# Q1 2018 Market Review & Outlook

Morgan Creek Capital Management

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## Letter to Fellow Investors

# Blockchain, Bitcoin & The Tokenized Economy: #TheVirusIsSpreading


Source(s): elaineou.com, TheEconomist.com, BitcoinMagazine.com, ScientificAmerican.com, MarketRealist.com

It is with sincere apologies that this quarterly letter is a couple weeks late, but as the title implies there was a culprit that caused the delay.  Everyone experiences the common cold from time to time as one of the strains of rhinovirus makes its way into our system and makes us feel bad for a week. Most colds are annoying, but not debilitating, and through the miracle of modern science we can take some over-the-counter medication to mitigate most of the symptoms and get on with daily life (we swear by Zicam). But every once in a while, some other, more virulent, strain of virus infects us, and we get smacked down to the point of actually missing work/school and struggling to keep up with the demands of our hectic schedules. Such was the case on my (and Ben Graham's) birthday this year. A friend had been here visiting from Europe and, as fate would have it, a particularly nasty strain of the adenovirus (the bug responsible for bronchitis and pneumonia that was making the rounds on the Continent producing a Hacking Cough outbreak) decided to hitch a ride with her and come wreak some havoc in North Carolina (how appropriate that it would be the hacking virus given our experience with the #RapperHacker last quarter). This particular virus is highly contagious and within a few days of the visit we were infected, went down for the count, and just could not put together any coherent content for the letter. Worse still is that while the rhinovirus version of the cold is gone in a week, this little bugger has hung on for three weeks, but we are finally feeling human again and have been able to get back to work in recent days and pound out the last section of this letter. The ironic thing about the sequence of events with the hacking infection is that for a while we have been contemplating reducing the volume of the letter (both for ease of reading and to free up time to work on some amazingly cool new projects we are starting at The Creek), so the old saying about "If I had more time, I would have written a shorter memo…" finally had an opportunity to come to pass. We hope you like the new format and hopefully readers will still get the full breadth of our views on markets and investment opportunities even if we aren't able to provide quite as much depth on each and every segment of the markets given the reduced length.

Over the past fifteen months, we have written the Quarterly Letter similar to an old-time serial, where each successive letter is connected to the last through a character or plot twist. Our story began last February with the first installment titled *Babson's Brilliance: #WelcomeToHooverville*, which introduced our protagonist, Sir Isaac Newton (brilliant scientist who discovered gravity) through the eyes of Roger Babson (brilliant entrepreneur and market observer who called the 1929 crash), who was obsessed with gravity throughout his lifetime (founded a research foundation to find a "cure"). The letter described how we believed that with the election of Donald Trump, a President with no experience just like Herbert Hoover, there was a risk of a bubble melt-up in the equity markets that would follow the 1929 pattern (peaking at SPX 2,800) of parabolic rise and devastating crash (every action has equal and opposite reaction). The second installment in May, titled *Not So Intelligent Investors: #GravityRules*, connected Newton to the father of value investing, Benjamin Graham, who (like Sir Isaac) had learned about the power of value investing by using the exact opposite approach (leveraged speculation) during the bubble leading up to the 1929 crash. Graham quickly discovered that gravity does indeed rule and lost everything, causing him to rethink the error of his ways, embrace the discipline of value investing, pen the two most important books on the topic (*Security Analysis* and *The Intelligent Investor*) and become a professor who inspired some of the most widely recognized value investors of our generation (like Warren Buffett). The third installment in August, titled *What Goes Up Must Come Down: #DarknessFalls,* linked the Aug. 22 total solar eclipse to Newton's pioneering work on gravity and the movements of the sun, moon and stars and also introduced W.D. Gann, a self-taught trader and market forecaster, who right after the turn of the twentieth century wrote about market cycles that would later predict the 1929 crash (to the month) and nearly every major crash, crisis or market turning point during the last hundred years. The fourth installment from November, titled *It's Déjà Vu All Over Again: #Pure Imagination,* used the wisdom of Yogi Berra to discuss how perhaps the repeal of gravity (stocks moving to ever higher levels of overvaluation) might persist because, as Yogi liked to say "It ain't over till it's over." We also sought the wisdom of Willy Wonka to help us understand that while every valuation metric was signaling a bubble (and imminent return of gravity), there was a possible explanation for the world of pure imagination insofar as the nominal value of equities was high, but when deflated by gold (real money) the valuations were lower than previous bubble peaks (an old Banana Republic trick of inflating asset prices that benefit the wealthy by slowly devaluing the currency).

In the fifth installment from February, titled *The Year of the Frog: #HackedMarkets,* I recounted my unfortunate experience of having my identity stolen by the #RapperHacker and made the case that markets had been hacked by the evil central bankers and their seemingly never-ending production of the anti-gravity element, upsidasium. The problem with radioactive elements is the heat they produce as they decay (high valuations in this case), and we argued that 2018 was not the Year of the Dog (the actual Chinese zodiac year), but rather the Year of the Frog, as the army (group of frogs) of investors was slowly being boiled alive and it was time to jump out of the pot (while we are all still able). We also introduced a new character with links to our protagonist Sir Isaac, the Real Slim Shady (a nod to the Eminem song when I regained control of my accounts from the hacker) of Economics, John Maynard Keynes, and provided many of his pearls of wisdom on investing, economic theory and market bubbles. Lord Keynes was an ardent admirer of Newton and, like Newton and Graham, learned the hard way that chasing Bubbles in equity markets was a road to ruin and that the discipline of value investing was the superior path to financial security. Our story (like all good serials) always finds its way back to primary character (Newton) and Eminem has a famous line in the song *Lose Yourself,* when he raps "Snap back to reality, oh there goes gravity" which crystalizes the immutable law of Newtonian Physics: what goes up, must come down. As we have written many times in the past year, in the end, #GravityRules and we said last time that "It is time, not to drop bombs (like my Twitter hacker), but to drop U.S. equity exposure and move your portfolio out of harm's way (out of the grip of #HackedMarkets and into free markets, and assets, around the world where you can still secure a margin of safety, minimize the probabilities of impairing your capital and keep the power of compounding working in your favor)." We discussed the biggest danger in following a prudent investment strategy that respects the laws of gravity was that it would underperform meaningfully in the bubble period leading up to a crash (and that the investor would be criticized harshly). Keynes summed it up by saying, "There is nothing so disastrous as a rational investment policy in an irrational world" and observed that "It is the long-term investor who will in practice come in for the most criticism. For it is the essence of his behaviour that he should be eccentric, unconventional and rash in the eyes of the average opinion. If he is successful, that will only confirm the general belief in his rashness, and if in the short run he is unsuccessful, which is very likely, he will not receive much mercy. Worldly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally." Such was the craziness of #HackedMarkets, prudent investing is deemed unintelligent and imprudent behavior, even when it results in poor outcomes, is rationalized away as being acceptable because everyone else was doing it too (cue the story of Mom telling you about people jumping off a bridge…).

In this sixth installment of our serial we will introduce a couple new characters, but first let's set the stage for the title, *#TheVirusIsSpreading*. We know a few things about viruses. First, they are small, but mighty, insofar as something that in many cases an observer would need the help of an electron microscope to actually see, can reduce the largest human to a sniffling, sneezing, hacking mess (and sometimes much worse), that is unable to function normally. Second, they are viewed quite negatively (for the most part) by people because of the first reason and are normally linked to words that connote fear such as epidemic, pandemic and contagion. As a counter to this point, Dr. Marilyn Roossinck, PhD, a Professor Environmental Microbiology at Penn State University, said in the *Journal of Virology* that "The word, virus, connotes morbidity and mortality, but that bad reputation is not universally deserved. Viruses, like bacteria, can be important beneficial microbes in human health and in agriculture" (more on the good side of viruses later). Third, they are infectious agents that have both living (can reproduce and mutate) and non-living (fully dependent of host organism) characteristics. Fourth, they can multiply at incredibly fast rates due to their efficiency in co-opting the host cells' metabolic machinery. These characteristics are associated with viruses that infect humans, animals and plants, but as we have entered the information age, these same characteristics are associated with computer viruses as well. A traditional virus goes through the lytic life cycle of adsorption (attach to host), entry (inject genetic instructions into cell to recruit enzymes), replication (co-opted enzymes produce new virus parts), assembly (parts are self-organized into new viruses) and release (break free and seek out new hosts). A computer virus acts much in the same way in a computer system or network with "programming code" replacing "genetic code" (DNA) in the life cycle process. In the technology world, the term virus is viewed just as negatively as the dominant view of viruses in the real world, but there is an exception.

There is a term that has developed as a result of the formation of powerful computer networks, connected devices and social media applications that gives a more positive twist on the traditional view of a virus, in that when an idea, a technology or a piece of content (photo, video, song, etc.) becomes very popular and widely adopted very quickly, it is said to have gone "viral." The connection comes from the fact that the growth follows the same mathematical path as when a virus infects a human/animal/plant population. Populations are divided into three groups, susceptible (those who do not have the virus), infected (those with the virus) and recovered (those who had the virus before and are now immune). For every virus, there is a basic reproduction number (R-zero) that determines the speed of growth of the infection in the population. When R-zero is < 1, the virus will not spread very effectively and will die out before causing much of a problem. When R-zero is > 1, the virus will spread through the susceptible population at an exponential rate. Each generation of the epidemic grows more quickly based on the relationship of the contagiousness of the actual virus (higher values of R-zero are more contagious; e.g., AIDs is 4, Measles is 16 and Malaria is 100) and the number of contacts each infected person makes. For perspective, imagine the difference between someone who catches a cold virus and stays home in bed (no contacts) versus someone who goes to work/school (hundreds of contacts). Viruses are extremely efficient multipliers. For example, a University of Arizona study showed that if the common norovirus was placed on a doorknob of an office building, replicated viruses would find their way onto 50% of the building surfaces in just four hours, thereby increasing the likelihood of individuals contracting the virus at an exponentially higher rate. Mathematically, in the early part of the epidemic, the number of susceptible members of the population is high (very few infected and none recovered) and from a single infected party (patient zero), the rate of infection grows rapidly (ultimately, parabolically) until those infected begin to become recovered (immune to the virus) and the virus eventually dies out over a similar time period (forms a standard bell curve). An important point here is that once you have had a virus you are immune to that particular strain (and sometimes related strains that may have mutated). That is the good news; the bad news is that you are less likely to have strong defenses against foreign viruses, which is why we were so at risk when a European strain was introduced into North Carolina. Another important point is that the most critical element in the spread of the virus is the number of contacts that the infected person has while they are contagious. This is where the construct of things going viral has become so important in that, as technology has advanced our ability to share things (infect others), causes or movements (Arab Spring), technological advances (blockchain and Bitcoin) and pop culture content (Sister Jean from Loyola during March Madness) has expanded at an increasing rate due to the network effect (the more people in a network, the faster things move). For example, imagine a post on your Instagram account that some 200ish friends would see and potentially forward and share, versus a post on The Rock's Instagram account where his 106 million followers could see and share the content. The more connections in the network, the faster the virus spreads.

So, let's go back to go forward. Almost exactly 30 years ago, a relatively unknown cypherpunk (an activist who promotes the use of cryptography as means to make social and political change) named Tim May released a short, but powerful, essay entitled *The Crypto Anarchist Manifesto.* This essay was an incredibly insightful (and amazingly prophetic) descriptor of a series of events that would unfold over the next few decades and lead us to the brink of the viral epidemic in cryptocurrency, blockchain technology and tokenization that we are witnessing today. The text of the manifesto was as follows:

*A specter is haunting the modern world, the specter of crypto anarchy.*

*Computer technology is on the verge of providing the ability for individuals and groups to communicate and interact with each other in a totally anonymous manner. Two persons may exchange messages, conduct business, and negotiate electronic contracts without ever knowing the True Name, or legal identity, of the other. Interactions over networks will be untraceable, via extensive re- routing of encrypted packets and tamper-proof boxes which implement cryptographic protocols with nearly perfect assurance against any tampering. Reputations will be of central importance, far more important in dealings than even the credit ratings of today. These developments will alter completely the nature of government regulation, the ability to tax and control economic interactions, the ability to keep information secret, and will even alter the nature of trust and reputation.*

*The technology for this revolution--and it surely will be both a social and economic revolution--has existed in theory for the past decade. The methods are based upon public-key encryption, zero-knowledge interactive proof systems, and various software protocols for interaction, authentication, and verification. The focus has until now been on academic conferences in Europe and the U.S., conferences monitored closely by the National Security Agency. But only recently have computer networks and personal computers attained sufficient speed to make the ideas practically realizable. And the next ten years will bring enough additional speed to make the ideas economically feasible and essentially unstoppable. High-speed networks, ISDN, tamper-proof boxes, smart cards, satellites, Ku-band transmitters, multi-MIPS personal computers, and encryption chips now under development will be some of the enabling technologies.*

*The State will of course try to slow or halt the spread of this technology, citing national security concerns, use of the technology by drug dealers and tax evaders, and fears of societal disintegration. Many of these concerns will be valid; crypto anarchy will allow national secrets to be traded freely and will allow illicit and stolen materials to be traded. An anonymous computerized market will even make possible abhorrent markets for assassinations and extortion. Various criminal and foreign elements will be active users of CryptoNet. But this will not halt the spread of crypto anarchy.*

*Just as the technology of printing altered and reduced the power of medieval guilds and the social power structure, so too will cryptologic methods fundamentally alter the nature of corporations and of government interference in economic transactions. Combined with emerging information markets, crypto anarchy will create a liquid market for any and all material which can be put into words and pictures. And just as a seemingly minor invention like barbed wire made possible the fencing-off of vast ranches and farms, thus altering forever the concepts of land and property rights in the frontier West, so too will the seemingly minor discovery out of an arcane branch of mathematics come to be the wire clippers which dismantle the barbed wire around intellectual property.*

*Arise, you have nothing to lose but your barbed wire fences!*

Perhaps the most amazing thing about reading these words is that they could have very easily been penned anytime in the past year as nearly everything that Tim wrote thirty years ago, from breakthroughs in cryptography and microchip technology to government attempts to halt the development to the realignment of economic and social power, is happening right before our eyes today. The most powerful statement comes in the final two lines in his contention that an arcane branch of mathematics will fully unlock the power of intellectual property (open source systems). The adoption of the technology (spread of the virus) has indeed altered forever the constructs of boundaries and ownership and unleashed the power of innovation that will create a wave of wealth creation the likes of which the world has never seen. While we are at times prone to hyperbole, we do not believe we are being dramatic in this particular case. We wrote last time how Lord Keynes was a huge believer in radical ideas and said that "Words ought to be a little wild for they are the assault of thoughts on the unthinking." Tim May was definitely willing to assault the unthinking with some wild words. So, if Tim May was patient zero in the CAM-1988 virus epidemic, and *The Economist* picked up the mantle a few months later and predicted that in 2018 the global barbed wire fences would have fallen and we would have a world currency called the Phoenix (curiously a gold coin that would become a recurring theme), why did it take so long for the crypto anarchy virus to spread? It turns out that CAM-1988 had an R-Zero not much higher than one, and it also turns out that the nature of the personality of being a cypherpunk (they keep to themselves and stay off the grid) meant that the infection rate turned out to be very low, essentially not many people caught the crypto anarchy bug. The other problem is that the people in positions of power have been "vaccinated" against new ideas and radical thoughts, as those ideas threaten their very positions and accumulated wealth. We discussed last time how Keynes wrote, "The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed, the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually slaves of some defunct economist. In the field of economic and political philosophy there are not many who are influenced by new theories after they are twenty-five or thirty years of age, so that the ideas which civil servants and politicians and even agitators apply to current events are not likely to be the newest. Mad men in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back." Those in power, the "practical men" (read old, entitled and afraid of change), were immune to the new ideas put forth by Tim May and the rest of the cypherpunks and were able to contain the contagion through whatever means necessary (the incumbents will always fight back). We also discussed last time how Keynes was passionate about the power of new ideas to ultimately initiate change (regardless of the immune response of those resisting) and stated that “I am sure that the power of vested interests is vastly exaggerated compared with the gradual encroachment of ideas” and that “Ideas shape the course of history.” It turns out that the eventual achievement of the manifesto objectives would simply need a slight mutation of the virus and another patient zero to begin the true crypto epidemic.

Lord Keynes described an economist in the manner in which we believe patient zero of the crypto epidemic had to resemble in order to advance the rate of the crypto virus spreading (raise the R-zero), saying, “The master-economist must possess a rare combination of gifts. They must be mathematician, historian, statesman, philosopher, in some degree. They must understand symbols and speak in words. They must contemplate the particular, in terms of the general, and touch abstract and concrete in the same flight of thought. They must study the present in the light of the past for the purposes of the future. No part of man’s nature or his institutions must be entirely outside their regard. They must be purposeful and disinterested in a simultaneous mood, as aloof and incorruptible as an artist, yet sometimes as near to earth as a politician.” It took two decades for that exact mutation to occur, but in 2008, the mysterious Satoshi Nakamoto appeared on the scene and unleashed the BTC-2008 (Bitcoin) virus on the world. We use the term mysterious in describing Satoshi because no one actually knows who he (she, they…) actually is/are, or at least no one has been willing to reveal the identity. That said, there have been two people who have claimed to be Satoshi only to be proved to be imposters (and some Teslarians have suggested Elon Musk, which is laughable). There is a theory (with some solid support) that Satoshi is actually not a single person, but a group of four individuals (one of whom has unfortunately passed away) who created the Bitcoin protocol and co-authored the original white paper. There is also a great conspiracy theory that Satoshi is actually the CIA (or NSA, pick your favorite “Deep State” entity) because if you translate Satoshi Nakamoto to English you get Intelligence Central. The hypothesis is that the U.S. government knows that the dollar is ultimately doomed so they created Bitcoin to entice people to convert fiat currency into the cryptocurrency and then they will seize it all (massive wealth tax) through a back door in the code. Finally, there is a fun meme that shows if you take letters from SAmsung, TOSHIba, NAKAmichi and MOTOrola, you get Satoshi Nakamoto (our bet would be that if it were created by Asian tech companies it would more likely be from China, like Bitmain). For now, we are sticking with the idea that there really was a Renaissance Man (or Woman) like the one Keynes described who possessed the genius as a mathematician, the vision as an architect and the Zen of a philosopher, truly a person who could “understand symbols and speak in words.” Keynes was an admirer of Newton because he believed that Sir Isaac was a man of towering intellect who had the wisdom of the ages embedded in his soul, saying “Newton was not the first of the age of reason. He was the last of the magicians, the last of the Babylonians and Sumerians, the last great mind that looked out on the visible and intellectual world with the same eyes as those who began to build our intellectual inheritance rather less than 10,000 years ago.” Given the magnitude of their creation, Satoshi could fit that description of mind-boggling intelligence and talent, but like Keynes described, Satoshi’s true wisdom (like Newton’s) would emanate from endless curiosity and the ability to look at things with a beginner’s mind (to not make assumptions of how something should be) and facilitate the power of the idea to unfold from a clear vision of the future. Indeed, the elegance of Satoshi’s creation is so profound it commands comparison to Keynes’ other belief about Newton’s genius when he described his “superpower” as the ability to focus intensely on a singular idea, saying “I believe that the clue to his mind is to be found in his unusual powers of continuous concentrated introspection…I believe that Newton could hold a problem in his mind for hours and days and weeks until it surrendered to him its secret. Then being a supreme mathematical technician, he could dress it up, how you will, for purposes of exposition, but it was his intuition which was pre-eminently extraordinary…” He also said "I fancy his pre-eminence is due to his muscles of intuition being the strongest and most enduring with which a man has ever been gifted."

With Newtonian level impact, Satoshi Nakamoto gave the world the gift of a global currency a decade ahead of schedule, nearly twenty years to the day after *The Economist* cover. Satoshi was quoted years ago that "I've been working on a new electronic cash system that's fully peer-to-peer, with no trusted third party" and then on October 31, 2008, Nakamoto released his seminal white paper, "Bitcoin: A Peer-To-Peer Electronic Cash System", where he described in detail the plans for developing a protocol that could fundamentally change the world forever. Bringing together the core elements of blockchain technology, distributed ledgers, cryptography and consensus, Satoshi raised the R-zero of the BTC-2008 virus to a level that would insure a rapid expansion of the protocol around the globe. One of the points that Satoshi made was that "Governments are good at cutting off the heads of a centrally controlled networks like Napster, but pure P2P networks like Gnutella and Tor seem to be holding their own." He realized that in order for his creation to flourish it would have to be truly decentralized and unassailable by any central authority. Satoshi was following in the well-worn path of the cypherpunks who had come before (like Tim May) and explained that "[Bitcoin is] very attractive to the libertarian viewpoint if we can explain it properly. I'm better with code than with words though." Later, he also said, "Sorry to be a wet blanket. Writing a description [of Bitcoin] for general audiences is bloody hard. There's nothing to relate it to." So, perhaps Satoshi wasn't exactly like Sir Isaac, who really did have an amazing ability to turn complex concepts into accessible language and was an outstanding communicator (but we bet he couldn't code worth a darn…). The cover of *Bitcoin Magazine* included in the pictures above sums up the essence of Bitcoin perfectly; the corrupt fear us, the honest support us and the heroic join us. The loudest opponents of Bitcoin are the Kleptocrats at the top of the pyramid (Dimon, Buffett, Munger, etc.) who have the most to lose should a truly free market currency exist that would level the playing field and remove the ability of central banks to funnel wealth into the hands of the 0.1% by devaluing the currency. The loudest supporters of Bitcoin are the masses who understand the profound implications of wrestling back control of the creation of wealth and power through the control of the currency. It turns out that what Thomas Jefferson is often quoted as saying in 1809 was correct, "If the American people ever allow private banks to control the issue of their currency, first by inflation, then by deflation, the banks and corporations that will grow up around them will deprive the people of all property until their children wake up homeless on the continent their Fathers conquered…The issuing power should be taken from the banks and restored to the people, to whom it properly belongs." Satoshi addressed the same idea when he said, "The root problem with conventional currency is all the trust that's required to make it work. The central bank must be trusted not to debase the currency, but the history of fiat currencies is full of breaches of that trust. Banks must be trusted to hold our money and transfer it electronically, but they lend it out in waves of credit bubbles with barely a fraction in reserve." Satoshi's disdain for the banking system was so great that the original entry in the Bitcoin Blockchain (the Genesis Block) says "01/03/2009. Chancellor on brink of second bailout for banks," pointing out the failure of the system and the need for further debasement of the currency through money printing and bailouts.

Clearly there were some people who were infected by the CAM-1988 virus and attempted to create crypto-related solutions over the course of the twenty years leading up to the Satoshi white paper. In fact, there were a number of substantial programs that were established, but ultimately failed because they were never able to amass the critical mass to make the Network Effects a reality. Satoshi believed that the problem was that the early attempts failed because they took a centralized approach, saying "A lot of people automatically dismiss e-currency as a lost cause because of all the companies that failed since the 1990s. I hope it's obvious it was only the centrally controlled nature of those systems that doomed them. I think this is the first time we're trying a decentralized, non-trust-based system." The key words in the mutation from CAM-1988 to BTC-2008 were "decentralized" and "non-trust-based" in that the true revolution in cryptocurrency was the elimination of the need for Trust Institutions (read banks) through the substitution of cryptography. Satoshi said, "With e-currency based on cryptographic proof, without the need to trust a third-party middleman, money can be secure and transactions effortless." The ability to transfer value between independent parties without the need of a middle-man creates huge opportunities to reduce costs, enhance security and improve the efficiency of the primary role of currency, medium of exchange and store of value. Satoshi commented on his cryptographic solution and the issue that it solved in saying "the proof-of-work chain is a solution to the Byzantine Generals' Problem." The BGP was a dilemma faced by commanders of ancient forces as they prepared to siege their enemies fortress in that they needed to have consensus on the precise moment to attack (or face certain defeat) and there were logistical issues of having weak links (spies or corrupt soldiers) in the chain of command that might change the orders in the process of delivering the instructions to attack. A decentralized system of computers that must reach consensus can actually discover, and ignore, any corrupted commands or false orders and provide the highest level of security of the network. Satoshi also preemptively addressed the issue of forking (where one group of developers wants to change the rules of the network) in saying "The only way for everyone to stay on the same page is to believe that the longest chain is always the valid one, no matter what." In this regard, he was ensuring that there would be consistency of trust in the system, thereby eliminating the need for the external third-party trust organizations.

Satoshi was pragmatic in his expectations of the rate of growth of the network (the speed of the infection process) and commented that Bitcoin "could get started in a narrow niche like reward points, donation tokens, currency for a game or micropayments for web sites." He clearly had more grand expectations for Bitcoin as a global currency, but was realistic in his expectations that it would take time for the virus to spread. He was equally pragmatic in recommending to people that "It might make sense just to get some in case it catches on. If enough people think the same way, that becomes a self-fulfilling prophecy. Once it gets bootstrapped, there are so many applications if you could effortlessly pay a few cents to a website as easily as dropping coins in a vending machine." Satoshi understood very well that in a network, once something begins to go viral, the speed of adoption can be very fast, and it will be much more challenging to gain a material position of ownership once the epidemic is underway. Making a statement nearly as prophetic as Tim May's from 1988, Satoshi said "I would be surprised if 10 years from now we're not using electronic currency in some way now that we know a way to do it that won't inevitably get dumbed down when the trusted third party gets cold feet." Amazingly, here we are precisely ten years hence and we have seen a number of third parties who were early adopters of Bitcoin as a payment system get cold feet and reverse their position, but we do indeed have digital currencies that are utilized every day in significant transaction volumes. The virus is indeed spreading in this regard as more and more industries, sectors and businesses look to integrate cryptocurrencies into their systems. Satoshi made another prediction that seems prescient in that he said, "I'm sure that in 20 years there will either be very large transaction volume or no volume" and Bitcoin does find itself at a crossroads where the primary use case of a currency has been displaced (for now) by store of value (digital gold) because of limitation on transaction speeds. Those speed issues are being addressed by technological enhancements like the lightening network (a means of pooling transactions on a side chain before appending to the main blockchain) and the next ten years will be very interesting to observe. Satoshi created an extremely elegant incentive system for securing the Bitcoin Blockchain through mining and even anticipated how the network would respond when the mining activity ended (when the 21 million Bitcoin limit is reached), saying "In a few decades when the reward gets too small, the transaction fee will become the main compensation for nodes." Once again, the elegance of the system is a testament to the deep intellectual firepower of Nakamoto and the powerful combination of technologies that will allow the BTC-2008 virus to spread much faster than the CAM-

1988 virus. One last point that showed amazing foresight was Satoshi's comment on his anticipation that some Bitcoin would be lost over time (like losing physical currency or gold) and he quipped "Lost coins only make everyone else's coins worth slightly more. Think of it as a donation to everyone."

Shifting back to Keynes' economic perspectives and how he foreshadowed the development of Bitcoin nearly a century ago, he wrote that "the political problem of mankind is to combine three things: economic efficiency, social justice and individual liberty." His conclusion (like many others') was that Capitalism was the worst economic system, except for all the others and quipped, "Capitalism is the astounding belief that the most wickedest of men will do the most wickedest of things for the greatest good of everyone." We have seen over and over that those who rise to power (the most wickedly crafty always rise) will abuse the system for their own benefit in the name of greater good. The most insidious issue we as a people face is the persistent Kleptocracy that those in power embrace through the path of inflation of assets (which they control) through the devaluation of the currency. Keynes quoted Lenin in this regard, saying "Lenin is said to have declared that the best way to destroy the capitalist system was to debauch the currency. By a continuing process of inflation, governments can confiscate, secretly and unobserved, an important part of the wealth of their citizens. By this method they not only confiscate, but they confiscate arbitrarily; and, while the process impoverishes many, it actually enriches some. The sight of this arbitrary rearrangement of riches strikes not only at security, but [also] at confidence in the equity of the existing distribution of wealth. Those to whom the system brings windfalls, beyond their deserts and even beyond their expectations or desires, become 'profiteers,' who are the object of the hatred of the bourgeoisie, whom the inflationism has impoverished, not less than of the proletariat. As the inflation proceeds and the real value of the currency fluctuates wildly from month to month, all permanent relations between debtors and creditors, which form the ultimate foundation of capitalism, become so utterly disordered as to be almost meaningless; and the process of wealth-getting degenerates into a gamble and a lottery. Lenin was certainly right. There is no subtler, no surer means of overturning the existing basis of society than to debauch the currency. The process engages all the hidden forces of economic law on the side of destruction, and does it in a manner which not one man in a million is able to diagnose." As we said last time, the army of frogs are slowly being boiled and they won't even realize it is happening until it is too late to jump out of the pot.

A natural response to the debasement of a nation's currency would be the creation of an alternative currency, a true store of value, that would allow the citizenry to fight back against the elites. That is precisely why Satoshi created Bitcoin. The Crypto Anarchists and the Libertarians lit the fire, but Nakamoto delivered the genetic material for the master virus. Keynes said that "The great events of history are often due to secular changes in the growth of population and other fundamental economic causes, which, escaping by their gradual character the notice of contemporary observers, are attributed to the follies of statesmen or the fanaticism of atheists." Tim May and his cypherpunk crew were clearly viewed as fanatics and Satoshi (by the nature of his portrayal in the mask) is viewed in a similar fashion, but the virus is spreading and there is no way to stop it now. One of Keynes favorite lines was that "it would not be foolish to contemplate the possibility of a far greater progress still." Like Satoshi said, it might make sense to get some, just in case it catches on. We have said many times that the miracle of Bitcoin is that it made it from $0.004 to $10.00 (surviving the establishment of the critical mass of the network), the movement from $10 to $100, $100 to $1,000 and $1,000 to $10,000 was not the miracle, but rather the normal, viral growth of a network as it develops. Indeed, it would not be foolish to contemplate the possibility of achieving "gold equivalence" ($8.4 trillion) which would yield a BTC price of around $400,000 (and even higher if other use cases develop). The virus is spreading, and growth rates become exponential as more of the population becomes infected over time. Given the low level of penetration of global users, the probability for the epidemic to run for a long time is very high.

The most pressing problem for all investors right now is that, unfortunately, the greatest progress still seems to be in the commitment of the developed markets governments to devalue their currencies (race to the bottom) and the investment markets have therefore simply become a high stakes game of musical chairs (and hope you can get out before the music stops). Keynes observed this same phenomenon a century ago saying, "The actual, private object of the most skilled investment today is to 'beat the gun,' as the Americans so well express it, to outwit the crowd, and to pass the bad, or depreciating, half-crown to the other fellow." The real problem is that when valuations reach extreme levels (like equity markets today), there is heightened risk that fear and doubt can spread like a virus at the slightest provocation because, as Keynes said, "A conventional valuation which is established as the outcome of the mass psychology of a large number of ignorant individuals is liable to change violently as the result of a sudden fluctuation of opinion due to factors which do not really make much difference to the prospective yield; since there will be no strong roots of conviction to hold it steady….Once doubt begins it spreads rapidly." When players come to a game late, they are the weak hands (due to lack of analysis and lack of conviction), and they will fold at the first sign of stress and, importantly, as we know from many historical examples, when things finally do turn down #RiskHappensFast. As we discussed last time, Keynes believed it was critical to change your mind when you find the majority agreeing with you, saying "the one sphere of life and activity where victory, security and success is always to the minority and never to the majority. When you find any one agreeing with you, change your mind. When I can persuade the Board of my Insurance Company to buy a share, that, I am learning from experience, is the right moment for selling it...The central principle of investment is to go contrary to the general opinion, on the grounds that if everyone agreed about its merits, the investment is inevitably too dear and therefore unattractive." When everyone is rushing to buy something at any price (like the #FANG stocks today), it is probably best to sit tight, or sell and wait to buy later at an inevitably better price.

Satoshi sought to combat the problems of persistent inflation and take the power away from the central authorities to debauch the currency at will, in essence to prevent the government from stealing the wealth from the citizenry. Once again, the solution was elegant in its simplicity - have a fixed limit on the money supply (the antithesis of fiat currency). Satoshi also contemplated how the price would change as the network grew over time, saying "The fact that new coins are produced means the money supply increases by a planned amount, but this does not necessarily result in inflation. If the supply of money increases at the same rate that the number of people using it increases, prices remain stable. If it does not increase as fast as demand, there will be deflation and early holders of money will see its value increase." We have said for a long time that the intense focus on the daily price of Bitcoin misses the entire point; that any price is simply the level at which a buyer and a seller will transact, which has nothing to do with the underlying value of the network. The network value is determined by the number of participants joining the system and over time that growth will be the primary driver of Bitcoin value. Networks are amazing things in that they grow in value at an exponential rate (much like a virus) as the efficiency and effectiveness of a network rises as the user base expands. Consider the amazing statistic that eight of the ten most valuable companies in the world today are networks and also consider that some of them are likely to be disrupted by blockchain technology and cryptocurrencies like Bitcoin (which will likely create incredible investment opportunities). Satoshi designed the Bitcoin network to get the maximum benefit of this process and built-in protections such that "there is nobody to act as central bank or federal reserve to adjust the money supply as the population of users grows." He went further to describe how the value creation mechanism would function, saying "It's more typical of a precious metal. Instead of the supply changing to keep the value the same, the supply is predetermined and the value changes. As the number of users grows, the value per coin increases." Our view is that it is prudent to allocate a portion of your portfolio (1% to 5%) to Bitcoin and other cryptocurrencies as they possess a rare combination of the ability to generate significant long-term returns and they are very strong diversifiers in a portfolio given they exhibit low correlation to traditional assets.

It is abundantly clear that the crypto virus is spreading, and at this point, no one can stop it (there is no vaccine). Interestingly, there are some people who don't like the use of the virus analogy because they think it has negative connotations for the technology, but we would posit that Dr. Roossinck is right, that having the good viruses in your system is beneficial to health. We would put Bitcoin in the good virus category and believe it enhances the immunity of your portfolio to external shocks from the traditional markets (like promoting good gut health). Others don't like the virus analogy since an analyst from Barclays used it to say that the December high will be the ultimate peak in the Bitcoin (crypto) market and there is only downside from here (he actually wrote that crypto would never reach the December levels, we will take the over). He made the case that those infected by the virus in the last parabolic run up last year have now lost money (by selling) and have moved into the immune population (out and won't go back in) and therefore the virus is on the back side of the growth/death curve (he actually proclaimed that Bitcoin would die out, good luck with that…). We find this argument a little comical in that a tiny sliver of the global population has ever had exposure to cryptocurrency, so it is a mathematical fact that the susceptible population is still massive, and we would expect that there will be many more parabolic moves ahead for Bitcoin in the years to come as the virus continues to spread. As you can see in the graph on the far right at the top of this letter that shows the adoption rates (infection rates) for major technologies over time, the Bitcoin line is barely visible, and BTC is #JustGettingWarmedUp. The epidemic is still a long way off in the future.

The evolution of the crypto economy and the development of these technologies over the past three decades has set the stage for a truly transformational period of broad adoption of blockchain-enabled technology, rapid development of related products and services. The confluence of events has created the most compelling investment opportunity we have seen in many decades as we transition from the analog age of securities to the digital age of securities. If we make the assumption that the next big technology wave will be the blockchain era and the internet of value, beginning in 2024 (the next stage of the 14-year tech cycle), we will witness widespread adoption of blockchain-enabled technology in cryptocurrencies, utility tokens and security tokens. We have discussed cryptocurrencies at length above. Utility tokens are the result of Initial Coin Offerings ("ICOs") and are essentially an alternative to early-stage capital raising for companies. ICOs are now competing with traditional venture capital ("VC") and more money was raised by early stage companies in ICOs than VC in both Q4 2017 and Q1 2018. That market will continue to develop, and we do see solid opportunities in that segment for those investors who have the knowledge and resources to understand the emerging technology and sift through the hundreds of losers to find the few winners. Remember that VC has a very high (80% to 90%) loss ratio and you should have the same expectations for ICOs. Yes, there will be some huge winners (10X, 20X or more), but there will be far more losers (in fact, the majority will actually go to zero). You will need a broadly diversified portfolio (and some luck, or a great manager/advisor) to generate superior returns in this area. Security tokens is the largest opportunity (by far) as we believe that every asset of value (real assets, real estate, private equity, debt, stocks and bonds, etc.) can be, and will be, tokenized (converted to digital ownership) in the coming decade. There are over $700 trillion of assets that are likely to be tokenized and this conversion process will create tremendous opportunity to provide solid, consistent returns to investors in what is likely to be a very challenging investment environment over the coming decade. Security tokens will be an incredibly exciting asset class to focus on for the foreseeable future.

We are so convinced of the potential for this asset class that we recently acquired a team (Full Tilt Capital) with extensive experience in asset tokenization and blockchain technology investing to augment the investment team within Morgan Creek. This combination of resources will position MCCM as one of the leaders in the blockchain investment landscape and enable us to fully capitalize on this tremendous investment opportunity in the coming years. Expect to hear from us often in the coming months about new investment solutions that combine the extensive experience of Morgan Creek in the traditional investment world with the emerging technological innovations that are driving the tokenized economy. The intersection of these two worlds contains a very small number of organizations, and we are excited to be positioned to become a thought leader in the marketplace as well as continue to invest in accordance with our tagline of Alternative Thinking About Investments. We have gone from spending minimal time thinking about investment opportunities related to blockchain technology five years ago to over half of our time today and we have rarely been as excited about putting capital to work as we are today. There are a number of reasons for this excitement. First, the flood of talent into the crypto and blockchain space in the past few years has been nothing short of breathtaking. We have only seen this type of mass migration of talent from the traditional investment world into a new area once in our career and that was in the late 1990s when the internet was finally reaching maturity after twenty years of development. In every business, talent creates success and following the talent is often a proven strategy for generating superior investment returns. Second, the scale and scope of the current investment opportunity is truly unprecedented, as the cumulative effect of the evolution of computing technology and rapid innovation has created an exponential pace of development that was not possible before today. Every business model in the world will be impacted by blockchain technology and the integration of the technology across every industry will provide outstanding opportunities to capitalize on the disruptive power of the new business models (and perhaps go short those being disrupted…). Third, being early in the adoption cycle of these transformative technologies will provide intrepid investors with outsized returns during the most disruptive phase of development. Finally, the inevitability of the transition from the analog world to the digital world provides a massive opportunity to apply new technology solutions to traditional assets across the private investment spectrum where the unlocking of the illiquidity discount through tokenization will accrue to the owners and acquirers of those assets. While there are compelling opportunities in all of the segments of blockchain technology, from crypto to ICOs, we are most excited about the opportunity to #TokenizeTheWorld. The virus is spreading and there is no way to stop it.

# First Quarter Market Review and Outlook

Our January #ATWWY Webinar each year is entitled "*Channeling Byron: 10 Potential Surprises for the New Year*" #MCCMSurprises (with a nod to Byron Wien, the former Morgan Stanley strategist who originated the annual 10 Surprises idea). The nice thing about doing the Surprises in late January is that their production coincides with writing the Q4 letter. The process of looking back over the past year's Surprises (counting up hits and misses), gathering information on precisely what the consensus is for each asset class, geography and sector and then forming variant perceptions (the actual Surprises themselves) provides a huge amount of data from which to create the New Year's Market Outlook. The Surprises framework is sufficiently broad such that we can cover the vast majority of global markets and can even drill down further, when necessary, to look at investment sectors and individual company ideas that allow for the optimal expression of the themes. That Annual Investment Outlook then lends itself quite nicely to a quarterly update throughout the year to check in on the Surprises themselves and the related investment ideas we have come up with to capitalize on those opportunities. So, let's get to the update for the first quarter of 2018, and in keeping with the blockchain theme of the letter, we will simply "add a block" of new analysis to the original text from last quarter's Surprises section to bring us up to date on the progress of the markets related to each Surprise.

There are a couple important points before we begin. When we talk about Surprises it is important to clarify that Surprises are intended to be non-consensus ideas, which by definition have some reasonable probability of not occurring, in other words they are not necessarily predictions (we would expect only a little above half will come true over the long term). To this point, the actual definition of a Surprise is a variant perception (an idea that is materially different from the consensus) that we believe has a better than 50% chance of occurring in the current year. The key point here is that a variant perception must be *materially* different than consensus to be truly valuable. The uncertain nature of a true Surprise fits in perfectly with the famous George Soros quote about how meaningful returns are made by "discounting the obvious and betting on the unexpected." In addition, to paraphrase Michael Steinhardt "we made all our big returns from variant perceptions that turned out to be right." One other important point to keep in mind is that a year is a long time. Things can change (sometimes dramatically) so we need to remember the wisdom of what John Maynard Keynes is often quoted as saying, "when the facts change, I change my mind, what do you do, sir?" We will remain vigilant during the year to track the progress of each Surprise and look for opportunities to capitalize on them in the portfolios, but we will also be ready to change our minds (and our positioning), should the facts change.

**Surprise #1: #ActionsBeatWords**

**Willy Wonka quipped 'Oh, you should never, never doubt what no one is sure about' and as consensus reaches unanimity on the Death of the Bond Bull Market (really this time, unlike the last five times…) everyone is sure (again) that rates are going to rise this year. With a new, taller Fed chair the trend must be up, deflation is dead and bond returns are soon to follow. Funny thing is that CB jawboning is one thing, action is another; despite all the talk about tightening, conditions remain extremely easy. No one is sure rates will fall, so they will likely continue down in 2018.**

**If things are so great, then why is the Fed holding interest rates at levels as if the U.S. were still in a financial crisis? Curiously, the effective Fed Funds rate is still negative, and the Goldman Sachs Financial Conditions Index shows financial conditions are as loose as they have been at any point since the Global Financial Crisis. We have seen this movie before when the Bank of Japan ("BOJ") tried to remove qualitative and**

**quantitative easing ("QQE") stimulus back in 2007 (coincidently 11 years ago that matches their demographic lead) and the equity market crashed (50%), so they had to reverse course and took the assets on the Central Bank balance sheet from 26% of GDP then (equivalent to the Fed level today) to over 100% today. Another curious phenomenon is that despite short rates rising along with the Fed hikes, long rates (until recently) were actually falling, so the yield curve ("YC") has been flattening rather than steepening as everyone expected. Ultimately, it is the 10-year Treasury Yield, what we like to call the "chart of truth", that has been in a three-decade declining channel, and every time the 10-year rate touches the top of the channel (two standard deviations above the declining average) there has been a financial crisis (1987, 1994, 2000, 2008). Today, we are at that point with yields at 2.8%. The most important level is the previous high in the series of lower highs- 3.06% in 2013 during the Taper Tantrum. Unless we break that level, the primary trend remains lower. With the recent equity market turmoil, it will be interesting to see how new Fed Chair Jerome Powell responds to a sudden (and long absent) bout of asset price volatility.**

As we presented the 10 Surprises in late January, interest rates in the U.S. had just surged from 2.4% at the end of 2017 to 2.7% on Jan. 26 (right on the eve of Bradley Turn Date Jan. 29), and we posited the idea that perhaps that was all the gas in the tank for the Bond Bears and that rates would roll back over during the course of the year. That view was looking pretty good as rates peaked a few weeks later at 2.9% on Feb. 21 and then rolled over and fell all the way back to 2.7% at quarter end, and it appeared that this was another false alarm on the RIP Bond Bull Market Narrative. In the past year it had been curious to watch the 30-year Treasury rate actually fall slightly as the 10-year rose (perhaps fears of the Fed making a Policy error), and we had discussed how the continually flattening yield curve was causing stress in the "Everything Is Awesome" crowd who were sure that the YC would steepen (and who had pushed financial stocks higher in anticipation). While the 30-Year bond yield did actually rise a little bit (from 2.7% to 3% during Q1), the 10-30 spread fell from 34 bps to 23 bps (and has fallen further to 13 bps in May). With the Fed promising more rate hikes soon, we are getting very close to Inversion Day (more on that next time). Bond investors felt the pain of rising rates as the Barclay's Aggregate Index fell (1.5%) in Q1 and the Barclay's Long Treasury Index fell twice as much, down (3.3%). After a very long time of long duration Treasuries being a safe haven, Q1 was interesting in that both stock and bonds fell, and long bonds were the worst performers. Some are trying to blame the Risk Parity funds (when in doubt, blame the Quants) on the thesis that they are being forced to unwind some very levered long bond positions, and while we have some sympathy for this perspective, we think the extent of the leverage in the system (and the amount of capital short volatility) far exceeds the Risk Parity players. The statistic to watch over the coming months will be capital flows out of bonds should investors look at their statements and realize that the trailing twelve months ("TTM") return in bonds just flipped negative in April with the Barclay's Aggregate Index down (0.3%) and the Long Treasury Index down (0.1%). We repeat what we wrote last time, that should this Surprise turn out to be wrong and "If rates do actually begin to creep higher, it will be increasingly challenging for equity multiples to expand and as the earnings recovery continues to fade, there could be double trouble for the equity Bulls."

The primary place where there appears to be support for interest rates to rise (and for this Surprise to be wrong) is in the inflation data in the U.S. as there has been a consistent trend higher since last summer. One could make the case (and we might) that the bulk of that move is from oil moving from $42 last June to $70 today and that the move will be transitory (more on that in the oil Surprise) but the higher inflation data does jive with higher rates. The Core PCE Inflation (Fed's favorite Indicator) has risen to 1.9%, up from 1.3% last summer, and while that is still below the target 2%, the Headline PCE did edge over the line to 2.01% in April. Core CPI managed to bounce from 1.8% a quarter ago (and 1.6% last June) and hit 2.1% in April, while the Headline number got downright frisky at 2.5%. Before everyone gets too excited about runaway inflation, consider that the Core PPI slipped back below 2%, at 1.9%, and has crashed over the past nine months from last summer's heady 4% levels. Straddling the fence quite nicely, the 5-Year/5-Year Inflation Rate trickled higher from 2% to 2.2% over the four months of 2018, while the 10-Year Breakeven Inflation Rate moved from 1.96% to 2.17%. These numbers seem to be goal-seeking the Fed Target, and we do remind readers from the Q4 letter of the "pesky little fact that this is a level similar to where the Fed was beginning QE II and III, not raising rates." We have mentioned on numerous occasions over the past year that in the end there is one critical number to watch on interest rates, and said last time that, "ultimately, the Chart of Truth (the 10-year Treasury Yield) has been in a three-decade declining channel and every time the 10-year rate touches the top of the channel (two standard deviations above the declining average) there has been a financial crisis (1987, 1994, 2000, 2008) and we are at that point toady with yields at 2.8%. The most important level in the Chart of Truth is the previous high in the series of lower highs in yields, 3.06% during 2013 during the Taper Tantrum. Unless we break that level, the primary trend remains lower. Coincidently, as we are writing this letter, the $TNX weekly chart did just pierce that level to end the week at 3.1%. We will clearly be writing more about this next time and it may very well be possible that we have seen the end of the Great Bond Bull Market (we say possible as Lacy Hunt and Van Hoisington still make the case that the secular low in yields is ahead of us, not behind…).

The Barclay's Global Aggregate Ex-US Bond Index was up a solid 3.6% in Q1. Once again, as has been the case for the past year, the bulk of these returns for U.S. investors was driven by dollar weakness. Global rates rose along with U.S. rates, but less quickly thanks to less conviction that global Central Banks would take their feet off of the pedal any time soon. In Japan, 10-Year JGBs began Q1 at 0.05% and ended at 0.05% but did rise a bit in April to 0.055% (we said a bit…). Kuroda-san's pledge to pin the 10-year at zero (or close to zero) for the foreseeable future seems to be money good. European 10-year yields were range bound in 2017 and broke out just a bit in Q1, but the biggest issue no one talks about is that there are still nearly $11 trillion of government bonds with negative yields (smells like Deflation) globally, though most of them in Europe. German 10-year Bunds started the year at 0.4%, shot up to 0.7% by the end of January, settled back to 0.5% by quarter end, and continued to creep higher to 0.6% by the end of April (until we see the 2015 high of 0.9%, the primary trend remains down). Perhaps the more persistent lows in international yields reflects the fact that EU and Japanese GDP growth and inflation remain more muted than in the U.S. economy. EU GDP had been improving over the past few years and actually accelerated during the first three quarters of 2017 to a high of 2.8%, took a tiny step backwards in Q4 2017, to 2.7%, and fell again in Q1 down to 2.5% (still modestly above the U.S.). The strange thing was that despite the rapid rise in oil prices, EU CPI has now fallen steadily for the past four quarters, dropping from 1.3% at the beginning of the year to 1.2% in April. The real surprise though came from Japan where GDP slipped back into negative territory in Q1, falling (0.2%), down from 0.5% the last two quarters, and inflation collapsed from 1.4% in January to 0.6% in April. Despite Super Mario (Draghi) and Krazy Kuroda-san's best efforts, the specter of deflation still hangs over the majority of the developed world. We find it tough to see how interest rates will rise in this environment, but they have indeed risen over the past few months, so we will have to watch closely to see how this tug-o-war plays out in the coming quarters.

One quick word on Absolute Return ("A/R") strategies where we have made the case that should rates actually rise they would be a far superior alternative to Fixed Income exposure. A/R strategies have been brutalized over the past few years by QE "As the central banker induced Financial Repression has made it nearly impossible for dollar neutral (equal dollars long and short) strategies to thrive." Historically, the cash generated by the shorts has been reinvested in cash and has contributed a meaningful percentage of total returns (short-term rates were high), but in the ZIRP world those cash returns vanished. That said, we argued in November that with a regime change in short-term rates, "This change is not necessarily a bad thing, as Absolute Return strategies have generated returns similar to bonds over the past few years, but do not have the interest rate risk that threatens Fixed Income investors (in fact, A/R is positively correlated to rates rather than negatively correlated)." We noted last time that "should rates normalize (read *rise*) these strategies should generate far superior returns to bonds and maybe they are set up very nicely for the year ahead." That is precisely what happened in Q1 (and has continued in April and May) as the HFRI Market Neutral Index generated a nicely positive 0.7%, the HFRI Relative Value Index was up 0.8%, the HFRI Market Neutral Index was also up 0.7% and the HFRI Merger Arbitrage Index reversed back into the black in Q1, rising 0.7% as well. While these are not world beating returns, they are materially better than the (1.5%) loss from the Fixed Income markets (not to mention superior to the (1.4%) loss in the SPX). We wrote last quarter that "One of our favorite sayings is that Patience = #Edge and we would expect that being patient in deploying capital in these strategies will be rewarded handsomely." We would also expect that Absolute Return strategies will have a slight tailwind in the years ahead as the process of interest rate normalization continues.

Surprise #2: #WelcomeBackBears

**Global central bankers have been working overtime since 2009 running their printing presses non-stop to provide liquidity to support global equity markets. Very quietly the Fed and the PBoC have been plugging up the spigot on the bubble fuel and even Super Mario (King Jawboner) has been making threats about Tapering. In a dramatic surprise, the talk turns into action, and the Bear hitches a ride on the China express and take their turn at running the markets for a while. Global equity markets sputter and begin a brutal correction back to fair value.**

By definition, one of the first two surprises will be at least partially wrong, as the central banks will either take away the monetary stimulus or they won't. That said, the risk to equity markets is that other central banks follow the PBoC and Fed lead of reducing liquidity in response to rising rates and inflation and the rising discount rate pushes the global equity markets into territory they have not seen for many years, a correction (or worse, a Bear Market). We said a year ago that a 1929 Redux would push the S&P 500 toward 2,800 before a correction would ensue and that if the Administration and Congress made similar policy errors to then, that correction could morph into a full-fledged crash. After reviewing the Gann Financial Time Table more closely, we observed that the next market crisis was predicted for 2019 (not 2017 as we originally hypothesized) and 2017 actually did look a lot like 1927 in terms of returns and lack of volatility. The biggest problem that we see for the Bull Market case is that central banks have flooded the world with debt and yet we have had the worst GDP growth in the past decade in the history of the U.S., so profits are unlikely to rise substantially as growth continues to be muted. The one wildcard to the timing of the crash hit us like a "ton of gold bricks" when reviewing a slide of the SPX deflated by Gold prices and by this measure, while nominal value of equities looks overvalued (on every measure you can observe), the real level of asset prices has gone down dramatically since 2000. Essentially, the government is inflating away their massive debt load by destroying the value of the Dollar (who is the currency manipulator now?). The largest risks

**to global equity markets is whether China decides to continue to remove the $1 trillion of excess stimulus they injected into the global economy during the 2015 slowdown (we can argue that the U.S. was in Recession in Q1 2016). The good news is that the world's greatest indicator (the $OEXA200R) was still above the magic number of 65 (on weekly chart) that signals an all clear to stay long equities. When it falls below 65 (as it did this week), you should move to 50% cash and if the indicator falls below 50%, you should move to 100% cash."**

We began the market outlook section last quarter saying "It really does appear that we can (and should) permanently include the line from the opening of the Market Review section of the Q2 Letter that described how markets are behaving in a manner very differently than historical norms courtesy of global central bank liquidity continuing to flow" where the primary point was that no matter what else was happening in the world (economic growth, earnings, geopolitics, etc.), global stock markets just kept focusing on the stimulus and defying gravity. Markets were following the same playbook for the first three weeks of Q1 as the S&P 500 and ACWI were both up 6.5%, the DJIA was up 7%, NASDAQ was up 8% and EEM was up 8.5%, but then a funny (funny because it hadn't happened in multiple years) thing happened on the Jan. 29 Bradley Turn Date, equity markets started to go down, hard (the Bears were back in town…). So, for the first time since the first six weeks of 2016, global equity markets actually had a correction (fell > 10%), and over the next two weeks the SPX, ACWI, DJIA and QQQ all fell around (10.3%) and EEM actually dropped (12.3%). With the precision of a Swiss watch, the global central bankers took to the media promising to continue their Dovish ways, and the Buy-The-Dippers came out in force on Feb. 8, 2018 and pumped equity prices back up over the next month almost to where they had begun the correction. In addition, the indices mentioned above were up 8%, 6.5%, 6%, 13.5% and 9%, respectively, through Mar. 10, 2018. The problem was that new Fed Chair, Jerome Powell, was no Janet Yellen, and he quickly went to work at his first meeting, dispensing with the niceties and explaining how it wasn't his (the Fed's) job to keep stock prices rising (he clearly didn't read the transition letter from QEeen Janet about job number one…) and with another Fed hike on Mar. 21, 2018, global equities limped into the end of the quarter, down (5.1%), (3.6%), (4.3%), (8%) and (3.2%) respectively over the last three weeks. For the full quarter, it was the inverse of 2016 (big drop followed by big rally to finish flat), and the S&P 500 was down fractionally, (0.8%), MSCI ACWI was down (1%), the DJIA was off (2%), NASDAQ managed to rise 2.3% (on the strength of #FANG) and the MSCI EM Index was up as well, rising 1.4%. In the U.S., small-caps outperformed modestly, with the Russell 2000 Index basically flat, down (0.1%), and the Russell Microcap Index eked out a modest 0.7% gain. For the trailing twelve months, global equity market returns still look robust (the strength of 2017 was greater than the weakness in Q1 2018), as the S&P 500 rose a solid 14%, NASDAQ was up an even more solid 19.5%, and the DJIA was right in line with the Tech Index, up 19.1% (again, thanks to #FANG). The R2000 Index was up a less robust (but still solid) 11.8% and the Microcap Index was also strong, up 13.5%. Internationally, developed equity markets were even stronger as the MSCI ACWI ex-USA rose 16.5%, while Emerging Markets ("EM") were the world beaters over the past year, as the MSCI EM Index surged 24.9%. What makes the EM performance so astonishing was the near universal belief that rising rates in the U.S. would derail the EM Bull Market, which has clearly not been the case over the past year (but that may be changing...).

Looking at the U.S. Style Index returns in Q1 suggests that perhaps a shift is occurring in the dominant trends over the past few years, growth over value and large over small. As we noted last time "Growth completely thumped Value in 2017 (so much so that the cries of Value is Dead as a discipline are starting again…)." Our Spidey-Sense always starts tingling whenever this refrain begins as it has historically marked important market turning points. Right on cue, Growth faded in Q1 as the RTop200G slumped (3.6%) in Q1, while the RTop200V fell slightly less, down (2.7%). The Small and Mid-caps outperformed the Large-caps in Q1, with the RMidG down a scant (0.2%) while the RMidV was up a scant 0.3%. The R2000G was up a solid 1.4% versus the R2000V, which was up an equally solid 1.2%. The spread between Large Growth and Small Value of (4.8%) was nearly as wide (in the opposite direction) as the Q4 gap of 6.1% and the spread for the full year fell from an astonishing 24.1% to 16.5%. We will be watching these trends very closely in the coming quarters as this could be the beginning of the Great Reversion (similar to the 2000 to 2010 period) where Value and Small will outperform Growth and Large. Since interest rates rose sharply in Q1, as the 10-Year Treasury yield moved from 2.4% to 2.7%, we repeat what we said last time, that "it seems like an important time to revisit our discussion of valuation and the SPX P/E ratio given the disconnect between the consensus that interest rates are now set to rise and that P/E ratios can continue to expand." The disconnect is that if rates really are headed back up (and liquidity is declining) then it would be illogical to think that P/E ratios would not fall (perhaps precipitously, which would be bad for equity prices). The P/E of the S&P 500 (using actual reported earnings) actually did decline (5.5%) from 25.4X to 24X during Q1 but fell significantly less than it should have given the 10.3% increase in EPS for the period.

Adding another potential issue to the mix, we have written many times about the formula created by Larry Jeddeloh at TIS Group outlining the translation of QE purchases into S&P 500 increases. The TIS model showed that every "$100 billion of QE has translated into 40 S&P 500 points." Now that the Fed has switched from quantitative easing to quantitative tightening ("QT") and has committed (for now) to sell some level of bonds back into the market, it will be very interesting to see if this relationship holds in reverse. The Fed sold around $60 billion of Treasuries and Mortgages in 1Q'18 (followed by increases to $30 billion so far in Q2 and theoretically to $40 billion in Q3 and $50 billion in Q4 if all goes well…), so there should have been approximately 24 S&P points of equity headwind (negative return) during the quarter. We wrote in November and again in February that "these levels of lowered purchases "doesn't really seem to us to amount to much in the context of a $4 trillion balance sheet but given the timing of the sudden turbulence in equity markets around the increase, perhaps it is like the proverbial butterfly flapping its wings." The S&P 500 Index actually fell 33 points during Q1, if we attribute (24) points to QE and (147) points to multiple contraction (beginning level of 2,674 times (5.5%) decrease in P/E), that would leave 138 points for earnings impact, which is only about half of what would have been expected given the 10.3% jump in EPS. Perhaps investors are realizing that the #TaxDeform induced, non-GAAP, "earnings-before-bad-stuff" numbers are not sustainable, or perhaps investors are realizing that the liquidity environment (and hence the market environment) has shifted and the Bears are back in town. The series of lower highs since the Jan. 29 Bradley Turn Date would appear to confirm that realization, and just for even more fun, another Bradley Turn Date is imminent on June 1. We will know more in a few months, and it could be a very interesting fall as the total of $420 billion of Fed tightening during 2018 would mean 168 points (6.4%) of headwind for U.S. equities. As a final confirmation of the Bearish trend, the $OEXA200R stayed in the 50% cash zone (< 65) for most of Q1 and plunged through the 50 level(100% cash) for the last two weeks of the period, before rebounding to the low 50s where it sits today (#CashIsKing).

We believed a year ago that hedge funds were poised to break the seven-year cycle of underperformance relative to the S&P 500 and while long/short strategies put up respectable double-digit returns, they lost again to the strength of the equity markets. We wrote last time that while we were "early" again (euphemism for wrong), we did see signs that 2018 was going to be a very different year. We paraphrased Roger Babson (hopefully for the last time) saying, "We will repeat what we said last year, and the year before, that buying strategies that others are selling (Hedge'd' Funds) is likely to deliver meaningful returns for investors going forward (and they could be terrific)." We reiterated an important point as well, saying "Just because we were early (some would say wrong) in predicting when the mean reversion in performance of long/short strategies would begin, does not impact whether we would be correct (or not) when making a similar forecast today because they are independent events (based on new and different information)." One quarter doesn't make a trend, but Q1 did see hedged equity strategies outperform as the HFRI Equity Hedge Index was up a solid 0.7%, easily outpacing the S&P 500 loss of (1.4%), but even more importantly, we saw the fourth consecutive quarter of alpha generated by the hedge fund crew, a welcome sight after a long drought. Even more importantly was the fact that short alpha was very strong as there continue to be increasing signs that bad companies will not continue to be bailed out by zero rates and excessive liquidity.

Surprise #3: #NotDeadJustResting

The potent combination of abundant liquidity provided by global central banks, an avalanche of capital pouring into Passive Investment strategies like Index Funds and ETFs, and widespread adoption of Volatility selling strategies pushes the VIX Index to record lows. Stock market volatility vanishes during 2017, as the equity Bull Market rages on and the S&P 500 experiences its lowest intra-year drawdown and highest Sharpe ratio in history. Investors declare VIX dead and pile into the riskiest assets right as Volatility awakens in 2018.

This Surprise seemed way more 'out there' when we released the Surprises in the third week of January as the idea that Volatility could ever come back was considered heresy thanks to the advent of algorithmic trading, a super-active Fed and everyone and their sister selling volatility and compressing the VIX index to the lowest levels ever recorded. The opening cartoon of our Around the World webinar showing an R.I.P. VIX tombstone was the broad consensus and our variant perception that VIX was just resting received a ton of trolling on Twitter (which we have found is perfectly negatively correlated to the quality of the idea). In the U.S. equity markets, forget ever talking about crashes as corrections had been outlawed. There had not been a (10%) correction in nearly two years, there had not been a (5%) correction in over eighteen months and there had not been so much as a (3%) correction in 2017. In fact, forget about corrections of any kind as 2017 was the lowest volatility year in the history of the S&P 500 and it had been nearly three months since the last 1% move (either way) in the SPX. The Index had been above its 200dma for nearly 400 days (second only to the 474-day streak in 2013 and 2014, also during the QE Era), and the Index had also been up for fifteen consecutive months (on a total return basis), breaking the previous record from the 1950s. The lack of equity volatility was astounding as the standard deviation of SPX fell to its lowest level ever for the year, at 3.9% (less than one-quarter of the normal level of 16%), and the Sharpe Ratio hit a new all-time high of 4.4 (60% higher than the previous record in the 1960s) and nearly 9X the normal level of 0.53. The VIX Index itself spent 52 days in 2017 under 10, after never having a year with more than four ever before and then VIX hit an all-time low on the first trading day of the New Year. Short VIX was the new get-rich-quick strategy and many billions of dollars were piling into leveraged ETN strategies (like XIV and SVXY) to try and replicate the success of the former Target manager turned day-trading millionaire. We pointed out that history was replete with examples of alligator jaw formation similar to the recent movements of the S&P 500 and the VIX and it was likely that these jaws could snap shut sometime soon (even we didn't think soon meant three weeks later…).

To reiterate our thesis from last time, we said "that abundant CB liquidity was causing an avalanche of capital into Passive strategies and widespread adoption of volatility selling products that pushed VIX to record lows just in time for the Bear Market to come out of hibernation and catch investors napping." Given the extremes in 2017, it actually wasn't that big of a stretch to say that the madness could not go on (although in full transparency we did say that after Q3 when new records were set, only to be smashed in Q4…) into the New Year. Indeed, volatility did return with a vengeance in Q1 and the SPX standard deviation more than doubled to 8.5% (still way too low and less than half the long-term average) and the Sharpe Ratio fell to 1.2 (still way too high and more than double the long-term average). We will make the unpopular call that these numbers will continue to mean revert and the volatility of equities will continue to rise for the foreseeable future, causing more pain for investors (particularly passive investors who chased the hot returns and low volatility). The VIX Index created some excitement during Q1, falling to its lowest level ever, 9.15, on Jan. 3 and then meandered upwards to 11.08 on the eve of the Bradley Turn Date on Jan. 29. Volatility made its comeback (in a big way) over the next few weeks and VIX more than trebled to 37.32 on Feb. 5 and stayed in that zone for the next few days as investors grappled with the SPX flirting with breaking through the 200dma. The Buy-the-Dippers came to the rescue in the ensuing weeks and pushed stocks comfortably back up into early March, but another wave of selling hit after the Fed rate hike and VIX spiked again from the low teens back to the mid-twenties on the first trading day of April. For the quarter, VIX more than doubled from 9.77 to 19.97 and averaged levels not seen in many years over the three months. Curiously, over the past six weeks, the VIX has been steadily dropping and has settled at levels similar to those around the Jan. 29 turn. Will this tightly coiled spring unleash again in the coming months? We will have to wait until next quarter for the answer, but the Bradley Turn Date on June 1 and the Gann Date on June /22 would indicate that the next few weeks could have some excitement.

**Surprise #4: #FANGsBite**

**After a grueling eighteen year climb back from the abyss following the 2000 Tech Bubble Crash, NASDAQ finally regained the March 2000 peak and continued to surge into the New Year on the back of the infamous #FANG stocks (FB, AMZN, NFLX, GOOGL plus AAPL and MSFT). Investors have determined that it is safe to buy these stocks at any price (similar to CSCO, INTC, MSFT and QCOM in 2000) and have pushed valuations to stratospheric levels. With less QE liquidity to inflate the equity Bubble further, it turns out that #FANGs Bite in 2018.**

Over the past century the U.S. economy and capital markets have been dominated by a small number of monster sized companies. In 1917 it was U.S. Steel, AT&T and Standard Oil; by 1967 it was IBM, AT&T, Eastman Kodak and GM; and today, in 2017, it was the Tech Fab Five of Apple, Google, Microsoft, Amazon and Facebook. #FAAMG rules. We showed how a year ago, things in the markets (aside from #FANG) didn't look that bubbly and when compared to the 2000 valuation craziness, the big tech names could double without being in the same rarified air. However, if you changed the perspective a bit (looked at a decade instead of a year) AMZN and NFLX looked very bubbly and extremely bubbly, respectively, and when the covers of magazines are adorned with sci-fi looking pictures of the #FANG stocks, it was likely that we were closer to the top than the bottom. We also showed how when every fast-growing company eventually slows down (capitalism works), valuations must follow, and while FB and GOOGL were only crazy priced around 35X earnings, AMZN and NFLX were in silly town at 336X and 196X respectively. Finally, there is a saying that 'lack of breadth is death' to Bull Markets and the large majority of recent returns were concentrated in a small number of

**tech stocks and we felt that like in 2000 there is no company good enough that you can't mess up by paying too high a price.**

The #FAAMG stocks are the largest tech companies in the world, the #FANG Fab Four swaps out MSFT and AAPL for NFLX and the newest acronym #FANGMAN adds NFLX and NVDA (Nvidia Corporation) to the original five and gives us a glimpse into the semiconductor (and crypto) space. Any way you look at it, this is a very narrow group of companies exhibiting a dominance of the Indexes that we haven't seen since the glory (or horror depending on your perspective…) days of 2000. The FANGs were mixed in Q1 as FB fell (12%) on data privacy fears, AMZN surged 22% on the continued world domination narrative, NFLX soared an astonishing 47% on rapid subscriber growth and forecasts of rapidly escalating prices sometime in the future (and investors seeming inability to do math…) despite burning up more billions of cash, and GOOGL slipped (3%) of spillover effects of the sudden realization by social media users that if a product is free then you are the product and the app is getting rich off your data. The MANs were also mixed as MSFT rose 6% on solid earnings expectations, AAPL fell (2%) on fears of poor earnings (later reversed when they blew the expectations away again) and NVDA jumped another 16% on continued strong earnings (and disclosure that 10% of sales were to crypto miners). Things continued to improve in April as it appears that we may have to wait a while longer for the biting to commence as the Spectacular Seven ("FANGMAN") returned 11%, 14%, 11%, 1%, 6%, (1%) and 2%, respectively, for the month to bring the trailing year returns to some truly astonishing numbers, 24%, 65%, 108%, 12%, 42%, 22% and 81%, respectively. Look at those numbers again and remember we are talking about five of the largest stocks in the world (and two other big companies) that have somehow managed to double, triple, even octuple, the return of the S&P 500 over the past year (up 14%). At the risk of sounding like a broken record (vinyl disk spun on a turntable to produce music), we believe these stocks have entered that "buy at any price" realm like the tech darlings of 2000 and we are convinced (more than ever) that the result over the long-term will be similar for investors who buy these stocks at these prices. We see increasing signs of a growth slow down and with higher discount rates, these stocks should live up to their name and we will see that #FANGsBite. We also reiterate what we wrote last fall that "We believe the rotation back toward value is coming and when it occurs, it will be terrific, meaning it will be long-lived and material, and all of the value investors who are perceived to be so dumb today will seem smart again." Just like volatility, value is not dead; it's just resting, and while that slumber could last another quarter (or maybe even a few quarters), we are closer to getting the wake-up call than most investors perceive.

**Surprise #5: #LookOutBelow**

**The New Administration has woken up and realized that China has been playing Go while they have been arguing about how to set up the Checker board and joined the Race to the Bottom in the Developed Market currency markets. King Dollar was dethroned last year when the RMB was admitted to the IMF SDR, and there is increasing evidence that more central banks around the world are headed toward a Multi-Polar currency regime. The days of U.S. Dollar Hegemony are numbered and DXY breaks lower, heading toward 80 by year-end.**

**Consensus believes that when the Fed raises rates, the Dollar rises. The problem with that narrative is that the data tells a completely different story. The markets anticipate the Fed move and the Dollar peaks right before the second Fed hike, so we expect that the Dollar has peaked for this cycle and is back into a cyclical decline (within its long-term secular decline). The DXY looks to have peaked late last year about a month after the Election (sooner on the trade weighted basis) and**

**looks to be firmly locked into a downward trend. As #KingDollar has been dethroned, the RMB has become ascendant and after posting very strong gains in 2017 (contrary to the consensus that China would have to devalue), the Yuan is setting up to maintain a very stable level versus the broad basket of global currencies that the PBoC considers its target basket (not just the Dollar). Once DXY crossed below the 200dma of 90, there was little support below and it could be a rapid trip toward 80. When looking at data from GMI and the TIS Group, we see that the G7 Inflation levels give us a target for DXY of the low-80s and the DXY Coppock Curve targets the mid-70s. As the world moves to a more multi-polar leadership model, the days of U.S. Dollar hegemony are numbered, and we will see the rise of other currencies like the RMB appear in other central bank portfolios (Germany just announced) and there will also be a rise in other electronic currencies and payment systems that will create a more global currency union over time.**

We have talked a lot about the dollar in our letters over the past few years because as we said over a year ago, "Getting the dollar right might be the most important investment decision we could make during the year. The reason for the hyperbole on the Greenback (beyond our normal hyperbolic style) was that so many of the other market opportunities had become so tightly correlated to the dollar and if you got the dollar call right you could make better returns in equities, bonds, commodities and (obviously) currencies." Our view that the dollar would weaken looked good in Q1 as the DXY fell another (2.3%) from 92.12 to 89.97 courtesy of all of the issues we highlighted last quarter. However, there is another issue that investors have to pay close attention to today given how currencies have become political weapons of mass destruction in a world where global trade is shrinking, and all of the major developed nations have realized it is a Race to the Bottom in competitive devaluations (to try and inflate the gargantuan government debt away). We felt very good about the fundamental case for the dollar to weaken based on the erosion of the petrodollar system and the commitment of Mnuchin and Trump to use the dollar as a bargaining chip in trade negotiations, but we cautioned that the rapid move in the Euro in January was likely to be perceived as too far, too fast. We wrote in the fall that "there is nothing like a strong currency to mess up the earnings (and then stock prices) of an export dependent economy and since the EU and euro plan is to create a weak currency as a weapon for global trade domination, the recent advance was most unwelcome." We followed that up last quarter by saying, "The Big Dog in the Eurozone, Germany, cannot be happy about the recent surge in the euro, so we expect some response from the EU to the U.S. currency manipulation very soon." One of our important mantras in investing is "strong opinions, weakly held" as you need a strong opinion to have conviction to act, but you have to be willing to change your mind should facts and circumstances change. We expected the EU to act (or at least talk) and Super Mario committed (again) to lower for longer and the Euro reversed on a dime on 3/23 and has fallen sharply, down (5.4%), in the past few weeks from 1.244 to 1.177 on the EUR/USD. Given how dominant the Euro is in DXY, there has been a sharp rally in the Dollar Index from 89.03 to 93.64 (up 5.2%) over the past six weeks as well (pushing it slightly into the black for the CYTD).

As we discussed last time, the "USDJPY did not weaken as we expected in Q4 (or in 2017, for that matter) and we see signs that the Yen is regaining some of its Safe Haven status and could actually be more resilient (stronger) in the coming months." The conundrum of a stronger Yen in a country with interest rates pegged at zero and declining GDP growth continued to puzzle investors for the bulk of Q1 as the USDJPY fell from 112.7 to 104.7 (despite Kuroda-san pledging to buy 10-year bonds indefinitely), but then turned on a dime along with the euro in late March and has rallied all the way back to 110.8, a 5.8% surge, in the past few weeks. There is a variant perception to these rapid reversals in the FX markets. With the threats of Trade Wars being bandied about by Trump nearly every day, it appears that perhaps China is Playing Go again (while Trump searches for the checkerboard) and they may be weakening the RMB (it troughed precisely on the March Bradley Turn Date at 6.273) to make it difficult for the Trump Administration to gain any advantage in trade negotiations. The USDCNY has surged back to 6.38 in recent weeks, right about at the levels it was on the last Bradley Turn Date in January when all the volatility began in global equity markets. This move in the dollar has all the makings of a dead cat bounce, and we would expect to see lower lows in the quarters ahead, but we could see a scenario play out where China continues to allow some RMB weakness and the DXY bounce lasts a little longer.

**Surprise #6: #OilsNotWell**

**After their Thanksgiving Turkey move in 2014 (not cutting production in an attempt to bankrupt over-leveraged U.S. Shale producers) Saudi Arabia finally came to their senses and convinced other OPEC members to cut production to stabilize oil prices. Oil prices followed our 2017 Surprise perfectly bouncing off $42 in June to rally back to $60 in December, but while the Saudis celebrated their "victory," U.S. production exploded higher setting up a very interesting battle in 2018. Oil reverts back to a normal cyclical pattern, rising toward $70 in 1Q18 and falling back to $50 by year-end.**

**There were some interesting conflicting signals about the oil markets coming into the New Year. The world's largest pension fund was divesting from oil and gas stocks (would normally be a contrarian buy signal, but they are so big that there could be a little self-fulfilling prophecy here) and there was the largest net long position in oil futures in history (would normally be a raging sell signal). The funny thing about oil speculators is they have a long history of being precisely on the wrong side (short or long) at precisely the wrong time (prices turning up or turning down) and we saw large net short positions last summer (when oil hit bottom at $42) and a gradually increasing net long position as oil rose back to $60 to end the year. Right as oil peaked at $66, the net long position hit its crescendo and oil prices have fallen ever since. There is one wrinkle in the data in that given the large leverage ratios in many of the U.S. shale producers, the banks are forcing them to sell forward production and thus the speculators on the other side are reactive rather than proactive so perhaps the true net long position is lower (but still really high). There are also some technical indicators that show how oil is prone to make peaks/troughs in January and June, there was a Bradley Turn Date on Jan. 29 and there was a cathartic buying panic around the same time, which all pointed to lower prices ahead. The biggest risk to the oil Bull thesis, however, was the ability of the U.S. shale producers to crank up the volumes at these higher prices and should they get up over 10mm bpd that would push the supply/demand balance back into over-supplied and put downward pressure on prices. Like clockwork, the end of January data showed a new record for U.S. production of 10.25mm bpd and the Saudis may have started celebrating too soon. Finally, the last three times that oil was this overbought (RSI over 85) was in 1991, 2000 and 2007, and a Recession ensued within the next year.**

We said last quarter that "one benefit to being global Value Investors is that we have no 'stake' in our view (unlike industry analysts or Wall Street) and we believe that when you are incentivized to call for higher prices (in oil, stocks or anything else) because your compensation depends on that view it is hard to be objective when looking at data." The issue for us coming into 2018 was that the data in the oil markets was not adding up in that the world had the largest net long position in history (net futures positions are always a great contrarian indicator) yet the supply data for U.S. production kept setting new records, which should have put some pressure on prices.

Following up on the big surprise from 2017 that OPEC actually didn't cheat on the production cuts (the stated OPEC target was 32mm bpd of overall production), the surprises kept coming from the Middle East in 2018, as OPEC actually managed to trim production from the 32.4mm bpd at year end to 32mm bpd at the end of April. Saudi production actually fell slightly below 10mm bpd and the U.S. was poised to overtake Saudi as the world's leading oil producer (unthinkable a decade ago). We wrote last quarter, "As oil prices surged back to $60 by year-end, it was not surprising at all to see U.S. production ramp all the way up to 9.8mm bpd on 12/29. As prices continued into the mid-$60's in January, we believed that it would not be surprising to see U.S. production to break through the 10mm bpd level and actually overtake Saudi Arabia as the largest oil producer in 2018." That milestone didn't take long as the U.S. took the lead at the end of January at 10.25mm bpd and has not looked back over the past few months as production has now surged to an astonishing 10.7mm bpd. The strange thing is that despite this net change of a positive 600k bpd (up 1mm bpd by U.S. less 400k less by OPEC), prices had risen from the high 50s back to the high 60s by the end of April (and have continued above $70 in May). The fact that supply has now exceeded demand for the past few months indicates that there should be some downward pressure on oil prices, but the rise over the past six weeks has been fairly linear.

Historically, there has been a strong correlation between oil prices and the dollar and also (interestingly) between oil prices and the USDEUR exchange rate. In the 2017 Surprises in Q4, we wrote that "for many years the dollar and oil prices were highly inversely correlated (dollar up, oil down; dollar down, oil up) and you could get a good sense of where oil prices were headed by the primary trend of the dollar. Looking at the long-term correlation charts, with the DXY around 100, oil should be in the $30's (rather than $52)." Given that the dollar was so weak in 2017 and into the first quarter of 2018, it was only a matter of time before oil prices went higher. A DXY of 92 was roughly correlated to oil in the mid $50s and as DXY slipped back below 90 in January, oil should have rallied toward the mid-$60s (and it did). The issue now is that with the abrupt turn in DXY on the Bradley Turn Date of Mar. 23, running from 89.03 all the way back to the low 90s, oil prices should actually be falling back toward the lower $50s, but instead they have curiously surged back to $70. Further, we have discussed many times oil's correlation with the euro saying, "The other indicator that has tracked oil prices very well has been the USDEUR with a six-week lag…" After the big move off the Bradley Turn Date in January, we wrote that "there should be one last cathartic move up on WTI through the middle of March. This will be a very interesting test given the recent string of poor storage data and the huge U.S. production surprise, but we will have to wait until next quarter to see how things play out with the EURUSD/Oil indicator." So, here we are three months hence and oil has followed the EURUSD indicator nearly perfectly, rallying sharply to the mid-March peak (based on the Jan. 29 euro level of 1.24) and then corrected slightly as the euro broke down to 1.22 by the end of February (oil troughed beginning of April) and then rose strongly following the 1.24 high in the EURUSD on Mar. 23 to the high $60s to the end of April. Here is where the data breaks down again - the euro has been crashing for the past seven weeks, falling all the way to 1.18, which would imply oil prices should decline to around $55 by the end of June. There is another Bradley Turn Date on June 1 so we will be watching oil very closely. As you might expect, with the big move in oil from $42 last summer to $71 today, all the pundits have become super bullish and $100 price targets have become common (like the $20 targets when prices were $42…). Pierre Andurand even said in an interview that there was risk of a geopolitically induced spike to $300, which was worth a few bucks when the headline broke with no context of his statement being that it would be a couple day event. We have discussed that in the current oil environment, the best ways to invest are in high-quality Permian E&P companies, Oil Services (which finally have some pricing power) and the offshore drillers (which may not be going away after all). We would expect the next few months to be a little volatile in the energy complex, so perhaps a more hedged approach is best, either long the companies and short oil or selectively long high quality and short low quality (overleveraged) businesses. We actually heard a great presentation the other day that made the case that much of the U.S. production is about to fall off a cliff and there could be another Big Short opportunity, but we need to do some more research and we will save that for next time.

Some quick thoughts on MLPs. We have been active investors in both the public and private energy markets, and we have had the good fortune to invest directly in the private markets into many of the pipelines that make up the core holdings of most of the premier MLPs today. We were puzzled by the 2H17 action in MLPs and wrote last time "so, the natural question might be that if things are so great in the oil & gas markets and production volumes of hydrocarbons are accelerating, why were MLPs down (1.0%) in Q4 and why were they down (6.5%) in 2017?" We said it was "complicated" and that a confluence of dividend cuts, fears about changes in the tax laws and retail investors being spooked by rising rates, was causing investors to sell first and ask questions later. That selling got worse in Q1 as MLPs plunged (11.1%) on fears that a very complex change to FERC regulations on inter-state taxes was going to reduce MLP cash flows. The rumor was that Mr. Buffett was unhappy that a lot of new pipelines might steal oil transport business from his railroad business, so he lobbied for changes to regulations that would delay pipeline development as long as possible. We wrote last time that "the best thing about MLPs right now is that it is not painful to earn twice the yield of other yield assets while waiting for the markets to re-value the core businesses that are improving every month as U.S. oil and gas production reaches new highs." That sounded great until you lost more than the 8% yield in one quarter, and we were actually on the verge of throwing in the towel on our positive view on MLPs when suddenly there was clarification that the FERC changes would not apply to most companies, the historical tax exemptions would definitely be continued and oil and gas production volumes exploded higher. MLPs jumped 8.1% in April, gaining back much of the Q1 losses, that strength has continued in May and we would expect investors to continue to seek value (and yield) in this segment of the energy markets.

**Surprise #7: #LongArmOfAbenomics**

**Continuing to defy the skeptics, the dynamic duo of Abe-San and Kuroda-San keep firing the arrows of Abenomics at their targets of Monetary Easing, Fiscal Expansion and Regulatory Reform and the Bull Market in Japanese Equities accelerates into 2018. Surprisingly, the Yen temporarily halts its decline, as the USD continues its descent, but the equity market separates from the currency as economic and earnings growth accelerates, and foreign investors finally return to the Land of the Rising Stocks. The Nikkei hits 27,000 by year-end.**

**When Abe-san came to power in 2012, he laid out a plan for a Tokowaka Renewal in the moribund Japanese economy and his three-arrow plan of aggressive monetary easing (to weaken the Yen), fiscal expansion to drive economic recovery and reduced regulation to encourage innovation and revive domestic investment, was subsequently dubbed Abenomics. After two years, the Yen was materially weaker, the Nikkei had nearly doubled, and an observer might have thought Abe and Kuroda (BOJ Governor) would have been heroes. Instead, the economy had fallen into a slight Recession after the VAT Tax changes and the media (and just about everyone else) deemed Abenomics a failure. Fast forward to today, Japanese GDP has been expanding for more than two years, business sentiment is the highest since 2006, animal spirits have been revived and Topic earnings growth is the highest in the developed world (and actually higher than most emerging markets as well). Kuroda-san has put his foot to**

**the floor and grown M2 money supply at a staggering rate and bought nearly every JGB and ETF he can get his hands on in an attempt (successful) to pin the yield curve at zero out to ten years and keep the recovery going. Everyone is buying Japanese stocks, from the BOJ, to large Japanese Pension Funds, to corporations that are buying back stock for the first time and even foreign investors are returning to the Land of the Rising Stocks. Interestingly, and most positively, despite the big moves in prices over the past few years, Japanese equities remain very cheap (EPS are growing faster than prices are rising) and the MSCI Japan Index has the fourth lowest P/E ratio relative to its long-term average in the world (only Taiwan, Columbia and Korea are lower).**

Since Abe-san's victory as Prime Minister in November 2012, the construct of Abenomics has boosted animal spirits, encouraged new business formation, supported export-oriented businesses (through a weaker Yen) and, as a result, raised stock prices. Coming into Q1 things looked good on the Abenomics score card as the USDJPY was up 44%, GDP growth had been up for eleven straight quarters, inflation had been in the black for fifteen months and the Nikkei had rallied 165% (versus the S&P 500 up 105%). Abe-san and Kuroda-san even got a couple of bonus points as the major tech exporters, Sony (SNE) and Nintendo (NTDOY) were up a stunning 350% and 280%, respectively, courtesy of the compounding effects of stronger growth and a weaker currency (and the general tech boom globally didn't hurt). But a funny (or not so funny if you are Kuroda-san) thing happened in Q1 as despite the BOJ's best efforts to keep the Yen falling, it actually rose quite a bit (up 5.6%) as the global currency wars heated up and investors sought the JPY as a safe haven (we have never really understood the allure here). The even less funny part was that suddenly inflation began to vanish again and while the CPI didn't fall back into deflation territory, it came close at 0.3%. The least funny part was that GDP surprisingly slipped back into the red during the quarter, at (0.2%), and while this is not a big contraction, it is a contraction nonetheless. Finally, Japanese equities were no laughing matter in Q1 as the Nikkei stormed out of the gate in January along with global markets, rising 6% to the peak on Jan. 23 and then collapsed downward along with the rest of the world through Valentine's Day, dropping (12.3%). After some global central bank jawboning about "anything it takes" to keep stock prices higher, the Nikkei bounced 5.8% through the end of the month before rolling over again in March as fears that the Fed really wasn't going to back down from raising rates. Equities fell (7.9%) in three weeks to trough at 20,618 (down (14.5%) from the peak in January). Then another funny thing happened on the combination Bradley Turn Date and Gann Date on Mar. 21, and the USDJPY and the Nikkei both did an about face and both have been rising steadily for the past couple of months. The Nikkei jumped 4.1% in the last week to finish Q1 up 0.8% in dollar terms, added another 4.7% in April and is up quite nicely so far in May while the Yen (as noted above) has gone back to its weakening ways, so Kuroda-san can relax again. We have been watching the four Big Dogs in Japanese technology closely and Sony (SNE), Softbank (SFTBY), Trend Micro (TMICY) and Nintendo (NTDOY) were mostly solid in Q1, as SNE, TMICY and NTDOY rose 6%, 4% and 21%, respectively, but SFTBY was a little weak as the Sprint deal in the U.S. weighed on returns and the stock slipped (8%). The big banks, Sumitomo Mitsui (SMFG), Mitsubishi UFJ (MUFG) and Mizhuo (MFG) continue to be very cheap and we expected them to finally make some headway in the New Year, but the Japanese banks continue to languish in the flat YC world in Japan. There is work to do for the Nikkei to reach the target by year end but everyone is pitching in to help in Japan as the BOJ, the Pension Funds and Japanese investors continue to buy; now if the foreigners will just realize that the earnings growth in Japan far exceeds other developed markets, Japan will be the Land of the Rising Stocks again.

Surprise #8: #NoOpenAirMuseum

Byron Wein once wrote Europe was on the way to becoming an open-air museum and for years pundits piled on saying that the Eurozone was crumbling and would disintegrate. A punishing Recession after the Global Financial Crisis followed by a wave of Populist threats to unity within the EU and Europe reached a fevered pitch with fears of Grexit 2.0 and possible backlash from Brexit. Consensus was that the EU's days were numbered. However, the ECB stimulus program has rekindled animal spirits and a real recovery has taken hold. These events lead to Europe being one of the best performing regions in 2018.

The ECB finally came to the rescue in Europe (better late than never) and they went all-in on the QE, exploding their balance sheet from 20% of EU GDP to 43% in just over two years. The result has been a rekindling of animal spirits in Europe, a rapid decline in unemployment (although still high) and a slight instigation of inflation (although still too low). Confidence has returned to the region and that confidence may even be running a little hotter than the actual economic recovery. The stimulus taps are stuck wide open and with many trillions of euros of negative yielding government bonds, there has been a solid recovery in corporate profits as debt is cheap and operating leverage is high at this point in the cycle. The one thing that doesn't seem to make sense is Italy with rates below U.S. Treasuries, but so long as the ECB has a continually low bid that anomaly is likely to persist. The one wrinkle in the plot is the continued strength of the euro itself may begin to bite into the export dominated markets like Germany and France and there are signs that profit growth is not growing as fast in those markets (relative to the PIIGS). The problem with the equity story to this point is that there seems to be a cap on the Euro Stoxx 50 Index in that each time it moves toward a break out level either threats of tapering by Super Mario or higher oil prices causing consumers to slow down have derailed the bull market. We think that Greece is the word in Europe in 2018 as the debt crisis seems to have passed (Greek 2-year yields are below Treasuries) and there is a large amount of offshore capital that is coming back home that could mitigate some of the bank capital needs to deal with the NPL issues. With confidence rising and economic growth rebounding strongly, business confidence is the highest ever recorded and with equity prices so low, it could be one of the best performing markets, in a region where there could be a lot of winners in 2018.

Mr. Draghi's noticeable absence from the public arena last year was likely an attempt to stay out of sight so he wouldn't have to confront the "growing chorus of people making the case that Europe is recovering rapidly and that inflation is surging to the point that not only will Draghi have to taper, but he may have to raise rates soon and even Super Mario would not be immune to the bullets that would be fired by global investors if he were to take away the ECB punchbowl just as the party was starting to get good again." Super Mario said in Q3 that tapering was "a possibility next year" and now it is a cold, hard fact as ECB purchases fell from 60 billion euros a month to 30 billion euros a month in 2018. We took the work that Larry Jeddeloh did at TIS Group and fit a model for Europe that said for every 100 billion euro of purchases you get 20 Euro Stoxx 50 points. Given 120 billion euro of purchases over the first four months of the year, there should have been 24 Euro Stoxx 50 points. European equity markets were a roller coaster just like all the other global markets in Q1. In addition, a curious thing happened over the first four months of the year in that the Index moved from 3,504 to begin the year to 3,537 on Apr. 30, a gain of 33 points, awfully close to what the model projected simply based on ECB bond purchases. We wrote last time that what was really needed was some follow through on the economic front, saying "A real economic recovery has indeed taken hold in Europe as Q4 GDP came in at 2.7% (above expectation) and up nicely from 2.5% in

Q3 (and far ahead of the 2Q16 trough at 1.6%). Should the growth continue, there could be some further gains to be captured in Europe, particularly if the earnings growth remains robust and the only spoiler would be if the stronger euro begins to bite at exporter earnings." As we expected (and noted about in the Dollar Surprise) the euro strength did indeed play a spoiler role, so much so that it appears that there has been some coordinated effort to reverse that strength and the euro has gone into free fall since late March. Should that weakness persist, it should provide some relief for earnings, and European equities could stage a healthy recovery. We saw some glimmers of strength in Europe during Q1 as Finland surged 8.2% (tech), Italy jumped 5.4% (banks) and Portugal rallied 3.1% (banks), but we also saw some laggards as Ireland slumped (5.9%) on economic weakness, Switzerland dropped (4.3%) on currency woes and Germany fell (3.6%) on export concerns related to the strong euro. Overall, the EU equity markets have not distinguished themselves from the other developed markets in 2018 to this point, but with relatively less expensive markets, solid growth and some continued support from the ECB, it still appears that Europe should be a leader in global equity markets.

Surprise #9: #DecadeOfDominance

**A year ago, consensus was that China was on the verge of a hard landing, the RMB (and other EM FX) was going to collapse as the Fed raised rates, and that the dominance of U.S. equities over the ROW would last indefinitely. Instead, Emerging Markets trounced developed markets (both stocks & bonds) as it turned out that Willie Sutton was right after all (that's where the money/growth was). Consensus now believes investors have "missed it" and that the inevitable EM Crash is just around the corner. We will take the other side and say the 'Decade of Dominance' is just getting started.**

**Emerging Markets were the star performers in 2017 and the most miserable markets at the beginning of the year performed best of all (nod again to Sir John Templeton to always invest where it is the most miserable), with Argentina, Nigeria and Turkey being right at the top of the Leader Board. EM equities have broken out of a multi-year consolidation and wedge pattern and look to be at the beginning of a multi-year move relative to the Developed Markets. DM had dominated from 2011 until 2016 and when we watch the ratio of EEM/SPY we see that there are clearly defined periods of time where either DM or EM dominates and extremely clear signals for when those periods begin and end (just had a new signal for EM). Economic data is very supportive of continued strength in EM as Leading Economic Indicators are rising and the Citi Economic Surprises Index is at a trough and turning higher. The term 'Decade of Dominance' comes from a chart that shows the long-term rising channel of the EM Index and, unlike the U.S. where the current price is at the very top of the channel (two standard deviations expensive), EM is at the bottom of the channel (two standard deviations cheap). EM countries are responsible for 40% of all global GDP, yet only have an 11% weight in the global equity index, so there is plenty of room for increased allocation (like the inclusion of China A-Shares beginning in June). EM lending is accelerating which should provide strong liquidity to the region and earnings growth has exploded upwards to nearly double the rate of the Developed Markets (and you get to buy that higher growth at a 22% discount in P/E). While there will no doubt be some volatility in these markets should the DM struggle (there always is despite the superior fundamentals), the EM markets are still very much a place where investors should buy the dips as opposed to the DM markets where it is more advisable to sell the rips (and redeploy into EM).**

We discussed last time how the "pesky" developing markets had dramatically outperformed the developed markets despite all of the collective central banker efforts to inflate developed market asset prices and how the MSCI EM Index surged an astonishing 37.3% in 2017, more than 70% better than the SPX return of 21.8%. So, we began the EM section last quarter saying "just when you thought it couldn't get any better for EM, it did, as during the global equity market melt-up in January the MSCI EM Index surged 8.3%, outpacing an audaciously strong 5.7% return from the SPX Index…We understand that these types of monthly moves are not normal (almost panic buying) and we would expect to see increased volatility (read some downside volatility) in the coming months." Markets simply can't go straight up forever, and parabolic moves tend to be followed by volatility, so some caution was warranted. The balance of Q1 was not very hospitable for global equities and EM equities were not spare during the correction as the MSCI Emerging Markets Index gave back most (but not all) of the January gains and finished up 1.4% for the period. EM gave back another (0.44%) in April, so in the three months since the last letter, there was that pesky volatility (the downside kind) and the MSCI EM Index fell (6.8%). To keep things in perspective, however, the TTM return for EM is still 21.7%, more than 50% better than the SPX return of 13.3% for the trailing year. The one thing to keep an eye on is the reversal that occurred on the Bradley Turn Date in March, when the dollar began to recover and suddenly there was discussion of vulnerability in EM and EM Debt again. Since the Mar, 21 turn, DXY has rallied 5%, SPX has been flat, but EEM has shed (7%) and now trails the U.S. for the CYTD. Looking at the BRIC components, Brazil is off a brutal (15%), Russia dropped (8.5%), India shed (3.5%), and China is down (2.5%) on the core and (4.5%) in the A-Shares. Given the relative valuations and earnings growth, we don't believe this type of relative performance is warranted, but the home market myopia bias continues to be strong in domestic investors who are quick to sell first and ask questions later in EM.

At the end of the Laggards section last summer, we wrote, "EM markets tend toward extremes in both directions so don't be surprised to see these cellar dwellers back at the top of the leader board in coming quarters." Right on cue, two of the top performers in Q1 were at the bottom of the leader board in 2017 and some of the rebounds have been sharp (the modus operandi of markets in the Algorithm Era). The best performing countries in EM during the first quarter of 2018 were Brazil, Pakistan and Russia, which rose 12.4%, 11.4% and 9.4%, respectively. Pakistan was punished in 2017 for the not making the MSCI Inclusion cut in June. As we have said, "it truly is amazing how much power the MSCI Committee has when it comes to making or breaking equity markets in the smaller countries around the world." We continued to believe that investors were missing the positive impact on Pakistan from the Belt & Road Initiative in China and we wrote that, "For the year, Pakistan dropped (24.4%) and is now squarely in the camp of being a miserable place to invest (as defined by Sir John Templeton) and we expect that there will be more gains than losses in the 2018." That forecast looked great right up until the phase shift at the end of March, but now Pakistan (and a bunch of other EM markets with vulnerable currencies) have given back all of the early gains (and more) and now the top three from Q1 are sitting down (8%), (9%) and (1%) respectively. As we saw often #RiskHappensFast. On the flip side in Q1, the laggards were all in SE Asia as Philippines slumped (11.6%), Indonesia dropped (7.2%) and India dropped (7%) as currency concerns caused big losses in March. The losses continued to mount in recent weeks as well and now these markets are down (16%), (27%) and (9%), respectively, for the CYTD as the skittishness about EM FX continues to rise. Greece was just off the laggard top three in Q1, falling (6.8%). This market has been quite volatile as investors try to balance very strong economic data with fears of the Troika (i.e. the IMF, the EC and the ECB) pulling the debt deal. We thought Greece would be the word in 2018 and things were looking good up until the Mar. 21 Turn Date, with GREK up 2% and the banks, GR:ALPHA, GR:ETE, GR:EUROB and GR:TPEIR up 18%, 6%, 19% and 2% respectively, but things got dicey in recent weeks and now GREK is down (10%) and the banks gave up the bulk of their gains and now stand at 8%, (10%), 3% and (20%) respectively.

We wrote last time how we believe that China A-Shares "will be the biggest story in global equity markets in 2018 as thanks to the MSCI Committee decision to include A-Shares in the MSCI Indices beginning in June, every global equity manager in the world now has to figure out how to own these stocks in the coming months." While the initial Index weighting is small (2.4%), the fact remains that the domestic China equity markets (A-Shares) are the second largest in the world (behind the U.S.), we believe the weight will rise to 20% (using traditional market-cap methodology). A-Shares performed better than global equities in Q1, up 0.4%, but we would have honestly expected a more robust advance to this point. Add on the downward pressure since late March and we believe that the opportunity in A-Shares is the best opportunity in equity markets for the balance of the year. We believe it so much that we actually dedicated our April Around the World (#ATWWY) Webinar to the China opportunity (if you missed it, you can watch it on our Around the World YouTube Channel). The China critics continue to point to debt imbalances and the consolidation of power by Xi as potential danger signs and are convinced that there will be an economic hard landing and banking crisis at any moment. The economic data would argue the opposite, as the bulk of the hard data in China is actually improving and the deft management of the reduction of excess liquidity in the system (from the 2015/2016 stimulus) has been spectacular as China continues to exhibit that they are playing a different game than the rest of the world (#ChinaPlayingGo). We have written often that "intelligent investors always seek divergent perspectives and dialogue and debate are critical to battle testing your investment hypotheses and lead to better investment results." We will always pay close attention to what smart investors say about markets where we have an interest, but in the case of China, we believe that our long-standing presence on the ground, our decades of investment into the region and our deep network of managers and regional experts give us an edge when deploying capital into China. Reiterating what we said last fall, we are in fact so excited about the prospects for investing in China that we are currently raising a fund dedicated to capitalizing on the tremendous opportunities in the private markets across the Technology, Healthcare and the Consumer segments. As we said last quarter, "As China transitions from a manufacturing powerhouse to a consumption-driven economy, there will be outstanding opportunities for intrepid investors to make outsized returns."

China valuations remain quite attractive as the MSCI China P/E is now 15.2X and the forward P/E is quite low at 12.4X, the MSCI HK Index P/E is 12.8X and the forward P/E is 15.7X and the MSCI China A50 (A-Shares) Index remains the cheapest of all with a P/E of 12.1X and a forward P/E of just 10.2X. Compared to other global equity markets, China valuations are about even with the MSCI EM Index P/E at 14.5X and the forward P/E at 11.9X, but they remain compellingly attractive relative to the broader global benchmarks. The ACWI Index P/E is high at 18.9X and the forward P/E is 15X, and the MSCI USA Index is truly egregious with a P/E of 23.1X and a forward P/E of 16.6X (50% higher than the China valuations). So, with valuations so compelling, why do investors remain underweight China? All the fears we have discussed above continue to move the masses to side with the China Bears and that has been costly and is about to become even more costly. We wrote last time that "there is a Great Wall of Money that is about to enter the Chinese equity markets and sitting on the sidelines is going to get increasingly expensive in the years ahead." We suggest investors continue to build exposure to the highest growth sectors, Consumer, Technology and Healthcare, in the public markets and also explore opportunities to participate in the transformational growth in the private markets. The transition from Manufacturing (Made in China) to Consumption (Made for China) is precisely why we have had a team on the ground in China for a decade and why we are raising our second fund dedicated to the private investment opportunities in these sectors. One quick story from that fund that showcases the tremendous growth is that Ping An Good Doctor (Clearview), a tele-medicine company that didn't exist five years ago, has grown from zero to over a quarter of a $Billion in revenue, just went public in HK (HK:1833) and is trading at a $7.5 billion market cap.

The most important indicator to monitor as a signal of the general health of China (and the Emerging Markets overall) is the level of Producer Price Inflation ("PPI") in China. We know that during bouts of Deflation in China (negative PPI) we have seen poor equity market returns and, in some cases, even periods of crisis in the broader global capital markets (like 2008). After the huge stimulus by the PBoC in early 2016, PPI had risen smartly to 7.6% in March 2017 before falling slightly back to 6.9% as of September 2017. We wrote last time that "with the new efforts to pull some of the excess liquidity out of the system, PPI fell back to 4.9% in December, still a positive level, but a meaningful enough decline to prompt close monitoring in the coming months." PPI has fallen steadily over the past four months down to a trough of 3.1% in March and settling at 3.4% in April. As we noted last time, as the trend in PPI moved downward, the angle of ascent of Chinese equities would fall, but the returns to A-Shares should "remain solidly positive unless the PPI plunges back in to negative territory in the quarters ahead."

The other place to look as an indicator of relative health of Emerging Markets is the EMD markets. We have said for a while that "looking across all public debt markets, we see more opportunity in EMD than NSHY and perhaps there is room for some long Treasuries in traditional Fixed Income portfolio to serve as a deflation hedge," but we gave one caveat to that view, saying "should the Bond Bear Market Narrative actually turn into a real Bond Bear Market, bond holders will likely revert back to traditional views of the world and EMD is likely to sell off harder during the initial downward adjustment." Over the past few months, that is exactly what has happened and while the Barclay's EM Debt Index was only down (1.5%) in Q1, things have gotten crazy in the past few weeks and that index is now down (3.9%), but the liquidity in these markets has dried up and the EMB ETF and the EMD CEF have collapsed and are down (7%) and (14%), respectively. This divergence is an example of the risks inherent in the overly Passivized world in which we live and shows how things are great when the flows are positive, but things can get really ugly when the flows turn negative. We said last time that "over the full cycle of the adjustment, we would expect the New World Order (EMD wins) to prevail, but old habits are hard to break" and the past few weeks are a good reminder of how quickly correlations can move to one when fear rises. The final point to make under the EM Surprise is that the most unexpected result in Q1 was the resilience of the Frontier Markets which were up 5.1% as a group, but exhibited very wide dispersion. We wrote last winter that following the wisdom of Sir John Templeton is extremely effective in FM, saying "we channel Sir John all the time and try to help investors to steer clear of opportunities where everyone is crowding around (the consensus) and rather seek out opportunities where no one seems to be (the variant perceptions)." The best way to approach these markets over time has been to take profits when markets run hard (Argentina) and buy when markets have lagged (Saudi) and that strategy has been a good one in 2018 as ARGT has fallen (13%) while KSA is up 16%. Generally speaking, an active strategy of rotating capital toward cheap markets and assets in the developing countries has been a sound strategy and we would expect that opportunity to continue to be available to intrepid investors who follow Sir John's admonition to always seek the place that is the most miserable.

**Surprise #10: #GetReal**

**After nearly four decades of falling Inflation, global developed markets are at an inflection point where the excessive liquidity created by central banks is finding its way into the economy. In**

**addition to the monetary pressures, the massive urbanization of Chindia (and other EM) has created huge demand for scarce resources and commodity prices have reversed their downward spiral that began in 2011. This perfect storm of events, coupled with the cheapest relative valuation of Real Assets to paper assets in history, creates a tremendous opportunity for commodity investors in 2018.**

**There are a number of tailwinds developing for real assets, not the least of which is the One Belt, One Road project (recently renamed the Belt and Road Initiative), which will be a powerful driver for rising demand for commodities as the largest infrastructure in the history of the world unfolds in the coming years. China overall continues to growth at a pace that is very favorable for commodities and real assets and with PMI as 5-year highs, LEI turning higher and GDP growth close to 7%, there is little doubt that China's growth will support the next commodity super cycle. Interestingly, there is evidence from some of the economic variables tracked by the Bloomberg Li Keqiang Index that China might actually be growing faster than the reported government figures (theory is they don't want to cause an inflation panic with the higher numbers). China pumped $1 trillion into their economy in 2015 to save the world from an impending slowdown (and to get Xi re-elected), but as that liquidity is sucked back out of the system by the PBoC there is some risk that global growth (and commodity demand) falls off a bit. All that said, there has never been a better time to sell paper assets and buy real assets as relative valuations between financial assets and hard assets has never been more extreme (thanks to central bank money currency devaluations). The good news is that despite a big more in the commodity indices in the past six months (including a recent record string of fifteen consecutive up days), the relative valuation of the CRB and GSCI Indices versus the S&P 500 is still near record levels (and we know that alligator jaws like this always close). Dr. Copper and Iron Ore prices are in solid uptrends and are pointing to better growth ahead, which bodes well for real asset prices. Gold and Gold Miners are as cheap as they were at the peak of the last Tech Bubble in 2000 and it could be an opportune time to add some precious metal protection to your portfolio at these attractive levels.**

We wrote last time that "Given the cyclicality of commodities that results from the Reflexive behavior producers and consumers of commodities, investors should be active in managing commodity price risk in portfolios…We believe that a new Commodity Super Cycle began in Q1 2016 after a severe Bear Market pushed commodity prices to extreme lows that finally forced excess capacity to be shuttered." Commodities were quite volatile last year as prices fell sharply in the first half, trying to shake out the weak hands that Kiril Sokoloff warned would happen in his serial reports in 13D Research. Then, as if bouncing off a trampoline, the GSCI surged off the bottom on the June 22, 2017 combination Bradley Turn Date and Gann Day and never looked back. The GSCI Index erased all of the early losses and finished the year up 5.8% to cap a very strong 38% move off the bottom in Q1 2016. The best news, however, was that commodities were still down (54%) from the peak in 2011, so there was plenty of headroom for the rally to continue. Commodities were relatively flat in Q1 as GSCI was down (0.4%) and the CRB Index was off (0.8%), both besting stocks for the period. We had discussed last year that "over the last six years the S&P 500 and the GSCI make a giant Alligator Jaws pattern with SPX up 105% and GSCI down (60%) and you know what we say about Alligator Jaws (they always close, the tricky part is the timing…)." Those jaws closed just a fraction in Q1, but then commodities surged in April and May on the heels of the oil price rally and snapped the jaws shut another 10%. The SPX stands at 110% and GSCI is now at down (50%), so there is plenty of room for those jaws to continue to close.

We posited last year that one possible explanation for strong price movements in Copper and Iron Ore while DM growth had remained muted was that "perhaps Dr. Copper is speaking Mandarin now", since the marginal user of industrial commodities today is China (and other EM) rather than the Developed Markets (Japan, Europe, U.S.). Hence, movements in commodity prices were likely a good proxy for EM and FM markets growth, which were strong in 2017. However, as we entered 2018 there was some concern as to whether that strong growth could continue (particularly in China) and while the GDP growth numbers have come in strong, Copper and Iron Ore prices fell slightly in Q1, down (8.1%) and (2.6%) respectively. Our comment in January that copper markets "could get quite volatile in the balance of Q1 should China continue to pull liquidity from the system" proved prescient and these industrial commodities will be important indicators to watch for signs of increased liquidity restriction from the PBoC. The copper stocks didn't seem to be bothered much by the (8%) drop in copper prices through May (for the most part), as Southern Copper (SCCO) is up 5%, First Quantum (FM.TO) is up 22%, Glencore (GLEN.L) is down (3%), Anglo American (UK:AAL) is up 17% and only Freeport-McMoRan (FCX) is down significantly, falling (15%), but was down (24%) at the end of April. Iron Ore-related equities have brushed off the weakness in the metal prices and VALE is up a very strong 15%, BHP and RIO are up a strong 7%, CLF rebounded 9% and only AU:FMG fell a bit, down (1%). We said last time that "we will be tracking what the PBoC does in the next few months and would remain cautiously positive on these names as valuations are not as stretched as many of the other sectors of the markets." As value investors, we like it much better when fundamentals actually matter.

We wrote last time that "consensus coming into the winter was that La Nina would finally bring weather extremes (colder winter) so $4 natural gas was once again a 'sure thing' (Willy Wonka reminds us what happens when everyone is sure of something…). Natural Gas ("NatGas") entered the year at $2.95 and January did bring some cold weather and it looked like the consensus had a shot of hitting their mark as gas went parabolic for a few days in the last week of January, hitting $3.63 for a few hours before plunging back to $3.00 to end the month, nearly unchanged. The cold weather dissipated and the NatGas production kept hitting records, so prices stayed range bound throughout the next three months and finished April at $2.76. We discussed in November how everyone is still focused on the demand side (weather) but the real issue for NatGas is the supply side, saying "the fact that NatGas supply was surging as expanded drilling activity in the Permian Basin was generating lots of excess gas and the Marcellus and Utica Basins were producing gas like it was going out of style…The production volumes are so high and the "free" gas that comes along with the ramp up of oil production in the Permian keeps us from getting too excited in the near term." We had also discussed how the NatGas space had bifurcated into the higher-quality operators (EQT, COG) and the lower-quality operators (SWN, RRC, AR, GPOR) and that it might make sense to buy the high-quality names. That has not been the case in 2018 as all of the NatGas stocks are down, falling (10%), (19%), (23%), (15%), (3%) and (19%) respectively. Fortunately, we did also write last time that "like a good Walmart commercial the prices keep getting slashed and at some point there should be good bargains here, but readers know how we feel about falling knives (never reach out, let them hit the floor, bounce around and stop moving), so we will let things settle down in NatGas before making new allocations." It appears that perhaps the knives stopped falling in March and it might be wise to go grab a few handles.

When it comes to gold, we said last time that "caution seems to be the appropriate stance in the Precious Metals space today, but given how the attitude of investors coming into the New Year was that everything was awesome, the Tax Cuts would cause the markets to surge and there was no need for safe haven assets or hedges, our Contrarian bone starts tingling saying that just as everyone is sure gold has been relegated to Barbarous Relic status it may actually be an interesting time to own some. As for the miners, they are super cheap, but they are in the falling knife category, so we need to let them find a bottom (again) and hopefully some natural buyers will appear to bring these stocks back toward fair value." Nothing really has changed here in the past few months as gold prices were essentially flat from January to April (moved from $1,348 to $1,341), but there has been a sharp drop in gold to $1,293 in the past six weeks as the dollar has done its best dead cat impersonation. So, for the time being, we will stay on the sidelines in the Precious Metals markets but do believe that sometime soon investors will realize, in the upside-down world of the #NewAbnormal, rock will beat paper, real assets will beat paper assets. To this point, we will close this section like the last couple of times by saying "we recently saw a great chart that Incrementum AG included in their most recent white paper (sourced from Bank of America Merrill Lynch ("BofAML")) that shows how Real Assets are the cheapest relative to Financial Assets they have been since 1925." As true value investors, the words "cheapest in a century" are music to our ears, and we always like to buy what is on sale. We are so excited in fact that we have been telling everyone to #GetReal (Real Assets that is…).

**Bonus Surprise: #BitcoinHitsTheBigtime**

Truly disruptive technologies cause great angst in the capital markets as they move along the S-Curve from Innovation to Adoption, particularly from incumbents who are most impacted by the change. In our view, blockchain is a truly revolutionary technology that will disrupt the entire Chain of Value in the same way that the Internet disrupted communication and commerce. Financial Services executives call it a fraud, governments call it a threat to national security and the consensus is that Bitcoin and other Cryptocurrencies are a Bubble and a Fad, or even a Ponzi scheme. In our view, the reality is that Blockchain and Bitcoin are BIG, Really BIG…

Back in 1988, *The Economist* magazine predicted there would be a world currency in 2018 (they called it the Phoenix and it was a golden coin); Satoshi obliged in 2008 and created Bitcoin (also depicted as a golden coin, although there are no coins, just electrons and ledger entries). It seems that everywhere you go people are talking about Bitcoin, the older generation calling it a scam and a Bubble and the younger generation calling it #DigitalGold and asking for it in their Christmas stocking. Last fall everyone was calling Bitcoin a Bubble (at $4,000) and Jamie Dimon was calling it a Fraud, but the traditional Bubble model doesn't apply to Bitcoin as it is a Network that is undergoing an S-Curve adoption and we showed how the upward trajectory of the Bitcoin price will be a series of parabolic moves that look like Bubbles, but will turn out to be barely observable wiggles on a long-term chart as cryptocurrencies replace fiat currencies over the coming decades. We believe money as we know it is going away and it will be replaced by the Internet of Money (or Internet of Value) and Value over IP will have the same impact to our traditional view of money that Information over IP had on our conception of the value of the Internet. There are plenty of Bit-haters, the largest group being governments and large financial institutions (incumbents who have the most to lose), but the more they try and fight Bitcoin, the stronger it becomes. Bitcoin prices are following a 2014 Logarithmic Non-Linear Regression model (most humans only think linearly) and that model predicted the $10,000 price this past November and shows how Bitcoin will move the next 10X to $100k over the next three years (we see a $400k price, gold equivalence over a decade). Q1s have historically been rough for Bitcoin (particularly following years with big up moves like 2017) as the Chinese get set for Lunar New Year and there is some tax selling related to the huge gains from the previous year. It is likely that Bitcoin will stabilize over the next three to nine months and head back for the

**parabolic pricing channel that mirrors the development of the Network over time. Bitcoin is all about the growth of the Network, people taking money out of the fiat system and increasing the user base of Bitcoin. That process is still in the early days and we have just entered the Frenzy portion of the Installation Phase of a new technology along an S-Curve. There will be a crash at some point in the future (like the Dot.Com crash), but we are likely a few years away. That crash will cleanse the system and lead to the Deployment Phase of Bitcoin where widespread adoption and use cases will flourish and the investment opportunities will become even more robust. One of the best things about Bitcoin is that it has strong portfolio diversification benefits (low correlation to traditional assets), so it doesn't take much (1% to 5%) in a diversified portfolio to make a significant positive impact. We believe Bitcoin (and other cryptocurrencies) are here to stay and they are just getting warmed up.**

We presented some data last quarter about how the Bitcoin network grows in a non-linear fashion, following a parabolic model that actually shares some elements of a viral growth pattern. We noted last time how "this may explain why people are having such a hard time understanding the price action since humans are not very good with exponential math and logarithmic non-linear regression models." The other important issue is to always distinguish between the network value and the current price as they are not one and the same; the current price is simply the price at which marginal buyers/sellers make a transaction. One of the reasons for the high volatility of BTC is that those willing to transact (not "Hold on for Dear Life") make up a very small percentage of the overall network ownership today and tend toward emotional extremes of panic buying (surges) and panic selling (crashes). To make matters worse, we discussed last time how "there is a cyclical phenomenon of year-end selling to pay taxes and Chinese selling related to Lunar New Year, which tends to amplify volatility (particularly in late Q4 and into Q1)." We warned people last December about how the divergence between the network value and current price had grown extremely wide and was likely to correct and that the launch of Bitcoin futures could also have some short-term impact as hedgers and speculators could now bet against the BTC price. We were also concerned about the Gann Date on Dec. 22 and tweeted the following, "Here is my near-term timetable Dec 22nd is next Break down, perhaps severe, as new weak hands get shaken out. 1Q18 Custody issue gets solved and Institutional wave commences and see $100k by early 2019. Then another Break down, before real ramp..." The Ghost of Gann struck again, and prices did fall sharply through the end of the year, closing at $14,156 on Dec. 31, down (27%) from the Dec. 16 peak.

We tweeted again on Dec. 28 to reiterate the point that the correction was not done, as weak hands (new buyers at the highs in December) would be shaken out and we also corrected the error on the timing of the $100k price target, saying "reiterating what I said three weeks ago, corrections in #Bitcoin (and other #Crypto) are inevitable along the way. This one in $BTC could easily extend back under $10k, but long-term trend toward $400k on track. $100k milestone likely in 2021. *#BuyTheDip #JustGettingWarmedUp".* We clarified a few days later, that there was nothing magical about the $10k number and that perhaps Mike Novogratz's forecast of $8,000 could be right (it would actually get closer to $6,000 in April). While Q1 did turn out to include a significant BTC correction as we anticipated, the volatility was not all downside as prices surged 24% to $17,527 in the first six days of January, then plunged (36%) to $11,189 on Jan. 17 before having one more bounce back up 15% to $12,899 before falling to $10,221 to end a wild January (all that fun in one month…). But the "fun" was just getting started as the first five days of February saw a plunge of (32%) to $6,995 before bouncing back a robust 63% to $11,403 on Feb. 20 (three weeks) and then dribbled down slightly to end the month at $10,398. The first five days of March were the inverse of February as prices rallied 11% to $11,573 before plunging (32%) to $7,917 by St. Patrick's Day and then meandered down to finish the quarter at $6,974, down a stunning (50.7%) for the three months. Prices fell slightly in the first few days of April to $6,636 on Apr. 6, which would turn out to be the final low and then surged 46% over the next few weeks to $9,698 on Apr. 24 and would finish the month at $9,241 (prices have been weaker in May, but more on that next time). Given the wild volatility during the past few months, we will repeat what we wrote last time (and have tweeted often) that "the most important thing to remember about Bitcoin is that the daily price is not really important, what is important is gaining ownership of the Network as it develops. Think of it like an iPhone, when there was only one, the network had no value, two phones, still no value, a million phones, meaningful value, ten billion phones, huge value. The same applies to the network value of Bitcoin." As millions of global users buy into the Bitcoin network (remember U.S. owners are still only 10%), the Network value will continue to grow toward our target level and with technology enhancements (like Lightning Network) that allow faster transactions and facilitate use cases (beyond Digital Gold), that $400k target over a decade might be conservative. Parabolic moves (like the one in 2017) are always followed by consolidation periods (like we have seen in 2018), but over the coming years, the network value should move along the Parabolic Model path, which points to levels of $22k by the end of 2018, $41k by the end of 2019, $75k by the end of 2020 and $100k by the middle of 2021.

There are hundreds of Crypto Tokens today (1,634 at last count) that have resulted from ICOs and notice we did not refer to them all as cryptocurrencies (most are not). An ICO is essentially a formalized crowdsourcing model and there has been a boom in capital raising using this process in the past year. This boom is having a profound impact on the traditional venture capital model as more money was raised in ICOs in the past two quarters than in traditional VC. In a wild turn of events, traditional venture funds are even participating in some of the ICOs, evidence that true disruption is going on in Silicon Valley. We talked last time of "another huge trend that is early in its development is tokenization of value whereby any asset could theoretically be put into a token format providing fractional ownership, instant liquidity and a 24/7 global trading platform." As we noted above, the implications for real assets is profound and we will be talking more extensively about this trend in the coming quarters and years. We have said that Bitcoin is #KingCrypto and Ethereum ("ETH") is the Crown Price. Think of Ethereum as the www. of the Internet of Money, a protocol that allows developers to build other applications (and tokens) utilizing the Ethereum Blockchain. Ethereum is also a cryptocurrency (an incentive system or means of exchange) that is widely held and trades across many exchanges. Ethereum-based applications focus on the integration of smart contracts directly into the applications and will lead to many interesting use cases. The potential of this protocol is truly staggering as it can be applied across nearly every business model. ETH had an even wilder ride in Q1 than BTC as the momentum surrounding Ethereum reached a fever pitch in early January with prices surging an astonishing 84% from $757 on Dec. 31, 2017 to a high of $1,396 on Jan. 13, 2018, then flash crashed (29%) to $986 ten days later on Jan. 23, before surging 26% back to $1,246 on Jan. 28 and then settling back to $1,118 to end the month. The first five days of February were unkind (to say the least) as ETH crashed (38%) to $698 before bouncing 40% back to $974 on Feb. 17 and meandering down to $855 at the end of February (recall the mathematics of losses, down (40%), up 40% is still down (16%). March was brutal for the ETH bulls as prices plummeted all month, falling (65%) to $396 (troughing six days later at $370), down a staggering (47.6%) for Q1. As Tax Day came and passed, the ETH buyers returned to the markets and prices surged 69% to $670 at the end of April (prices were solid in early May and have been weak in recent weeks, but more on that next time). With this kind of price volatility, it is easy to forget that ETH was $8 on Jan. 1, 2017, and the network value had languished for three years as the community moved toward adopting ERC-20 as a standard protocol (similar to how the Internet protocols fought for share in the 1990s). We expect to see a similar opportunity for the primary protocols in security tokens over the coming years.

We will conclude this section the same way as the last quarters, saying "some really, really, smart people are getting really, really excited about cryptocurrencies and we are beginning to feel less strange about writing about them, which is a trend that we expect to continue." A number of these really, really smart people (like Dan Morehead and Mike Novogratz) will be raising new funds this year and we are excited to participate with some of the leading investors in Blockchain technology in our new blockchain fund. We have built a strong pipeline of deal flow in the Blockchain space and we are seeing lots of compelling ideas to deploy capital. Having a team now in place that has experience in tokenization is a huge advantage in the marketplace and Morgan Creek is becoming a preferred partner for opportunities in the security token space. We will be forming a vehicle to capitalize on the opportunity in security tokens in the coming months. We are also very excited to have the opportunity to partner with some amazing talent in the cryptocurrency and infrastructure investment areas who are looking to partner with an established platform that can bring experience in the traditional investment markets to these emerging areas. We will look forward to writing more about these new programs and solutions over the course of the year.

**Summary**

Reviewing our overall asset allocation view, we would reiterate that the current investment environment is not favorable for excessive risk taking and that cash (and other stores of value) may turn out to be a very valuable asset (rather than the drag on investment returns most believe it to be today). We noted last time that #HackedMarkets have occurred many times during our career (1987, 2000 & 2008) and we commented that "One thing we know for certain is that eventually the good guys get back control of the account and things return to normal." We have written a number of times of the past few quarters that "Cash has a high level of option value as it allows you to preserve capital in the event that the bubble returns to normal faster than anticipated and it allows you to buy assets at cheaper prices in the future." Keynes was right when he said that markets can be irrational longer than you expect. The secret is to avoid excess leverage (looking at you XIV buyers, volatility sellers and margin borrowers) to insure there is no solvency risk and that you don't get carried out of the game right before rationality is restored. We said last time that "we expect that the army of frogs will, unfortunately, not heed the warning signs, and will end up as the starter course at dinner. However, for those that have started to finally feel the heat, there is time to jump out of the pot and head for the cooler waters of value, private, hedged and real assets strategies to protect capital and keep the miracle of compounding working on your behalf." We believe that the Killer D's (demographics, debt and deflation) are still in control across Developed Markets and that economic growth, interest rates and (eventually) equity prices will be lower than consensus expectations. Clearly the last few months have been challenging for the Hoisington thesis that the secular low in interest rates is ahead, yet we continue to believe that holding a position in long duration Treasuries may be beneficial and will help preserve capital should economic and market turbulence rise more than anticipated. For those investors who continue to be compelled to own public equities (we recommend well below average exposure overall) we would weight portfolios in the following order Emerging Markets > Japan > Europe > U.S., thereby reversing the current capitalization weighting profile from the MSCI ACWI Index (incredibly U.S.-centric and very little EM exposure). We believe that demographics is destiny and that growth in the Developing Markets will continue to exceed Developed Markets and their economic power will rise over time. MSCI will eventually have to adjust the market capitalization weightings in their indices to reflect the actual contributions to global GDP. It makes little sense that Emerging Markets now contribute 40% of global output yet have only 9% of the allocation of the ACWI Index. When allocating capital toward risk assets in the capital markets today, given the high levels of valuation in the public markets (particularly in the U.S.) we continue to believe that the best place for investors to earn outsized returns will be in the private markets (small LBOs, China Growth Capital, Venture Capital, Energy & Natural Resources, Real Estate and Direct Debt). We have said for the past couple of years that "Whatever weight an investor has been comfortable with historically for private investments, double it (that is, if you liked 20%, raise to 40%)." While we haven't jumped on the runaway inflation bandwagon yet (like the 13D gang), we do believe that this is an opportune time to be shifting from paper assets toward real assets (cheapest relative valuation ever) and that there are very compelling opportunities in commodities and natural resources in the current environment. We like this theme so much that we titled our most recent Around the World (#ATWWY) webinar, Move Your A$$ets: Why Now Is The Time To #GetReal (real assets, that is). Finally, as you might infer from the theme of this letter, we also believe that making an allocation to cryptocurrency and tokenized assets will add value to portfolios and we would expect to be writing much more about these assets in the coming years as the markets develop. As the Morgan Creek tagline reminds us, now is an important time for some Alternative Thinking About Investments.

## Update on Morgan Creek

We hope you have been able to join us for our Global Market Outlook Webinar Series entitled "***Around the World with Yusko***." We have had many interesting discussions in the last few months including: *2018 Is the Year of the Dog: Nope, It's the Year of the Frog* and *Digital Disruption: Why Blockchain is Big, Really Big…*.If you missed one and would like to receive a recording, please contact a member of our Investor Relations team at IR@morgancreekcap.com or visit our website www.morgancreekcap.com.

We are also a proud sponsor of The Investment Institute, an Educational Membership Association for Institutional & Private Investors and Managers in the Southeast. The date of the next program will be **October 22nd–23rd, 2018** at **The Carolina Inn, Chapel Hill, NC**. For more information on how to become a member and join this elite group please visit www.theinvestmentinstitute.org.

As always, it is a great privilege to manage capital on your behalf and we are appreciative of your long-term partnership and confidence.

With warmest regards,

Mark W. Yusko
Chief Executive Officer & Chief Investment Officer

**General**

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**Risk Summary**

Investment objectives are not projections of expected performance or guarantees of anticipated investment results. Actual performance and results may vary substantially from the stated objectives with respect to risks. Investments are speculative and are meant for sophisticated investors only. An investor may lose all or a substantial part of its investment in funds managed by Morgan Creek Capital Management, LLC. There are also substantial restrictions on transfers. Certain of the underlying investment managers in which the funds managed by Morgan Creek Capital Management, LLC invest may employ leverage (certain Morgan Creek funds also employ leverage) or short selling, may purchase or sell options or derivatives and may invest in speculative or illiquid securities. Funds of funds have a number of layers of fees and expenses which may offset profits. This is a brief summary of investment risks. Prospective investors should carefully review the risk disclosures contained in the funds' Confidential Private Offering Memoranda.

**Indices**

The index information is included merely to show the general trends in certain markets in the periods indicated and is not intended to imply that the portfolio of any fund managed by Morgan Creek Capital Management, LLC was similar to the indices in composition or element of risk. The indices are unmanaged, not investable, have no expenses and reflect reinvestment of dividends and distributions. Index data is provided for comparative purposes only. A variety of factors may cause an index to be an inaccurate benchmark for a particular portfolio and the index does not necessarily reflect the actual investment strategy of the portfolio.

Russell Top 200 Value Index — this measures the performance of the mega-cap value segment of the U.S. equity universe. It includes those Russell Top 200 Index companies with lower price-to-book ratios and lower expected growth values. Definition is from the Russell Investment Group.

Russell Top 200 Growth Index — this measures the performance of the mega-cap growth segment of the U.S. equity universe. It includes those Russell Top 200 Index companies with higher price-to-book ratios and higher forecasted growth values. Definition is from the Russell Investment Group.

Russell 2000 Value Index — this measures the performance of small-cap value segment of the U.S. equity universe. It includes those Russell 2000 Index companies with lower price-to-book ratios and lower forecasted growth values. Definition is from the Russell Investment Group.

Russell 2000 Growth Index — this measures the performance of the small-cap growth segment of the U.S. equity universe. It includes those Russell 2000 Index companies with higher price-to-value ratios and higher forecasted growth value. Definition is from the Russell Investment Group.

Russell Midcap Value — this measures the performance of the mid-cap value segment of the U.S. equity universe. It includes those Russell Midcap Index companies with lower price-to-book ratios and lower forecasted growth values. Definition is from the Russell Investment Group.

Russell Midcap Growth — this measures the performance of the mid-cap growth segment of the U.S. equity universe. It includes those Russell Midcap Index companies with higher price-to-book ratios and higher forecasted growth values. Definition is from the Russell Investment Group.

Russell 3000 Index (DRI) — this index measures the performance of the 3,000 largest U.S. companies based on total market capitalization, which represents approximately 98% of the investable U.S. equity market. Definition is from the Russell Investment Group.

MSCI EAFE Index — this is a free float-adjusted market capitalization index that is designed to measure developed market equity performance, excluding the US & Canada. Morgan Stanley Capital International definition is from Morgan Stanley.

MSCI World Index — this is a free float-adjusted market capitalization index that is designed to measure global developed market equity performance. Morgan Stanley Capital International definition is from Morgan Stanley.

91-Day US T-Bill — short-term U.S. Treasury securities with minimum denominations of $10,000 and a maturity of three months. They are issued at a discount to face value. Definition is from the Department of Treasury.

HFRX Absolute Return Index — provides investors with exposure to hedge funds that seek stable performance regardless of market conditions. Absolute return funds tend to be considerably less volatile and correlate less to major market benchmarks than directional funds. Definition is from Hedge Fund Research, Inc.

JP Morgan Global Bond Index — this is a capitalization-weighted index of the total return of the global government bond markets (including the U.S.) including the effect of currency. Countries and issues are included in the index based on size and liquidity. Definition is from JP Morgan.

Barclays High Yield Bond Index — this index consists of all non-investment grade U.S. and Yankee bonds with a minimum outstanding amount of $100 million and maturing over one year. Definition is from Barclays.

Barclays Aggregate Bond Index — this is a composite index made up of the Barclays Government/Corporate Bond Index, Mortgage-Backed Securities Index and Asset-Backed Securities Index, which includes 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. Definition is from Barclays.

S&P 500 Index — this is an index consisting of 500 stocks chosen for market size, liquidity and industry grouping, among other factors. The index is a market-value weighted index – each stock's weight in the index is proportionate to its market value. Definition is from Standard and Poor's.

Barclays Government Credit Bond Index — includes securities in the Government and Corporate Indices. Specifically, the Government Index includes treasuries and agencies. The Corporate Index includes publicly issued U.S. corporate and Yankee debentures and secured notes that meet specific maturity, liquidity and quality requirements.

HFRI Emerging Markets Index — this is an Emerging Markets index with a regional investment focus in the following geographic areas: Asia ex-Japan, Russia/Eastern Europe, Latin America, Africa or the Middle East.

HFRI FOF: Diversified Index — invests in a variety of strategies among multiple managers; historical annual return and/or a standard deviation generally similar to the HFRI Fund of Fund Composite index; demonstrates generally close performance and returns distribution correlation to the HFRI Fund of Fund Composite Index. A fund in the HFRI FOF Diversified Index tends to show minimal loss in down markets while achieving superior returns in up markets. Definition is from Hedge Fund Research, Inc.

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MSCI Emerging Markets Index — this is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global emerging markets. The MSCI Emerging Markets Index consisted of the following 23 emerging market country indices: 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.

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