ABBOT DOWNING

ABBOT DOWNING STRATEGY REPORT

Trendless Volatility

APRIL 2019

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Trendless Volatility

> *"Markets love volatility"*
> Christine Lagarde
>
> *"Fragility is the quality of things that are vulnerable to volatility"*
> Nassim Nicholas Taleb

The first quote above, from the Managing Director of the International Monetary Fund, may prompt a double take from most market participants, especially those with a long term orientation. While volatility never "feels" very lovely, in many camps (and the vast majority of business schools) the term is synonymous with risk. Its calculation, as "deviation from expected return," is measured with decimal point precision as if narrowing that dispersion will magically make risk disappear.

But as we have stated on a number of occasions, there are many more potent forms of true risk for individual investors. Among them: unmet personal goals; permanent loss of capital from poor allocation or business decisions; undue operational or transactional cost drags that deteriorate corpus; inability to sustain lifestyle; loss of spending power relative to inflation; or inelegant planning that leaves assets vulnerable to unnecessary taxation to name but a few. Then too, volatility somehow feels different when the market's trend is upward versus downward—a notion that behavioral scientists have proven via numerous studies that show we are twice as dismayed over a given increment of loss as we are thrilled with a similar unit of gain. We're basically hardwired to expect market gains as the norm and losses as abnormal.

While investors may be predisposed to despise volatility (especially on the downside), many traders do, in fact, relish it. There are firms that make money off each trade, so volume is more important than direction. Then too, some hedge fund styles, opportunistic traders, and even individuals with large cash balances looking for auspicious entry points may welcome wider than typical day-to-day swings.

We often notice volatility more acutely when it's headed firmly in one direction or the other, aided and abetted by supportive headlines. When markets are moving downward for example, we hear about "the biggest decline in two months" or "three out of the last four days to the downside" as well as this or that economic stat's growth rate slowing. We are basically fed a confirmatory diet of headlines that reinforce our perception—and our psychological angst.
But in many situations, potential risks and opportunities are more evenly balanced. This push-me, pull-you type environment, rooted in the second quote by Professor Talib (one of the early leaders in the behavioral finance revolution), emphasizes the notion that environments that are prone to volatility are fraught with relationships that are inherently fragile. Even when potential risks and returns seem largely in balance, it is typically a delicate equilibrium that can easily be upset by unexpected headlines or events—a fire, earthquake or flood; an earnings surprise; a tweet from an influencer; a new law suit; unexpectedly strong or weak economic numbers; or a change in direction from world financial leaders.

Interestingly, there's a long-standing adage on Wall Street that markets tend to operate by the 80/20 rule—moving sideways (trendless volatility) the bulk of the time, with major moves happening in short sharp bursts which tend to correlate to less than 20% of calendar days. A variety of studies have lent support to the lore, showing that missing just a handful of the market's best up days can leave investors far behind 'average' as illustrated in Chart 1.
Refer to Chart 1: Timing the Market is Risky on page 7.

After 2018's inglorious end and 2019's early snap back, global equity markets seem to be teed up for some "backing and filling" movement. Investor angst often runs high during these sideways periods as participants attempt to project which direction the next big move will travel. In order to help focus the conversation, we thought it would be helpful to outline a few of the key currently balanced relationships supporting the status quo, and append a few comments regarding where disruption of the equilibrium might come from.

Earnings Season – Investors will largely be ignoring the numbers (or in our opinion should be) given the great degree of disruption caused by the 35-day government shutdown, numerous delays in the implementation of additional tariffs, and several pushouts of the Brexit process. Further, harsh weather in many corners of the U.S. also likely impacted everything from home sales and consumer goods purchases to business production, government and municipal activity (school closings), construction, and manufacturing progress. Investors will be listening closely to see if overall guidance is increased or decreased for the remainder of the year, and what managements are seeing for margin pressure. While it's too soon to detect any discernible trends, markets are behaving as if the growth bias is still intact, as evidenced by the strong performance of more cyclically and growth-oriented sectors (such as technology) and segments (like mid-caps and the NASDAQ index). Financing costs are low and credit is perceived as available versus tight. Wage inflation is pinching margins a little, but not an undue amount yet and the capital expenditure cycle has yet to truly take hold in any meaningful way. Surprise from the earnings front would likely be significantly better than or worse than results in aggregate when the season is complete in a couple of weeks. That said, investors may still choose to take the entirety of Q1 results with a grain of salt, focusing on second and third quarter numbers for more reliable long term directional indications given the extenuating circumstances of the just ended period.

Economic Stats – As alluded to above, statistics are still showing signs of impact from unusual winter weather across the country and the 35-day government shutdown. Keep in mind that even though the government was technically reopened on day 36, many agencies and activities took many weeks to fully reopen and begin plowing through the backlog created during the closure. February and early March numbers showed understandable weakness with more recent data coming in with strength. Consumers are employed, with rising wages and historically low debt service ratios. Weaknesses that do occur on the consumer front are more the result of lack of supply issues (e.g. housing starts and affordability) than a paucity of demand.

We believe the most important issues to watch from an economic standpoint will be business optimism—and what it implies for CapEx, hiring, pay, and support of expanded initiatives (marketing campaigns, sponsorships, R&D). From a margin standpoint it will also be important to watch spending on technological enhancement (the deployment of AI, sensors, robots, etc.)—which could spawn the long awaited improvements in productivity numbers and support a continuation of the moderated growth trajectory the economy is currently on.

The Federal Reserve – After the last rate hike on December 19, 2018, the U.S. Federal Reserve has seemed to traverse a philosophical U-turn, professing "patience" and "data dependency". While the comments on data dependency were not new, the types of data the Fed was seeing had shifted as global growth slowed markedly by late 2018 relative to the year's start. We believe business leaders had turned more cautious, presumably impacted by a variety of concerns from tightening credit costs to slower growth in Developed Markets and China. It appears business optimism waned and spending and growth plans were shelved. Keeping a read on the regional Fed's perceptions via Beige Book perusal will, we suspect, be a solid way to stay in sync with the overarching mind-set. Then too, given the heightened innuendo of tension between the White House and the Federal Reserve, it will be important for market stability that the Fed maintain its political independence and objectivity. Market expectations have gone from discounting a single rate rise this year, to a growing percentage of Fed watchers expecting a rate cut. If none is forthcoming—or if growth accelerates enough to prompt a hike, the markets could be negatively surprised.

Global Growth – Growth from most corners of the planet has been conducive to reasonable equity and debt market performance for the past few years with ebbs and flows in specific regions keeping things on a steady, if overtly unexciting global growth path. For example, corporate tax cuts in the U.S. in late 2017 boosted domestic 2018 growth, even as China and tariff impacted industries slowed moderately.

The IMF recently lowered its 2019 global growth estimates, taking a big hit out of EU expectations (now expecting 1.3% growth down from 1.6% projected in the January report); moderating the U.S. growth estimate by 10 basis points (from 2.3 % to 2.2%) but increasing China's expected rate (to 6.3% from 6.2%.) under the presumption that it's reflation efforts were taking hold.[i] Thus the delicate balancing act of overarching growth amidst low rates remains largely intact. China growth fears had weighed on markets in late 2018 and into 2019, particularly as impacted by heavy debt burdens there and the impact of U.S. Tariffs. Should either of these slip versus stabilize, especially in the context of a markedly slowing EU territory, investors would likely opt for more bearish mindsets, particularly given the big upmove since the late December lows (more than 20% increases for most equity markets). While the UK economy is not a huge contributor to global GDP, it is an important base for a number of multinational companies and an important recipient of and exporter to various EU nations. The psychological drain of Brexit being pushed out multiple times leaves businesses and citizens alike frozen and frustrated. An environment of unknowns is deadly for business confidence and prompts many to sideline a raft of business decisions such as plant expansion, supply chain enhancement, hiring, and research and development.

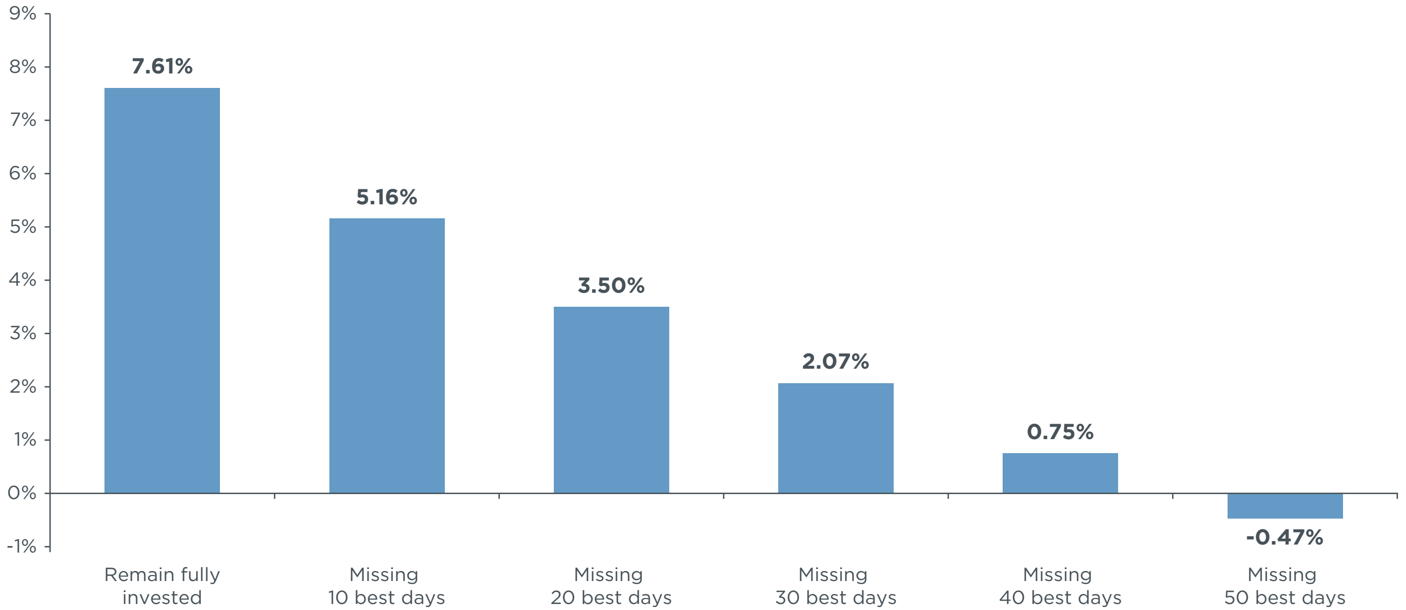
Trade Wars – Markets seem to be discounting a favorable resolution of the U.S. threat to deploy additional tariffs on China, while conveniently forgetting or ignoring a variety of other trade issues. First and foremost the tariffs already in place on over $100 billion in goods (and China's retaliatory tariffs on U.S. exports) are pinching U.S. exporters, supply chains and U.S. consumers. Everything from washing machines to whiskey are subject to higher prices for U.S. consumers, while grain and soybean farmers are struggling as their traditional export markets are closed and weather wreaks havoc in individual areas. Additionally, bilateral trade negotiations are unfinished with Japan and the EU—and even the USMCA has not been approved by congress yet. If any one of these—or a multitude of them—came apart, investors would likely be negatively surprised and markets could suffer.

Border Battle – Markets are warily eyeing the fight at our southern border and, more importantly, the not-so-veiled threats to shut down the border. While watchful, recent trading seems to imply that investors presume rational heads will prevail with key ports of entry remaining open to continue to facilitate the important daily flow of goods and services that happens through these important veins. Even a temporary shutdown would, we suspect, be viewed extremely negatively by markets given the disruptive impacts it would have on a host of important states and industries.

Normal Seasonal Market Cycle – Summer is vacation season (hence the old adage "sell in May and go away") and we saw how dangerous lack of staffing was in the December 2018 period. It's not lost on us that the low of the market was December 24, 2018. After earnings season is done in the next few weeks, there will be little news flow to hang one's hat on until mid-late July. Congress will be in recess too, though campaign rhetoric—much of it tilted to make us dissatisfied with the status quo and itching for change—will likely accelerate. In the absence of much to chew on, markets could well be range bound, perhaps trekking through more trendless volatility until issues resolve later in the year.

Chart 1: Timing the Market is Risky

Average Annual S&P 500 Price Return (1989–2018)



Sources: Morningstar Direct and Wells Fargo Investment Institute, as of December 31, 2018. For illustrative purposes only. An index is unmanaged and not available for direct investment. ***Past performance is no guarantee of future results.*** *A price index is not a total return index and does not include the reinvestment of dividends.*

After Tax Returns

> *"This is a question too difficult for a mathematician. It should be asked of a philosopher."*
>
> Albert Einstein

"Tax Form Baffles Even Prof. Einstein" was the title of the March 11, 1944 article in *The New York Times* in which Einstein gave the quote above. He said it in response to a question about whether he was able to understand the myriad forms and attachments required to file his taxes. Even Einstein was not immune from this centuries-old challenge—calculating taxes is hard work. Despite the difficulty, it remains very important work; understanding the true impact of taxes on investment returns can mean the difference between meeting your goals and falling well short. At Abbot Downing, we have recently completed a thorough review of the nature and structure of the components of returns down to the sub-asset class level and as a result have recalibrated new model allocations for those clients that are in the highest tax bracket and/or reside in high-tax states.

Breaking Down Returns – A New Approach

As we have mentioned in previous reports, the nature of our client base—large portfolio sizes with multi-generational time horizons—has allowed us to create an investment platform and process that very closely mimic the behavior and implementation of large institutional investors. One of the primary challenges, however, is that we serve both tax-exempt foundation and endowment clients **AND** taxable ultra-high-net-worth (UHNW) individuals. While there is much overlap in how we execute, UHNW individuals differ from large institutions in two important ways. First, they pay taxes at a high income tax rate. Second, whether due to balance sheet needs, lack of qualified purchaser status, client preference for liquidity, or tax filing simplicity, some entities in a UHNW relationship are constrained to a liquid-only solution. Below, we examine the impact of both of these factors on recommended client allocations.

For ultra-high net worth investors, taxes can consume up to half the pre-tax return on high yielding assets or on high turnover strategies that generate short-term capital gains. We find that the tax-efficiency of an asset class is driven by two key factors—effective tax rate and timing of tax. For example, broadly speaking most investment returns are treated as either ordinary income or capital gains (this example uses some generalizations that don't replace the analysis of a tax professional). Ordinary income is taxed at an investor's income tax rate. For most UHNW clients, they pay the highest Federal rate of 37% plus the 3.8% Medicare Surcharge. That's a rate of 40.8% (ignoring the state income tax for now) on returns labeled as ordinary income or short-term capital gains. Compare this to a long-term capital gains rate of 20% plus the 3.8% Medicare Surcharge for an effective rate of 23.8%. Assume U.S. stocks return 8%, where 6% comes in the form of long-term capital gains and 2% from dividends—both taxed at a 23.8% rate, generating an after-tax return of approximately 6.1%. Assume further a REIT investment also returns 8%. However, REITs are required to distribute the majority of their income, resulting a lower component of the returns coming from growth and more coming from income. If 4% of the return is capital gains and the remaining 4% is taxed at ordinary income levels the after-tax return is closer to 5.4%. A drag of 50 basis points on a $100 million portfolio is $500,000 *each year*.

This analysis has very important implications from a portfolio construction perspective. Adding different asset classes to a portfolio for diversification may appear to improve risk-adjusted returns when using pre-tax returns assumptions. However, upon closer review, the higher rate applied to ordinary income tends to make asset classes like taxable fixed income, high-yield bonds, TIPs, and private debt look less favorable than if you look solely at pre-tax return assumptions. Similarly, high turnover strategies: relative value hedge, macro hedge, and diversified commodity funds, which generate mostly short-term capital gains also tend to fall out of favor for UHNW investors—particularly those in high-tax states. For example, a more traditional portfolio optimization approach might suggest that adding in real estate exposure may help diversify returns.

However, the higher income component of returns should give pause, and further, if gaining access to real estate beta can only be done through publicly traded REITs (which tend to turnover investments more frequently than their private real estate counterparts) then the diversification benefit may not improve the risk-adjusted return profile of the portfolio on an after-tax basis.

Conclusion

We have calculated 'tax haircuts' for all asset classes by evaluating the three primary drivers of asset class tax-efficiency: the percent of total returns earned from ordinary income versus capital gains, the turnover of the strategy, and the holding period of the investment. These attributes vary widely across asset classes, making some assets significantly more or less attractive on an after-tax basis compared to their pre-tax estimated return—this gap is the tax haircut. We are proud of the work we have done creating what we feel are realistic, transparent assumptions upon which to build client portfolios. While the first recorded taxes came from Ancient Egypt, the first Federal income taxes placed on Americans happened under Abraham Lincoln. In the beginning things were much simpler. Lincoln passed the Revenue Act as a way to finance the Civil War. The law required all income above $800 to be taxed at a flat rate of 3%—even Einstein would have been able to do that math.

Market Performance

Stock Market Total Returns**

Period Ending March 31, 2019

Equity Indexes	QTD	YTD	1 Year	3 Year*	5 Year*
Global Market	12.3%	12.3%	3.2%	11.3%	7.0%
Large Cap	13.6%	13.6%	9.5%	13.5%	10.9%
Large Cap Growth	16.1%	16.1%	12.7%	16.5%	13.5%
Large Cap Value	11.9%	11.9%	5.7%	10.5%	7.7%
Mid Cap	16.5%	16.5%	6.5%	11.8%	8.8%
Small Cap	14.6%	14.6%	2.0%	12.9%	7.1%
Developed Ex. U.S. (USD)	10.1%	10.1%	-3.2%	7.8%	2.8%
Developed Small Cap (USD)	10.8%	10.8%	-9.0%	7.9%	4.8%
Emerging Markets (USD)	10.0%	10.0%	-7.1%	11.1%	4.1%
Frontier Markets (USD)	6.9%	6.9%	-14.8%	7.2%	0.9%

Source: Wells Fargo Investment Institute Quarterly Market Overview, 4/11/19. ***Past performance is no guarantee of future results.***

**Annualized returns.*

***Index returns do not reflect the deduction of fees, expenses, or taxes. Please see disclosures at the end of the report for sector representative indices and their definitions.*

Fixed Income Market Total Returns**

Period Ending March 31, 2019

Fixed Income Indexes	QTD	YTD	1 Year	3 Year*	5 Year*
Global Multiverse	2.4%	2.4%	-0.3%	1.8%	1.2%
U.S. Inv Grade Taxable	2.9%	2.9%	4.5%	2.0%	2.7%
U.S. Treasury Bills	0.6%	0.6%	2.1%	1.1%	0.7%
U.S. Short-Term Taxable	1.2%	1.2%	3.0%	1.3%	1.2%
U.S. Interm-Term Taxable	2.6%	2.6%	4.8%	1.8%	2.6%
U.S. Long-Term Taxable	6.4%	6.4%	5.4%	3.7%	5.3%
U.S. Treasury	2.1%	2.1%	4.2%	1.0%	2.2%
U.S. Corporate	5.1%	5.1%	4.9%	3.6%	3.7%
U.S. Municipal	2.9%	2.9%	5.4%	2.7%	3.7%
U.S. TIPS	3.2%	3.2%	2.7%	1.7%	1.9%
U.S. High Yield	7.3%	7.3%	5.9%	8.6%	4.7%
Developed Ex. U.S. (Unhedged)	1.6%	1.6%	-4.4%	0.8%	0.1%
Emerging Markets (USD)	6.6%	6.6%	3.5%	5.2%	4.8%

Source: Wells Fargo Investment Institute Quarterly Market Overview, 4/11/19. ***Past performance is no guarantee of future results.***

**Annualized returns.*

***Index returns do not reflect the deduction of fees, expenses, or taxes. Please see disclosures at the end of the report for index definitions.*

Market Performance (Continued)

Real Asset Total Returns**

Period Ending March 31, 2019

REIT/Commodity Indexes	QTD	YTD	1 Year	3 Year*	5 Year*
Public Real Estate	14.9%	14.9%	14.3%	6.7%	7.4%
U.S. REITs	17.2%	17.2%	20.5%	7.8%	10.0%
International REITs	13.7%	13.7%	7.7%	7.9%	5.9%
S&P GSCI Commodity	15.0%	15.0%	-3.0%	6.2%	-12.6%
Bloomberg Commodity	6.3%	6.3%	-5.3%	2.2%	-8.9%
RICI Commodity	9.4%	9.4%	-2.7%	6.0%	-8.3%
Global Infrastructure	14.1%	14.1%	9.2%	8.7%	5.4%

Source: Wells Fargo Investment Institute Quarterly Market Overview, 4/11/19. ***Past performance is no guarantee of future results.*** *Please see disclosures at the end of the report for index definitions.*

**Annualized returns.*

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Alternatives Total Returns**

Period Ending March 31, 2019

Alternative Indexes	QTD	YTD	1 Year	3 Year*	5 Year*
Global Hedge Funds	5.9%	5.9%	0.9%	5.1%	3.1%
Relative Value	3.8%	3.8%	2.9%	5.5%	3.5%
Arbitrage	4.0%	4.0%	3.8%	5.0%	3.4%
Long/Short Credit	4.8%	4.8%	2.7%	6.9%	3.7%
Struct Credit/Asset Backed	1.7%	1.7%	3.3%	6.8%	5.1%
Macro	2.9%	2.9%	0.3%	0.1%	1.3%
Systematic	2.8%	2.8%	-0.8%	-2.1%	1.2%
Discretionary	1.9%	1.9%	1.5%	0.9%	0.1%
Event Driven	4.2%	4.2%	1.9%	6.9%	3.0%
Activist	8.3%	8.3%	-0.7%	4.7%	3.9%
Distressed Credit	3.3%	3.3%	1.3%	8.1%	1.8%
Merger Arbitrage	2.7%	2.7%	6.0%	4.4%	3.7%
Equity Hedge	7.9%	7.9%	-0.1%	6.8%	3.6%
Directional Equity	6.5%	6.5%	-2.1%	4.6%	2.9%
Equity Market Neutral	1.1%	1.1%	-0.7%	2.2%	2.6%

Source: Wells Fargo Investment Institute Quarterly Market Overview, 4/11/19. ***Past performance is no guarantee of future results.*** *Please see disclosures at the end of the report for index definitions.*

**Annualized returns.*

***Index returns do not reflect the deduction of fees, expenses, or taxes.*

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.

The Return of Volatility

Global equity markets have rebounded from the sharp losses experienced in Q4. The S&P 500 has rebounded nearly 25% from the recent low on December 24th. A decidedly more dovish stance from Fed chairman Jerome Powell leading up to and during the March FOMC meeting, combined with increased optimism that a U.S.-China trade deal will be completed are key factors for the stock-market turnaround. Although the February employment report was weaker than expected, employers added 196,000 jobs in March and the unemployment rate held steady at 3.8%; the risk of a U.S. recession seems remote in 2019. Nevertheless, market gyrations will most likely continue throughout the year, as two potential headwinds will be continuously scrutinized—the extent to which S&P 500 EPS growth decelerates from the unsustainable pace of 20% plus in 2018, and the magnitude of China's economic slowdown.

Behind the broad, swift equity-market slide of 2018 and rebound in early 2019 is an underlying new reality: Roughly 85% of all trading is on autopilot—controlled by machines, models, or passive investing formulas.[1] While fundamentals ultimately drive capital markets in the long run, the aforementioned program-trading environment combined with an extended business cycle will likely result in continued volatility in 2019.

Global Trade

After high-level talks in Beijing and Washington last month, U.S.-China trade negotiations appear to be in their final stages. Two key issues that still need to be resolved include how to enforce a deal and the pace at which the U.S. and China will roll back the tariffs imposed over the past year. To recap, the U.S. has levied tariffs on $250 billion of Chinese goods, and Beijing has retaliated with tariffs on $110 billion of U.S. goods.

Regarding the issue of enforcement, both sides seem to be far apart. The U.S. wants a mechanism that would quickly ratchet up tariffs if Washington believes that China is backsliding on its agreement. On the other hand, Beijing would prefer such disputes be settled through a mediator, like the World Trade Organization's arbitration process.[2]

Another big issue is the pace at which the two sides would remove tariffs now in force. The U.S. wants to roll them back slowly after China reached certain milestones, while Beijing wants the tariffs quickly lifted. In addition, the U.S. has indicated a desire to keep in place the 25% on $50 billion of Chinese goods to compensate for what the White House calculated was the harm caused to U.S. companies caused by China's forced technology transfers.[3]

Pressure is growing on the U.S. and China to forge a trade deal considering that economic output has slowed in both countries and world trade volumes continue to display weakness.

Domestic Geopolitical Concerns

Historically, equity markets have corrected in the run-up to midterm elections, but once this uncertainty has been removed following the election, stocks have performed well over the following 12 months—regardless of which party was in charge before or after the election. Looking forward however, the new Democrat Party-controlled House of Representatives could add to market volatility in this rather hostile political environment. Although the new U.S. tax bill with permanently lower corporate tax rates and immediate write off of capital expenditures for the next five years is currently not in danger of being overturned, issues relating to deficits, regulation, the environment and fiscal spending will likely produce added friction. Case and point, President Trump initiated a controversial national emergency in order to transfer military funds to secure the U.S. border—a decree that will likely face challenges in the judicial system.

Although still early in the cycle, investors are beginning to focus more attention on the 2020 presidential election. New proposals focusing on higher taxes and regulations from recently-announced contenders will likely rattle equity markets heading into the primary season.

Special counsel Robert Mueller's report concluding that President Trump and his campaign didn't conspire or coordinate with Russia to interfere with in the 2016 election eliminates a potential overhang to equity markets. Nevertheless, both political parties will undoubtedly not be satisfied: Democrats want full disclosure of the entire report including redactions, while Republicans will investigate potential abuses by the DOJ from two years ago. Democrats have also promised hearings on President Trump's tax returns and prior financial dealings.

Commodity Prices

WTI crude oil prices have spiked 44% in 2019 to $64[ii] based on the following:

- OPEC members plus Russia and other non-OPEC countries agreement late last year to reduce production by 1.2 MBPD.
- Geopolitics:
  - The Trump administration's decision to designate Iran's Islamic Revolutionary Guard Corps a foreign terrorist organization. This increases the odds that the U.S. will not grant waivers to Iranian oil buyers.
  - Ongoing crisis in Venezuela; the country's oil output is projected to reach 1 MBPD (down from 2.5 to 3 MBPD).[ii]
  - Escalation of the conflict between rival government forces in Libya.

While crude prices have bounced back sharply from oversold conditions late in 2018, it would not be surprising if WTI fell back into the mid-$50 range, as producers will likely ramp up production.

Commodities price volatility, especially to the upside, could further stoke investor nerves regarding inflationary pressures.

Central Bank Meetings—The Fed and The ECB

As expected, the Federal Reserve (Fed) decided to maintain the current target range for the federal funds rate at 2.25% to 2.5% after the March meeting. Perhaps somewhat of a surprise to investors were the new "dot plots", suggesting that the Fed will not hike rates in 2019—consistent with what futures markets have been saying for several months. In fact, futures markets are indicating a possibility that the Fed will cut rates by the end of this year. To be sure, National Economic Council Director Larry Kudlow has called on the Fed to lower rates by a half a percentage point, but to date Fed officials are pushing back on rate-cut hopes—insisting a yield curve inversion (which has since turned slightly positive) would need to "last for months and not weeks."[4]

The Fed also announced at the March FOMC meeting its plans to end the balance sheet normalization sooner than expected and also target a much higher normalized balance sheet going forward than has been anticipated. The Fed's current monthly balance sheet roll off target is $30 billion in Treasury securities and $20 billion in mortgage-backed securities (MBS). Beginning in May, the Fed will reduce Treasury roll-off by $15 billion—and any principal payments the Fed receives in its agency and MBS portfolio will be invested in Treasury securities. At the end of September, the Fed's balance sheet reduction will be complete—with any principal payments from its agency and MBS portfolio reinvested in Treasury securities. We estimate that the Fed's portfolio will stand near $3.75 trillion once this process is complete.[2]

Employment cost index releases should continue to spawn market volatility; recent monthly unemployment reports have reached the lowest levels since year 2000 and year-over-year wage gains exceeding 3.0% have been the best since 2009. These are likely to be much-watched statistics for the remainder of the year along with their inferred implication for Fed monetary policy decisions.

Acting less than three months after it phased out a 2.6 trillion euro bond-buying program, the ECB introduced surprise plans to stimulate the European economy: (1) Pushing an interest-rate increase into 2020 at the earliest, after previously suggesting one might come this year, (2) Issue more targeted long-term refinancing operations—TLTROs—to provide cheap funding to European banks until 2023, and (3) Roll over in full maturing bonds acquired under its QE program.

We feel that markets will remain focused on the progress of inflation and the Fed's comments surrounding economic health. Minutes from the Federal Reserve's March 19 to 20 meeting indicate some policymakers under certain circumstances could "judge it appropriate to raise the target range for the federal funds rate modestly later this year." But the summary also says: "A majority of participants expected that the evolution of the economic outlook and risks to the outlook would likely warrant leaving the target range unchanged for the remainder of the year."

Markets will also continue to scrutinize ECB President Mario Draghi's comments. After unveiling the aforementioned new stimulus plan, Mr. Draghi blamed the Eurozone's weakness on external factors—protectionism, geopolitical uncertainty, and fragility in some emerging economies.

Techlash

Despite rebounding sharply in early 2019 and outperforming the S&P 500 year to date, the tech sector will likely continue to experience greater volatility relative to other equity sectors. High profile (and continued) hacks, data misuse announcements and potential meddling/ manipulation of data feeds by a variety of bad actors continue to plague many players. Key leaders from companies like Google and Facebook are making repeat visits to testify in front of congressional panels and moves against key global players by the U.S. and China keep the industry in the headline news flow. Most recently, two influential Senators (including a Presidential contender) recommended to break up big tech companies like Facebook and Amazon. Scrutiny of the all-important technology sector is likely to continue and bears watching as any unexpectedly negative announcement—even if preliminary—could impact the stocks.

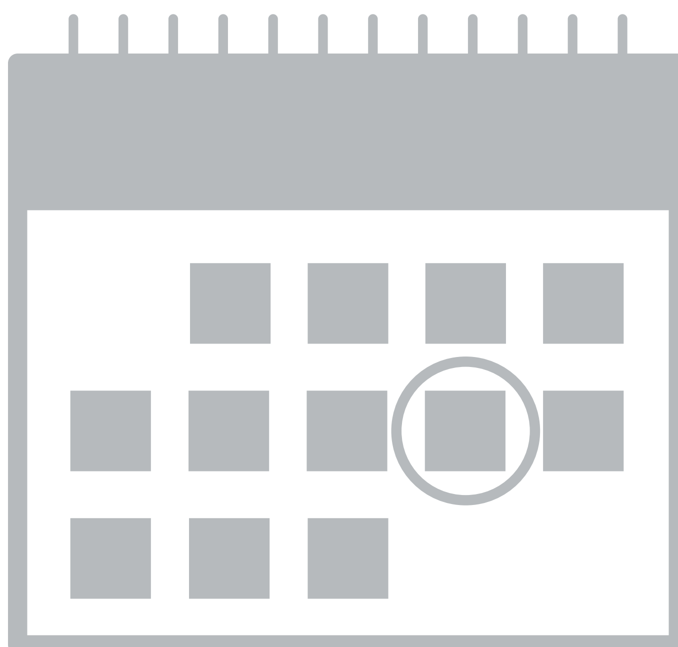
In addition to regulatory issues, tech stocks have come under pressure due to fundamentals; concerns of peak earnings, slowing revenue and high valuations have led to additional volatility for this sector. Indeed, shares of Apple, Inc. initially plunged after management slashed its quarterly revenue forecast for the first time in 15 years, prompted by a slowdown in sales of iPhones in China.

The European Union is far ahead of the U.S. on this front and has already lodged fines on affected companies from Facebook to Apple. Given the high profile, and growth-valuations that many individual names bear, we expect news flow and market sentiment to continue to buffet the industry on a day-to-day basis.

U.S. Economic Data Heading into 2019

According to the U.S. Bureau of Economic Analysis (BEA), the latest GDP report showed the U.S. economy accelerating 2.2% on an annualized basis in Q4, revised down from the initial estimate of 2.6%. Overall, U.S. GDP growth advanced 3.0% in 2019, and is forecast to increase 2.1% in 2019. We believe the latest data inputs support continued growth through 2019: leading economic indicators (LEI), quality corporate bond spreads, and manufacturing surveys are all forecasting solid expansion.

Although output clearly accelerated throughout 2018, Q1 GDP is expected to show further moderation. We believe monitoring incoming data late in a business cycle for signs of acceleration and deceleration is prudent as year 2019 progresses.



Non-U.S. Geopolitical Concerns

Corporate fundamentals in Europe and Japan have improved, but investors should still be aware of political risks. For example, uncertainties surrounding the Brexit endgame continue to heighten levels of market volatility. In late March, members of U.K. parliament (MPs) in the House of Commons resoundingly rejected for a third time Prime Minister Theresa May's Brexit deal that she negotiated with the EU. As of this writing, the U.K. and the EU have agreed to another Brexit extension "only as long as necessary" and "no longer than October 31st" to allow for the ratification of the withdrawal agreement—pushed forward from the previous deadline of April 12th. In return for the extension from the EU, the U.K. must put up candidates and participate in European Parliamentary elections May 23 to 26, unless Prime Minister May can pull together a deal that a simple majority can agree on. Mrs. May recently changed her Brexit strategy by saying she will pursue a different deal with the opposition Labour Party. The new approach by the Prime Minister carries risks, as the Labour Party has pushed for the U.K. to remain in a customs union with the EU, something many in the Conservative Party staunchly oppose.

The bottom line is that the threat of a no-deal Brexit has been postponed for another six months, and markets have not shown great sensitivity to Brexit developments. Still, the closer Brexit negotiations reach the deadline for the U.K. to quit the EU without an agreement (Hard Brexit), the more uncertainty it creates for European businesses and capital markets.

France has endured 15 straight weekends of "Yellow-Vest" demonstrations with no signs of letting up, sparked by new fuel taxes that disproportionately hurt workers who commute from the suburbs and rural areas. In response, President Emmaneual Macron rolled back the fuel tax and some pension taxes, while also increasing the minimum wage. Although Mr. Macron promised to continue his broader pro-business agenda (the wealth tax was not reinstated), the riots are still likely to negatively impact future reforms.

Italy currently has a coalition government formed by two populist parties: Left wing 5 Star movement and the right-wing Lega party, which presents a complicated situation. Indeed, the Italian parliament initially produced a budget that was rejected by the EU based on spending rules and debt levels. Brussels has demanded that Italy revise and resubmit its budget. Moody's subsequently downgraded Italy's debt, while Standard and Poors has "lowered its outlook" on Italy. Italy countered with a revised deficit target proposal in line with demands by the EU (from 2.4% to 2.0% of GDP).[III] The yield on the country's 10-year government bonds dropped to 2.5% for the first time since July and stocks climbed on the news. Nevertheless, the Italian economy fell into a technical recession in the last half of 2018 after a sharp increase in borrowing costs and political uncertainty regarding the stand-off with Brussels over its budget plans.

Investors are keenly aware of intense political divisions within the European bloc that could be disruptive. In its latest assessment of "imbalances" in its member state economies, the EU highlighted Italy as one of three countries—along with Greece and Spain—that is suffering from excessive economic imbalances.

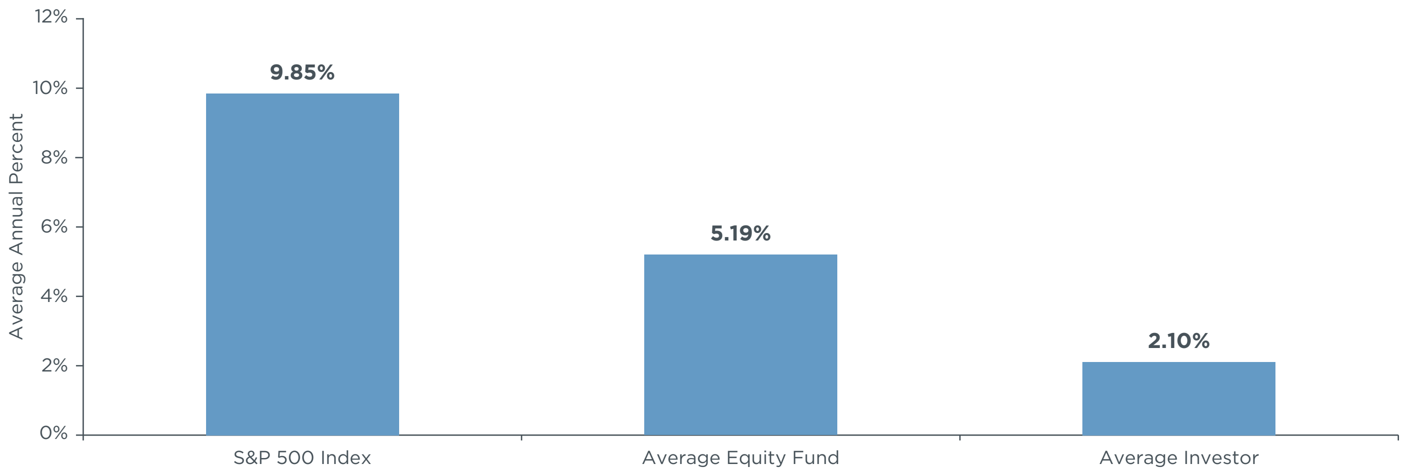
Notable Observations

Our Own Worst Enemies – Yet Another Illustration of How Market Timing Doesn't Work

For years, industry studies have pointed to the disparity between average returns in the equity markets and investors' actual experience. Unfortunately, as the Dalbar statistics illustrated below point out, investors continue to see personal returns on average substantially below what a "buy and hold the index" strategy would have produced.

The period shown below (most recently available data covering 1996 to 2015), includes at least two major bull runs (1995 to 2000 and 2003 to 2007) as well as two major downturns. Perhaps the most dismaying of all is that the incremental return between investors and markets have widened. (Similar figures reported by John Bogle and Vanguard in 2005 showed market returns of 13.6% versus investor returns of 6.6%).[IV] Commonly cited contributors to this disparity include more timing decisions and excessive trade activity.

Chart A: Average Annual Returns – 1996 to 2015



Source: Dalbar, Inc., Quantitative Analysis of Investor Behavior

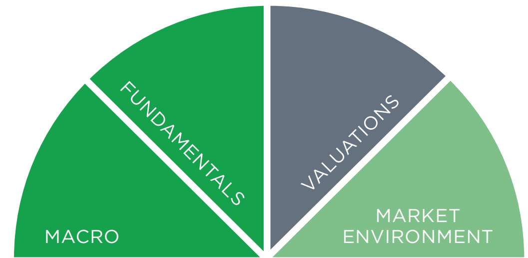
Dynamic Allocation Summary

Global Equities Outlook Overview

U.S. Large Cap Equities

Outlook: Mixed Positive

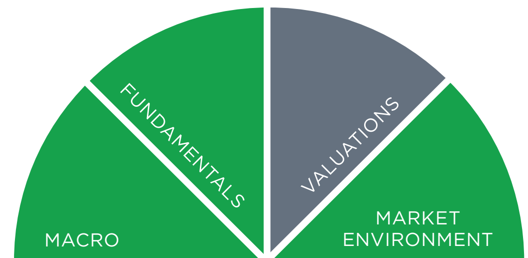
Macro and fundamental inputs continue to favor U.S. large-cap equities. Valuations have returned to average after the strong rebound in early 2019, and in instances where clients are in need of capital we would consider taking profits in this asset class, if the client is above target weights. At the same time, if U.S. large-cap stocks were to experience additional volatility, we would consider this a potential opportunity to invest at more attractive prices.



U.S. Small Cap Equities

Outlook: Neutral

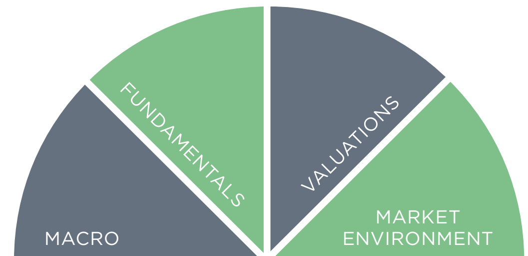
We have a neutral weighting on domestic small cap equities. Valuations are deemed expensive relative to larger companies, but the new tax plan should benefit small-cap stocks by comparatively more than the large-cap indices; smaller domestic companies tend to pay higher tax rates than large, multinational companies, and generally have lower profit margins. Active management is favored to generate alpha in this space.



Developed Market Equities

Outlook: Neutral

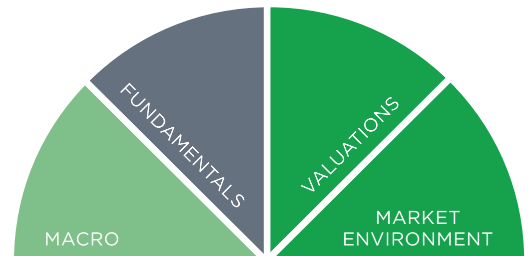
Developed market equities have been downgraded to neutral. Although we are not forecasting a recession, economic growth in Europe is expected to decelerate further in 2019. Rising corporate profits and reasonable valuations warrant a target weight in developed equities.



Emerging Market Equities

Outlook: Neutral

W e 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.



Outlook Ratings POSITIVE | MIXED POSITIVE | NEUTRAL | NEGATIVE

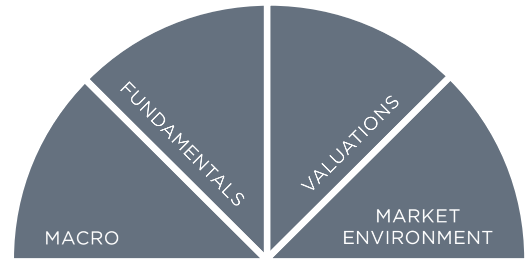
The color-coded rating system applies to specific inputs only (Macro, Fundamentals, Valuations, and Market Environment) and represents the current and shorter-term (three to six months) outlook for the specific inputs based on qualitative data and recommendations from the Abbot Downing Asset Allocation Committee. It is intended to provide guidance to the Abbot Downing Portfolio Construction Team. The content does not represent a buy, hold, or sell recommendation for specific asset classes.

Dynamic Allocation Summary (Continued)

U.S. Investment Grade Fixed Income

Outlook: Neutral

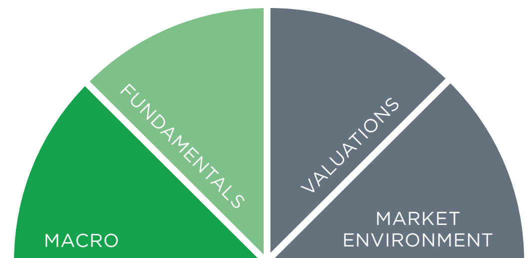
We feel that yields of investment-grade bonds (Treasuries, municipals, and corporates) have moved into fair value range, and are supported by expectations that the Fed will continue to be cautious; markets currently appear to anticipate that the Fed will not hike rates in 2019.



Non-Investment Grade Fixed Income

Outlook: Neutral

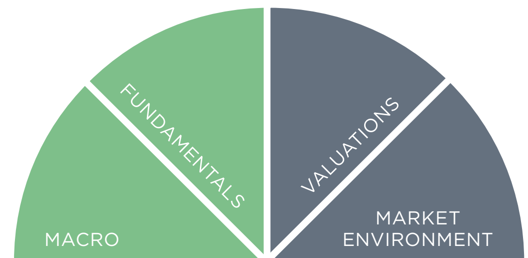
We remain constructive on preferred stock securities based on healthy yield premiums versus investment-grade bonds. Valuations have become expensive in the high-yield asset class.



International Fixed Income

Outlook: Negative

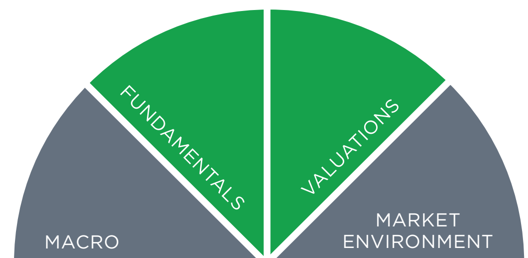
We believe near zero yields on many developed country sovereign debt issues warrant caution for this sector. Emerging market bond spreads are now near their long-term historical averages.



Real Estate Investment Trusts (REITs)

Outlook: Neutral

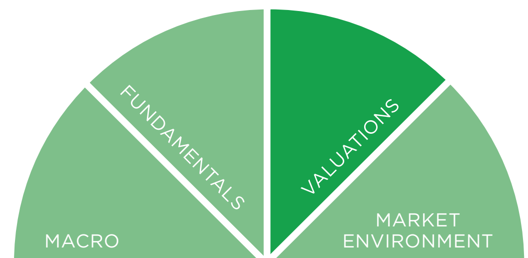
We have downgraded REITs to neutral, as they have become more sensitive to interest rate moves. REIT fundamentals remain solid and exhibit attractive valuations. REITs currently sell at a 0.6% discount to underlying real estate holdings.



Master Limited Partnerships (MLPs)

Outlook: Positive

Although MLPs came under pressure in Q4 as investors adjusted to lower oil prices and tax-loss selling, performance has rebounded strongly based on stronger fundamentals. Current MLP yields of near 9% are also attractive on both an absolute and relative basis. Finally, active management is favored in this space due to the recent FERC ruling and risk of C-corp conversion.



Outlook Ratings

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.

Disclosures (Continued)

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 cap and mid cap company stocks** are generally more volatile than large cap 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 average 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.

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.

Disclosures (Continued)

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. Inv Grade Taxable Fixed Income: Bloomberg Barclays U.S. Aggregate Bond Index is composed of the Bloomberg Barclays Capital U.S. Government/Credit Index and the Bloomberg Barclays Capital U.S. Mortgage-Backed Securities Index, and includes Treasury issues, agency issues, corporate bond issues, and mortgage-backed securities.

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. Aggregate Bond Index is made up of the 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): JP Morgan 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.

Disclosures (Continued)

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 46 country indices comprising 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.

Disclosures (Continued)

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%.

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 reweighing 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.

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 HFR 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.

Disclosures (Continued)

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.

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 typically are 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 another 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.

Disclosures (Continued)

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.

Citations

[1] *Wall Street Journal*

[2] *Wells Fargo Investment Institute (WFII)*

[3] *WSJ, 3/20/2019.*

[4] *Dallas Fed President Robert Kaplan*

Sources

[I] *Bloomberg.com, IMF Cuts Global Growth Outlook for 2019, 4/9/2019*

[II] *Wells Fargo Investment Institute, FactSet*

[III] *CNBC.com, Italy's revised budget: numbers and measures, 12/20/2018*

[IV] *Vanguard, Average Annual Total Return, 2005, For stock market returns, we use the Standard & Poor's 500 Index from 1960 to 1970, the Dow Jones Wilshire 5000 Index from 1971 through April 22, 2005, and the MSCI US Broad Market Index thereafter. For bond market returns, we use the Standard & Poor's High Grade Corporate Index from 1960 to 1968, the Citigroup High Grade Index from 1969 to 1972, and the Barclays Capital U.S. Government/Credit Bond Index from 1973 to 2005. For the returns on cash investments, we use the FTSE 3-Month Treasury Bill Index.*

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