

THE MEASURE OF ALL THINGS

*ASSET ALLOCATION PERSPECTIVES /
OUTLOOK FOR 2019*



EXECUTIVE SUMMARY

Last year, our annual outlook publication, *Confronting The Unknown*, focused on risk: how we define it, how we measure it, and what we saw as the major risks facing investors in 2018. The discussion, unfortunately, was timely given the market volatility we experienced last year. Two of the five risks we highlighted—the risks of rising interest rates and heightened global trade tensions—were top of mind for investors throughout the year. Later in the year, markets became anxious about other topics, such as a potential economic slowdown, a new level of dysfunction in Washington (including unusual executive challenges to the Fed's independence and an extended partial government shutdown), and escalating trade disputes between the U.S. and China. All of this weighed heavily on equity returns across the globe in 2018.

Entering 2019, we face rising economic, political and market risks. But the drop in valuations experienced at year's end, alongside higher bond yields, offered a foundation for better long-term return expectations across most asset classes. Given that backdrop, many of our client conversations during the back half of 2018 centered on how we might balance these opportunities and risks. Valuation is one of the key drivers of long-term future equity market returns, and as such, we thought an appropriate topic for this year's publication would be a deeper dive into valuation—the figures we examine to gauge valuation, the manner in which we adjust portfolios in response to valuation shifts, and the state of market valuations today across asset classes and regions. There is no silver-bullet metric for valuation analysis, and as we will demonstrate later in this report, the variety of metrics that we monitor—from price/sales ratios to enterprise value/EBITDA multiple—sometimes point in different directions. We believe that by gathering a wide spectrum of information, we can cut through the market's noise and make informed decisions that help us lean into value and away from more expensive areas.

TABLE OF CONTENTS

Executive Summary	2
Investment Landscape	4
Valuation: Perspectives, Methods and Outlook.....	8
2018 Asset Allocation Outlook and Model	17-20
Valuation Focus: U.S. vs. Non-U.S. Equities	21
Conclusion	27

One example of this which we will explore in depth is examining the opportunity set between U.S. vs. non-U.S. equities along with the topic of geographic diversification. The prolonged period of strong U.S. performance has led many U.S.-based investors to consider severely reducing or even abandoning non-U.S. equity exposure. Consistent headlines about political turmoil (such as in the U.K., Italy and Turkey), economic challenges (such as in China, Argentina and Germany) and structural issues (such as in Japan and Italy) have fueled concerns about non-U.S. markets. But there are still long-term opportunities to invest in great companies in these countries. We wanted to offer a holistic look at how we think about the geographic mix of our equity investments.

This is also a fitting moment to review the intersection of risk and valuation. 2018 marked the 10-year anniversary of the depths of the 2008–09 financial crisis, an event that tested the strength of the global financial system, the will of the global body politic, and the mettle of everyday citizens throughout the world. We are now also nearly 20 years separated from the collapse of the internet bubble in the late 1990s. During both of these periods, asset prices became disconnected from reasonable estimates of intrinsic value. Investors who weathered these storms all bear scars, but we can all draw important lessons from those events about the risks of excess leverage in portfolios or on balance sheets, the importance of sticking to your investment discipline, and the need to maintain a diversified asset allocation with robust liquidity to withstand periods of market mayhem.

We don't see the same levels of excess in either market valuations or excessive debt levels that we saw in 1999 or 2008, but global economic growth appears to be slowing, and we do see rising risks of a recession in the U.S. Our base scenario for 2019 includes a deceleration of U.S. growth, but not a recession. Nevertheless, we are concerned about the pressures of rising interest rates and the potential blowback from global trade strife. On the other hand, the recent

market sell-off has taken valuations in equity markets to somewhat more attractive levels. In our conversations with external managers, and with Brown Advisory's own equity and fixed income research teams, we are hearing more excitement about bottom-up investment opportunities than we have in the past few years. In non-U.S. markets, the opportunities look even more attractive from a pure valuation perspective, and one area of particular focus in this publication will be how valuation and other factors inform our views and decisions about investments in Europe, emerging Asia and other areas of the world.

We are moderately cautious in our portfolio positioning at the start of 2019, with reduced equity exposure vs. our long-term targets and an emphasis on liquidity in our client portfolios. In times of elevated volatility, we seek to remain disciplined, control the natural human impulse to retreat from losses, and avoid any overreactions to near-term price movements. We have been preparing client portfolios for these conditions for more than two years and believe we are in a good position to approach today's challenges from a position of strength and patience.

But this stance is a baseline that changes for every client, depending on that client's situation. The title for this year's report comes from a quote from the Greek philosopher Protagoras, often paraphrased as "Man is the measure of all things"—a statement about relativism (i.e., two people can experience the same set of conditions differently, and both experiences are equally valid representations of reality) that cuts to the heart of our work. The objective realities of today's market may lead to very different advice and diverging paths for our clients, informed by their time frame, circumstances and temperament. Our aim is to help them reconcile the objective and subjective factors that play key roles in their long-term plans.

As always, we hope this paper leads to valuable conversations with our clients and helps us make better decisions together as a result. We look forward to hearing your thoughts and comments.

INVESTMENT LANDSCAPE

2018 started as a continuation of 2017, with stocks marching upward, but quickly changed course in February as the S&P 500 Index swiftly dropped by more than 10% during a two-week stretch in January and February. This volatility and bipolarity came to define 2018, as investors weighed the positives of a strong U.S. economy with the negatives of rising rates and trade war concerns. U.S. stocks performed well for the first three quarters of the year, but the year ended with a bona fide market correction. The S&P 500 Index experienced a peak-to-trough drop of more than 19% between the start of October and Christmas (followed by a year-end and January rally that somewhat mitigated losses). Global equity markets broadly declined by more than 10% in the fourth quarter and generally ended the year in negative territory. In many ways, 2018 was the inverse of 2017, as non-U.S. stock markets underperformed materially and the strong U.S. dollar detracted further from returns for U.S. dollar-based investors in those markets.

Interest rates were a major focus for U.S. investors throughout the year. The Federal Reserve hiked rates four times during 2018, and December's increase to a range of 2.25–2.50% was the highest level for the Fed Funds rate since the spring of 2008. Longer-term rates followed suit for most of the year, and 10-year U.S. Treasuries sustained yields above 3% for the first time since 2011. In December,

fears of an economic slowdown pushed rates back down, but yields were still well above where they started 2018.

Inflation marched steadily higher in 2018, hitting a 10-year high and rising above the Fed's target of 2%, while unemployment fell below 4%, a 50-year low. Given the Fed's dual mandate to curb inflation and unemployment, it hiked rates in December despite the market's sell-off.

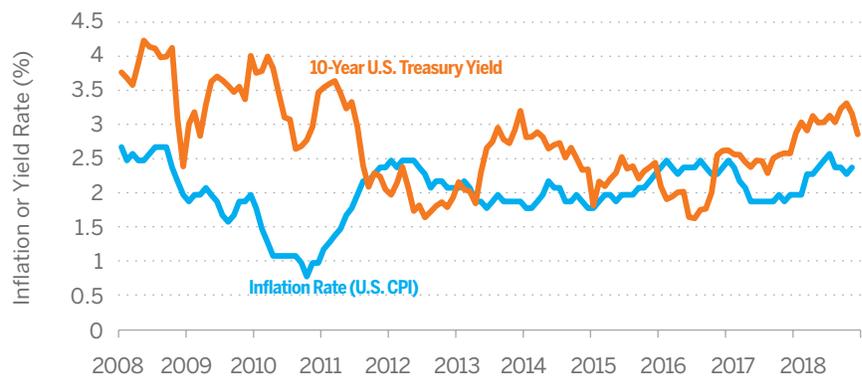
On trade, markets were less concerned about actual tariffs being imposed in the U.S. (for example, the moderate tariffs on approximately \$250 billion of Chinese imports) and more focused on escalating rhetoric and policy uncertainty. Such uncertainty makes it difficult for companies to plan capital expenditures and for investors to project results for companies dependent on foreign trade.

On the positive side, U.S. economic growth and corporate earnings accelerated in 2018, buoyed by tax cuts, fiscal stimulus and regulatory reform. However, much of this improvement was already baked into equity valuations by the end of 2017. In addition, most other large economies saw decelerating growth, with Europe, Japan and China all showing signs of a material economic slowdown. Further still, rising U.S. interest rates contributed to a strong U.S. dollar, which pressured emerging markets. Currency shifts led to poor returns for USD-based investors placing capital outside the U.S. Conversely, euro- and sterling-based investors gained a boost to their U.S. equity returns.

Slowly Simmering

Inflation hit a 10-year high during 2018, while 10-year U.S. Treasuries sustained yields above 3% for the first time since 2011. The rise in both of these metrics played an important role in the reversal in market sentiment toward the end of the year.

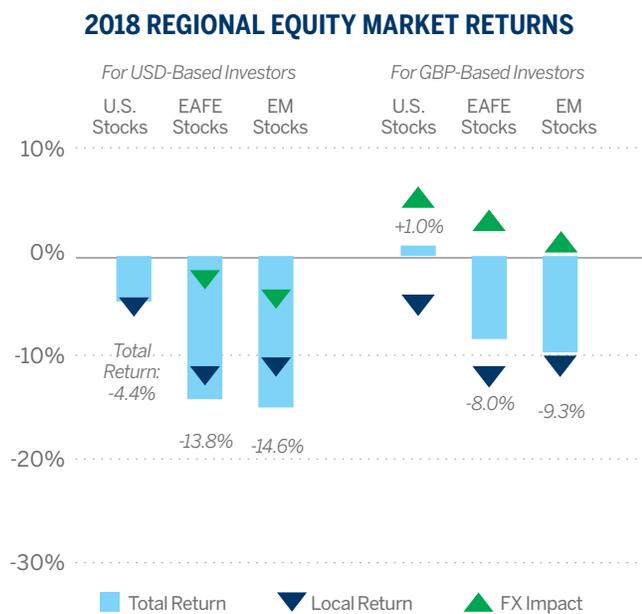
TREND IN CORE INFLATION AND 10-YEAR TREASURY YIELD, 2008–2018



SOURCE: BLOOMBERG

Lost in Translation

Because the U.S. dollar strengthened in 2018, currency impacts in 2018 were largely negative for unhedged USD-based investors who invested in non-U.S. markets. For unhedged sterling-based investors, on the other hand, currency translation effects were more beneficial.



SOURCE: BLOOMBERG USING RUSSELL 3000 INDEX FOR U.S. EQUITIES, MSCI EAFE NET TOTAL RETURN (LOCAL) INDEX AND MSCI EMERGING MARKETS NET TOTAL RETURN LOCAL (INDEX) FOR U.S., EAFE AND EM EQUITY RETURNS RESPECTIVELY. PLEASE REFER TO THE BACK COVER FOR A COMPLETE LIST OF INDEXES USED TO REPRESENT VARIOUS ASSET CLASSES AND REGIONAL MARKETS THROUGHOUT THIS REPORT.

Equity valuations moved noticeably lower in 2018, although most measures other than earnings multiples suggest that U.S. stocks are still not cheap by historical standards. European and emerging markets have started to look cheap relative to their long-term averages; despite underperformance of European and emerging Asian equities in 2018, we maintain our positions in these markets and are looking to rebalance back up to our target weightings. Corporate credit spreads widened toward the end of the year but held up relatively well compared to equities. We feel that the credit opportunity is not yet compelling enough to warrant an increased allocation.

An old Wall Street saying states that “bull markets don’t die of old age—the Fed kills them.” In the early months of 2019, all eyes remain on the U.S. Federal Reserve. The probability of a hike at the Fed’s March meeting (according to Fed Funds futures) fell from 60% in November to near zero by year’s end, and the direction the Fed hits rates in 2019 (up or down) will likely impact markets throughout the year. On top of the potential drag from rising rates, most economists predict slower 2019 growth in the U.S. Few economists predict a 2019 recession, but we see a growing possibility of a recession in the next two years. In an environment with rates rising, unemployment at its lowest levels since 1969, inflation picking up and corporate leverage (i.e., debt relative to capital) levels on the rise, caution seems warranted. Our long-term return expectations across most asset classes have risen because of falling market valuations, but we still expect portfolio returns to be below the “normal” post-WWII experience due to lower interest rates and lower global growth.

We entered 2018 with a fairly moderate risk stance in portfolios, and made relatively few adjustments during the year. Most notable was our midyear reduction in equity exposure in favor of fixed income. This decision was based largely on rising yields in bond markets that offered a more attractive return opportunity, the rising risks for stocks mentioned above and what we saw as a shrinking equity premium for U.S. equities at that midyear point. We also stressed the importance of maintaining a sufficient reserve of safe, liquid assets available for near-term spending needs. Of course, with hindsight, we know that a larger shift from equities would have served us well, but we rarely if ever place large bets on near-term market direction. The best investors are correct only modestly more often than not, so we tend to make gradual and incremental shifts in our portfolios. The fact is that asset classes do not suddenly become attractive or unattractive—these changes are gradual, so we too shift our portfolio weightings gradually, thereby reducing the significance of the moment we choose to make a shift. The goal, as always, is to keep focused on the long-term plan for each of our clients and produce a long-term outcome that meets their future needs.

CURRENT POSITIONING BY ASSET CLASS

We are positioned fairly conservatively in most client portfolios, seeking lower equity, credit and interest rate risk than our long-term target benchmarks. The recent downturn in stocks has not changed our views materially. Equity markets are starting to get more interesting, and we are looking closely for timely and targeted opportunities to increase equity exposure in portfolios as valuations fall, but we are being patient as we do so. We are slightly more willing to take on interest rate risk given higher yields and the fact that the risk of economic slowdown is rising relative to the risk of significantly higher inflation. We still seek overall duration exposure below that of broader bond markets—yields are still below long-term averages, and inflation risk, though reduced, is still a factor given a tight U.S. labor market and rising trade tensions.

Equities: We seek to balance our weightings in equity markets, which form the core of most client portfolios, with exposure to other diversifying asset classes.

Emphasize Europe and the U.S. within developed markets, with lower exposure to Japan (against a broadly cautious stance on equities overall). Valuations fell in both the U.S. and Europe in 2018 to levels that appear relatively attractive vs. recent history. Europe continues to trade at a relative discount to the U.S.; we think that discount is a bit wider than it should be, but our enthusiasm for Europe is tempered by political uncertainty from issues such as Brexit and by our growing concern about the health of a number of large European banks. Our exposure in Europe is focused largely on robust, multinational companies in the consumer, industrial, health care and technology sectors—these are companies that we would be comfortable owning throughout an economic cycle. In 2018, Japan saw heavy foreign capital outflows, and equity valuations are as low there as they have been in decades. We still aren't compelled to increase our weighting in Japan (a sentiment shared by many of our fundamentally focused external managers), given low growth and unfavorable demographics. Notably, central bank support for the Japanese market is in uncharted territory—Japan's central bank now owns 5% of the country's stock market and nearly half of its government debt.

Overweight U.S. small caps vs. large caps. This emphasis in our portfolio was a boon during the first nine months of 2018 but a clear detriment in the fourth quarter. Nevertheless, we still seek to hold approximately one-third of our U.S. equity allocation in small-cap stocks. Some of our reasoning is structural and therefore somewhat enduring—smaller companies are generally covered by fewer analysts, the market is imperfectly informed about them, and their volatility can present attractive entry points for individual stocks. But we also see attractive relative valuations in smaller companies at the moment, and fundamentally, these companies have benefited more from recent U.S. corporate tax cuts than larger firms.

Overweight Asia within emerging markets. We are strong believers in the long-term opportunity in Asia presented by faster growth, improving corporate governance and increasing innovation. In our view, Asian equities today are trading at a wider discount to global benchmarks than is warranted. We haven't lost any of our enthusiasm as Asian markets have underperformed, and we are focused on rebalancing portfolios back up to their target weights as the relative value has become even more attractive to us. We acknowledge the headwinds of trade policy and a slowdown in China but take comfort in our ownership of quality growth companies with strong balance sheets and good corporate governance. We have begun using a combination of active and passive strategies to pursue our emerging-market investment thesis, in an effort to couple the potential for alpha generation from local expert managers with lower-dispersion allocations.

Fixed Income: Our view on fixed income has transformed a bit since last year's report. Broadly, we are more positive on prospective bond returns relative to stocks; specifically, higher yields and rising leverage levels have made us marginally more comfortable with interest rate risk but increasingly cautious about credit risk. We expressed these views by increasing our fixed income allocations, increasing our portfolio duration and further reducing allocations to high yield in portfolios. Brown Advisory's bond managers, as well as the external credit managers with whom we work, focused on increasing

credit quality in their portfolios in 2018, reducing risk as credit spreads tightened. Spreads widened again at the end of 2018, but we remain cautious on credit risk. That being said, credit is often one of the first places we see opportunity after a period of market turmoil clears and our outlook improves—credit investments generally have a lower risk profile than equities, and their income component offers tangible compensation for risk. 2018 was a good reminder that owning quality fixed income in our portfolios, and resisting the urge to reach for yield, is one of the most reliable ways to preserve or even grow capital during equity market downturns.

Private Investments¹: We seek to invest with managers with the ability to add value to their companies or assets. We believe such managers can drive attractive returns even when valuations are elevated. We consider it essentially impossible to “time” private investments, so we seek to maintain consistent allocations and invest almost exclusively via funds with multiyear investment periods.

Real Estate: In 2018, we launched our first multimanager private real estate fund. We plan to launch these funds on a regular schedule so clients can gradually invest across vintage years. These funds will seek to invest in skilled, value-adding real estate managers, while preserving some capital for direct investments in attractive properties.

Real estate is an important portfolio diversifier. Like all asset classes, real estate has become more expensive in recent years, but we believe that the real estate arena is differentiated and idiosyncratic enough to let managers generate attractive returns with low correlation to other assets, even in an expensive market.

Buyout and Growth: Valuations, in our view, are relatively high in traditional private markets. A competitive buyout market has led to increased use of debt and higher prices. To combat higher valuations, we have targeted middle- and small-market buyout managers that can add value through operational improvements and accretive add-on acquisitions at lower multiples, believing that such managers are well-positioned for the current environment.

Venture Capital: Record levels of capital are being invested in a small number of venture-backed companies,

pressuring valuations and extending the length of time that companies stay private. To find value, we seek to partner with well-established managers as well as promising emerging managers earlier in their life cycle. (These emerging managers are still unproven; we scale our investments accordingly.) We believe that our relationships with several emerging managers should open up attractive levels of access to those managers in the future if they demonstrate the success we expect. In 2018, we combined with NextGen Venture Partners, a seed-stage firm with a differentiated, network-driven model for sourcing and examining investments. NextGen has the potential to serve as a source of compelling direct investments.

Income Strategies: In the same spirit as our private equity and real estate fund series, we plan to launch our first multimanager private credit vehicle in 2019, helping us further diversify client portfolios into areas with less correlation to public markets. A flexible structure should enable investment in private lending and distressed debt, as well as structured finance strategies such as royalties, leasing and litigation finance that offer high competitive barriers, noncorrelated return streams and high current yield. A two-year investment period lets us be opportunistic about entry points; we believe that our clients will benefit from having capital committed and ready to deploy if market conditions suddenly shift.

Hedge Funds: After years of strong bull markets, hedge funds were given an important test in 2018. We saw solid results from a number of our managers, who generated alpha and protected client capital well in a challenging market. Changes to our hedge fund roster in recent years (notably, our emphasis on smaller, differentiated managers with less portfolio overlap with broad markets and the hedge fund industry) aided our results. We have been shifting capital away from long/short equity strategies and toward event-driven, long/short credit and global macro strategies that generally have lower correlation to broad market moves. We expect to continue these shifts toward diversifying strategies and also toward managers that offer lower fees for large investors, early investors or those willing to accept longer lock-up periods.

VALUATION: PERSPECTIVES, METHODS AND OUTLOOK

At the heart of every investment decision is a deceptively simple judgment—what is the intrinsic value of the asset we are buying, and how does that compare to the price we are paying for it? In investment parlance, the process of comparing intrinsic value to price is generally referred to as *valuation*. Asset class valuations are one of the most important inputs that inform our long-term return estimates, and thus our asset allocation recommendations.

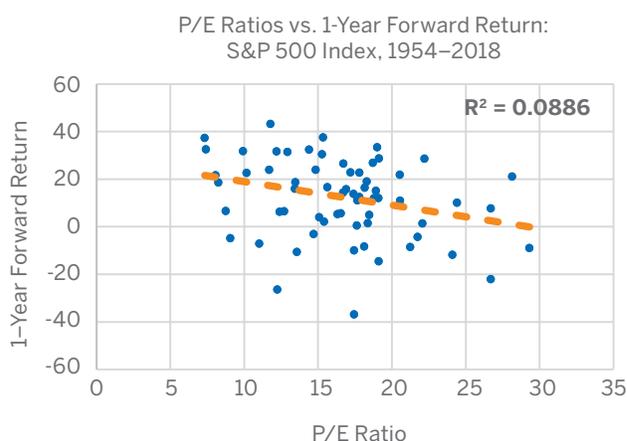
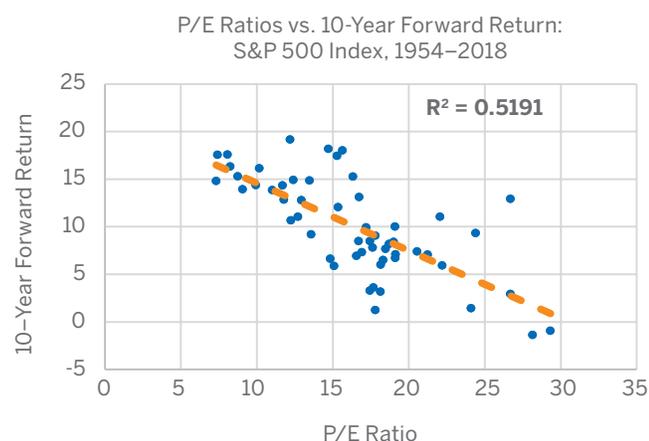
Valuation is the process that helps us understand the gap between fundamentals and sentiment, and is thus a crucial exercise in our effort to spot situations where we may be vulnerable to risk or positioned for opportunity. One might suppose that public markets would be capable of spotting such situations and quickly adjusting, but history clearly demonstrates that this is not the case. Investors over the past 20 years have experienced two major market disruptions—the collapse of the internet bubble in the late 1990s and the global credit crisis in the late 2000s—and both of these disruptions are examples of “irrational exuberance,” in which capital flows and leverage spiked aggressively within highly overvalued markets.

As we noted in our introduction, we do not see the extreme excess in today’s market that existed in technology stocks in 1999 or in real estate in 2008. Valuations advanced steadily and reached fairly high levels in 2018, but the correction at the end of last year brought valuations in some asset classes and regions back into more attractive ranges. Given the market’s volatility and the mixed macro signals that investors are attempting to parse, a discussion about valuation seems timely as it relates to any potential adjustments to long-term allocation plans.

Before we discuss specific valuation metrics, we want to begin by stating that valuation is an important component that we use in projecting long-term returns (with the general trend of higher starting valuation translating to lower subsequent returns), but we believe it is far less helpful in thinking about short-term returns. Far too often, valuation is discussed in the financial media as a factor driving the immediate direction of the market. But history indicates that the relationship of valuation and short-term returns is quite weak. As shown in the chart below, valuation explains very little of the variability of one-year returns since 1990, but it correlates strongly with 10-year returns

The Long Game

Valuation is a helpful input for estimates of future returns—but only for long-term returns. The charts below show that price/earnings ratios in any given year have been a meaningful predictor of returns over the subsequent 10-year period but have offered almost no predictive value in explaining one-year forward returns.



SOURCE: BLOOMBERG

during that time period. **As such, we want to reinforce that this entire discussion is aimed at exposing our thinking about long-term asset allocation, and is not an attempt to predict the direction of the stock market in 2019.**

PERSPECTIVES ON VALUATION

At first glance, valuation can seem like a simple exercise. Valuation for publicly traded stocks, for example, is often expressed as a price/earnings (P/E) ratio. The P/E ratio is popular because it is easy to calculate and easy to understand, but this simplicity comes with shortcomings. A single metric, like GAAP-based earnings, is often not the best proxy for shareholder value. Earnings are more easily manipulated than cash flows, corporate profit margins tend to be quite cyclical and share buybacks can inflate earnings per share without creating any economic value for a company. Finally, P/E ratios only offer a view of current conditions, not an investment's future prospects. In other words, if we want to get a comprehensive view of valuation, we need to dig deeper.

We evaluate any valuation metric on a) its ability to accurately represent underlying economic value, b) our ability to consistently and accurately measure it, and c) the strength of the historical relationship with forward returns. In some asset classes, valuation offers strong predictive value about future returns, while in others, it may offer almost no predictive value at all. For investment-grade bonds, valuation metrics like yield to maturity and yield to worst are easily calculable and are strong predictors of future returns (certainly at the broad index level, if not always at the level of individual securities). For example, the yield-to-worst metric for the Bloomberg Barclays Aggregate Bond Index offered high correlation with forward 10-year returns (R-squared = 0.88) between 1975 and 2018. Conversely, commodities have no easily measurable valuation metric, other than the real value of spot prices relative to history, which has a fairly weak relationship with forward returns, and thus valuation offers minimal insight about the future direction of commodity prices. The marginal cost of production is often cited as

a helpful valuation metric for commodities, but it is very hard to measure and highly volatile. In 2015, for example, production of cheap shale oil started to seriously impact oil prices—the drop in marginal production costs is obvious in retrospect, but at the time, many analysts were still calling for a market recovery based on marginal cost estimates in the \$70 to \$80 range.

Equities fall in between these two poles. Equity valuation metrics—and there are a fairly wide range of these metrics, each with their own strengths and weaknesses—are certainly helpful in projecting long-term returns but not as predictive as they are for fixed income returns. The various metrics we consider each provide helpful information, and some are more useful than others for evaluating different corners of the equity universe. By considering all of these metrics alongside each other, we can begin to develop a sense of whether a specific equity-market segment is cheap, expensive or fairly valued.

METHODS OF VALUATION

In the table on page 10, we define and describe a variety of metrics that help us examine a company's market value relative to its intrinsic value.

Most of these ratios relate various baseline financial metrics to a company's publicly traded stock price. One additional metric, EV/EBITDA, is different from the others and deserves a bit more discussion. EV/EBITDA offers several advantages over other metrics. EV, or enterprise value offers a different view of a company's value than its stock price, because it also includes debt and cash. For example, two companies might have the same P/E ratio, but the one with less debt will have a more attractive EV/EBITDA ratio. The other part of the calculation, EBITDA, can sometimes be a better indicator of core business strength as it excludes from earnings items such as interest, taxes (which vary according to company structure or country/state of domicile) and the depreciation of assets (noncash charges that can be manipulated). However, the metric is not always helpful for every company or industry. Financial companies and utilities, for example, often have substantial and structural interest and/or depreciation

Key Equity Valuation Metrics

Investors have access to a variety of different valuation metrics; each of these can be quite useful in certain situations but less useful in others. Here, we've listed some of the metrics we consider in our valuation work. When weighing the importance of each metric in a given situation, we consider its theoretical strengths and weaknesses as well as its historical efficacy within the relevant context. We should note that a shortcoming shared by all of these metrics is that they are based more on backward-looking data than on the future prospects of a company or market.

	Definition	Strengths	Weaknesses
Price/Earnings (P/E)	Current share price divided by annual earnings per share (based on a trailing period or projections for a future period).	Ratio is simple to calculate and widely used across the industry.	Is not useful for companies with negative earnings. Earnings can be more easily manipulated than some other metrics. It is sometimes hard to separate recurring vs. transient earnings.
CAPE (Cyclically Adjusted P/E)	A P/E ratio variant that uses a trailing, inflation-adjusted long-term average (typically 10 years) as its earnings figure.	CAPE adjusts for impact of business cycles and for inflation. There is evidence of strong correlation between CAPE and long-term returns.	Evolving accounting standards make historical comparisons difficult. May be skewed by extended periods of high or low valuations. Extended 10-year time frame may not accurately depict current environment.
EV/EBITDA	Enterprise value (EV) divided by EBITDA (earnings before interest, taxes, depreciation and amortization).	Incorporates a company's balance sheet quality. Controls for differences in depreciation; useful for examining capital-intensive companies. Can be positive when earnings are negative.	Is less useful in industries with structurally high interest or depreciation expense. Free cash flow may be a better proxy for company value than EBITDA.
Price/Book Value	Market value of a company's equity, divided by the value of equity recorded, or "booked," on a company's balance sheet.	Can be positive even when earnings are negative. Typically more stable than P/E ratios.	Can be misleading if asset definitions or accounting practices differ across companies or industries. Share repurchase or issuance can distort historical comparisons.
Price/Sales or EV/Sales	Current share price (or EV per share) divided by annual revenue per share (based on a trailing period or projections for a future period).	Determined by a more straightforward calculation than earnings. Can be positive, while earnings can be negative. Typically more stable than P/E ratios. Good for valuing mature, cyclical or loss-making companies.	Revenue conveys very little about profitability. Does not reflect differences in cost or operational efficiencies across companies. Different companies may use different revenue recognition policies.
Price/Cash Flow	A company's share price divided by annual operating cash flow per share or free cash flow per share.	Cash flow is less prone to manipulation than earnings. Using cash flow calculations addresses different accounting methods used across companies.	Free cash flow can be negative and is often volatile for companies. Companies can inflate cash flow measures, such as operating cash flow. May not be appropriate for financial firms and capital-intensive companies, given the significance of noncash expenses.

SOURCE: BROWN ADVISORY

expense baked into their business model; because of this, EV/EBITDA is often not the best indicator of business strength for these companies, and the metric is not useful as a comparable vs. other industry sectors.

Similarly, price/cash flow is often favored by analysts over P/E (cash flow results are generally harder to manipulate than GAAP earnings), but in capital-intensive industries, depreciation is a major noncash expense, and for financial companies, changes in asset valuation and loan loss provisions (again, noncash items) are important business drivers.

Of course, the basic P/E ratio can potentially offer false signals to investors because earnings can be manipulated in a number of ways. Case in point: Over the past several years, stock buyback activity has ticked up meaningfully among S&P 500 Index companies (see chart below), and this coincided with strong year-over-year earnings growth from 2017 to 2018. While the uptick in buybacks is not the only factor driving earnings-per-share (EPS) growth, there is a clear relationship between these two trends. Buybacks increase earnings per share by decreasing the number of shares outstanding, which in turn can produce a lower P/E ratio when in fact corporate valuation has not changed.

EPS Can Be a Deceptive Indicator

A change in earnings per share does not always mean a change in fundamental profitability. The growth in EPS for U.S. stocks over the past few years was at least partly driven by stock buybacks.



SOURCE: BLOOMBERG. DATA IS AS OF 9/30/2018 AND IS THE MOST RECENT AVAILABLE AT TIME OF PUBLICATION.

In short, none of these metrics is optimal in an absolute sense. Each has its place, and in our process, we look at all of these figures in tandem to develop as full an understanding as we can of the relevant valuation issues for a security, industry, market or region.

Of course, valuation is a more complex exercise than comparing one static number to another. In our work valuing equities, several key factors come into play:

Structural differences in markets: Every stock market is made up of different components, with a certain percentage of market float in different industry sectors and market-cap ranges (i.e., small-cap or large-cap companies). When one stock market appears overvalued compared to another, it is often attributable to structural differences in the component makeup of those two markets. For example, U.S. and European equity markets have meaningful differences in their sector makeups. Europe’s market is weighted more heavily in financials than the U.S., while the U.S. market is far more skewed toward technology. Financials generally trade at lower valuations than tech firms (the former sector broadly exhibits higher leverage, lower margins and slower growth than the latter), so the gap in valuation between U.S. and European stocks is partly explained by the fact that Europe’s market contains a larger weighting in a sector with lower valuations.

The right metric for the right segment: The best example of this concept is the stark difference between the “best” metrics for large-cap vs. small-cap stocks. Earnings-based metrics are fairly predictive for large-cap equity returns but have minimal historical statistical relationship to returns for small-cap companies. Meanwhile, sales-based ratios can be effective in predicting long-term returns for small-cap stocks (margins for smaller companies tend to be quite volatile, so during a “trough” period for margins, a company’s P/E ratio might appear inflated when in fact earnings are poised to rebound and potentially buoy forward returns).

Changes over time may invalidate historical comparisons: In emerging markets, state-owned commodity and financial companies once dominated equity markets, but their share of total capitalization

has declined greatly over time as well-run, high-growth technology and consumer companies have blossomed. Thus, comparisons of valuations in these markets today vs. 20 years ago are limited in utility because of their major transformation into very different markets over time. Japan offers a different historical challenge. It took more than a decade for Japanese valuations to renormalize after that country's massive equity bubble in the late 1980s; that extended period when numbers were out of whack greatly skews historical comparisons.

The business cycle matters: When gauging the meaning behind a valuation metric, context is key. When business conditions are unusually strong or weak, valuations can become distorted and misrepresent embedded risk and/or opportunity. For example, oil prices ran from about \$20/barrel in 2001 to \$140/barrel in 2008, which caused oil production company valuations to look attractive from a P/E perspective in 2008, despite the recent dramatic rise in their stock prices. However, with hindsight, we know just how vulnerable those valuations were to a shift in the market environment, which happened as oil prices collapsed in the second half of 2008.

The same phenomenon can occur with broad valuations for entire equity markets. When the economy is growing, corporate revenue growth and margins are generally healthy, and companies have ample access to capital. To a certain extent, this characterizes the recent U.S. experience, so we need to pointedly ask ourselves whether we think the economic environment will remain as favorable as it has been recently. This is a primary argument for using the CAPE ratio (cyclically adjusted P/E ratio, or "Shiller P/E Ratio," in recognition of Robert Shiller, who developed the metric). CAPE uses a trailing 10-year average for its earnings denominator, in an effort to normalize earnings across an economic cycle. While the logic behind CAPE is sound, one issue to note is that by the end of 2019, we will be fully 10 years removed from the last recession. Thus, the standard CAPE ratio will encompass a time frame characterized entirely by economic expansion (assuming, of course, that there is no recession in 2019).

Interest rates matter: Interest rates generally reflect the return opportunity for bonds, and most diversified investors are constantly looking at the risk/reward trade-off between stocks and bonds. Therefore, as interest rates rise, investors will sell out of equities to buy bonds unless the return expectation for equities also rises to justify current prices. This begins a process to reach equilibrium—if and when investors sell equities, then prices fall and valuations drop. Eventually, the forward return opportunity for equities will increase to a point that equities become attractive once again relative to bonds. Interest rates are also a discount mechanism for the future cash flows that a company generates, and future cash flow potential is the core variable determining a company's enterprise value. As interest rates rise, the present value of those future cash flows declines. For these reasons, higher interest rates have a dampening impact on valuations.

This is not to say that short-term valuations are driven by interest rates; over shorter periods, cyclical considerations tend to overwhelm smaller interest-rate moves. However, the market's perception or a structural shift in rates (i.e., a resetting of the "normal" baseline level for interest rates) can lead to meaningful shifts in valuation levels. Equity markets fared well during the post-crisis years, especially considering the sluggish GDP growth during that period, partly because the market came to believe that extremely low interest rates were the "new normal" and thus accepted higher equity valuations. The reverse occurred in the late 1960s and 1970s; GDP growth was quite robust, but interest rates seemed permanently stuck at high levels, so equity markets struggled (especially after accounting for inflation).

VALUATION OUTLOOK

So where are we today with valuations? As was discussed earlier in the outlook section, valuations are above historical norms in most asset classes, thanks to the lengthy global economic expansion as well as years of accommodative monetary policy around the world.

The graphic on page 13 offers a quick view of our current valuation thinking, via a rough placement of various asset

Summary of Our Valuation Viewpoints Across Asset Classes, as of Dec. 31, 2018

EXPENSIVE	U.S. Large-Cap Equities Still above trend despite 2018 correction.	Private Equity* Multiples have risen, notably in growth and buyout. Competition continues to drive increased leverage and higher prices.			
	Investment-Grade Bonds Real yields still slightly below historical norms.	Real Estate* Cap rates for office and multifamily properties have fallen broadly vs. bond spreads.	U.S. Small-Cap Equities Somewhat elevated vs. long-term norms, but less so than large-cap valuations.		
INEXPENSIVE	High-Yield Bonds Real yields below historical norms, but spreads above norms.	Japan Equities Japan cheaper than U.S., but it still faces major economic and structural challenges.	European & U.K. Equities Europe cheaper than U.S., partly due to different sector weightings.	Commodities Broadly near long-term real price norms. Note: Valuation is a poor predictor of commodity returns.	Private Credit* Attractive yields & lower volatility vs. broader credit market. Recent inflows have offset banks' exit from this space.
	Latin American Equities Wide historical variation makes region hard to gauge. Generally, valuations appear slightly better than fair value.				
	Asia ex-Japan Equities Historical comparisons understate the value in the region, which features higher-quality companies than it did in the past.				

SOURCE: BROWN ADVISORY. *INVESTMENTS AVAILABLE FOR QUALIFIED PURCHASERS AND ACCREDITED INVESTORS ONLY.

classes along the “overvalued/undervalued” spectrum. (Note that the volatility of the market, particularly across public equities, means that the placement of these asset classes along this spectrum may be especially fluid in the early part of 2019.)

FIXED INCOME

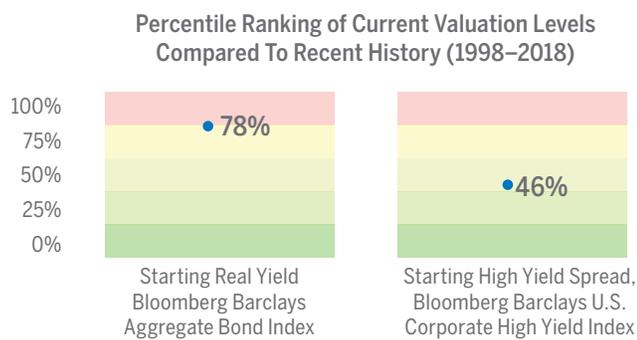
Investment-Grade: Nominal (not adjusted for inflation) and real (adjusted for inflation) interest rates are, in our view, the most pertinent valuation metrics in fixed income, alongside yield spreads. Real yields tend to be most important for investment-grade bonds, while credit spreads are more important for high-yield bonds. Rates

rose meaningfully in 2018, after a multiyear period when yields were at historically low levels. On both a nominal and real basis, investment-grade yields are at a seven-year peak; in the U.S., yields exceed inflation by more than 150 basis points, a marked difference from mid-2016, when yields were below inflation. Overall, real yields are still below their 20-year average level but are reasonably close to their longer-term (75-year) average of 2.2%.

Credit/High Yield: Credit spreads were well below historical norms in the first nine months of 2018, but the volatility of the fourth quarter pushed spreads above long-term average levels. In the past, the combination of two factors—credit spreads at above-norm levels and

Summary of Fixed Income Valuations Relative to History, as of Dec. 31, 2018

In the broader bond market, starting real yields (a primary metric for valuing investment-grade bonds) are currently well above historical norms, while credit spreads (a key metric for high-yield valuation) are fairly in line with recent history.



SOURCE: BLOOMBERG

government bond yields at below-norm levels—has generally been a weak but positive indicator of long-term credit returns (R-squared = 50.8%). Spreads are still well below levels reached in late 2015 and early 2016 that motivated us to allocate opportunistically to high yield. The implied forward default rate at the moment offers additional reason for caution. We are closely watching this space—after a period of downside volatility and at the point when risk/reward appears more attractive to us, credit is often a good option for initial forays into riskier assets. Credit assets generally have strong mean-reversion characteristics and provide income streams, both of which make them generally less risky than equities.

EQUITIES

U.S. Equities: Depending on which metric you emphasize in your thinking, the U.S. market might look expensive or inexpensive relative to history. U.S. stocks look more attractive on a P/E basis relative to history; however, when looking at price/book or price/sales, the market is far more expensive (these metrics nearly approached levels last seen during the late 1990s internet bubble

before the fourth-quarter correction). Higher comps for price/book and price/sales are partly due to sector shifts—for example, financial stocks generally have lower price-to-book and price-to-sales ratios, while tech stocks carry richer valuations on these metrics, and sector allocation in the U.S. has shifted strongly away from financials and toward technology over the last decade. We also note that valuations are still boosted somewhat by low interest rates (even considering that rising rates were a primary driver of the correction at the end of the year). Overall, despite falling considerably in 2018, we still view U.S. equity valuations as broadly elevated, given the degree to which most valuation metrics, outside of P/E, are above historical norms. That being said, as you go down the market capitalization spectrum, valuations become somewhat more attractive (especially keeping in mind that metrics like price-to-sales and price-to-book have a far stronger relationship with returns for smaller companies).

Developed Non-U.S.: Equity market valuations are more attractive outside of the U.S. Again, sector dynamics are an important driver of the difference between valuations in U.S. and non-U.S. markets. In Europe, for example, financials are a bigger part of the stock market than in the U.S., and heightened regulation and extremely low interest rates have led financials, particularly banks, to trade at very low valuations. Additionally, Europe's market does not have a large weighting in technology stocks, and the tech sector in the U.S. is a big reason for the overall market's elevated valuation levels. That being said, European markets do appear cheaper than the U.S. even accounting for sector dynamics; it's simply important to know that the headline numbers overstate the differential.

Emerging Markets: Sector changes in emerging markets (EM) would lead one to believe that valuations should be on the rise: Technology-related stocks—new firms like Alibaba and Tencent, as well as established firms like Taiwan Semiconductors—are a bigger part of emerging markets today, and the state-run financials and resource companies that once dominated EM indexes (and trade at low multiples) are a smaller part of those markets. However, EM valuations are still attractive relative to history.

Summary of Regional Equity Valuations Relative to History, as of Dec. 31, 2018

Here we look at a number of valuation metrics across regional equity markets, in terms of where current valuations sit on a percentile-rank basis relative to the past 20 years (1998–2018). (Time period chosen based on data availability across regions.) U.S. equity valuations are still fairly rich despite the sell-off late last year, especially when looking at CAPE, price/book or price/sales ratios. Europe and emerging Asia, in contrast, appear fairly valued, and according to some metrics, these regions appear inexpensive relative to history.

Percentile Ranking of Current Valuation Levels Compared to Recent History (1998–2018)



SOURCE: BLOOMBERG

PRIVATE EQUITY AND REAL ESTATE

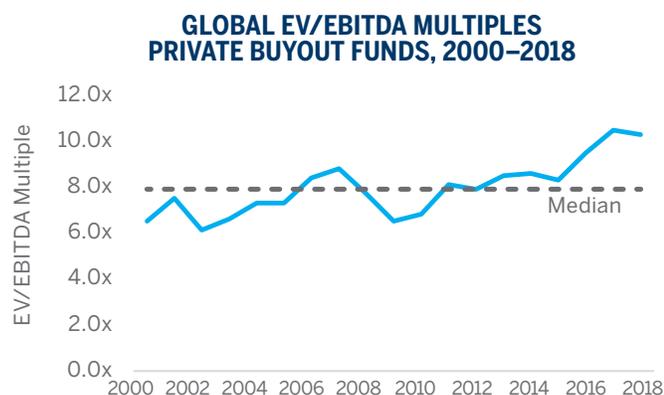
Both private equity and private real estate investments have seen a notable increase in valuations over the past several years, particularly in the U.S. Private buyout transaction valuations, as measured by EV/EBITDA purchase multiples, have risen materially since 2000, driven especially by a run-up in buyout multiples (from 6.6x in 2000 to 10.4x in 2018) as well as later-stage growth deals. We emphasize managers with disciplined investment processes and who operate in more idiosyncratic market segments—small- and middle-market managers, managers in niche industry spaces, managers with particular expertise in driving operational improvements, etc. This approach, in our view, helps us to mitigate some of the challenges of investing in a broadly pricy market. The story is similar in real estate—cap rates have declined markedly

in recent years, deals are broadly more expensive and rising interest rates will almost certainly impact valuations going forward. We try to combat this challenge through a focus on managers with specific operational expertise that lets them improve property values and with sufficient discipline to avoid expensive transactions.

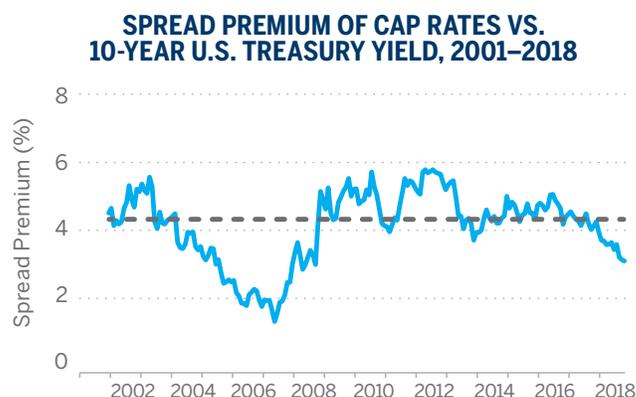
We invest in private markets primarily through funds with multiyear investment periods so that despite our need to choose specific moments to commit to a fund, we always know that our capital will be invested over several years. Thus, even if we had a desire to time the private market, the way these funds invest capital gradually prevents us from doing so. We believe that the best way to invest in private markets is to be disciplined and consistent, invest regularly across vintage years, and diversify the valuation environments in which our investments are initiated.

Summary of Private Market Valuations Relative to History, as of Year-End 2018

Key metrics suggest that both private equity and real estate are somewhat pricy relative to recent history. In private equity, buyout multiples are well above their long-term median and near 20-year highs. In real estate, the spread between cap rates (i.e., the expected levels of income or return that real estate investments will generate) and 10-year treasury yields is below the long-term median and has fallen to a 10-year low.



SOURCE: PITCHBOOK. DATA IS AS OF 9/30/18 AND IS THE MOST RECENT AVAILABLE AT TIME OF PUBLICATION.



SOURCE: BLOOMBERG (CAP RATE DATA FROM REAL CAPITAL ANALYTICS). DATA IS AS OF 11/30/18 AND IS THE MOST RECENT AVAILABLE AT TIME OF PUBLICATION.

2019 ASSET ALLOCATION VIEWS

Long-Term Outlook

Our asset allocation ranges are largely based on our long-term return estimates across asset classes. For equities, the key inputs for our long-term return estimates are economic growth expectations (or potential GDP growth), changes in interest rates and starting valuations, whereas for fixed income, the predominant indicator of return is starting yields (incorporating both base government bond yields and spreads) with some influence from the slope of the yield curve and anticipated changes in yields.

2018 saw an improvement in long-term return expectations across asset classes, as interest rates rose, credit spreads widened and equity markets valuations declined in nearly every geography. We did not make any major changes to our long-term ranges for asset classes because the increases in our return expectations were so broad across asset classes. This improved return outlook is the silver lining after a year clouded by disappointing returns in nearly every asset class.

Medium-Term Outlook/ Changes to Scenario Analysis

We adjusted our analysis of likely medium-term scenarios (see table on page 20), mostly reflecting growing uncertainty. A “steady state” scenario has become considerably less likely in our view, as the global economy seems to be facing an inflection point. Therefore, we consider both our bullish and bearish scenarios more likely in aggregate, with the balance tilting more toward the bearish outcomes.

- **The “inflation heat” scenario appears less likely.** The Fed appears to be ahead of inflationary pressures, as evidenced by inflation staying reasonably subdued during 2018. This has been helped by a decline in commodity prices during the second half of 2018, particularly in energy.
- **The “anti-globalization” scenario appears more likely to us.** Tensions are rising between the U.S. and China, nationalist sentiment is resurgent in Europe, and a “hard Brexit” appears more and more likely; these issues are already impacting markets, and the risk of an escalation is meaningful.
- **“Global economic slowdown” is a new scenario.** The U.S. and global economies are increasingly late in their cycles. Labor markets are tightening, interest rates are rising and business sentiment is cooling. Therefore, the probability of a recession sometime in the next year or two in multiple major economies has, in our view, increased.

(continued on page 20)

2019 ASSET ALLOCATION VIEWS

Long-Term Ranges/Medium-Term Targets

Note: Asset allocation ranges and targets presented in the table are intended for U.S. dollar-based portfolios.

		U.S. Equities	Europe and U.K. Equities	Japan Equities	Asia Equities (ex. Japan)	
Factors	Long-Term (10 years)	Expected Baseline Return	7.0%	6.2%	5.6%	8.9%
		Alpha Opportunity	0-1%	1-2%	1-2%	2-3%
		Drawdown Risk (1-in-10 / 1-in-20)	-26% / -43%	-27% / -48%	-37% / -53%	-44% / -60%
Medium-Term (2-3 years)		Valuation	Slightly Negative	Slightly Positive	Slightly Positive	Positive
		Macroeconomics	Slightly Negative	Slightly Negative	Negative	Neutral
		Most Favorable Scenarios	U.S. Acceleration	Global Acceleration	Global Acceleration	Emerging Market Rebound
		Least Favorable Scenarios	Global Economic Slowdown	Strong Borders, Global Economic Slowdown	Global Economic Slowdown	Hard Landing in China

graphic not to scale

		Latin American Equities	Investment-Grade Bonds	
Factors	Long-Term (10 years)	Expected Baseline Return	7.7%	4.0%
		Alpha Opportunity	2-3%	0-1%
		Drawdown Risk (1-in-10 / 1-in-20)	-50% / -62%	-5% / -9%
Medium-Term (2-3 years)		Valuation	Neutral	Neutral
		Macroeconomics	Slightly Negative	Slightly Positive
		Most Favorable Scenarios	Emerging Market Rebound	Hard Landing in China, Global Economic Slowdown
		Least Favorable Scenarios	Global Economic Slowdown	Inflation Heat, Global Acceleration

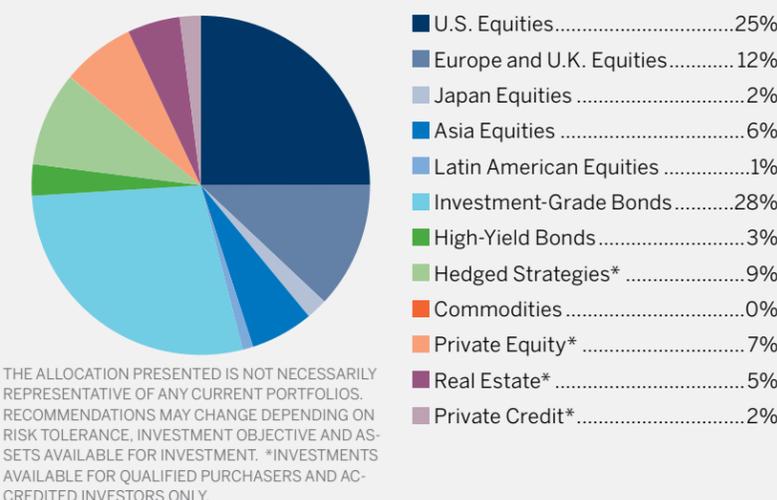
Notes

The **long-term ranges** in the chart (depicted by the vertical lines) express what we consider to be prudent boundaries for each asset class in a typical, long-term-oriented portfolio, given our 10-year outlook for that asset class. We consider a variety of factors in setting these boundaries; three of the most important drivers of our thinking are our expectations for **baseline 10-year annualized return**, maximum likely **drawdown risk** (expressed as worst likely one-year outcomes over 10-year and 20-year periods) and the **alpha opportunity** we think we can reasonably achieve from selection of adept managers.

The **medium-term targets** in the chart (depicted by the hollow dots placed along each vertical line) express our current guideline for where to position portfolios within each asset class, based on a disciplined process in which we develop a number of potential market scenarios that may play out in the next two to three years, and then assess the likely performance of various asset classes within each of those scenarios. An essential goal of this exercise is to select targets that we believe offer us the **best aggregate outcome across all potential scenarios**, as opposed to any attempt to pick the "right" scenario and build an investment plan dependent on that scenario playing out.

Below, we compiled our medium-term targets into a summary graphic, but we want to strongly emphasize that this is not a "model portfolio" that we would implement with any specific client. We are opposed to the concept of applying universal model portfolios to broad groups of clients. Instead, we use our asset allocation research as a foundation, from which we tailor every client's portfolio specifically to address their return goals, risk tolerance, liquidity needs and other factors unique to their circumstances.

Medium-Term Allocation Targets as of 12/31/2018



		High-Yield Bonds	Hedged Strategies*	Commodities	Private Equity*	
Factors	Long-Term (10 years)	Expected Base Return	6.3%	4.6%	4.8%	10.3%
		Alpha Opportunity	1-2%	2-3%	0%	3-7%
		Drawdown Risk (1-in-10 / 1-in-20)	-13% / -28%	-13% / -27%	-31% / -49%	-33% / -54%
Medium-Term (2-3 years)		Valuation	Slightly Negative	Slightly Negative	Neutral	Slightly Negative
		Macroeconomics	Neutral	Neutral	Slightly Negative	Neutral
		Most Favorable Scenarios	U.S. Acceleration	Global and/or U.S. Acceleration	Inflation Heat	Global and/or U.S. Acceleration
		Least Favorable Scenarios	Global Economic Slowdown	Inflation Heat, Global Economic Slowdown	Hard Landing in China	Global Economic Slowdown

graphic not to scale

		Real Estate*	Private Credit*	
Factors	Long-Term (10 years)	Expected Base Return	8.6%	8.7%
		Alpha Opportunity	3-5%	3-5%
		Drawdown Risk (1-in-10 / 1-in-20)	-16% / -26%	-13% / -28%
Medium-Term (2-3 years)		Valuation	Slightly Negative	Neutral
		Macroeconomics	Neutral	Neutral
		Most Favorable Scenarios	Inflation Heat	Global and/or U.S. Acceleration
		Least Favorable Scenarios	Global Economic Slowdown	Inflation Heat, Global Economic Slowdown

*Alternative investments may be available for qualified purchasers and/or accredited investors only.

SOURCE: BROWN ADVISORY

2019 SCENARIO ANALYSIS SUMMARY

Base-Case Scenario

Steady as It Goes

Moderate U.S. GDP growth of 2–3%; Europe stagnates but remains politically stable and with modest positive growth, and Asian GDP grows more slowly than in years past, but still ahead of developed markets. The Federal Reserve makes no significant changes to interest rates but continues to allow its balance sheet to shrink. Inflation remains near central bank targets.

Most Likely Scenario

Bull-Case Scenarios

Bear-Case Scenarios

Global Acceleration

Global economic activity accelerates proving to have greater than anticipated economic slack, which also keeps inflation modest.

Moderate to Low Likelihood

Inflation Heat

Inflation rises as employment in U.S. and Europe reaches near-full levels, and in reaction, central banks rapidly curtail stimulus and raise interest rates faster than markets anticipate.

Moderate to Low Likelihood

U.S. Acceleration

The Fed threads the needle. U.S. economic growth outperforms as policy initiatives bear fruit, leading to increased business investment, steady household consumption and a stronger U.S. dollar.

Low Likelihood

Strong Borders

Nationalist political forces continue to rise, leading to protectionist policies and rising geopolitical tensions. Global trade suffers, damaging global economic growth.

Moderate Likelihood

Emerging Market Rebound

Recent years of volatile performance give way to a cyclical rebound. Reforms in major economies like India and Brazil pay dividends. Fears around trade and dollar strength prove overblown.

Moderate to Low Likelihood

Global Economic Slowdown

Higher interest rates, tighter labor markets and trade tensions combine to substantially slow down the global economy and send multiple other major economies into recession.

Moderate Likelihood

Hard Landing in China

China's growth slows considerably, leading to capital flight and rising default rates, potentially creating a negative spiral.

Low Likelihood

SOURCE: BROWN ADVISORY

Tail Risks

Each of the scenarios above clears a “reasonable likelihood” hurdle, but there are certainly tail risks with lower probability that deserve some consideration. Many of the geopolitical norms that have long governed global policy are being challenged right now by President Trump and other leaders, and we believe that the risk of a tail event is higher today than it has been in several years. Here are three specific risks we are thinking about.

- **Federal Reserve Credibility and Independence.**

President Trump has broken with recent precedent by openly criticizing the Fed and Chairman Powell for raising interest rates. The independence of the Fed is often cited by economists as having been the key to its success in increasing price stability in the U.S. and reducing economic volatility. Criticism from the White House, which could be particularly harsh in the event of a recession, could lead to more tangible challenges; should this occur, it could undermine Fed independence, potentially destabilize capital markets, and threaten the primacy of the dollar as the world's reserve currency and of the U.S. as the world's center of financial gravity.

- **EU/Eurozone Cohesion.** Brexit and the political turmoil in Italy threaten the fundamental underpinnings of the European Union. The uncertainty surrounding Brexit has impacted economic activity in the U.K. and across the Eurozone, and how Brexit plays out may provide a precedent and a template for future discontented EU members. Italy (the third largest Eurozone economy and the ninth largest economy in the world) has also been a major source of Eurozone uncertainty. With its shrinking population, massive public debt, internal political discord and combative stance toward previous agreements with the EU, the direction forward for Italy is far from certain.
- **Major Military Conflict.** The U.S. appears to be withdrawing somewhat from its preeminent role in international organizations such as NATO. This, along with rising antagonism with other major powers, such as China, has to be viewed as raising the chances of an open military conflict involving North Korea, Russia or perhaps even China. We note that this scenario, while potentially more likely than it has been in some time, is still an extremely low-probability eventuality in our view.

VALUATION FOCUS: U.S. VS. NON-U.S. EQUITIES

The global equity market has advanced materially since the 2008–09 financial crisis, but gains in the U.S. have been far stronger than in other regions. The Russell 3000® Index of U.S. equities produced a 10-year annualized return of 13.2% as of Dec. 31, 2018; the MSCI EAFE Index and the MSCI Emerging Markets Index returned 6.3% and 8.0%, respectively, over the same period.

Because of this trend, many U.S. investors in recent years have questioned the wisdom of maintaining investments abroad. Moreover, strong U.S. returns have led to notably higher current valuations in the U.S. than in other developed and emerging markets, which has raised questions about the potential for mean reversion. In this section, we offer a more focused discussion on regional valuation dynamics and some of the related factors that inform our asset allocation thinking across global equity markets—specifically, our reasoning for maintaining healthy non-U.S. weightings in portfolios.

BACKGROUND

Several factors have been at play in driving U.S. returns ahead of the pack. The U.S. Federal Reserve was more aggressive in monetary and fiscal stimulus efforts than other countries after the crisis, generally buoying U.S. markets, and specifically helping banks and financial firms recapitalize so they could increase lending and help to rekindle growth. The powerful progress of the U.S. technology sector over the past decade—specifically, the rapid rise of Apple, Google, Amazon and a revitalized Microsoft—has been a major contributor to U.S. outperformance.

Currencies have played an important role as well. The U.S. dollar has strengthened vs. most other currencies since the financial crisis, thanks to steady U.S. economic growth and higher interest rates relative to other major economies (U.S. interest rates were higher than those of other G-7 nations for most of the last 10 years), which in turn attracted investor and business capital to the U.S.

While there were fundamental factors driving U.S. returns in recent years, the fact remains that U.S.

equities carry meaningfully higher valuations today than their counterparts in both emerging markets and other developed markets. We believe that the current valuation environment offers a compelling argument for maintaining non-U.S. weightings in portfolios, and our examination of several other factors reinforces that argument:

Diversification Benefits: Globalization has generally led to higher correlation across regional equity markets, but there are still diversification benefits to maintaining a global portfolio. Additionally, the recent experience of U.S. outperformance will not continue forever, and historically, there has been an unpredictable cyclicity in the spread between U.S. and rest-of-world returns.

Investment opportunities: Excluding more than half of the investable universe of public equities would necessarily eliminate many exceptional companies from our opportunity set.

Central bank policy: The U.S. has been raising interest rates, while most of the rest of the world has continued to pursue more accommodative monetary policies.

Currency: Our views with regard to currency are mixed (and in general, we do not place great stock in our ability to forecast currency movements), but to us it appears that it will be increasingly difficult for the U.S. dollar to advance much further against other global currencies.

THE NON-U.S. EQUITY VALUATION PICTURE

Non-U.S. equities are trading at meaningful discounts relative to the U.S., as discussed above. Our chart on page 15 displayed these differences in terms of percentile rankings relative to history; the absolute figures as of the end of 2018 (see table on page 22, at top left) shows that across all commonly cited valuation metrics, the U.S. is trading at higher levels than other regions.

There are certainly factors that support a premium valuation for U.S. equities, such as more favorable economic dynamics, the reserve currency status of the U.S. dollar, and the U.S. market's heavy weighting in the technology sector. However, these facts have been fairly consistent for decades, and U.S. stocks are trading at a higher premium to other markets than they have for most of the past 30

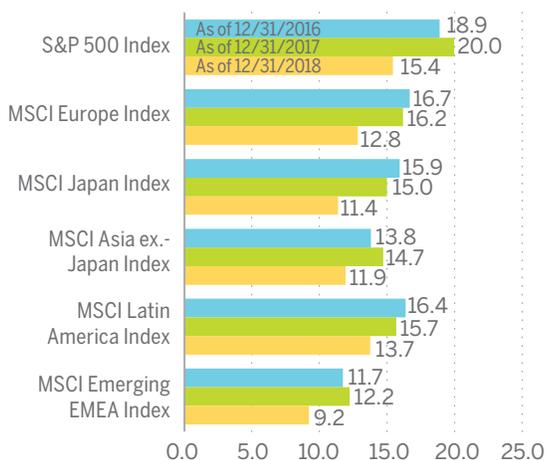
REGIONAL EQUITY MARKET VALUATION SUMMARY, AS OF 12/31/18

	P/E Ratio	P/B Ratio	P/S Ratio	P/CF Ratio	EV/ EBITDA
S&P 500 Index	16.3	3.1	2.0	11.9	11.1
MSCI Europe Index	13.4	1.6	1.1	8.3	8.6
MSCI Japan Index	12.1	1.2	0.8	7.8	7.8
MSCI Asia ex. Japan Index	12.4	1.4	1.2	8.0	8.7
MSCI Latin America Index	13.7	1.9	1.4	7.9	7.4
MSCI Emerging EMEA Index	9.4	1.3	1.3	6.7	6.6

SOURCE: BLOOMBERG AS OF 12/31/2018.

years. Further, the notable drop in valuations last year was fairly proportional across regional markets and did little to narrow the valuation gap between the U.S. and other regions, as shown in the chart below. (This chart also illustrates just how quickly valuations can shift and therefore change the parameters for investment decisions.)

THREE-YEAR TREND IN VALUATIONS ACROSS REGIONS (1-YEAR FORWARD P/E RATIOS)



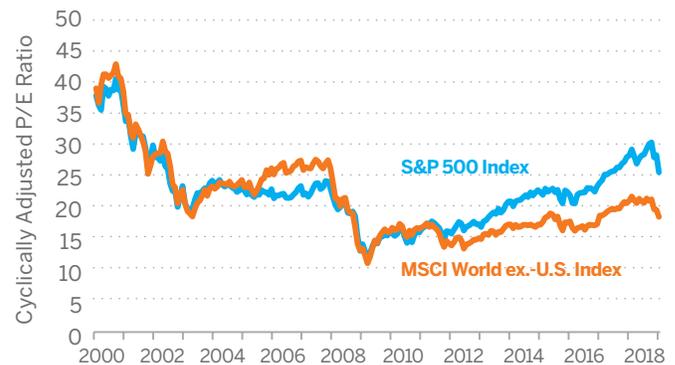
SOURCE: BLOOMBERG AS OF 12/31/2018.

While non-U.S. markets have lagged recently, from a valuation standpoint, they currently trade at reasonably attractive levels relative to the U.S. The chart below shows the progression of valuation in U.S. and non-U.S. markets over the past 20 years, using the CAPE ratio as a metric. According to this metric, U.S. stocks from mid-2016 onward have been at their highest valuation levels since the start of the century and remain in that range even after the fourth-quarter correction. Non-U.S. stocks, in contrast, are at or below their long-term CAPE trend.

Please Mind the Gap

Non-U.S. stocks are trading at their widest discount to U.S. stocks in 20 years, as measured by the CAPE ratio.

CAPE RATIO, U.S. VS. NON-U.S. STOCKS, 12/31/99–12/31/18



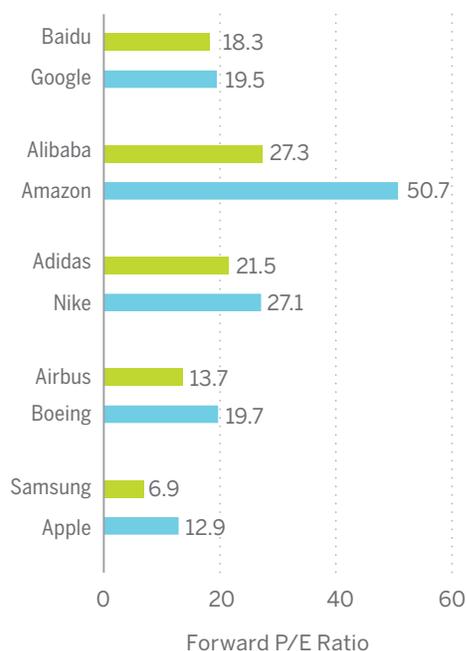
SOURCE: BLOOMBERG

The valuation gap is just as pronounced, or even more so, at the individual security level. We offer a few examples in the chart on page 23 (left column); while some U.S. companies have similar valuations to comparable non-U.S. firms (such as Google vs. Baidu), others, like Apple and Amazon, are trading at nearly double the valuation of Samsung and Alibaba, respectively.

Tales of Two Companies

Across a variety of industries, leading U.S. companies are trading at premiums—sometimes large premiums—relative to reasonably comparable firms outside the U.S.

U.S. VS. NON-U.S. COMPARABLE VALUATIONS: FORWARD P/E RATIOS AS OF 12/31/18



SOURCE: BLOOMBERG

In our view, this valuation disparity represents a potential source of long-term return in non-U.S. equities and a fairly compelling reason to maintain those allocations. We have been actively rebalancing portfolios by trimming outperforming U.S. equity allocations, and adding to non-U.S. positions; there may be further opportunity to do so going forward. Additionally, we are optimistic that skilled active managers (including those we have recommended to clients) can take advantage of the valuation gap by investing in non-U.S. firms that are economically similar to U.S. peers but trading at more attractive valuations.

GLOBAL ALLOCATION DECISION FACTORS

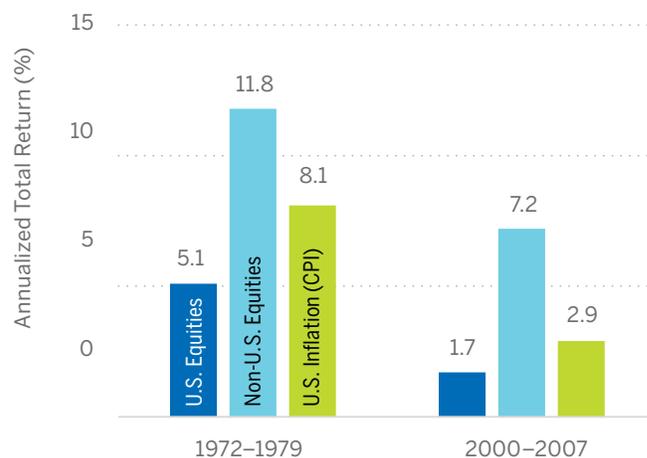
As noted above, valuation is an important factor in our allocation thinking, but not the only factor. Here are some of the additional issues and facts that currently inform our thinking on allocating to non-U.S. equities.

Diversification benefits: Regional correlation has risen over the past several decades thanks to globalization and other factors, and when we take a look at recent U.S. equity market downturns, non-U.S. markets generally performed worse during those periods. Is there still diversification value in holding a global equity portfolio?

We believe there is. From a diversification standpoint, we think it is most important to think about long-term periods when U.S. equities do not keep pace with inflation. Such periods, in our view, are particularly problematic for long-term investors, as a primary goal of any investment program is to maintain and/or grow the real (i.e., post-inflation) value of one's portfolio. During the last 50 years (see table below), U.S. equities have underperformed

Beating Inflation

One of the fundamental goals of long-term investing is to stay ahead of inflation. During two extended periods over the past 50 years, U.S. equities lagged behind inflation, but non-U.S. stocks beat inflation handily during those same periods.



SOURCE: BLOOMBERG, USING S&P 500 INDEX FOR U.S. EQUITIES, MSCI EAFE FOR NON-U.S. EQUITIES AND U.S. CPI FOR INFLATION.

inflation during two extended time periods—first from 1972 to 1979, and then again from 2000 to 2007—and in both instances, non-U.S. equities outpaced inflation substantially. We see this as evidence of the diversifying value of geographic diversification.

There is also a much simpler argument for investing in both U.S. and non-U.S. equities: Common sense dictates that neither side of this “contest” can outperform the other forever. History shows that each side tends to hold the crown for a healthy amount of time before the other takes its turn on top, as shown in the chart below.

While we cannot predict how long these cycles will last, investors selling out of non-U.S. equities today may be doing so at the worst possible time, given current valuations.

Investment opportunities: The U.S. economy is the world’s largest, as is its stock market. But the U.S. only represents about 40% of global equity market capitalization and only 23% of global GDP.

That’s important for two reasons. First, if you invest only in U.S. equities, you will miss out on 60% of the world’s equity market, and you will not have any domiciled

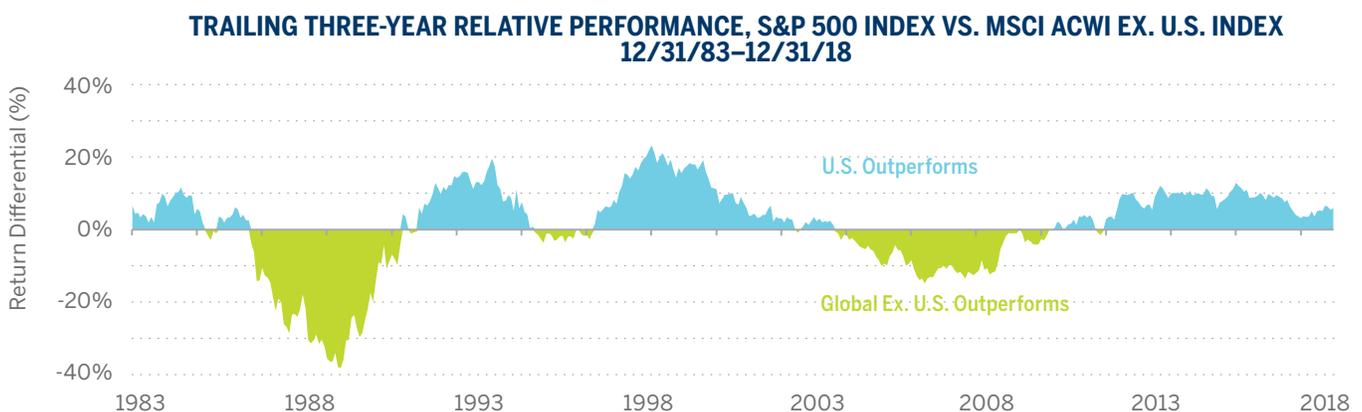
exposure to more than three-quarters of the global economy.

Second, because the U.S. controls such a large portion of global market cap today, many countries’ share of global market cap does not accurately reflect their share of the global economy. This suggests a long-term opportunity for their equity markets to “catch up” to their actual economic impact. For example, China generated about 18% of global GDP in 2018; that’s a mismatch with its stock market, which only accounts for 7.5% of total global equity market cap. As Chinese financial markets mature, companies trading in China may see their valuations buoyed if equity markets begin to more accurately reflect China’s economic impact on global GDP. We also note that this disparity between market cap share and GDP share in various countries offers a source of alpha for skilled managers who can target quality companies in those countries.

Central bank policy: Another key consideration in the current environment is divergent central bank policy. In the U.S., the Fed has ratcheted short-term interest rates from near zero in 2015 to the 2.5% range in 2018. Meanwhile, Europe and Japan have held rates at zero (or

Split Decision

U.S. and non-U.S. stocks have cycled back and forth over time, in terms of which outperforms the other.



SOURCE: BLOOMBERG

in some cases less) for more than five years, and China has held its short-term rate at just above 4% since 2015, down from 6.5% earlier in the decade (all data from Bloomberg.) Interest rates clearly play an important role in equity valuations, so the fact that rates are rising in the U.S. and not elsewhere is another argument in favor of maintaining non-U.S. weightings.

Currency: We are not in the business of forecasting currency movements, but we can't deny that these movements impact equity returns. Last year, the rising U.S. dollar had meaningful impact for our clients, most of whom invest across borders within their equity allocations. In developed markets, currency fluctuations have generally evened out over time; overall, currency impact has added about 0.5% per year to 20-year returns for USD-based investors in developed markets. Conversely, emerging market currencies have oscillated to greater extremes over time, and have rarely reverted back to the mean. Currency impact has detracted 1.5% per year on average from returns over the last 20 years for USD-based investors in emerging markets. However, the rapid growth in emerging markets has more than compensated USD-based investors; over the last 20 years, the currency-adjusted MSCI EM Index USD has outperformed the S&P 500 Index by more than 3% per year.

Since currency has a meaningful role in determining nonlocal returns, we need to have a view on the likelihood that currency will help or hurt our investment choices—in terms of return translation issues for our clients, as well as any fundamental impacts on specific industry sectors and companies. To do so, we try to focus on where we think the balance of interest rates, inflation and economic strength will shift between countries—admittedly, an equally challenging task—as these factors drive capital flows, which ultimately drive currency shifts. We also try to understand how currency shifts may impact corporate fundamentals. This is an important consideration for long-term investors. If, say, a USD-based investor owns shares in a company whose base currency is the euro, that investor's returns suffered last year due to the dollar's strength, but the company's competitive position improved relative to

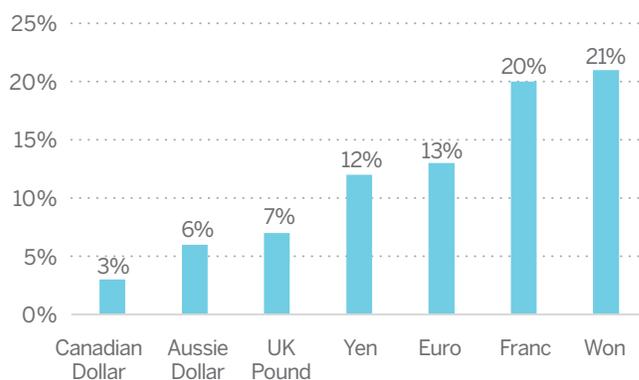
U.S. dollar-based companies. Thus, currency impact over time is influenced by an element of self-hedging.

The best valuation metrics for currencies, in our view, are those based on purchasing power parity (PPP). PPP refers broadly to the idea that similar goods and services should cost the same, regardless of what currency is used to pay for them. When that is not the case, it indicates a potentially overvalued or undervalued currency. The U.S. dollar's rise in recent years has caused it to become overvalued from a PPP perspective (see chart below). This certainly does not guarantee that the U.S. dollar will

Overpowered

The strength of the U.S. dollar has led to its being almost universally “overvalued” vs. other major developed-world currencies on a purchasing power parity basis.

RELATIVE PREMIUM OF U.S. DOLLAR VS. OTHER CURRENCIES AS OF 12/31/18 (BASED ON PPP)



SOURCE: BLOOMBERG

weaken, but it does indicate there is likely more room for it to weaken, should economic forces push that direction, than it has room to strengthen.

Today's environment sends a very mixed set of signals regarding currency. Rising short-term U.S. interest rates

and a fairly strong U.S. economy could push the U.S. dollar higher, but PPP valuations indicate that relative economic conditions are at least somewhat priced into current currency levels. Additionally, economic fundamentals strongly favored U.S. vs. non-U.S. markets over the past few years, and it is hard to imagine dynamics shifting further in favor of the U.S., which seems a prerequisite for continued dollar strength. Finally, we need to keep in mind that a recession, likely or not, lurks on the horizon. The U.S. dollar tends to strengthen during periods of financial market stress, given its status as the world's reserve currency. Given these mixed signals, we do not see enough glaring or one-sided currency-related risk to cause us to meaningfully deviate from long-term portfolio allocations.

SUMMARY

We are confident that non-U.S. markets offer considerable value to long-term investors. From a valuation standpoint, U.S. markets are more expensive than most other major global equity market at the moment, and after a long period of outperformance for U.S. stocks, history suggests that a mean reversion is inevitable (although certainly not an immediate guarantee). Non-U.S. markets offer many of the most compelling global growth opportunities available to investors today, not the least of which is the enormous potential of the blossoming middle class in many emerging economies. U.S. rate tightening already had a short-term impact on U.S. stocks in 2018, and generally tighter policy relative to other countries may continue to drag on U.S. equity results. Finally, the U.S. dollar's extended period of strength, and its current overvaluation on a PPP basis, suggests that further strengthening is less likely.

CONCLUSION

Focusing on valuation for this year's publication was timely—the U.S. stock market's long bull run, an extended period of low interest rates and years of robust private equity activity have led many to fear that valuations are overheated across many asset classes. Contrasted against this backdrop, U.S. equities declined by nearly 20% in the fourth quarter—this was certainly disconcerting for most of us, but it also raised questions about whether a new entry point with more attractive valuations had presented itself.

As we've discussed throughout this piece, we believe that valuations across asset classes are, broadly speaking, still somewhat elevated relative to long-term historical norms in an environment with elevated levels of uncertainty; as a result, we are positioned fairly conservatively in portfolios. But we do not see signs of the extreme valuation excesses that led to the internet crash in the late 1990s or the housing crash in 2008, so we are still allocated in a manner that allows us to capture growth. This stance should not be viewed as a definitive statement that tail risk doesn't exist in today's market. Tail risks, by definition, are always very improbable but always possible. We live in interesting times, to put it mildly. Several possible tail risks highlighted earlier—such as the breakdown of EU cohesion or open military conflict among major global powers—would have been laughable just a few years ago but are now closer to the realm of possibility.

But if the crises of the past 20 years taught us anything, it's that there are valuable steps we can take to guard against tail risk that don't involve retreating to cash. We can avoid leverage in our portfolios. We can try to ensure that our clients always maintain an adequate liquid operating account so they aren't caught needing to sell assets at the worst possible time. We can remain disciplined at all times and regularly rebalance portfolios back to target—a



valuable tool for trimming assets that have run up, and adding to those that are oversold. We can stay focused on our due diligence, knowing how important it is to conduct careful research on securities and other managers before we invest. And perhaps most importantly, we can watch our teammates and ourselves for signs that basic human instincts like greed or fear are getting in the way of rational decisions.

In other words, the keys to success in long-term investing are balance, patience and discipline. We conclude nearly every communication to our clients with the same message, because it is always true. If we maintain these priorities, we should usually be in a good position to properly value investments and invest our clients' capital accordingly.

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¹Private and alternative investments (including hedge funds and private equity, credit and real estate funds) available for qualified purchasers and/or accredited investors only.

The following indexes were used throughout this report to represent returns and characteristics of various asset classes and regions:

U.S. Equities: The **S&P 500® Index** represents the large-cap segment of the U.S. equity markets and consists of approximately 500 leading companies in leading industries of the U.S. economy. Criteria evaluated include: market capitalization, financial viability, liquidity, public float, sector representation, and corporate structure. An index constituent must also be considered a U.S. company. Standard & Poor's, S&P, and S&P 500 are registered trademarks of Standard & Poor's Financial Services LLC ("S&P"), a subsidiary of S&P Global Inc. The **Russell 3000® Index** is a market-capitalization weighted equity index that provides exposure to entire U.S. stock market. It tracks the performance of the 3,000 largest U.S.-traded stocks, which collectively represent about 98% of all U.S. incorporated equity securities. The Index is completely reconstituted annually. The Russell 3000® Index and Russell® are trademarks/service marks of the London Stock Exchange Group of companies.

Emerging-market equities: The **MSCI Emerging Markets® Index** captures large- and mid-cap representation across 23 Emerging Markets countries. With 834 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country. The **MSCI Emerging Markets Net Total Return (Local) Index** tracks the performance of the MSCI Emerging Markets Index in local-currency terms. The **MSCI Emerging Markets EMEA Index** captures large- and mid-cap representation across 10 emerging markets countries in Europe, the Middle East and Africa. With 145 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country. **European equities:** The **MSCI Europe Index** is designed to represent the performance of large- and mid-cap equities across 15 developed markets. As of December 2017 it had more than 400 constituents and covered approximately 85% of the free float-adjusted market capitalization across European developed-market equity. **Japan equities:** The **MSCI Japan® Index** is designed to measure the performance of the large- and mid-cap segments of the Japanese market. With 319 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in Japan. **EAFE equities:** The **MSCI EAFE Index** is designed to represent the performance of large- and mid-cap securities across 21 developed markets in Europe, Australasia and the Far East, excluding the U.S. and Canada. With more than 900 constituents as of December 2017, the MSCI EAFE Index covered approximately 85% of the free float-adjusted market capitalization in each country. The **MSCI EAFE Net Total Return (Local) Index** tracks the performance of the MSCI EAFE Index in local-currency terms. **Asia ex-Japan equities:** The **MSCI Asia ex Japan Index** captures large- and mid-cap representation across 2 of 3 developed market countries (excluding Japan) and 9 emerging markets countries in Asia. With 953 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country. **Latin American equities:** The **MSCI Emerging Markets (EM) Latin America Index** captures large- and mid-cap representation across 5 emerging markets countries in Latin America. With 108 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country. **Non-U.S. equities:** The **MSCI World Ex-U.S. Index** represents the performance of large- and mid-cap securities across 22 of 23 developed-market countries, excluding the U.S. With more than 1,000 constituents as of December 2018, the Index covers approximately 85% of the free float-adjusted market capitalization in each country. The **MSCI World Ex-U.S. Index** represents the performance of large- and mid-cap securities across 22 of 23 developed-market countries (excluding the U.S.) and 24 emerging-market countries. With more than 2,100 constituents as of December 2018, the Index covers approximately 85% of the global equity opportunity set outside of the U.S. Unless otherwise noted, all non-U.S. equity return data is cited in USD terms.

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Investment-grade bonds: The **Bloomberg Barclays Aggregate Bond Index** is an unmanaged, market-value weighted index composed of taxable U.S. investment grade, fixed rate bond market securities, including government, government agency, corporate, asset-backed and mortgage-backed securities between one and 10 years. **High-yield bonds:** **Bloomberg Barclays U.S. Corporate High Yield Index** measures the USD-denominated, high yield, fixed-rate corporate bond market. Securities are classified as high yield if the middle rating of Moody's, Fitch and S&P is Ba1/BB+/BB+ or below. Bonds from issuers with an emerging markets country of risk, based on Barclays EM country definition, are excluded.

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Terms and definitions: Definitions for various valuation ratios (Price/Earnings, CAPE, EV/EBITDA, Price/Sales, Price/Book Value, Price/Cash Flow) are provided in the table on page 10 of this publication. **Earnings Growth** refers to the growth rate of a company's net profit. **Yield to maturity** is the total return anticipated on a bond if held until it matures. **Yield to worst** is the lowest total return anticipated on a bond with callable, puttable or other features (i.e., the "worst" outcome between yield to maturity, yield to call, yield to put, etc.).

