it's a bad idea to seek a finance guru to compete for you. *Morningstar strategist Samuel Lee sums it up nicely:* it's "rarer than rare" to find fund managers who have consistently outperformed their benchmarks.

Better Off with Group Intelligence

The truth is, even trained specialists who analyze business, economic or geopolitical information have the same problem that ordinary investors do when it comes to anticipating market reactions to current events. They're no better at predicting the future than anyone else, and furthermore, they have to compete against group intelligence. As we discovered previously, capital markets (like the independently-thinking groups in studies) are more skilled at determining correct answers than even the most intelligent people in the group, in part because their knowledge is already grouped into prices that adjust quickly and with relative accuracy to any unexpected events.

The Evidence on "Star Performers"

Perhaps you've heard of elite fund managers who have impeccable track records or brilliant stock brokers with exclusive formulas for investment success. Maybe you've seen TV personalities who seem to have a special edge. Investors who aren't satisfied by their returns are often tempted to seek advice from these "exceptional" performers. But before doing so, it's essential to look carefully at what really works.

If well-informed, careful investors were able to show higher returns based on advice given by star performers, there would be ample data to support it.

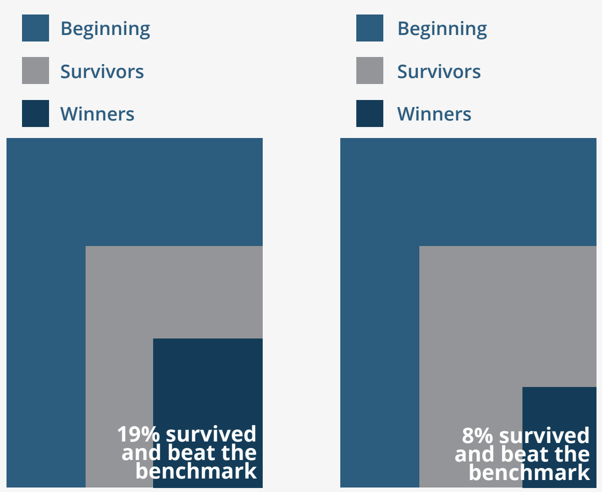
Unfortunately, there's no such evidence showing higher returns; in fact, there's an overwhelming body of evidence to the contrary. While some "active managers" fail to outperform comparable market returns, many do not survive at all. Only about half of some 1,500 actively managed funds available in 1998 still existed by the end of 2012, according to a *2013 Vanguard Group analysis*. A scant 18% of the surviving funds had outperformed their benchmarks. Other studies, such as Dimensional Fund Advisors' *independent analysis of 10-year mutual fund performance through year-end 2013* showed similar outcomes.

Outsmarting Other Investors is Tough

FEW MUTUAL FUNDS SURVIVE AND BEAT THEIR BENCHMARKS 15-YEAR PERFORMANCE PERIOD ENDING DECEMBER 31, 2014

EQUITY FUNDS

FIXED INCOME FUNDS



2,711
FUNDS AT BEGINNING

733
FUNDS AT BEGINNING

Past performance is no guarantee of future results.
In US dollars. . US-domiciled mutual fund data is from the CRSP Survivor-Bias-Free US Mutual Fund Database, provided by the Center for Research in Security Prices, University of Chicago. Beginning sample includes funds as of the beginning of the 15-year period ending in 2014. The number of funds as of the beginning is indicated below the exhibit. Survivors are funds that are still in existence as of December 31, 2014. Winners are funds that survive and beat their respective benchmarks over the period. Funds are identified using Lipper fund classification codes and are matched to their respective benchmarks at the beginning of the sample period. Loser funds are funds that did not survive the period or whose cumulative return did not exceed their respective benchmark.

Drawing from information gathered over the course of decades from markets around the world, a multitude of academic studies have analyzed active manager performance and consistently found that it comes up short. Michael Jensen made one of the earliest studies of this phenomenon in his 1967 paper, "*The Performance of Mutual Funds in the Period 1945–1964*." There was, Jensen concluded, "very little evidence that any individual fund was able to do significantly better than that which we expected from mere random chance."

Eugene Fama and Kenneth French's study from 2009, "*Luck Versus Skill in the Cross Section of Mutual Fund Returns*," shows the same outcome. They discourage active management because it's expensive and fails to deliver better results: "The high costs of active management show up intact as lower returns to investors."

From the mid-20th century to the present, as many as 100 comparable studies uniformly agree with Jensen, Fama and French. "Selecting active funds in advance that will achieve outperformance after deduction of costs is [...] exceptionally difficult," was the conclusion reached by the *Netherlands Authority for the Financial Markets (AFM)* after it conducted an overview of all this data in 2011.

If managed funds often fail to meet expectations, investors often assume that hedge fund managers and similar experts might be more successful. Unfortunately, the evidence does not support that assumption either. Ten percent of hedge funds available at the beginning of 2013 had closed by the end of the same year. The statistics are far worse for long-term funds, with nearly half of the funds going belly-up within five years, according to a *March 2014 Barron's column* on hedge fund survivorship.

The Bottom Line

Now that we've discussed a few common misconceptions about the value of active management, let's look at positive steps you can take to make the market work for you. The first step is getting familiar with a strategy that's been shown to succeed for investors: Diversification.

Chapter 2
Diversification

Principle 4: A Diversified Portfolio is a Healthy Portfolio

Diversification is one of your most important financial tools. This one strategy can simultaneously limit your exposure to investment risks while also potentially improving expected returns. Best of all, the benefits of diversification are well-documented and supported by over 60 years of academic research.

The Benefits of Global Diversification

Diversification simply means spreading risks around by populating your investment portfolio with a variety of holdings. It's not just about putting your eggs in different baskets; diversification ensures you have multiple baskets full of eggs and lots of other foods.

This is common knowledge to investors, but the fact remains that many believe their portfolios are more diversified than they really are. You may hold large numbers of stocks or numerous accounts, but take a closer look at your portfolio. If the majority of your holdings are concentrated in large-company U.S. stocks, your portfolio will not enjoy the benefits of genuine diversification.

A well-diversified portfolio provides three key benefits:

- It decreases your vulnerability to specific, avoidable risks.
- It cushions you during bumpy financial times, providing a smoother overall investment experience.
- It gives you confidence and helps you avoid stressful second-guessing of your investment decisions.

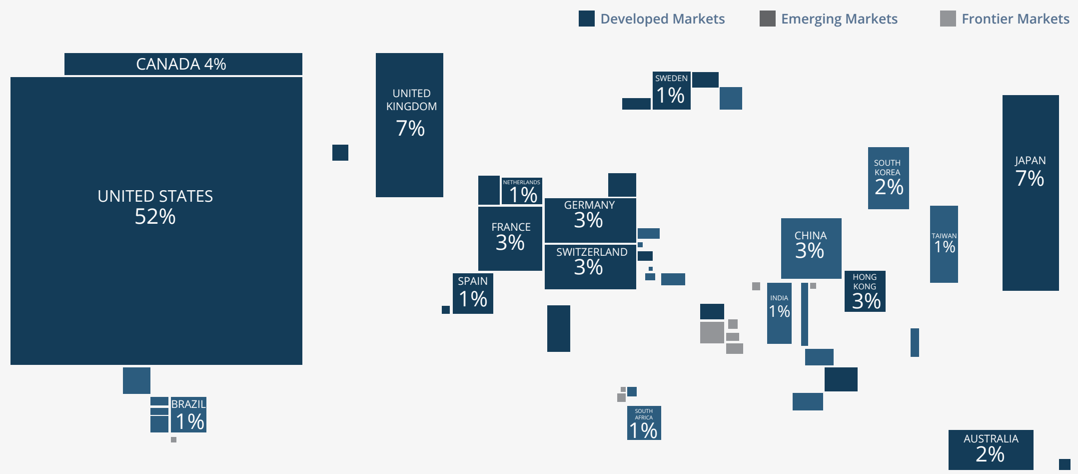
Without proper diversification, investors contend with higher costs, lower expected returns and – perhaps most detrimental of all – increased anxiety. When you're not adequately diversified, you're back in the problematic position of trying to beat the market instead of playing along with it.

Think Globally

Remember, a whole world of investment opportunities is available. Designed to facilitate meaningful diversification, tightly managed mutual funds offer efficient, low-cost exposure to capital markets found around the globe.

Diversification Helps You Capture What Global Markets Offer

Percent of world market capitalization as of December 31, 2014



In US dollars. Diversification does not eliminate the risk of market loss. Market cap data is free-float adjusted from Bloomberg securities data. Many nations not displayed. Total may not equal 100% due to rounding. For educational purposes; should not be used as investment advice. China market capitalization excludes A-shares, which are generally only available to mainland China investors.

For educational purposes; should not be used as investment advice.

The Bottom Line

Academic research demonstrates that working with brokers who attempt to beat the market is a waste of your time and money. While they may help you achieve some level of diversification, you're likely to experience high costs and unnecessary anxiety without receiving much benefit.

We instead advise our clients to focus on efficiently capturing diversified dimensions of global returns and only work with fund managers who share the same approach.

Principle 5: Intelligently Manage Market Risk

Wise diversification means low-cost exposure to a range of capital markets from around the world, as opposed to simply investing in many different accounts or securities. Diversification also allows investors to more successfully cope with two kinds of investment risks: avoidable concentrated risks and unavoidable market risks.

Lightning Bolts vs. Rain Storms

Concentrated risks are like lightning strikes that damage specific stocks, bonds or sectors. For example, when an individual company goes through a sudden downturn for whatever reason, stock prices also drop, causing investors to feel the pressure. This can occur even when the rest of the market is thriving.

Most economists consider concentrated risks to be largely avoidable. Investors inevitably experience occasional losses, but the impact of those losses can be significantly mitigated if your holdings are spread across global markets. It's easy to see how diversification buffers concentrated risks: even if some of your returns are negatively affected, your other, stronger holdings effectively neutralize any serious damage.

Diversification Reduces Risks That Have No Expected Return

Concentrating in one stock exposes you to unnecessary risks. Diversification reduces the impact of any one company's performance on your wealth.

Diversification does not eliminate the risk of market loss.

Market risks are the great equalizers – the rain showers that fall on everyone the same. These risks affect a large percentage of the market; anyone invested in capital markets faces them. You can hide your cash under the mattress and know for sure it won't go anywhere. (It may be worth less due to inflation, but that's *a different conversation*.) The moment you invest in the market, you're subject to market risk. It's unavoidable.

The Expected Rewards of Risk

Yet again we see the benefit of group intelligence. Fortunately, the market as a whole knows the distinctions between risks you can avoid and those you can't. This collective wisdom can guide us in how to intelligently manage our own investing using an evidence-based plan.

Concentrated Risks

Focusing on specific types of stocks or sectors in an attempt to beat the market leaves you exposed to higher concentrated risks. Investors using this strategy should not expect to see consistently high returns over the long term. Diversification, on the other hand, helps you steer clear of these risks.

Market Risks

Market risk can never be completely eliminated, even in well-diversified portfolios. Investors who hold steady even when risk goes up can expect to see higher returns as compensation for their tenacity. In the short-term, however, there is always the possibility that results may not meet expectations. Because of this, it's important that investors think carefully about taking on the right amount of personal financial risk. Diversification becomes a useful tool for gauging the appropriate amount of market-risk exposure for your portfolio.

The Bottom Line

Determine your ideal combination of concentrated risks and market risks. Achieve enough diversification to minimize risk exposure and maximize expected returns.

Principle 6: Diversify for Less Stress and a Steadier Ride

Diversification means steadier, less stressful progress toward your goals. Near-term market returns are subject to periods of dramatic volatility; diversification helps lessen the effects of those volatile leaps. Picture a group of lines on a graph, each one representing a different type of investment that, while somewhat up-and-down, nevertheless trends upward. Each investment by itself experiences a number of bumps, but these are smoothed out when the holdings are taken as a group.

Invest Across the Market

Diversification is effective due to the way price-changing events influence different market factors. While one type of investment may lose value due to particular news, another may gain value. Rather than quickly adjust and try to capture the good returns without the bad, a smart investor stays diversified across a wide range of holdings. With this strategy, underperforming investments are more likely to be offset by profits from those that stay steady or add value.

It's never possible to say with absolute certainty what the outcomes of diversification will be. All the same, decades of research show you're more likely to benefit from market returns with a blanket of diversified coverage than with guesswork or trying to move faster than the market.

In part, this is due to the fact that past outcomes are worthless when predicting which market factors will succeed in the future. Scholars who use color-coded charts to look for these patterns like to compare the results to a Crazy Quilt: there's no discernable pattern to be found in the data.

Diversification Helps Take the Guesswork out of Investing

Annual returns (%): 2000-2014

You never know which markets will outperform from year to year.

By holding a globally diversified portfolio, investors are positioned to capture returns wherever they occur.

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Higher Return	31.0	12.3	7.6	60.6	33.8	34.5	36.0	39.8	8.8	79.0	28.1	9.4	18.6	38.8	32.0
	9.0	8.4	5.1	56.3	33.2	23.5	32.6	8.2	6.6	44.8	26.9	3.4	17.9	32.4	13.7
	8.3	7.3	3.6	47.3	26.0	13.8	25.2	7.2	4.7	28.5	20.9	2.3	17.1	25.8	4.9
	7.3	6.4	3.4	36.2	18.3	4.9	18.4	6.3	-33.8	27.2	19.2	2.1	16.3	1.2	1.9
	-3.0	2.5	-2.0	28.7	10.9	4.6	15.8	5.9	-37.0	26.5	15.1	0.6	16.0	0.6	1.2
	-9.1	-2.4	-6.0	2.0	2.7	3.1	4.3	5.5	-39.2	2.3	3.7	-4.2	2.1	0.3	0.2
	-9.9	-11.9	-20.5	1.9	1.3	2.4	4.1	-1.6	-45.8	0.8	2.0	-14.7	0.9	-0.1	-1.8
Lower Return	-30.6	-13.6	-22.1	1.5	0.8	1.3	3.8	-17.6	-53.2	0.2	0.8	-18.2	0.2	-2.3	-5.5

- S&P Inex
- Russell 2000 Index
- Dow Jones US Select REIT Index
- Dimensional International Small Cap Index
- MSCI Emerging Markets Index (gross div.)
- BofA Merrill Lynch 1-Year US Treasury Notes Index
- Barclays Treasury Bond Index 1-5 Years
- Citigroup World Government Bond Index 1-5 Years (hedged to USD)

In US dollars. Diversification does not eliminate the risk of market loss. **Past performance is not a guarantee of future results.** Indices are not available for direct investment. Their performance does not reflect expenses associated with the management of an actual portfolio. Source: S&P data provided by Standard & Poor's Index Services Group. Russell data copyright © Russell Investment Group 1997-2015, all rights reserved. Dow Jones data provided by Dow Jones Indexes. Dimensional Index data compiled by Dimensional. MSCI data © 2015, all rights reserved. The BofA Merrill Lynch Indices are used with permission; copyright 2015 Merrill Lynch, Pierce, Fenner & Smith Incorporated; all rights reserved. Merrill Lynch, Pierce, Fenner & Smith Incorporated is a wholly owned subsidiary of Bank of America Corporation. Barclays Capital data is provided by Barclays Bank PLC. Citigroup bond indices © 2015 by Citigroup.

The Bottom Line

By diversifying your holdings, you're positioned for more sustainable exposure to risk, better capture of expected returns, and fewer bumps in the road. Diversification also means you don't need to guess what the market will do in the future. This brings relief from the nagging anxieties that plague so many investors and cause them to inadvertently damage their portfolios. Now let's take a look at what other strategies make for a solid portfolio.

Chapter 3
Factors That Impact Market Returns

Principle 7: Know the Basics About Market Returns

Now that we've seen the benefits of diversifying your portfolio to mitigate unnecessary risks, manage the ones you can't avoid, and ride out market volatility, the next step is understanding how best to capture expected returns. To do this effectively, investors need a working knowledge of where those returns originate.

What Are Market Returns?

The answer is simple, if often overlooked. Investors provide the financial capital that makes all business enterprises possible, from the mom who buys the lemons for her second-grader's lemonade stand, to shareholders of global companies. Market returns simply compensate investors for providing the capital.

Investing is not just giving your money away; when you purchase a stock or bond, you generate capital for business or agencies. The big idea is that when they've achieved success, companies return your capital to you, plus some additional compensation.

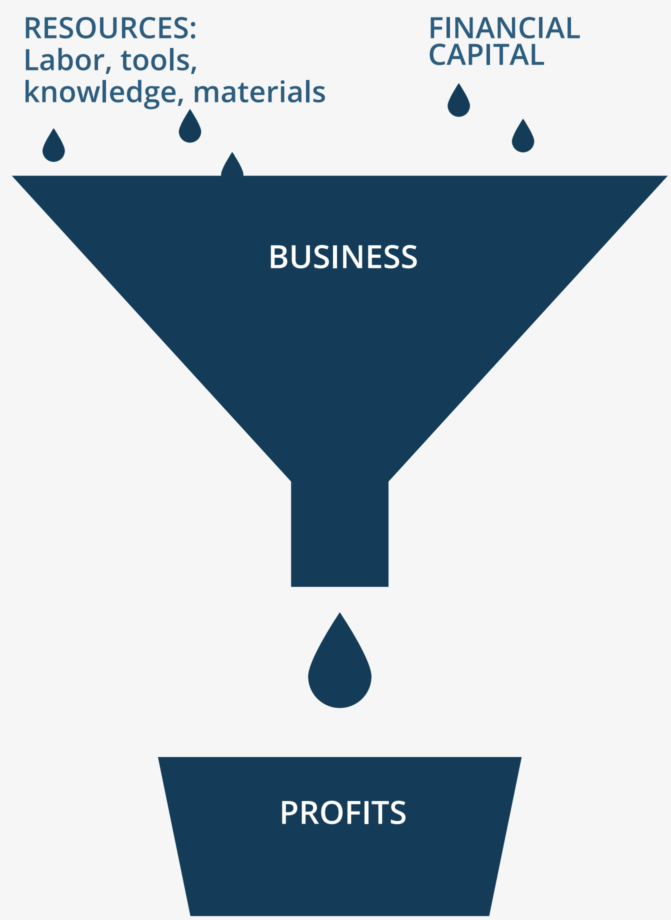
Investor Returns

Let's take a look at the relationship between company profits and investor returns. It might seem logical to assume a successful company should always pay out generous returns to its investors. In reality, however, an investor's returns are affected by a number of factors – not just the company's success. Investors shouldn't necessarily expect to reap huge benefits simply by buying stock in a booming business. By the time a company is known

Financial Capital Plays a Vital Role in Wealth Creation

Using financial capital and other resources, a business produces goods or services that can be sold for a profit.

As providers of financial capital, investors expect a return on their money.



to be successful, it will already have higher share prices and less room for growth.

Stocks and Bonds: The Facts About Market Returns

Investing in already-successful companies does not always guarantee higher returns, so let's talk about what will improve your chances. Of the myriad of important factors, market risk is one of the most potent. We talked earlier about the importance of diversifying away avoidable, concentrated risks, but investors who are willing to accept the market risks that remain after diversification can expect to be compensated for their higher risk tolerance.

Stocks (equities) and bonds (fixed income) are two of the broadest market factors, and most investors start by deciding how much of their portfolio they'll allocate to stocks and how much to bonds. It turns out those allocations matter significantly. Let's take a closer look at stocks and bonds to find out why.

If you invest in a bond, you're simply acting as lender. The business or agency that sold the bond borrows your capital and pays you interest. That interest is the return on your "loan." With bonds, you do not acquire an ownership stake, but you are more likely to be paid back with any remaining capital in the event of bankruptcy or default.

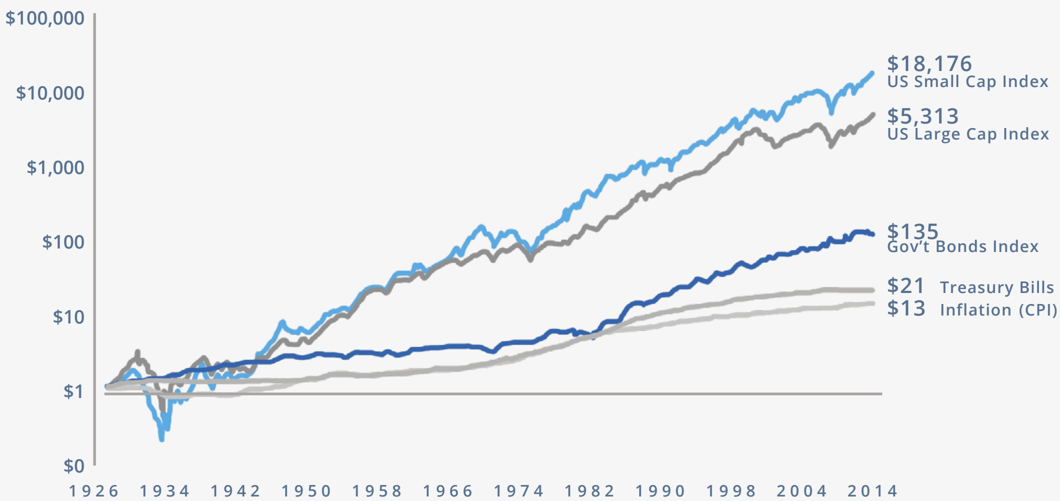
Stocks are different. Purchasing a stock makes you a co-owner in the business and gives you the right to vote at shareholder meetings. Increased dividends or share prices are the source of your returns, and if the company goes bankrupt, you are near the end of the line of those waiting to be repaid.

Because of all this, stocks involve more risk. Investors might not get the returns they anticipated or lose their investment altogether. As a rule, however, stocks generally deliver better returns over the long term.

When stocks outperform bonds, it's known as the "equity premium." It's not easy to predict exactly how much premium will be returned or how long it will take. Research on long-term stock-versus-bond performance demonstrates that stock returns eventually do pull ahead of bonds. This data also shows that stocks experience more ups and downs. Investors willing to tolerate exposure to risk are eventually rewarded with higher returns.

The Capital Markets Have Rewarded Long-Term Investors

Monthly growth of wealth ($1), 1926-2014



In US dollars. Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio. Past performance is no guarantee of future results. US Small Cap Index is the CRSP 6–10 Index; US Large Cap Index is the S&P 500 Index; Long-Term Government Bonds Index is 20-year US government bonds; Treasury Bills are One-Month US Treasury bills; Inflation is the Consumer Price Index. CRSP data provided by the Center for Research in Security Prices, The S&P data are provided by Standard & Poor's Index Services Group. University of Chicago. Bonds, T-bills, and inflation data © Stocks, Bonds, Bills, and Inflation Yearbook™, Ibbotson Associates, Chicago (annually updated work by Roger G. Ibbotson and Rex A. Sinquefield).

The Bottom Line

Historic data links higher risk with better returns, but academic research also suggests other factors contribute to stronger outcomes. Next, we'll look at these additional factors and examine why our evidence-based approach is so useful for navigating them.

Principle # 8: Implement Evidence-Based Investing

Markets reward investors for risking their capital in business enterprise, but because of the risk involved, you are not *guaranteed* to earn big returns. This is why your investment strategy matters so much. Extensive research and long-term studies have demonstrated the effectiveness of a strategy known as evidence-based investing. As the name suggests, evidence-based investing simply means you use a rational method based on evidence – not guesswork or secret formulas – to stay on track toward your investment goals. So what's involved in evidence-based investing?

Market Return Factors

For a number of decades, well-known economists and academics have studied financial markets. Their research focuses on questions like these:

- What factors contribute to high returns? Which of these factors repeatedly crop up over time in various global markets and different market conditions?
- How do these factors work? Can we determine why particular factors affect returns the way they do?

Financial Researchers and Financial Advisors

Using many decades' worth of market research, fund companies and other financial advisors are working on ways to determine whether the answers to these theoretical questions can be useful to ordinary investors after factoring in the costs involved.

Finding real-world applications for their research matters to scholars, too; it's in researchers' best interest to figure out how to apply their results. This is partly why it's important to maintain the separate roles of financial scholar and financial professional, so each group is doing what they do best in their respective fields.

Academic Studies Mean High Standards

Why should you put any stock in the research of academics? Academic data is held to extremely high standards. It requires:

AN OBJECTIVE, THIRD-PARTY PERSPECTIVE – Ideal academic inquiry does not begin by trying to support a specific, predetermined theory. Instead, it begins by investigating interesting or unusual market events and detailing the outcomes of the investigation.

THOROUGH DATA ANALYSIS – The analysis must do the following:

- Use advanced mathematics (such as multi-factor regression) to isolate the genuinely important elements in an otherwise confusing mix of factors.
- Compare apples to apples by using appropriate benchmarks to determine whether a given strategy is a success or failure.
- Avoid data that is too limited, too short-term or draws from too small of a sampling to be representative.
- Avoid "survivorship bias," in which researchers opt only report on funds that survive, excluding funds that were closed during the course of the study (often due to underperformance).

ELIMINATION OF ATYPICAL RESULTS - Reliable information comes from studies that are repeatable and reproducible. As with scientific study of any kind, a number of researchers working in different environments must be able to reproduce the test and get similar outcomes. This limits the chances of a single study producing random or atypical results.

PEER REVIEW - The most effective safeguard for getting sound research results is the peer review system. It means that before a study is published, it must be reviewed by another researcher in the same field with the same standards and credentials to examine their work. In the peer review process, an academic community works together to reach consensus on the validity of the results and make any necessary critiques or corrections.

The Bottom Line

The "evidence" in evidence-based investment comes from decades of thoroughly-vetted economic research. Taken together, it provides a set of guidelines to help you use the research in your portfolio, avoid inadequate or unreliable strategies, and reinforce your ability to grow your assets over the long term.

Principle # 9: Build an Evidence-Based Portfolio

Now you're ready to utilize the tools of evidence-based investing to build your portfolio and get closer to achieving your financial goals. These steps are essential for moving forward:

1. Evaluate the factors at play in your portfolio to determine whether they can offer the kinds of returns and diversification benefits you need.
2. Understand why the factors exist, so you can better work with them.
3. Determine what other factors, if any, might best augment your approach.

Evaluate the Factors

Sixty-some years of research demonstrates that three stock market factors have important implications for your portfolio over time. You may have heard your financial advisor call this "three factor modeling."

First, stocks (equities) have been shown to yield higher returns than bonds (fixed income). This is the *equity premium* concept we discussed previously.

Second, and perhaps counterintuitively to some investors, small-company stocks have been shown to return more than their large-company counterparts. This is known as the *small-cap premium*. The third factor is the *value premium*. Growth companies have higher ratios between their stock price and things like their earnings, cash flow and sales. Value companies, on the other hand, have lower such ratios. Value premium means that, because their stocks appear to be undervalued by the market, value companies have returned more growth.

The bond market also carries premiums. Economists have identified two primary factors that influence how much return bonds will yield. The first – known as the *credit premium* – describes how bonds with higher credit ratings, like U.S. Treasury bonds, return less than bonds with lower credit ratings, like “junk” bonds. The second is the *term premium*, or how bonds with far-term due dates return more than bonds that come due in the nearer-term.

Dimensions Point to Differences in Expected Returns

Academic research has identified these dimensions, which are well documented in markets around the world and across different time periods.

EQUITIES	**Market**	Equity premium– stocks vs bonds
	Company Size	Small cap premium– small vs large companies
	Relative Price[1]	Value premium– value vs growth companies
	Profitability[2]	Profitability premium– high vs low profitability companies
FIXED INCOME	**Term**	Term premium– longer vs shorter maturity bonds
	Credit	Credit premium– lower vs higher quality bonds

Diversification does not eliminate the risk of market loss.

1. Relative price as measured by the price-to-book ratio; value stocks are those with lower price-to-book ratios.

2.Profitability is a measure of current profitability, based on information from individual companies’ income statements.

Understand Why Such Factors Exist

Members of the research community as well as the financial planning sector are interested in isolating return factors to see if they really exist and, if so, why. If a factor is determined to exist and persist over time, it will be built into the broader strategy. There are two major reasons why some factors persist long-term and others don’t: behavioral and risk-related.

How Behavioral Instincts Affect Investors

Research shows that, naturally, the human element is a factor. Sometimes our deeply-ingrained survival instincts clash with the parts of us that try to make rational financial decisions. When gut reactions win out, we tend to ignore our well-planned strategies and inadvertently damage our portfolio. Thus, those who are able to control their reactions to breaking news may have greater investment success. Educating yourself about the basics of behavioral finance provides you with knowledge that may help you neutralize your fight-or-flight impulses down the road.

The Correlation Between Risks and Rewards

Keep in mind the relationship between risk and reward. Earlier, we discussed the ways the market rewards those who tolerate the kind of risk that can't be diversified away. Our example about value stocks being riskier – and yielding better outcomes – than growth stocks reinforces the point. CBS MoneyWatch columnist Larry Swedroe *puts it this way*: "Value companies are typically more leveraged (have higher debt-to-equity ratios); have higher operating leverage (making them more susceptible to recessions); have higher volatility of dividends; and have more 'irreversible' capital (more difficulty cutting expenses during recessions)."

The Bottom Line

Tolerating added risk and controlling your own potentially damaging impulses are key factors that may figure into higher market returns. In addition to evaluating the amount of risk built into your portfolio and understanding behavioral finance and risk and reward, it's a good idea to keep an eye on additional research that sheds light on other intriguing factors. Even a robust, evidence-based portfolio may be strengthened by the benefits they offer.

Principle # 10: Implement Profitability and Momentum

Researchers have determined that the two most effective additional factors are profitability and momentum. Both show the potential to generate more premiums, which appear to be the byproduct of assuming more market risk, suppressing the impulse to overreact to market changes or a combination of the two.

- **Profitability** - This factor simply means profitable companies have delivered stronger returns than low-profitability companies.
- **Momentum** - Like a snowball rolling down a hill, stocks tend to keep doing whatever they've done recently. Whether they've over- or underperformed, they appear to sustain the trend longer than forecasts would normally expect.

A Few Cautions to Consider

Before we dig deeper into profitability and momentum, it's important to keep a few caveats in mind. First, a factor may exist in theory, but that doesn't always equal successful outcomes for in the real world. The goal is to generate expected premiums without incurring too many expenses; the cost must not cancel out the reward. Second, we also want to emphasize that some of these factors are still being vetted by the evidence-based community to determine their long-term value. Even though they may have been at work in the market for a while, academics have only recently identified them, and only time will tell the degree to which they benefit investors.

Additionally, sometimes factors work in opposition to each other. Adding one factor to your portfolio may mean letting go of another. [Jared Kizer puts it this way](), "One generally can't tilt toward both value and momentum at the same time, because the two strategies tend to be highly negatively correlated." It takes careful consideration to determine what trade-offs may move you toward your goals.

These variables lead to a difference of opinion among financial advisors on how or even if profitability, momentum and other newer factors should best be integrated into investment portfolios. As we evaluate the ongoing research, we invite you to contact us personally so we can talk about your options and assess whether these factors help you reach your goals.

Information Overload

Evidence-based investment theory was born out of data analysis and rigorous study. Peer-review, journal articles and integrating new information has always been and will continue to be vital to the process of developing and refining the reliable strategies we recommend.

Yet for many investors, abundant information is not a useful tool that helps them develop a sound investment plan; rather it feels like a paralyzing barrage. Perhaps you've been overwhelmed before by the contradictory advice of various finance experts. In the face of so much data and conflicting opinion, even cautious investors can give way to panicky reactions and unintentionally damage their carefully constructed portfolios.

Reliable Sources

Where are investors supposed to turn for advice that cuts through the hype and keeps them on track? We believe strongly that an evidence-based advisor relationship can provide this kind of guidance. Sticking firmly to your strategy – instead of reacting to every news flash that scrolls across the screen – will benefit your portfolio as well as your overall wellbeing. Our response to "new" market information involves vetting it over time with questions like:

- Are the results repeatable and reproducible? Have other researchers in a variety of markets reached similar outcomes? Over long periods of time, do the results stay consistent?
- Have financial advisors and academic researchers alike given it thorough analysis? Has it gone through a rigorous peer-review process?

This kind of examination protects investors from being derailed by ever-changing headlines or contradictory advice.

The Bottom Line

Our goal is always to evaluate new financial information thoroughly in order to point our clients toward the evidence-based insights that will best serve them, while steering clear of useless trends. We always encourage investors to work with advisors who have the same priorities.

Chapter 4

Your Brain, Your Portfolio

Principle # 11: Recognize the Human Factor

All the evidence-based strategy in the world, no matter how deep the analysis or how painstaking the peer review, is still subject to the human factor. Positive or negative market news can activate powerful impulses in our brains that disrupt even the most well-laid plans.

When asked to describe how they make choices, studies show that people like to describe their decision-making as being grounded in rationality. The truth is, our instincts, emotions and biology play a much greater role than we like to think.

Fight, Flight and Finance

Being able to respond quickly to threats or new information was essential to our survival in prehistoric times, and in many ways our brains are still wired with fight or flight instincts that kick in with powerful force.

If we hear our child in distress, our adrenaline kicks in and we're on our way immediately. In the same way, our brains respond with bonding hormones when we embrace a loved one. This chemistry keeps us safe and connected in most situations, but it can also harm our portfolios.

Because the market favors the steady and cool-headed, it's essential for investors to identify those chemistry-driven instincts when they appear. If you don't learn to spot them, they can fool you into believing you're following a wise course of action, when in fact you're operating in fight or flight mode. Unfortunately, these reactions can cause real trouble, financially-speaking. As renowned neurologist and financial theorist *William J. Bernstein said*, "Human nature turns out to be a virtual Petri dish of financially pathologic behavior."

Behavioral Finance and Your Portfolio

Fortunately, there's a field of academic study that brings evidence-based research to bear on how the human factor relates to financial health, known as behavioral finance. Researchers in this field study the parts of human nature that contribute to the Petri dish of financial pathogens.

In "*Your Money and Your Brain*," Jason Zweig of the Wall Street Journal provides a helpful overview of the research. He describes various market circumstances, followed by a breakdown of how our brains respond. If you've been in the market for any length of time, you've surely experienced the things Zweig describes.

Say the market suddenly soars. In your frontal lobe, your reflexive nucleus accumbens responds, filling you with a drive to grab the opportunity and buy. When you get news that the markets are down, your amygdala activates a flight response and releases a burst of corticosterone. You might feel a knot in your stomach and an impulse to eliminate losses by selling.

But these types of responses are only part of the challenge for investors. In addition to the involuntary activity of our brains, we're subject to a whole host of biases that can negatively impact our financial strategies. These include loss aversion, overconfidence, preference for recency, herd mentality, confirmation bias, and sunken costs. We'll talk more about these biases shortly.

Mental Error

Humans Are Not Wired for Disciplined Investing

When people follow their natural instincts, they tend to apply faulty reasoning to investing.

The Bottom Line

These challenges highlight the need for investors to bring in an evidence-based financial advisor. When we notice that behavioral biases are getting in the way of financial success, we're able to help investors see the problem and avoid the pitfalls.

Principle # 12: Watch for These Six Behavioral Biases

Learning to recognize the problematic unconscious biases that may influence investors' financial choices is a big step toward avoiding them. Investors under the influence of these biases may feel like they're just common sense, but studies show that, when unchecked, they can cause real trouble.

1. **Loss Aversion** - The thought of losing something valuable causes negative feelings more strongly than the positive feelings that come from gaining something. In "Your Money and Your Brain," Jason Zweig asserts that "doing anything - or even thinking about doing anything - that could lead to an inescapable loss is extremely painful." We see loss aversion play out when investors hang onto cash or bonds in bear markets because it feels safer – even though the evidence demonstrates that long-term returns would go up if they would buy stocks while prices are low. The fear of losing their capital is a bigger motivator than the hope of seeing strong returns later.

2. **Overconfidence** - The opposite of loss aversion is overconfidence. This very common bias is the belief that one's own skill as an investor is superior to others. It plays into the dangerous false belief that you can do better than the collective wisdom of the market.

3. **Recency** - This is the temptation to respond to the information of the moment rather than stick to the plan based on established research. It's a powerful impulse, but it must be checked. We often see large numbers of investors rushing to sell their stocks and buy bonds when the markets drop, even though evidence shows stocks have better returns in the long run. This is an example of recency bias.

4. **Herd Mentality** - This affects investors when they see trends moving in the market and believe they have to follow the crowd. Sometimes this looks like a run on a stock or some other type of exciting purchase opportunity. Herd mentality also influences large groups of investors to abandon ship when things look risky. In both cases, this bias leaves investors vulnerable to damaging their portfolio by buying high or selling low.

5. **Confirmation** - This is the powerful impulse to give credence to the data that supports our opinions and ignore information that challenges them. Because human nature is so strongly inclined to confirmation bias, evidence-based investment strategy becomes even more crucial to making objective decisions.

6. **Sunk Costs** - Sometimes investors resist letting go of past losses. When an investment fails, sunken-cost logic leads to the desire to hang on until prices go up again. Sometimes they do, but in other cases, investors just end up throwing more money at bad investments. Although it hurts to admit defeat, clinging to such losses can damage an otherwise healthy portfolio.

The Bottom Line

Gaining a working knowledge of behavioral economics will assist you as you make the best possible decisions for your portfolio. We encourage investors to look honestly at the six biases above to determine whether their strategy might be negatively impacted by any of them. The insights offered by behavioral economics can significantly add to investor confidence and skill. It's important to keep in mind, however, that even very self-aware investors can still be affected by these deeply-ingrained biases. That's why it's essential to get input from an objective financial advisor who may be able to detect hidden influences and help investors eliminate them.

Conclusion

We hope this resource provides you with useful tools as you implement evidence-based investing. These principles are backed by decades of research and can guide investors down a clear path toward their financial goals. Anyone can benefit from following these principles:

- Utilize the Knowledge of Experts - Don't worry if you never got around to earning an advanced degree in economics. Use the peer-reviewed, time-tested principles of evidence-based investing.
- Instead of trying to outsmart the market or employ trendy new formulas, organize your portfolio to play *with* the market, not against it.
- Learn to identify the way your brain-based instincts can actually damage – rather than protect – your investments. Then bring in expert advice to help manage these impulses and keep your portfolio healthy and strong.

We hope our evidence-based investment ideas prove useful. We would love to start a personal conversation with you to help evaluate your needs, discuss your goals and create a strategy to help you effectively capture market returns. Give us a call today and let us know how we can help.

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