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Peering Into the Future: An Early Read on 2018

“The most reliable way to forecast the future is to try to understand the present.”

John Naisbitt

“People don’t realize that we cannot forecast the future. What we can do is have probabilities of what causes what, but that’s as far as we go.”

Alan Greenspan

Setting the Stage

It’s that time of year—time for the annual “reflect and project” missives across the financial landscape evaluating the accuracy of current year prognostications and laying out predictions for what the New Year will hold. Special “double issues” of all the key financial publications and extended strategy reports from major investment houses sport fresh ideas for navigating the period ahead even though numerous studies show that most predictions fall far wide of the mark. How useful (or necessary) is this widespread process?

In prudent investment management, one must always be on the alert for changing factors that might impact strategic or tactical allocation in the near or the long term. This process isn’t just at year end, though somehow the annual investment outlook period seems to grow in prominence every year. The flaw, we suspect, isn’t with the process of forecasting as much as the way it’s done—the presumptions underlying and the recommendations derived from the effort.

Most forecasts, for example, tend to be deeply embedded in what’s happened in the past, presuming if it played out a certain way before, odds are it will play out that way again. Behavioral economists teach us, in fact, that we tend to put more weight on things that have just happened (or are still happening) and project them to continue ad infinitum. While momentum often does push things further and longer than mere fundamentals may dictate, it’s always important to keep an eye on what factors may be shifting just enough to influence the status quo. And that eye should be peeled throughout the year, of course, not just at year end.

Yet we suspect there’s something emotionally compelling about tying off an old year and ushering in a new… not unlike the annual process of setting New Year’s Resolutions. Hopefully for your portfolio’s sake, however, the process is ongoing and adaptable throughout the year.

As 2017 draws to a close and we try to get an early read on 2018, forecasting is likely to be that much more difficult in light of a confluence of recent events. Republican success to date, for example, in pushing through the most sweeping tax code changes in a generation is likely to prompt a variety of individual and business behavior changes over the intermediate term. Some may be immediate, some less so.

The tax overhaul bill is full of changes to economic incentives all through the system from individual and corporate savings to real estate transactions, debt accumulation, inheritance, etc. While the final form of the bill is, as of this writing, still unknown, there are enough moving parts and significant potential changes to suggest behaviors will be altered in the long run. This unknown is what makes all the attempts to score the bill and its impact on deficits, spending, and behavior such a difficult process.
Economic models of how humans behave in specific situations are notoriously subject to errors. It is also important to remember that the last time the tax code was overhauled in such a major fashion, the Boomers were in full bloom, bringing their personal generational attributes to bear in the economic choices that resulted. This tax bill, should it become law, will occur when Millennials and increasingly Generation Z are becoming the driving economic force. And these two contingents have already been shown to have very different tastes, sensibilities, work/life/social impact mores than many of their elders.

Additional factors complicating the projection landscape include other relationships that are either new territory (massive Central Bank balance sheet unwinds and the reassertion of rising rates; changing demographics in the U.S., China, and the EU) or that haven’t been seen for some time (full employment, synchronous global uptick).

Looking Ahead
In the near term, current fundamentals should continue to have the most significant impact on economic outcomes. Housing markets continue to rebound, consumer and business spending and confidence are solid, capital expenditures are strengthening and interest rates and financing costs are still low in the U.S. as well as much of the globe.

We expect a continuation of many of these positive trends (see stoplight section). We have been overweight Global equities for some time, with a bias toward shifting assets to Developed Markets outside the U.S. at the margin. At this point, we do not expect this will change—particularly if some of the most business-friendly parts of the pending tax legislation make it into law and have the stimulative effect we suspect they could.

That said, we do note that many aspects of such optimism are already affecting asset valuations and we remain increasingly watchful for what might drive us to neutral or below in our equity exposure. Further, given that markets are always forward looking, by mid-2018, investors will be grappling with a host of potentially worrisome issues for the back half of the year and into 2019.

Markets, so far this year, have been amazingly resilient at shrugging off one concern after another. Will this Teflon nature carry? Below we discuss some of the issues we suspect will capture investor attention in the coming year:

Inflation – Current and emerging bottlenecks in many areas could squeeze wages higher if end demand picks up sufficiently. Revisions to the tax code and/or increased infrastructure spending could exacerbate the issue. Any whiffs of above-expectations inflation could make bond investors and the Federal Reserve's Federal Open Market Committee nervous and prone to more rate hikes than currently expected.

Reconstituted Federal Reserve Board – As of February 3, 2018, the Federal Reserve will be under new leadership in the form of incoming Fed Chair Jerome Powell. Further, President Trump will have nominated (or have the potential to nominate) a total of four of the seven members of the board of governors. It is unknown at this time whether this new Fed will have the same tilts—or even communication style—as the Yellen Fed has had.

Pace of Corporate Activity – Economic activity in the U.S. and elsewhere has strengthened in recent quarters, with top lines coming in moderately stronger. According to data provided by Bloomberg, LLC., the companies comprising the S&P 500 Index have posted year-over-year revenue growth of 6.2% and that revenue is dropping in magnified fashion to bottom lines given still historically high margins. We will be watching carefully to see if reduced corporate tax rates filter through broadly enough to accelerate this activity. Further we strongly suspect such acceleration could exacerbate bottlenecks, especially in the acquisition of skilled workers. Moderate upward pressure on wages could be quite positive for consumers and employees, allowing the virtuous cycle to continue.

Global Trade – The U.S. has removed itself from the TPP and NAFTA is being renegotiated. Will President Trump’s administration adopt a hard line and essentially isolationist status? Will that cause protectionist retaliation from our key trading partners?
Political – Investors have largely shrugged off the administration’s woes relative to Russian interference in the elections and hints at sexual harassment, will they continue to do so?

Geopolitical – U.S. markets have largely shrugged off the difficult pace of Brexit negotiations and the troubles the UK is having in assembling a working coalition. Should things remain stuck or deteriorate further, the process could cast a psychological pall over the EU. Elections in Germany, angst between Catalonia and Spain, continued militancy from North Korea and Iran, and a host of other issues from Russia, China, etc. could emerge at any time to trouble global investors.

Mid-Term Elections in the U.S. – Will inevitably generate contentious headlines and promote a generalized sense of unrest as was the case last year. The Republicans have already started working on two other large sets of legislative items: higher education funding/post-secondary training; and key revisions to New Deal entitlement programs like Social Security and Medicare.

M&A, Accelerating Impact of New Technology and Changing Business Models – Individual stocks and sectors could continue to show wide dispersion as unusual combinations (Amazon and Whole Foods or CVS and Aetna, for example) and/or rapid technological changes emerge.

Cybersecurity – U.S. infrastructure, especially in areas like the power grid, remains vulnerable to attack. A single large or sustained disruption to the electricity grid or perhaps the global payments system could wreak havoc in the markets.

Volatility – Large moves of +/-3% either up or down, have been notably absent throughout 2017. Those could easily creep back should investors start to fret about one or any combination of the above issues. Additionally, ETFs, at the size they are currently at, have not been tested by a major dislocation. Investors in some of these vehicles may realize “passive” doesn’t mean “riskless”.

It’s important to remember that much of the forgoing is not new. Predicting how, when or if markets will focus on any one or a combination of them is a tricky process. But the issues are each potentially disruptive enough in their own right to bear close monitoring and assessment.

As discussed in the article on pages 6 and 7 of last month’s Abbot Downing Strategy Report, the magnitude and direction of key macro-economic indicators that we emphasize (Moody’s Baa/Aaa bond spread, Leading Economic Indicators, Purchasing Managers’ Index) will drive the decision of whether to maintain our overweight positions to global equities or change to neutral. Valuation would be another consideration, particularly the equity risk premium; if inflation data and economic growth exceed expectations, bond yields are likely to rise and reduce the relative attraction of stocks.

When all is said and done, there will be much to watch in 2018 as there seem to be more moving parts all in play at the same time. Change creates opportunity for the watchful and the nimble, however, and we intend to be watching closely!
“Of course you can have your cake and eat it too—if you decide to bake a second cake.”

Robert Kuttner

Kuttner’s quote is expressing a concept that is fairly common in investing—what do you do when you have two seemingly competing interests? In our case, we often try to balance the preference for high returns with the desire for low risk. Unfortunately, if you want both it is not quite as easy as ‘baking a second cake’. You can’t generate returns without taking on risk. However, you can take on risk that does not result in returns. We employ several tools to help avoid taking on unnecessary risk. This section will describe one of those tools—tracking error.

How We Use Tracking Error

In previous versions of our Abbot Downing Strategy Report, we have discussed establishing a Core Beta portfolio, and then looking for opportunities to generate alpha through tactical asset allocation decisions, manager selection, and risk factor tilts. Departures from the Core Beta reference portfolio require that we expect the new allocation to result in higher returns, lower risk, or both. Tracking error is a useful tool in this analysis. Formally defined by the CFA Institute, tracking error is the difference between returns of a portfolio and its benchmark. To calculate tracking error, we calculate the standard deviation of the differences between a portfolio and its benchmark using monthly returns data. The resulting number—expressed as a percentage—indicates the level of dispersion an investor is expected to experience around the returns of the benchmark. For example, if a benchmark returns 7% in a given year, and the portfolio has a tracking error of 2.5%, we would expect that in two out of three years the portfolio would return somewhere between 4.5% and 9.5% (in the third year the deviation could be expected to be larger than +/-2.5%).

Tracking error is useful in a number of ways. First, it helps us develop expectations for how a portfolio might behave in the future. The smaller the tracking error, the more a portfolio should behave like the benchmark. This is particularly useful when we use an ETF in a particular asset class. In these situations, we expect the ETF portfolio to have a very low tracking error. Because of the impact of fees, and because an ETF is not able to rebalance precisely when a benchmark does, it is impossible to get tracking error all the way down to zero. However, it is not uncommon to see ETFs with a tracking error less than 1%. Conversely, we often hire managers that run concentrated portfolios of between 20 to 30 stocks. We are anticipating that these managers will generate excess returns by allocating capital to very high conviction ideas, and hold those for a long period of time. In these situations, we are perfectly comfortable experiencing tracking error greater than 10%.

Tracking error can help us choose among certain managers. Suppose we have two managers with 10-year track records where both outperformed the benchmark by 2% on an annualized basis over those 10 years; but Manager A did it with tracking error of 5% to 6% and Manager B did it with tracking error of 9% to 10%. This means Manager B took on more risk to achieve those returns. All else being equal we would select Manager A.

Tracking error can also be a useful tool when we are helping clients execute a contribution to charity. Typically, when clients transfer securities to a charity, they are looking to maximize the amount of unrealized gains to transfer to the charitable institution. However, this can have a meaningful impact on tracking error. If—like this year—information technology stocks have increased materially, maximizing the transfer of unrealized gains may leave the resulting portfolio substantially underweight to the sector. This could drive tracking error up, and as a result drive risk up. In cases like this, we would calculate the increased risk associated with the transfer and perhaps reduce the unrealized gains transfer to balance out the transfer across more sectors.
Lastly, we also use tracking error to monitor a manager’s behavior over time. If a manager demonstrates historical tracking error of 3% to 4% but that number becomes 7% to 8% it could mean they are drifting away from their core mandate in an attempt to chase performance in another area. It could also mean that they are carrying more cash than anticipated. This does not always result in termination, but it does help alert us to portfolio changes that might not be evident when looking at performance alone.

While tracking error is valuable, we always consider it in the context of several other portfolio statistics. Because of the way standard deviation is calculated tracking error is always a positive number. A manager that tends to consistently outperform the benchmark by 3% to 5% could likely have very similar tracking error to a manager that consistently underperforms the benchmark by 3% to 5%. Higher tracking error does not necessarily equate to higher return potential, just higher dispersion.

Conclusion

Departures from the Core Beta reference portfolio can add value over time. However, not all departures from the index are created equal. Tracking error can help us gauge how far away from the benchmark a portfolio could be over time, and whether the decision to take that risk is likely to pay off. When you can’t bake two cakes, it’s important you always think before you slice.
### 2017 Asset-Class Return and Volatility Assumptions (10- to 15-Year Horizon)

<table>
<thead>
<tr>
<th>Category</th>
<th>Hypothetical Arithmetic Return</th>
<th>Hypothetical Geometric Return</th>
<th>Hypothetical Standard Deviation</th>
<th>Yield or Dividend Yield</th>
<th>Downside Risk</th>
<th>Sharpe Ratio</th>
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<tbody>
<tr>
<td>Inflation</td>
<td>2.5%</td>
<td>2.5%</td>
<td>1.0%</td>
<td>2.5%</td>
<td>0.8%</td>
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<td>Cash Alternatives</td>
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<td>1.0%</td>
<td>2.5%</td>
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<td>U.S. Short Term Taxable Fixed Income</td>
<td>2.6%</td>
<td>2.6%</td>
<td>1.8%</td>
<td>2.6%</td>
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<td>High Yield Taxable Fixed Income</td>
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<td>12.0%</td>
<td>6.1%</td>
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<td>Long Term Tax Exempt Fixed Income</td>
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<td>2.8%</td>
<td>-10.9%</td>
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<td>Emerging Market Fixed Income</td>
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<td>6.2%</td>
<td>12.0%</td>
<td>6.2%</td>
<td>-11.7%</td>
<td>0.36</td>
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<td>Inflation-Linked Fixed Income</td>
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<td>6.0%</td>
<td>3.1%</td>
<td>-6.3%</td>
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<td>Preferred Stock</td>
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<td>U.S. Large Cap Equities</td>
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<td>Developed Market Ex-U.S. Equities</td>
<td>8.9%</td>
<td>7.5%</td>
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<tr>
<td>Private Equity*</td>
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<td>10.9%</td>
<td>22.0%</td>
<td>0.0%</td>
<td>-19.3%</td>
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<tr>
<td>Private Debt*</td>
<td>9.3%</td>
<td>8.1%</td>
<td>16.0%</td>
<td>6.8%</td>
<td>-14.9%</td>
<td>0.42</td>
</tr>
</tbody>
</table>


Capital market and asset class assumptions are estimates of how asset classes may respond during various market environments. For example, Downside risk is based on our assumptions about average returns and the variability of returns. It represents the minimum return that would be statistically likely in 95% of annual returns. In other words, in 19 out of 20 years, performance would likely be better than this figure and in the twentieth year it would likely be worse. There is no guarantee that any particular 20-year period would follow this pattern. Hypothetical returns represent our estimate of likely average returns over the next several market cycles. They do not represent the returns that an investor should expect in any particular year. Geometric return is the compounded annual growth rate of an investment (asset class or portfolio) over a specified period of time longer than one year. Standard deviation is a measure of volatility; it reflects the degree of variability surrounding the outcome of an investment decision; the higher the standard deviation, the greater the risk. Yield on a bond assumes constant maturity. Dividend yield on an equity or real-asset investment represents the projected dividend as a percentage of the purchase price. Sharpe ratio measures the additional return that an investor could expect to receive for accepting additional risk. The assumptions are not designed to predict actual performance, and there are no assurances that any estimates used will be achieved. The information given has been provided as a guide to help with investment planning and does not represent the maximum loss a portfolio could experience.

*Alternative investments are not suitable for all investors. They are speculative and involve a high degree of risk that is suitable only for those investors who have the financial sophistication and expertise to evaluate the merits and risks of an investment in a fund and for which the fund does not represent a complete investment program.
Key Market Events

Listed below are key upcoming events and/or accelerating trends we’re watching especially closely, as well as a few comments related to how they may impact short-term markets.

Geopolitical Concerns

The House and Senate have approved similar tax reform initiatives and the reconciliation process could result in a new bill signed and passed before Christmas. The U.S. equity market is behaving as if this is a done deal, thus stocks would be vulnerable if a final agreement did not materialize. Overseas, continuing brinkmanship with North Korea has the potential for significant disruptions, and the failure to make a breakthrough in the Brexit negotiations to date has weighed on Britain’s economy. Upcoming Italian elections with the populists 5 Star Movement threatening a referendum on Italy’s euro membership also warrants scrutiny.

Geopolitical events are highly unpredictable and thus carry a greater than average risk of “surprising” investors and markets.

Commodity Prices

Based on historical data, commodities are knee-deep in a bear super cycle that commenced in 2011 with, we suspect, the bulk of the damage having already occurred. Six years into the cycle, individual commodities in aggregate are likely to be range bound—providing potential opportunities for investors. For example, oil is expected to trade in a range of $40 to $55 per barrel in 2017, and $30 to $60 over the next two years.

Should oil prices drop into the low $40s—from near $56 today—energy-related investments could offer good value for clients.

Central Bank Meetings – The Fed and The ECB

Although U.S. headline inflation data remains stubbornly low, the Fed is expected to tighten another 25 basis points this month. Investors will also focus on the Fed’s plan to trim its balance sheet that commenced in October, as well as scrutiny of new Fed chairman Powell whose term kicks off in February. The European Central Bank recently announced a continuation of its quantitative easing program through 2018, but will halve its monthly bond buying starting in the current month.

Key for investors will be in the very short term, Chairman Yellen’s comments on the economy and inflation. Markets will also be micro-analyzing early commentary from new Chairman Powell as well as any and all speeches individual governors give in the next few months for hints related to pacing and number of increases in 2018. Progress and commentary around the pace of balance sheet unwind will also bear watching for its impact on market levels of liquidity and pricing.

Progress on President Trump’s Economic Initiatives

In addition to tax reform for individuals and corporations, market expectations are also high for further progress on rolling back regulations and possibly an infrastructure plan. President Trump’s political problems associated with potential interference in the U.S. elections and hints at sexual harassment threaten to undermine the aforementioned initiatives deemed to be pro-growth by the markets. Additionally, Congressional Republicans have floated trial balloons over their intention to tackle entitlement reform and higher education funding in 2018.

The details will prove important to watch as even recent presidential orders contain sweeping different outcomes for different segments of the economy (witness environmental, energy, and military initiatives).
China

China’s 19th Party Congress held in October focused on political and economic stability, but failed to appoint a successor to President Xi Jinping. China’s economy advanced at an impressive rate of 6.8% year-over-year in the third quarter, following output growth of 6.9% during the first half of the year. Although the official manufacturing PMI remained solid at 51.8 in November, the speed of China’s recovery is expected to gradually slow over the quarters ahead as officials continue their efforts to rein in financial risks associated with the property market and fiscal support now being withdrawn. China is also beginning to address closing unproductive plants, which could distort reported economic numbers toward the softer side in the short term. On a positive note, net capital outflows have slowed and fears of devaluation have eased with the strengthening Yuan versus the dollar.

While the risks of a “hard landing” in China appear to be limited, we will continue to examine markets and data for signs of potential stress.

U.S. Economic Data Heading into 2018

The U.S. economy posted its best six-month stretch of growth in three years, as GDP expanded at a 3.3% annualized rate in the third quarter following 3.1% annualized growth in the second quarter. Data inputs from Q4 support continued growth throughout 2017 and into 2018: leading economic indicators (LEI), quality corporate bond spreads, and manufacturing surveys are all forecasting robust expansion.

Although output has clearly accelerated from a weak Q1, monitoring incoming data late in a business cycle for signs of acceleration and deceleration is prudent.
Notable Observations

Is the Demise of the Bull Finally at Hand?

The end of the decades old bond bull market (and a corresponding increase in yields) has been called for over most of the past decade. Yet global rates have remained stubbornly low—with nearly one third of global sovereign yields in negative territory for much of last year. While global rates have begun to stabilize, and in some corners rise as central bankers have begun to remove accommodation, there still seems to be an overwhelming sense of disbelief that rates or inflation will return to anything close to long term averages. “Lower for longer” has turned into “lower forever” in many pundits’ eyes.

While headline inflation has remained tame, many sub-sectors—services, education, and health care most notably—have run much higher levels of annual increases. Further, given the heat building in the economy, potentially stimulative tax reform, expanding Capital Expenditures, a globally synchronous recovery supporting demand, and pressures building in the employment markets—underlying inflation could surprise to the upside in 2018. Adding to the unknown will be how a newly reconstituted Fed chooses to play its hand—raise aggressively to stay in front, or respond more passively and let things roll on for a bit. Specific components of the new tax bill (muni deductibility, the ability of municipalities to pre-refund existing bonds, etc.), should they remain in the final legislation and be passed into law, could impact supply and demand in specific sectors as well.
Dynamic Allocation Summary

Global Outlook Overview

U.S. Large Cap Equities

**Outlook:** Mixed Positive

We remain constructive on U.S. large cap equities but are aware of elevated valuations. In instances where clients are in need of capital, we would consider taking profits in this equity class. At the same time, were a correction to occur in U.S. large caps, we would consider this a potential opportunity to invest at more attractive prices.

U.S. Small Cap Equities

**Outlook:** Negative

We are underweight domestic small cap equities, as valuations are deemed expensive relative to larger companies and this asset class frequently underperforms in the latter stages of most cycles. Active management is favored to generate alpha in this space.

Developed Market Equities

**Outlook:** Positive

Stronger economic data from developed countries outside the U.S., accelerating profits, and reasonable valuations favor developed market equities. In cases where clients have immediate funds to invest, developed equities would be a top consideration.

Emerging Market Equities

**Outlook:** Neutral

We have become more optimistic on emerging market equities due to strengthening currencies and stabilizing commodity prices, along with attractive valuations. A potential slowdown in China and future stability of the Yuan are potential risks.

U.S. Investment Grade Fixed Income

**Outlook:** Neutral

Yields of investment-grade bonds (treasuries, municipals, and corporates) have moved into fair value range, and are supported by expectations that the Fed will tighten again in December and continue to raise rates at a gradual pace next year.
Non-Investment Grade Bonds

**Outlook:** Neutral

We remain constructive on preferred stock securities based on healthy yield premiums versus investment-grade bonds. Valuations have become expensive in the high-yield asset class.

International Fixed Income

**Outlook:** Negative

Near zero yields on many developed country sovereign debt issues warrant caution for this sector. Emerging market bond spreads are now slightly below their long-term historical averages.

Real Estate Investment Trusts (REITs)

**Outlook:** Positive

We remain positive on REITs. REIT fundamentals appear to be getting stronger and exhibit attractive valuations. REITs currently sell at a 3.0% discount to underlying real estate holdings.

Master Limited Partnerships (MLP)

**Outlook:** Positive

Although MLPs have come under pressure recently as investors adjust to lower distribution growth rates and tax-loss selling, the outlook for MLPs from a fundamental perspective is positive. Current MLP yields of near 8% are also attractive on both an absolute and relative basis.

Outlook Ratings

- **POSITIVE**
- **MIXED POSITIVE**
- **NEUTRAL**
- **NEGATIVE**
Disclosures

Risk Considerations
Past performance does not indicate future results. The value or income associated with a security or an investment may fluctuate. There is always the potential for loss as well as gain. Investments discussed in this report may be unsuitable for some investors depending on their specific investment objectives and financial position.

Asset allocation and diversification do not assure or guarantee better performance and cannot eliminate the risk of investment losses. Your individual allocation may be different than the strategic long-term allocation above due to your unique individual circumstances, but is targeted to be in the allocation ranges detailed. The asset allocation reflected above may fluctuate based on asset values, portfolio decisions, and account needs.

Investing in commodities is not suitable for all investors. Exposure to the commodities markets may subject an investment to greater share price volatility than an investment in traditional equity or debt securities. Investments in commodities may be affected by changes in overall market movements, commodity index volatility, changes in interest rates or factors affecting a particular industry or commodity. Products that invest in commodities may employ more complex strategies which may expose investors to additional risks.

Convertible securities are subject to the same interest rate, price and credit risks as regular debt securities. Prices tend to be inversely affected by changes in interest rates. In addition, a convertible security is also subject to the risks associated with common stocks. The return and principal value of stocks fluctuate with changes in market conditions.

Alternative investments, such as hedge funds, carry specific investor qualifications which can include high income and net-worth requirements as well as relatively high investment minimums. They are complex investment vehicles which generally have high costs and substantial risks. The high expenses often associated with these investments must be offset by trading profits and other income. They tend to be more volatile than other types of investments and present an increased risk of investment loss. There may also be a lack of transparency as to the underlying assets. Alternative investments are subject to fewer regulatory requirements than mutual funds and other registered investment company products and thus may offer investors fewer legal protections than they would have with more traditional investments. Additionally, there may be no secondary market for alternative investment interests and transferability may be limited or even prohibited. Other risks may apply as well, depending on the specific investment product. Please carefully review the prospectus, private placement memorandum or other offering documents for complete information regarding terms, including all applicable fees, as well as risks and other factors you should consider before investing.

Investments in fixed-income securities are subject to interest rate and credit risks. Bond prices fluctuate inversely to changes in interest rates. Therefore, a general rise in interest rates can result in the decline in the bond's price. Credit risk is the risk that an issuer will default on payments of interest and principal. High yield fixed income securities are considered speculative, involve greater risk of default, and tend to be more volatile than investment grade fixed income securities. Municipal bonds offer interest payments exempt from federal taxes, and potentially state and local income taxes. They are subject to credit risk and potentially the Alternative Minimum Tax (AMT). Quality varies widely depending on the specific issuer. All fixed income investments may be worth less than their original cost upon redemption or maturity.

Mortgage-related and asset-backed securities are subject to prepayment risks. Changes in prepayments may significantly affect yield, average life and expected maturity.

Currency hedging is a technique used to seek to reduce the risk arising from the change in price of one currency against another. The use of hedging to manage currency exchange rate movements may not be successful and could produce disproportionate gains or losses in a portfolio and may increase volatility and costs.

Investing in foreign securities presents certain risks that may not be present in domestic securities. For example, investments in foreign, emerging and frontier markets present special risks, including currency fluctuation, the potential for diplomatic and potential instability, regulatory and liquidity risks, foreign taxation and differences in auditing and other financial standards.

Master Limited Partnerships (MLPs) involves certain risks which differ from an investment in the securities of a corporation. MLPs may be sensitive to price changes in oil, natural gas, etc., regulatory risk, and rising interest rates. A change in the current tax law regarding MLPs could result in the MLP being treated as a corporation for federal income tax purposes which would reduce the amount of cash flows distributed by the MLP. Other risks include the volatility associated with the use of leverage; volatility of the commodities markets; market risks; supply and demand; natural and man-made catastrophes; competition; liquidity; market price discount from Net Asset Value and other material risks.

There are special risks associated with investing in preferred securities. Preferred securities are subject to interest rate and credit risks and are generally subordinated to bonds or other debt instruments in an issuer’s capital structure, subjecting them to a greater risk of non-payment than more senior securities. In addition, the issue may be callable which may negatively impact the return of the security. Preferred dividends are not guaranteed and are subject to deferral or elimination.

Private debt has speculative characteristics that include potential default, limited liquidity and the infrequent availability of independent credit ratings for private companies.
There are risks associated with investments in **private companies**. Such companies are not subject to SEC reporting requirements and are not required to maintain effective internal controls over financial reporting. These companies may have limited financial resources; shorter operating histories; more asset concentration risk; narrower product lines and smaller market shares that larger companies. In addition, securities issued by private companies are typically illiquid and there may be no readily available trading market for such securities.

Investing in **real estate** involves special risks, including the possible illiquidity of the underlying property, credit risk, interest rate fluctuations and the impact of varied economic conditions.

The prices of **small and mid-size company stocks** are generally more volatile than large company stocks. They often involve higher risks because smaller companies may lack the management expertise, financial resources, product diversification and competitive strengths to endure adverse economic conditions.

**Technology and internet-related stocks**, especially of smaller, less-seasoned companies, tend to be more volatile than the overall market.

**Treasury Inflation-Protected Securities (TIPS)** are subject to interest rate risk, especially when real interest rates rise. This may cause the underlying value of the bond to fluctuate more than other fixed income securities. TIPS have special tax consequences, generating phantom income on the “inflation compensation” component of the principal. A holder of TIPS may be required to report this income annually although no income related to “inflation compensation” is received until maturity.

There is no assurance that any of the target prices or other forward-looking statements mentioned will be attained.

**Index and Other Definitions**

An index is unmanaged and not available for direct investment.

**Inflation** is the change in the **Consumer Price Index (CPI)**. The CPI measures the price of a fixed basket of goods and services purchased by an average consumer.

**Core inflation** is the change in the **core Consumer Price Index (CPI)**. The core CPI measures the price of a fixed basket of goods and services—excluding the volatile food and energy components—purchased by an average consumer.

**Alpha** is a coefficient measuring the risk-adjusted performance, considering the risk due to the specific security, rather than the overall market. A large alpha indicates that the stock or mutual fund has performed better than would be predicted given its beta (volatility).

**Beta** measures a security’s or group of securities’ (portfolio’s) volatility relative to a benchmark. A result greater than 1.0 implies that the security or portfolio is more volatile than the benchmark; a result less than 1.0 suggests that the security or portfolio is less volatile than the benchmark. Betas may change over time.

**Conference Board’s Leading Economic Index (LEI)** is a composite economic index designed to signal peaks and troughs in the business cycle. The leading economic index is essentially a composite averages of several individual leading indicators. They are constructed to summarize and reveal common turning point patterns in economic data in a clearer and more convincing manner than any individual component—primarily because they smooth out some of the volatility of individual components.

**Consumer Confidence Index** (CCI) is a barometer of the health of the U.S. economy from the perspective of the consumer. The index is based on consumers’ perceptions of current business and employment conditions, as well as their expectations for six months hence regarding business conditions, employment, and income.

**Markit Manufacturing Purchasing Managers Index (PMI)** tracks manufacturing and service sector activity in the Eurozone. An Index value over 50 indicates expansion; below 50 indicates contraction. The values for the index can be between 0 and 100.

**PMI Surveys**, such as the Eurozone Manufacturing PMI, track sentiment among purchasing managers at manufacturing, construction and/or services firms. An overall sentiment index is generally calculated from the results of queries on production, orders, inventories, employment, prices, etc.

**The Producer Price Index (PPI)** program measures the average change over time in the selling prices received by domestic producers for their output.

**The Market Volatility Index (VIX)** is an index designed to track market volatility as an independent entity. The index is calculated based on option activity and is used as an indicator of investor sentiment, with high values implying pessimism and low values implying optimism.

The **Institute of Supply Management (ISM) Manufacturing Index** is a composite index based on the diffusion indexes of five of the indexes with equal weights: New Orders (seasonally adjusted), Production (seasonally adjusted), Employment (seasonally adjusted), Supplier Deliveries (seasonally adjusted), and Inventories. An Index values over 50 indicate expansion; below 50 indicates contraction. The values for the index can be between 0 and 100.

The **U.S. Dollar Index (USDX, DXY)** is an index (or measure) of the value of the United States dollar relative to a basket of foreign currencies, often referred to as a basket of U.S. trade partners’ currencies.

The **Institute of Supply Management (ISM) Non-Manufacturing Index** is a composite index based on the diffusion indexes for four of the indicators with equal weights: Business Activity (seasonally adjusted), New Orders (seasonally adjusted), Employment (seasonally adjusted), and Supplier Deliveries. An Index values over 50 indicate expansion; below 50 indicates contraction. The values for the index can be between 0 and 100.

**Real economic growth** is the change in the gross domestic product (GDP) adjusted for inflation—that is, the volume of services and goods produced in the United States.
West Texas Intermediate Crude Oil is a light, sweet (i.e., low sulfur) crude oil which is the main type of U.S. crude oil traded in U.S. futures markets.

Brent Crude Oil is a light, sweet crude oil extracted from the North Sea. It serves as a major benchmark price for purchases of oil worldwide.

**Bond credit rating.** A grade given to bonds that indicates their credit quality. Private independent rating services such as Standard & Poor’s, Moody’s and Fitch provide these evaluations of a bond issuer’s financial strength, or its the ability to pay a bond’s principal and interest in a timely fashion. The general meaning of these credit rating opinions are as follows:

- **AAA**—Extremely strong capacity to meet financial commitments. Highest Rating.
- **AA**—Very strong capacity to meet financial commitments.
- **A**—Strong capacity to meet financial commitments, but somewhat susceptible to adverse economic conditions and changes in circumstances.
- **BBB**—Adequate capacity to meet financial commitments, but more subject to adverse economic conditions

**Global Fixed Income Representative Indices**

**Global Multiverse Fixed Income:** Bloomberg Barclays Multiverse Index provides a broad-based measure of the global fixed-income bond market. The index represents the union of the Global Aggregate Index and the Global High-Yield Index and captures investment grade and high yield securities in all eligible currencies. Standalone indices such as the Euro Floating-Rate ABS Index and the Chinese Aggregate Index are excluded. The Multiverse Index family includes a wide range of standard and customized sub-indices by sector, quality, maturity, and country. JP Morgan Global Ex United States bond Index is a total return, market capitalization weighted index, rebalanced monthly consisting of the following countries: Australia, Germany, Spain, Belgium, Italy, Sweden, Canada, Japan, United Kingdom, Denmark, Netherlands, and France.


**U.S. Treasury Bills Fixed Income:** Bloomberg Barclays U.S. Treasury Bills includes all publicly issued zero-coupon U.S. Treasury Bills that have a remaining maturity of less than three months and more than one month, are rated investment grade, and have $250 million or more of outstanding face value. In addition, the securities must be denominated in U.S. dollars and must be fixed rate and non-convertible.

**Short, Intermediate and Long Term Fixed Income:** Bloomberg Barclays U.S. Government/Corporate Bond Index, Mortgage-Backed Securities Index, and Asset-Backed Securities Index, including securities that are of investment grade quality or better, have at least one year to maturity, and have an outstanding par value of at least $100 million.

**U.S. Treasury Fixed Income:** Bloomberg Barclays U.S. Treasury Index includes public obligations of the U.S. Treasury with a remaining maturity of one year or more.

**U.S. Corporate Fixed Income:** Bloomberg Barclays U.S. Corporate Bond Index includes publicly issued U.S. corporate and Yankee debentures and secured notes that meet specified maturity, liquidity, and quality requirements.

**U.S. Municipal Fixed Income:** Bloomberg Barclays U.S. Municipal Bond Index represents municipal bonds with a minimum credit rating of at least Baa, an outstanding par value of at least $3 million, and a remaining maturity of at least one year. The Index excludes taxable municipal bonds, bonds with floating rates, derivatives, and certificates of participation.

**U.S. TIPS Fixed Income:** Bloomberg Barclays Treasury Inflation Protected Securities (TIPS) Index includes all publicly issued, investment-grade U.S. TIPS with an outstanding face value of more than $250 million and that have at least one year to maturity.

**U.S. High Yield Fixed Income:** Bloomberg Barclays U.S. High Yield Bond Index is an unmanaged index that tracks the performance of below investment grade U.S.-dollar-denominated corporate bonds publicly issued in the U.S. domestic market.

**Developed ex. U.S. Fixed Income:** JPMorgan GBI Global ex-U.S. (Unhedged) in USD is an unmanaged index market representative of the total return performance in U.S. dollars on an unhedged basis of major non-U.S. bond markets.

**Emerging Market Spread:** Bloomberg Barclays EM USD Aggregate Index is a flagship hard currency Emerging Markets debt benchmark that includes USD denominated debt from sovereign, quasi-sovereign, and corporate EM issuers. The index is broad-based in its coverage by sector and by country, and reflects the evolution of EM benchmarking from traditional sovereign bond indices to Aggregate-style benchmarks that are more representative of the EM investment choice set. Country eligibility and classification as an Emerging Market is rules-based and reviewed on an annual basis using World Bank income group and International Monetary Fund (IMF) country classifications. This index was previously called the Bloomberg Barclays U.S. EM Index and history is available back to 1993.

**Emerging Market Bond (U.S. Dollar):** JPMorgan Emerging Markets Bond Index (EMBI Global) currently covers 27 emerging market countries. Included in the EMBI Global are U.S.-dollar-denominated Brady bonds, Eurobonds, traded loans, and local market debt instruments issued by sovereign and quasi-sovereign entities.

**Preferred Stock:** S&P Preferred Stock is an unmanaged index consisting of U.S.-listed preferred stocks.

**U.S. Dollar Index (USDX)** measures the value of the U.S. dollar relative to majority of its most significant trading partners. This index is similar to other trade-weighted indexes, which also use the exchange rates from the same major currencies.
Global Equity Representative Indices

**Global Market Equity:** MSCI AC World Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets. The Index consists of 23 developed and 23 emerging market country indices. The developed market country indices included are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, United Kingdom, and the United States. The emerging market country indices included are: Argentina, Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Israel, Korea, Malaysia, Mexico, Morocco, Peru, Philippines, Poland, Russia, South Africa, Taiwan, Thailand, and Turkey.

**Dow Jones Industrial Average** is a price-weighted index of 30 “blue-chip” industrial U.S. stocks.

**NASDAQ Composite Index** measures the market value of all domestic and foreign common stocks, representing a wide array of more than 5,000 companies, listed on the NASDAQ Stock Market.

**Large Cap Equity: S&P 500 Index** is a capitalization-weighted index calculated on a total return basis with dividends reinvested. The index includes 500 widely held U.S. market industrial, utility, transportation, and financial companies.

**Large Cap Equity (Growth): Russell 1000® Growth Index** measures the performance of those Russell 1000® companies with higher price-to-book ratios and higher forecasted growth values.

**Large Cap Equity (Value): Russell 1000® Value Index** measures the performance of those Russell 1000® companies with lower price-to-book ratios and lower forecasted growth values.

**Mid Cap Equity: Russell Midcap® Index** measures the performance of the 800 smallest companies in the Russell 1000® Index, which represent approximately 25% of the total market capitalization of the Russell 1000® Index.

**Small Cap Equity: Russell 2000® Index** measures the performance of the 2,000 smallest companies in the Russell 3000® Index, which represents approximately 8% of the total market capitalization of the Russell 3000® Index.

**Developed Market ex. U.S. Equity: MSCI EAFE Index** (Europe, Australasia, Far East) is a free float-adjusted market capitalization index that is designed to measure the equity market performance of developed markets, excluding the U.S. and Canada. The Index consists of the following 21 developed market country indexes: Australia, Austria, Belgium, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, and the United Kingdom.

**Emerging Markets: MSCI Emerging Markets Index** is a free float-adjusted market capitalization index that is designed to measure equity market performance of emerging markets. The MSCI Emerging Markets Index consists of the following 23 emerging market country indexes: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Peru, Philippines, Poland, Qatar, Russia, South Africa, Taiwan, Thailand, Turkey, and United Arab Emirates.

**Frontier Market Equity: MSCI Frontier Markets Index** is a free float-adjusted market capitalization index that is designed to measure equity market performance of frontier markets. The MSCI Frontier Markets Index consists of the following 24 frontier market country indexes: Argentina, Bahrain, Bangladesh, Bulgaria, Croatia, Estonia, Jordan, Kenya, Kuwait, Lebanon, Lithuania, Morocco, Kazakhstan, Mauritius, Nigeria, Oman, Pakistan, Romania, Serbia, Slovenia, Sri Lanka, Tunisia, Ukraine, and Vietnam. The MSCI Saudi Arabia Index is currently not included in the MSCI Frontier Markets Index but is part of the MSCI Gulf Cooperation Council (GCC) Countries Index. The MSCI Bosnia Herzegovina Index, the MSCI Botswana Index, the MSCI Ghana Index, the MSCI Jamaica Index, the MSCI Palestine IMI, the MSCI Trinidad & Tobago Index, and the MSCI Zimbabwe Index are currently stand-alone country indexes and are not included in the MSCI Frontier Markets Index. The addition of these country indexes to the MSCI Frontier Markets Index is under consideration.

Global Real Assets Representative Indices

**Global REITs: FTSE EPRA/NAREIT Developed Index** is designed to track the performance of listed real-estate companies and REITs in developed countries worldwide.

**Domestic REITs: FTSE NAREIT U.S. All Equity REITs Index** is designed to track the performance of REITs representing equity interests in (as opposed to mortgages on) properties. It represents all tax-qualified REITs with more than 50% of total assets in qualifying real estate assets, other than mortgages secured by real property that also meet minimum size and liquidity criteria.

**International REITs: FTSE EPRA/NAREIT Developed ex-U.S. Index** is designed to track the performance of listed real estate companies in developed countries worldwide other than the United States.

**MLPs: Alerian MLP Index** is a composite of the 50 most prominent energy Master Limited Partnerships (MLPs) that provides investors with an unbiased, comprehensive benchmark for this emerging asset class. The index, which is calculated using a float-adjusted, capitalization-weighted methodology, is disseminated real-time on a price-return basis and on a total-return basis.

**Commodities (S&P GSCI): S&P Goldman Sachs Commodity Index** is a trade-weighted index of commodity sector returns representing unleveraged, long-only investment in commodity futures that is broadly diversified across the spectrum of commodities. The index includes futures contracts on 24 physical commodities, of which Energy represents nearly 70%.
Global Alternative Investments Representative Indices 

Global Hedge Funds: HFRI Fund Weighted Composite Index. A global, equal-weighted index of over 2,000 single-manager funds that report to HFRI Database. Constituent funds report monthly net-of-all-fees performance in U.S. Dollars and have a minimum of $50 million under management or a 12-month track record of active performance. The HFRI Fund Weighted Composite Index does not include Funds of Hedge Funds.

Relative Value Arbitrage: HFRI Relative Value (Total) Index. Strategy is predicated on realization of a valuation discrepancy in the relationship between multiple securities. Managers employ a variety of fundamental and quantitative techniques to establish investment theses, and security types range broadly across equity, fixed income, derivative, or other security types. Fixed income strategies are typically quantitatively driven to measure the existing relationship between instruments and, in some cases, identify attractive positions in which the risk adjusted spread between these instruments represents an attractive opportunity for the investment manager. RV position may be involved in corporate transactions also, but as opposed to ED exposures, the investment thesis is predicated on realization of a pricing discrepancy between related securities, as opposed to the outcome of the corporate transaction.

Arbitrage: HFRI RV: Fixed Income Sovereign Index. Includes strategies predicated on realization of a spread between related instruments in which one or multiple components of the spread is a sovereign fixed income instrument. Strategies employ an investment process designed to isolate attractive opportunities between a variety of fixed income instruments, typically realizing an attractive spread between multiple sovereign bonds or between a corporate and risk free government bond. Fixed Income Sovereign typically employ multiple investment processes including both quantitative and fundamental discretionary approaches and relative to other Relative Value Arbitrage sub-strategies, these have the most significant top-down macro influences, relative to the more idiosyncratic fundamental approaches employed.

Long/Short Credit: HFRI RV: Fixed Income—Corporate Index. Includes strategies predicated on realization of a spread between related instruments in which one or multiple components of the spread is a corporate fixed-income instrument. Strategies are designed to isolate attractive opportunities between a variety of fixed income instruments, typically realizing an attractive spread between multiple corporate bonds or between a corporate and risk free government bond. They typically involve arbitrage positions with little or no net credit market exposure, but are predicated on specific, anticipated idiosyncratic developments.

Structured Credit/Asset Backed: HFRI RV: Fixed Income—Asset Backed Index. Includes strategies predicated on realization of a spread between related instruments in which one or multiple components of the spread is a fixed-income instrument backed by physical collateral or other financial obligations (loans, credit cards) other than those of a specific corporation. Strategies are designed to isolate attractive opportunities between a variety of fixed income instruments specifically securitized by collateral commitments, which frequently include loans, pools and portfolios of loans, receivables, real estate, machinery, or other tangible financial commitments. Investment thesis may be predicated on an attractive spread given the nature and quality of the collateral, the liquidity characteristics of the underlying instruments and on issuance and trends in collateralized fixed-income instruments, broadly speaking. In many cases, investment managers hedge, limit, or offset interest-rate exposure in the interest of isolating the risk of the position to strictly the disparity between the yield of the instrument and that of the lower risk instruments.

Macro: HFRI Macro (Total) Index. Encompass a broad range of strategies predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard-currency, and commodity markets. Managers employ a variety of techniques, both discretionary and systematic analysis, combinations of top-down and bottom-up theses, quantitative and fundamental approaches and long- and short-term holding periods. Although some strategies employ RV techniques, Macro strategies are distinct from RV strategies in that the primary investment thesis is predicated on predicted or future movements in the underlying instruments rather than on realization of a valuation discrepancy between securities. In a similar way, while both Macro and equity hedge managers may hold equity securities, the overriding investment thesis is predicated on the impact movements in underlying macroeconomic variables may have on security prices, as opposed to EH, in which the fundamental characteristics on the company are the most significant are integral to investment thesis.

Commodities (BCOM): Bloomberg Commodity Index represents futures contracts on 19 physical commodities. No related group of commodities (e.g., energy, precious metals, livestock and grains) may constitute more than 33% of the index as of the annual reweightings of the components. No single commodity may constitute less than 2% of the index.

Commodities (RICI): The Rogers International Commodity Index is a U.S. dollar based index representing the value of a basket of commodities consumed in the global economy. Representing futures contracts on 37 physical commodities, it is designed to track prices of raw materials not just in the U.S. but around the world.
Disclosures (Continued)

**Systematic Macro: HFRI Macro: Systematic Diversified Index.** Diversified strategies employing mathematical, algorithmic and technical models, with little or no influence of individuals over the portfolio positioning. Strategies are designed to identify opportunities in markets exhibiting trending or momentum characteristics across individual instruments or asset classes. Strategies typically employ quantitative processes which focus on statistically robust or technical patterns in the return series of the asset, and they typically focus on highly liquid instruments and maintain shorter holding periods than either discretionary or mean-reverting strategies. Although some strategies seek to employ counter-trend models, strategies benefit most from an environment characterized by persistent, discernible trending behavior. Typically have no greater than 35% of portfolio in either dedicated currency or commodity exposures over a given market cycle.

**Discretionary Macro: HFRI Macro: Discretionary**

**Thematic Index.** Strategies primarily rely on the evaluation of market data, relationships and influences, as interpreted by individuals who make decisions on portfolio positions; strategies employ an investment process most heavily influenced by top-down analysis of macroeconomic variables. Investment Managers may trade actively in developed and emerging markets, focusing on both absolute and relative levels on equity markets, interest rates/fixed income markets, currency and commodity markets; they frequently employ spread trades to isolate a differential between instrument identified by the Investment Manager as being inconsistent with expected value. Portfolio positions are typically predicated on the evolution of investment themes the Manager expects to develop over a relevant time frame, which in many cases contain contrarian or volatility-focused components.

**Event Driven: HFRI Event Driven (Total) Index.** Maintains positions in companies currently or prospectively involved in corporate transactions of a wide variety including mergers, restructurings, financial distress, tender offers, shareholder buybacks, debt exchanges, security issuance or other capital structure adjustments. Security types can range from most senior in the capital structure to most junior or subordinated and frequently involve additional derivative securities. Exposure includes a combination of sensitivities to equity markets, credit markets and idiosyncratic, company-specific developments. Investment theses are typically predicated on fundamental (as opposed to quantitative) characteristics, with the realization of the thesis predicated on a specific development exogenous to the existing capital structure.

**Activist: HFRI ED: Activist Index.** Strategies may obtain or attempt to obtain representation on the company’s board of directors in an effort to impact the firm’s policies or strategic direction and in some cases may advocate activities such as division or asset sales, partial or complete corporate divestiture, dividends or share buybacks, and changes in management. Strategies employ an investment process primarily focused on opportunities in equity and equity-related instruments of companies that are currently or prospectively engaged in a corporate transaction, security issuance/repurchase, asset sales, division spin-off or other catalyst-oriented situation. These involve both announced transactions and situations in which no formal announcement is expected to occur. Activist strategies would expect to have greater than 50% of the portfolio in activist positions, as described.

**Distressed Credit: HFRI ED: Distressed/Restructuring Index.** Strategies focus on corporate fixed-income instruments, primarily corporate credit instruments of companies trading at significant discounts to their value at issuance or obliged (par value) at maturity as a result of either formal bankruptcy proceedings or financial-market perception of near-term proceedings. Managers are typically actively involved with the management of these companies; they are frequently involved on creditors’ committees in negotiating the exchange of securities for alternative obligations, either swaps of debt, equity or hybrid securities. Managers employ fundamental credit processes focused on valuation and asset coverage of securities of distressed firms; in most cases, portfolio exposures are concentrated in instruments that are publicly traded, in some cases actively and in others under reduced liquidity but in general for which a reasonable public market exists. Strategies employ primarily debt (greater than 60%) but also may maintain related equity exposure.

**Merger Arbitrage: HFRI ED: Merger Arbitrage Index.** Strategies primarily focus on opportunities in equity and equity-related instruments of companies that are currently engaged in a corporate transaction. Merger Arbitrage involves primarily announced transactions, typically with limited or no exposure to situations in which no formal announcement is expected to occur. Opportunities are frequently presented in cross-border, collared, and international transactions that incorporate multiple geographic regulatory institutions, typically with minimal exposure to corporate credits. Strategies typically have over 75% of positions in announced transactions over a given market cycle.

**Equity Hedge: HFRI Equity Hedge (Total) Index.** Equity Hedge Investment Managers who maintain positions both long and short in primarily equity and equity derivative securities. A wide variety of investment processes can be employed to arrive at an investment decision, including both quantitative and fundamental techniques; strategies can be broadly diversified or narrowly focused on specific sectors and can range broadly in terms of levels of net exposure, leverage employed, holding period, concentrations of market capitalizations and valuation ranges of typical portfolios. EH managers would typically maintain at least 50% exposure to, and may in some cases be entirely invested in, equities, both long and short.

**Directional Equity: HFRX EH: Multi-Strategy Index.** Managers maintain positions both long and short in primarily equity and equity-derivative securities. A wide variety of investment processes can be employed to arrive at an investment decision, including both quantitative and fundamental techniques; strategies can be broadly diversified or narrowly focused on specific sectors and can range broadly in terms of levels of net exposure, leverage, holding period, concentrations of market capitalizations, and valuation ranges of typical portfolios. Managers typically do not maintain more than 50% exposure to any one Equity Hedge sub-strategy.
Equity Market Neutral: HFRI EH: Equity Market Neutral Index. Strategies employ sophisticated quantitative techniques to analyze price data to ascertain information about future price movement and relationships between securities. These can include both Factor-based and Statistical Arbitrage/Trading strategies. Factor-based investment strategies include strategies predicated on the systematic analysis of common relationships between securities. In many cases, portfolios are constructed to be neutral to one or multiple variables, such as broader equity markets in dollar or beta terms, and leverage is frequently employed to enhance the return profile of the positions identified. Statistical Arbitrage/Trading strategies consist of strategies predicated on exploiting pricing anomalies which may occur as a function of expected mean reversion inherent in security prices; high-frequency techniques may be employed; trading strategies may also be based on technical analysis or designed opportunistically to exploit new information that the investment manager believes has not been fully, completely, or accurately discounted into current security prices. Strategies typically maintain characteristic net equity market exposure no greater than 10% long or short.

Cambridge Associates LLC U.S. Private Equity Index® is an end-to-end calculation based on data compiled from 1,152 U.S. private equity funds (buyout, growth equity, private equity energy and mezzanine funds), including fully liquidated partnerships, formed between 1986 and 2014. Pooled end-to-end return, net of fees, expenses, and carried interest. The latest published returns data are as of September 30, 2014.

Note: While the HFRI Indices are frequently used, they have limitations (some of which are typical of other widely used indices). These limitations include survivorship bias (the returns of the indices may not be representative of all the hedge funds in the universe because of the tendency of lower performing funds to leave the index); heterogeneity (not all hedge funds are alike or comparable to one another, and the index may not accurately reflect the performance of a described style); and limited data (many hedge funds do not report to indices, and, therefore, the index may omit funds, the inclusion of which might significantly affect the performance shown. The HFRI Indices are based on information hedge fund managers decide on their own, at any time, whether or not they want to provide, or continue to provide, information to HFR Asset Management, L.L.C. Results for funds that go out of business are included in the index until the date that they cease operations. Therefore, these indices may not be complete or accurate representations of the hedge fund universe, and may be biased in several ways. Returns of the underlying hedge funds are net of fees and are denominated in USD.
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