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First Quarter, 2017

Investing in "Radical Uncertainty"

Risk is a constant. We don't like risk because it reminds us of the potential for failure or loss. While some people enjoy the risks present in adventure, we generally prefer predictability which helps us make decisions. The question is: how much risk should we take and how do we measure risk? Our first efforts to limit risk involve using rationality and knowledge. We study the issue, then implement protective measures, inoculations in a disease environment, umbrella insurance in a litigious world, perhaps a marital pre-nup in a culture of serial monogamy.

In seeking to minimize risk and maximize wealth accumulation, economists who forecast economic trends and investment results take the same steps. They use their knowledge to identify and quantify risk, and then implement appropriate risk-avoidance techniques such as hedging or portfolio optimization. In order to make investment decisions, investment management depends upon econometric modeling, data gathering, software, and analysis. Particularly since the advent of computers, business decision-makers, including economists, insist on using only measurable factors in their analysis. You likely have heard "If you can't measure it, you can't manage it," or, "If you can't measure it, don't mention it!" This strict adherence to measurable elements narrows the range of possible outcomes in any study, to what lies within the bounds of "normal," or what is reasonably possible. Key word: "reasonably." We do essentially the same thing when we decide upon a medical operation.

Some economists argue that this attachment to reasonability or normality make for faulty forecasting of economic trends, or investment returns, because the range of outcomes is too narrow. It measures only risk in the context of normality. They suggest that there is a meaningful disparity between risk and *uncertainty*. Risk, belonging to a fairly stable environment, can be measured through historical data analysis. Probabilities can be assigned to certain outcomes. Thus, the economist speaking from the investment management firm can use calculated risk to give a reasonable prediction of what will occur over a short to longer term horizon. Consider: if you got a job with a successful company with a penchant for a stable workforce, your risk of losing the job in the next few years is low (highly unlikely in a normal world.) However, if you were seriously injured in a tornado or the company is closed owing to criminal financial irregularities (possible in an uncertain world) you would need to consider other options.

Lord Mervyn King, a British economist from the traditional school, asserts that things have changed: we now live in a world of "radical uncertainty" in which so many things occur that are beyond our experience, that we cannot fully imagine what the future may hold. We no longer can count on a predictable political structure, for instance, or stable values. Nor can we assume that human behavior will remain predictable according to historical norms. King says, pointing to Lehman, Greece, Brexit and Trump, "Stuff happens." Is he correct, or is he simply tired?

This recognition of possibilities beyond our current view is not original. John Maynard Keynes was open to a realm of economic rationality that lies beyond the bounds of patterns of the past, and that is hard to contemplate by measurable factors alone. Other economists also have acknowledged the existence of "unknowable unknowns" or factors of uncertainty we haven't yet imagined. Recently, analysts have talked about a "new normal," which at least admitted that things can change, but perhaps only to the next set of measurable norms. Nassim Nicholas Taleb warned us in his 2007 book, The Black Swan: The Impact of the

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Radical Uncertainty continued

Improbable, that some events occur so fast and so without precedent that history offers no clues.

We want dependable forecasts to guide our investment decisions. Where can we look? Here are some alternatives:

Some investment analysts offer guidance on a micro level of individual stocks, typically consistent with macro economic forecasts. The logic might go like this: "An analysis of economic data predicts a difficult year in which consumer staples stocks will outperform. The following stocks are likely winners based upon dividends, liquidity ratio and profitability (or whatever). " This assumes regularity, and uses measurable data. Yet its focus on individual stocks doesn't allow enough diversity to quantify and reduce risk, at least in our view. There is more risk, *and* more uncertainty than in a broader recommendation.

Some recommend highly diversified portfolios, but use historical data that does not include margins for the unlikely or unknown events, in order to determine risk measures and then create general boundaries for expected performance. Using asset type performance-based data alone, they make no bets on the economy. For example: "Based upon the historical returns of several asset types (large domestic growth stocks, high yield bonds, etc) and upon the correlation among them, we predict a range of return for these asset type and for these asset allocation models." Does this sound familiar? It's the approach used by Assabet. It protected our clients in 2008-09 and none needed to sell equity securities at an inopportune time. Our analysis was based upon the measurement of risk in a very long-term but normal environment, recognizing a far broader realm of possibility than in the method described above.

Finally, some might throw up their hands and say, "There is too much uncertainty to make any prediction! Therefore, I'm 1) keeping it all in cash, or 2) trusting my gut." One reason you consult an advisor is to avoid making either of those mistakes. We agree that uncertainty seems "radical" today, but some order still exists in this world. We're here to help you make the best possible investment decisions for your situation, without being paralyzed by uncertainty.

R. Skidelsky, "Economists in Denial," www.fa-mag.com, 2/28/17, J. Fels, "King, Keynes and Knight…" www.fa-mag.com, 7/18/16, "The Black Swan President," Politico Magazine, 11/12/16.

ER or OR: A Hill to Die On?

Schwab Advis**or** Services, Dimensional Fund Advis**ors**, Assabet Advis**ors**, LLC, Investment Advis**ers** Act of 1940. You may have noticed the inconsistency before but didn't care enough to ask about the difference between an adviser and an advisor. We'll tell you anyway: only spelling and preferred usage. There is no grammatical rule governing the choice, yet some people have some strong preferences.

When Assabet set up shop in 2003, we chose the title "Advisor," the choice of the majority of brokers, custodians and fund companies. It was more familiar in the institutional world we came from, and frankly, seemed a bit more classy. One adviser disagrees, indicating that palm readers and the like tend to call themselves "Advisors." His choice also is a tad snooty, yet from another angle. Bob Veres, a consultant in the financial industry, has another perspective, saying that "Adviser" connotes too narrow a regulatory focus. He's correct in that Adviser is an older form, predating 1800, and has stronger credentials given its usage in SEC law and documents. The Investment Advis**er**s Act of 1940 is a foundational law of financial and investment regulation.

In regulatory vernacular, we are a "Registered Investment Adviser," which is the reason we use both spelling forms on page 1 of this newsletter (see the paragraphs under Robert's photo). It's not a typo. Even better, it makes sense. "Advisor" is a common spelling for the title of a firm in our particular industry. "Adviser" is a legal term. Depending upon the usage, we use both.

We have our rationale. We assume that Merrill Lynch also does, but in a company employing more than 15,000 people who oversee many different types of accounts, it gets more confusing. There, the titles are interchangeable but vary with the type of account being sold and managed. An "Advisor" is your go-to person for a brokerage account while an "Adviser" prepares your financial plan. You buy life insurance from an "Advisor." Presumably a single individual has multiple titles. With only one product, Assabet is only an "Advisor," (unless, of course, we're using the legal term "Adviser").

Do you care? Probably not, but now you have one more example of how people tend to manufacture complexity and conflict.

"Adviser v. Advisor, www.grammarist.com, M. Ticak, www.grammarly.com, 3/3/17, "Adviser v. Advisor," www.iheartwallstreet,11/4//16, J. Benjamin, "Adviser or Advisor?" www.Investmentnews.com 3/19/17,

Economic and Financial Overview

Through the first quarter of 2017, the U.S. stock market continued gains begun after the November election as investors imagined the potential business benefits of the new president's stated policies. A promised fiscal policy of infrastructure expenditure supporting a goal of aggressive growth, and the planned undermining of business regulations excited business optimism. Analysts also anticipated the repatriation of dollars to spur domestic investment. Additionally, economic data were strong enough to permit the Federal Reserve to make a +0.25% rate hike in March, signaling economic stability. The enthusiasm from these factors played out in positive market trends. For Quarter 1, 2017, the S&P 500 Stock Index had a return of +6.07%, outperforming the Dow Jones Industrial Average at +5.19% and the Russell 2000 Index of U.S. small cap equities at +2.47%. Growth stocks surpassed value issues and large cap returns exceeded small cap gains.

The fixed income markets had tepid but positive returns despite the Fed's rate hike. The U.S. Aggregate Bond Index returned +0.82% for the period while High Yield bonds performed better at +2.70%. Yields stayed within a range. The 10 year rate was 2.40% at the end of the quarter, 0.05% lower than at the end of 2016, yet higher than the 1.78% rate a full year before. Continued cautious tightening of rates is expected for a while, with perhaps only 2 more hikes of 0.25% this year.

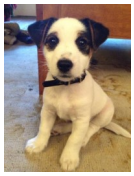
Much of the stock market climb was emotionally triggered, as investors greeted the new administration with hopefulness. Economic data, particularly in jobs, actually belonged to the prior leadership team. First quarter reports were disappointing. As with in any first quarter of a new president, Trump's policies were still just promises. It isn't clear how planned corporate tax breaks and heavy spending will be offset so as not to widen the deficit. As the quarter progressed, the mood was tempered by the administration's apparent inability to implement policies, as well as political turbulence. It is likely that the policies, even when implemented, will not have considerable affect for a while. Analysts have shown some discomfort at the high valuation of domestic equities. A P/E ratio of 17.55 (S&P 500) is above the historical norm of 15.

Foreign markets also rose on a generally positive economic outlook. Emerging markets, up +11.49% (MSCI EM Index) beat developed markets at +7.39% (MSCI EAFE Index). Foreign countries, earlier along in their recoveries, may not be ready as soon as the U.S. to abandon an expansionary monetary policy.

Doggie Deductions

We consider our pets to be family members, but the IRS just doesn't buy it. None of our feline, canine, rodent, or equine (or whatever) family stories or photos will convince the taxman to view them as qualified dependents for tax purposes. Yet, there are a few ways you may be able to deduct pet care expenses in your filing. Try to look at your animal friend in a new way.

First, think of your pet as an employee. Does that handsome Tabby keep the business environment free of rats and snakes? Does your imposing pooch deter unwelcome visitors from your business property? If you keep good track of their work hours, and their service is necessary and common in your trade, expenses for their care may be deductible from your business tax. Tips: don't claim a Shih Tzu as a guard dog, and do depreciate the cost of the animal over it useful life.



If you must change your home location because of your job, and the new location meets distance requirements, the cost of transferring your pet may qualify as an above-the-line deduction. Use Form 3903.

The cost of acquiring, training and maintaining service or therapy animals might be deductible as a medical expense. To qualify, the helper animal must be certified as trained for the purpose, and prescribed by your doctor.

Do you show your dog or cat as an income-making hobby? If so, you might be able to deduct expenses up to the level of that income. Your pet will have to be a winner, or your income will have to be modest, because a threshold of 2% of AGI applies.

Some animal-related expenses can be included in charitable deductions. Unreimbursed pet fostering can be deducted as charitable giving. So can various expenses related to volunteering at a pet shelter. In these cases, the institutions must be 501(c)(3) organizations. So what if you can find no deductions. Your family member of a different species is worth every penny!

6 Tax Breaks for Pet Owners, www.msn.com, K. Ball, www.bankrates.com, B.Bird, "6 Tax Breaks for Pet Owners," https://www.gobankingrates.com, 1/7/17, "Pets and Tax Deductions," Huffington Post, 3/31/17

Know Me By My Wheels

When you're tired of defensive driving on a highway full of crackpots, do you ever imagine yourself leaning back with a magazine as your car gets you to your destination? No trying to stay awake, no watching out for speed traps, no fighting the temptation to text. Self-driven cars may sound pretty good to you in those moments.

The real thing won't be quite as appealing. So far, autonomous cars need some level of oversight, and the experience might more accurately be called "assisted driving." The cars being tested by Uber in Pittsburgh come with a responsible human aboard. Liken this to your role as you sit in the passenger seat while your teenager, with a learner's permit, drives your car. The vehicle truly is capable of driving itself. It can avoid collisions, stay on the road, follow directions and manage adaptive cruise control, among many other things. Yet, the supervision of an experienced driver is required.

The technology for self-driven cars is not uniform. Most common is Lidar in which stacks of spinning laser beams create a 3-D image of the car's surroundings. Teslar's computer vision based technology uses a combination of image cameras, sonar and radar, and offers less vehicle autonomy. Both technologies collect a large quantity of information needed to guide a car safely. This includes measuring distances between vehicles and other objects, calculating speeds, identifying signs, stop lights and lane stripes. Back to your teenager: Do your recall how, in their first drives on public roads, it was all they could do to stay on the road? Visual multitasking, or seeing everything then apparent while also looking out for the unexpected, was beyond them for a while. The autonomous car sees all and knows nearly all. It can differentiate between a bike and a pedestrian, for example. Its vision even can brighten the lane striping, a good thing as seniors, with nighttime driving limitations, become an increasing percentage of our adult population.

The race is on. No one company currently owns the business so the competition for dominance is fierce. Winners will be successful partnerships of auto manufacturers. Partnerships currently in the race will resign before finishing. The complexity comes from a lack of history with the product (it's not fully defined) and therefore, an absence of legal, social and market context. What do consumers want? What will they want in 5 years? How can we regulate usage?

Autonomous cars will not suddenly proliferate. The average age of cars on American roads is 12 years, suggesting the speed of vehicle turnover. Also, consumer willingness to adopt self-driving cars may be slow at first, so that autonomous features may be introduced gradually. Over time, certain features may become standard or even required. Remember when AC or airbags were added features on new cars? When these cars are new, drivers may be reluctant to relinquish total control. While they may become secure in their own self-driven cars, they may still fear the other drivers on the road. Manufacturers will have to design to appease concerns, adjusting as the new cars become the norm and technology improves. (This recalls the introduction of cake mixes to replace home-baked. Initially, the mixes required little but water, but when housewives balked at surrendering all their creative effort, the mixes were made more difficult.) But reception of the autonomous cars surely will improve as we experience the advantages and figure out how it all works. Could we get a limited license? Who gets sued if the car malfunctions?

Once we're used to the "assistance," driving on highways, especially, will become more stress-free. On a national basis, there will be a huge increase in productivity. Today, we lose ~30,000 people to accident deaths. 15% of hospitalizations relate to car accidents. In self-driven cars, DUIs would be nearly extinct. How about urban smog? Infrastructure demands?

Many people may decide to forgo car ownership entirely. The estimate is 12 cars replaced by each autonomous car, simply because of the great increase in use of Uber, Lyft and the like. Former drivers in many regions could simply call for a lift to get to and from work, or elsewhere. In this way, cars become shared, public in terms of property, yet private in use. In that environment, would new homes require garages? Certainly urban areas, arenas, and office buildings would need far less parking. Imagine the impact on urban design. Municipalities and states would see a decline in revenue from excise taxes, license and registration fees, and traffic tickets. Airports, for whom parking, car rental, and ground transportation produce 28% of their revenue, also would see declines. What happens to revenue bonds in that setting? These are not incidental changes, but ones that alter basic life patterns, as well as our sense of who we are, perhaps without owning a car.

N.Winton, "Cars That Drive Themselves,"Forbes 11/8/13, d. Howell, "We Drove Cars That can Drive Themselves," www.washingtonpost.com.4/5/16, S. Hassler, (2017 The Year of the Self-Driven Car," www.spectrum, 12/30/16, J. Bhuiyan,"More People Will Ride in Self-DrivenCars" www.recode.net,1/8/17, G. Laskoski, "The Google Car Economy," www.usnews.com, F.Shafroth, "Breaking Down the Financial Impact of Self-Driven Cars,"www.gortech.com,1/30/17,. Alang, "Self-Driving Cars," www.glodeandmail.com, 7/29/13