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Editor's Note

With over 20 million inhabitants, Florida is the 3rd largest state in the US and its 2018 projected GDP of over $1 trillion ranks it as the 4th largest. The state has also the strongest asset protection laws in the US. On average, 1,000 people move to Florida daily. Undoubtedly the recent tax reform will be a huge catalyst as it clearly disfavors high tax northeast states, which are already the main source of the region's immigration. The slow trickle of migration from the Northeast is a massive tailwind for South Florida.

17 Fortune 500 companies are based in Florida and over 40% of all US trade with Latin and South America pass through the state. Miami is a great place for wealth managers and family offices, and over the last years more asset managers set up shop in Miami. In fact, the Miami Downtown Development Authority has seen over 50 finance firms moving to Miami.

9,000 high and ultra high net-worth individuals in South Florida

When we look at the asset raising environment and compare Miami and Manhattan, these are certainly two distinct markets. Obviously Miami is the gateway to Latin America where also a lot more potential can be developed. But just South Florida has about 9,000 high net-worth and ultra high net-worth individuals, which for an asset management firm or for a fund that's just starting offers some real and significant opportunities. Subsequently when the asset base has grown to a certain level, the manager can then start to commute to Manhattan and looking for institutional opportunities. Both cities have advantages fund managers can capitalize on.

Fund managers who recently moved into AI to cause trouble

While in 2015, 47% of all hedge fund launches included a component of quantitative finance or machine learning and artificial intelligence, for 2018 Deloitte predicts this number to reach 70%. Of course, machine learning is only as good as the data that you have, but there may also be a dark side to AI. David Coggins is convinced *fund managers and investment firms that have recently moved into this space will find the transition to be a difficult one.* New challenges will arise such as having to refine quant models to reflect higher interest rates, inflation projects, etc. These types of situations are going to happen this year and will put global markets at risk, creating many market sell-offs in 2018, according to Coggins. *Note that this Roundtable meeting took place in December 2017 in Miami, and that the participants pretty much nailed the VIX flash crash that happened in early February 2018.*

The following experts participated at the Opalesque 2018 Miami Roundtable, sponsored by the Miami Downtown Development Authority:

1. Dr. Bret Diamond, Chairman, CIO and Founder of The Fortune Group & AlphaStars Portfolio Science
2. David Coggins, Managing Member, Coral Gables Asset Management
3. Mark Fitzpatrick, Co-Founder, Glide Capital
4. Nitin Motwani, Managing Principal, Miami Worldcenter Group; Chair, Economic Development, Miami Downtown Development Authority
5. Ricardo Navarro, CFA, Portfolio Manager, Noctua Partners
6. Shalin Madan, Founder, Bodhi Tree Asset Management

The group also spoke about:

- Miami infrastructure: A $3 billion dollar train system where Henry Flagler's original tracks were laid 100 years ago (page 12). Miami goes international: Paramount Miami Worldcenter with buyers from 50 countries (with China #2) (page 12)
- The LatAm nexus: Why there is still a significant upside for an influx of assets and asset managers in south Florida (page 13). Opportunites in Latin America and the broader EM markets (page 19-20)
- Ex-ante risk management (page 16)
- Investment advisor / wealth management industry pressured to change (page 18-21,23). What should a fund manager's value proposition be in a world where well over 95% of institutions can't beat a simple equity/bond construct of passives
- Biases that go deeper than education: Why only a very small percentage of investors are truly equipped to select the very best asset managers for their wealth (page 22-23). How the super rich want to invest today (page 24)
- Private debt solutions for RIAs (page 19, 26)
- How to make money with distressed ICO tokens (page 27)
- Where the machines are going to get tripped up. The Augmented AI model (page 17)
- How to survive the next financial crisis (page 28-30)

Enjoy!

Matthias Knab
Knab@Opalesque.com

Participant Profiles

(LEFT TO RIGHT):

Nitin Motwani, Mark Fitzpatrick, Shalin Madan, Dr. Bret Diamond, Ricardo Navarro, Matthias Knab, David C. Coggins

Introduction

Nitin Motwani
Miami Worldcenter

Nitin Motwani with Miami Worldcenter. We have a 27-acre, $4 billion project you can see right here from this window under construction. Separately, we operate a private equity vehicle under the name, Encore Capital Management where we run two opportunistic funds and one private REIT that specifically invests in apartments. We have about $1 billion of assets under management with offices in San Francisco, Los Angeles, Orlando and South Florida.

Mark Fitzpatrick
Glide Capital

Mark Fitzpatrick, I co-founded Glide Capital in 2015 and have been in the alternatives industry for about 20 years and have lived in Miami since 2003.

Glide Capital is a solution for wealth management firms to more efficiently invest into new alternative investment strategies. We focus on private credit and have spoken to over 300 managers in that industry and have approved 18 of those funds for portfolio building. Investors get exposure to the private credit industry through a single investment by selecting from one of the portfolios our wealth management clients build. For the wealth managers, it is a turnkey solution to give clients access to the private credit industry without a significant commitment of time or resources, because we approve the managers and operate the structure on their behalf.

We launched three years ago and have 12 wealth management firm clients and over $150 million in assets. We are very close with our clients and understand their firm objectives. We see ourselves as a partner where we want to help them grow and build better portfolios by building efficient ways to invest in private credit and other attractive asset classes which historically have been attractive investments but difficult to access.

Ricardo Navarro
Noctua Partners

My name is Ricardo Navarro and I manage the credit strategies at Noctua Partners. We are an asset management firm that specializes in alternative strategies within emerging markets, offering products within EM credit, EM equities and niche markets. We also provide customized exposure to emerging markets through managed accounts and fund-of-one structures. Today we have about $800 million in assets under management with offices in Miami and Buenos Aires, Argentina.

David C. Coggins
Coral Gables Asset Management

My name is David Coggins, Managing Member of Coral Gables Asset Management, ("CGAM"). CGAM specializes in quantitative equity management for both sophisticated individuals and institutional investors around the world. The fundamental premise on which our investment philosophy is based is that superior long-term results can be achieved by systematically exploiting the judgmental biases and behavioral weaknesses that influence the decisions of many investors. CGAM's mission is to generate alpha by delivering superior risk-adjusted returns while hedging exposure to systematic risks.

Shalin Madan
Bodhi Tree Asset Management

My name is Shalin Madan. I am the Founder of Bodhi Tree Asset Management. I have spent my career as an allocator in the alternatives world, beginning in 2000 when it was a much smaller industry. Before Bodhi Tree, I was a Managing Director for a substantial family office investing in an endowment style portfolio. Prior to that, I was a portfolio manager for a hedge fund of funds in New York, overseeing several billion dollars in peak assets.

After many years in the alternatives business and having built up a strong multi-product skill set, I felt that I could provide a logical solution for institutions and wealthy individuals to manage their betas in a tactical manner and I decided to start Bodhi Tree Asset Management.

Our first product is the Bodhi Tree Tactical Allocation Fund, a multi-asset, all-weather hedge fund that uses algorithmic process to invest. The General Partner is backed by a group of sophisticated family offices and two former hedge fund managers.

Dr. Bret Diamond
The Fortune Group

My name is Dr. Bret Diamond. I am the Chairman, CIO and Founder of The Fortune Group and AlphaStars Portfolio Science. My first career was in Psychology. I was a professor teaching at the University level at age 22 and primarily focused on Peak Human Performance and Psychotherapy.

Although my first academic and career focus was Psychology, I always had a special affinity for numbers and algorithms. For example, as an undergraduate I completed a tutorial in Symbolic/Mathematical Logic that went all the way through all the subject material that is covered to complete a Ph.D. in the subject in just a few months because I really enjoyed it.

I changed careers 30 years ago and I have found that my interests in Psychology, Mathematics and algorithms have all served me very well as an asset manager. I started at a large firm that unfortunately expanded too fast and went out of business not too long after. I was successful enough at that firm to start my own company after only two to three years in the industry. At that time very few firms applied Modern Portfolio Theory in practice and ideas such as truly uncorrelated investments and absolute return strategies were rarely considered. As far as I knew, no one specialized in this approach. So I saw an opportunity to start the first Introducing Broker specializing in diversified portfolios of uncorrelated, absolute return, liquid investments applying the principles of Modern Portfolio Theory to obtain the optimal efficient frontier, better reward to risk ratio, etc .

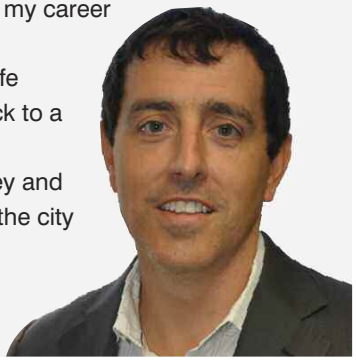
I also was trading for my own account and I had the good fortune to establish apprentice-mentor relationships with three of the best known superstar investors/traders in the world in the first few years of my career. I have continued with both these professional endeavors in my business and my family office until the present time. For a number of years I took the opportunity to focus exclusively on my family office and philanthropic interests. Recently some of my friends working at the highest levels at some of the largest banks and brokers made a concerted effort to persuade me to re-enter the asset management business using the strategies I have utilized in my family office.

As a result we have two products that we are very enthusiastic about. One is what I call a Manager of Manager, Multi-Manager program. I review hundreds of managers, complete due diligence on many dozens of them and select the only very best to combine together according to Modern Portfolio Theory – and a number of other important factors that I have isolated over the years – in diversified portfolios of about fifteen programs each that are designed to provide optimal diversification and absolute returns with comparatively low volatility. After selection, I am the Manager of the Mangers and can adjust allocations, substitute programs, etc as needed to meet our goals. We also put a strong emphasis on non-correlation and Crisis Alpha in order to be in a position to provide potential risk reduction for portfolios that already include exposure to the stock market or other assets that are dependent on good economic conditions.

The other program utilizes a group of systems that I developed for use in my family office that combine Quantitative Methods with Behavioral Finance. It is a multi-strategy systematic program with a robust combination of Statistical Arbitrage, Relative Value, Pattern Recognition, Trend Analysis and Behavioral Finance applications with both market neutral and directional components. We believe that we have combined these approaches in a manner that is unique in the following way.

This program combines the capability of consistent low-volatility Alpha generation with Left-Tail Hedge/Black-Swan Capture components. The idea is to have a program with a Left-Tail Hedge that generates significant positive Alpha during the times that the market is not in a bearish mode while being prepared to capitalize on significant downside moves in the stock market that are likely to occur from time to time. This, of course, not only has significant advantages in itself but can potentially be a great diversifier for a traditional stock or stock/bond/real estate portfolio. Both programs are designed for institutions, family offices and ultra-high net worth individuals.

Matthias Knab Mark, you said that in 2003 you moved to Miami. From where did you come and why did you pick Miami?



Mark Fitzpatrick: As a quick background, I am originally from Vancouver, Canada where I began my career in the investment industry on the audit side. I then spent two years in Bermuda doing hedge fund administration. After a couple years on a 23 square mile island in the middle of the Atlantic, my wife tapped me on the shoulder and said "I'm done with this place. It's great but we need to move back to a city where there are more things to do." We set our minds to combine the beauty and weather of Bermuda with a city that had more options and opportunities. We thought about California, Sydney and some other places but decided Miami was the most attractive option for us. We like being part of the city that is changing all the time and we also have found that Miami is a great place to run a business.

Matthias Knab How have you seen Miami evolve through the time you are here?

Mark Fitzpatrick: Miami is constantly evolving and is growing up right before our eyes. It reminds me or a teenager or maybe someone in their twenties where there is so much potential and it is exciting to see it develop. Again, we moved in 2003, and at that time, downtown was almost like a ghost town on weekends but then a series of developments began downtown that has made the city more alive and liveable on weekends. There has clearly been a lot of new buildings being built downtown and the skyline has gone through a dramatic shift as the cranes are always out there. Some of the leading architects in the world have come to build high end buildings and there are some world class buildings downtown Miami while it remains affordable because of the extent of the development.

Miami has also really built up a strong footprint in the arts and every day we see new restaurants and businesses coming in. We have some unique areas like Wynnwood/Midtown where artists decorate the walls with graffiti and of course we have the beaches and South Beach. Miami needs to focus on investing more in the transportation infrastructure and there are other places to grow but it is an exciting city to live in and work.

Matthias Knab What's it like to run an asset management company here in Miami?

Mark Fitzpatrick: This is a good question, because obviously, a lot of people think you need to be in New York or in certain other places to raise money, but there are actually really good opportunities to succeed in this business here in Miami if you are connected to the right people.

When we first arrived in 2003, my goal was to find a good reputable firm to work with which was going to provide opportunities for growth. Again, I had been working in the investment industry and hedge fund administration for several years and the most important consideration for me moving to a new city was to find a firm that will be around for the next five to ten years. At that time, there were a lot of smaller boutique investment firms but I was patient and was lucky to find a good and very reputable firm that had been around since '94 that was willing to give me a chance.

While searching for work in Miami, I remember being disappointed and not really understanding the lack of quality opportunities with asset managers in Miami. If you look at the weather, quality of life, tax benefits, and the fact that technology allows you to work from anywhere, it didn't make sense why there weren't more quality asset managers down here. But over time that has changed, and I believe more firms and opportunities are coming as this city provides an attractive quality of life and the business opportunities are also very attractive. Already many wealth management firms are based here in Miami and downtown, and there's great access to capital, particularly if you are connected to the Latin American world.

David C. Coggins: I moved down here in 2004. I met my future wife in undergrad and worked in Manhattan for a few years before moving to Miami. Since then, it's taken a long time and, you know, one wouldn't think that from the outside, but the growth and the seriousness of the city, it's taken a long time to develop. And I just recently started seeing a change where I think the town is a little bit more serious; people are starting to come down here and planning their season, they're based here, which is encouraging.

Miami still lacks a world-class transit system, so that is discouraging and developing one would help the city tremendously. The tax bill getting approved indeed helps as the bill should spur robust growth not only for our country but South Florida as well. Speaking specifically about Brickell Avenue; I believe the area has the potential to be one of the densest areas in the United States.

When we look at the asset raising environment and compare Miami and Manhattan, these are certainly two distinct markets. South Florida has a combination of about **9,000 high net-worth and ultra high net-worth individuals,** which either call South Florida home or their second home. For an investment fund just starting out, the demographics are incredibly compelling. And once your asset base crosses a certain threshold, you begin to commute to Manhattan looking for institutional opportunities. So, I think each city has its advantages a firm can capitalize on.

Shalin Madan: Miami is a great place for wealth managers and family offices. It has always been an excellent hub for real estate-oriented investors and continues to be so. There is no reason it can't be a great hub for hedge funds as well. I think that the future is very bright.

Undoubtedly the recent **tax reform** will be a huge catalyst as it clearly disfavors high tax Northeast states, which are already the main source of the region's immigration. The slow trickle of migration that we have seen from the Northeast is a massive tailwind for South Florida.

Matthias Knab David and Shalin, you run quantitative strategies that incorporate some artificial intelligence as well, how is the capital raising going for you here in South Florida? Do the local investors get what you do?

David C. Coggins: I think we need to clear a few things about artificial intelligence in finance. We still don't know what artificial intelligence is yet; we just don't, and all its capabilities.

AI still has a difficult time **predicting regime changes** such as changes in correlations, volatility, interest rates, monetary policy, things of that nature, so it's still challenging. Investors need to be aware that it's a tool in the toolbox. It's a great buzz word, at the dinner table, but I think there's still the need for human interaction, there is no question about that.

Shalin Madan: I agree 100% with David. The core of what we have initially developed is based on complex decision tree algorithms which have pretty good efficacy given the quality of datasets. You didn't have the data five or ten years ago to create such effective decision trees. The algorithms that we have created are really a manifestation of **human domain expertise,** starting actually with mine. We started with myself because I have a very broad skill set having been a multi-asset class investor. We work off the premise that asset allocation – as opposed to securities selection or identification of 'talent' – is what drives most of one's return as an investor. That is what I observed managing institutional portfolios and so we really sought to systematize a way to harvest the related premia.

Where the machine learning and the AI comes to play is in helping to discover things that one might not have realized or understood, and helping to optimize what one might have already created. That's where AI can be very, very powerful. However, I will caveat that with the fact that **machine learning is only as good as a data that you have.** But the beauty of it is that once you have created a proof of concept like we have done, it just runs on its own and that is where we are at today.

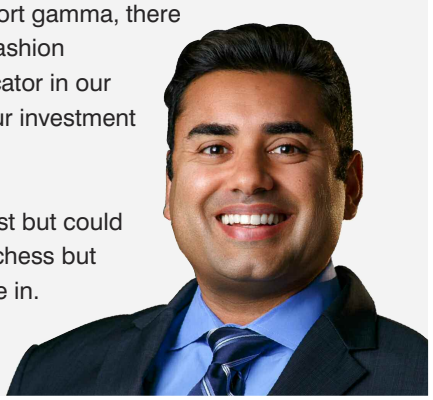
As it pertains to capital-raising, our intention was to use the working capital we raised to build out a core level of infrastructure and product as well establish proof of concept. We believe that our returns to date have proven that we know how to be prudent stewards of capital and our goal for 2018 is to market the fund with the same rigor we built the models and operations of the firm.

David C. Coggins: To piggyback on Shalin's comments, I am convinced fund managers and investment firms that have recently moved into this space will find the transition to be a difficult one. I say this because a new set of challenges will arise such as having to refine quant models to reflect higher interest rates, inflation projects, etc. These types of situations are going to happen this year and will put global markets at risk, creating many market sell-offs in 2018.

As Shalin pointed out, you need to understand the underlying mechanisms and economics behind the inputs because if you don't, one's investment strategy could create friction that could lead to substantial market imbalances. But depending on which side of the fence you are sitting on it could impact some people unfavorably, or these potential inefficiencies could lead to significant alpha generation for others.

And these potential inefficiencies that we feel we are going to see in both the short and long-term will again come from those firms that do not fully understand the underlying mechanisms behind their quantitative models. So you will see a substantial cost for some and for the ones that can identify and exploit these potential inefficiencies they will be rewarded nicely. It's going to be interesting to see what the potential adverse impacts will be from some of these trading models that have been recently implemented and what the possible consequences might be for financial markets both at home and abroad.

Shalin Madan: I agree with David. Judging by the trillions of dollars that are essentially short gamma, there is no doubt that mishaps are forthcoming from pure black box models. We at Bodhi Tree fashion ourselves much more in the quantamental realm, whereby we use the expertise of an allocator in our scenario analysis and then have the algorithms pre-determine our positioning based on our investment philosophy.



This approach is predicated on the belief that human beings actually do know how to invest but could be helped by a 'recommendation engine' approach. I liken it to playing a Grandmaster in chess but having the computer tell you all the moves. So this is the direction we have sought to move in.

Mark Fitzpatrick: Coming back to Miami, there are a growing number of investment products being developed but you also witness some of the smartest people not succeeding because just like in every other aspect of life, you need to be in the right place to succeed. I think it will be really interesting to see what kind of asset management community Miami can develop into. I see Miami as the **gateway to Latin America** but with a lot more potential.

In banking, New York is still the biggest industry and maybe Charlotte comes next, but Miami is probably third or fourth. The reason is because Miami is the gateway to Latin America with a lot of Argentinean, Brazilian, Venezuelan, or Columbian investors looking to invest in the US because it is a stable economy with the largest investment options in the world. They come here to buy property and invest in a place they feel at home because of the Latin American culture is thriving in Miami.

What we have seen so far is that a couple strategies like real estate and credit go very well with the **Latin American investors** and their mindset, and they have an appetite for those. It will be really interesting to see what types of strategies they invest into next.

Miami is constantly evolving, and the overall population keeps growing and changing as well. There are some very positive things going on and a lot of development. I agree we're weak on the transportation infrastructure and that needs to change. We also need to create communities for Asian and other investors to feel at home so we can build out those communities and become a truly multicultural city. That would be exciting to see Miami grow into a more culturally diverse city and it would also go a long way in bringing in more capital to allow for more for investment managers and strategies to be successful. The potential is certainly here but like everything good, it takes time to develop.

Nitin Motwani: I chair economic development for the Downtown Development Authority and lead what we call the hedge fund finance initiative. We named it the hedge fund initiative but it's directed at the broad sphere of investment and wealth management firms, so for example also family offices or venture capital. So far, we have seen **over 50 finance firms moving to Miami.**

I also moved to Miami from New York in 2004 having worked there in finance. I think since then the city has changed dramatically. There was no art museum, Museum of Science, performing arts center, or New World Symphony. The sports teams, the restaurants, and the hotels have evolved. And as someone who's in private equity as well as the development space, we have certainly upped our game as far as buildings go. Every Pritzker Prize winning architect is in Miami, but for one. I think it speaks volumes to what's happening here and that also goes for all the major brands from Four Seasons, Faena, Edition, et cetera.

And, of course, while the city has matured, I also think we have a long way to go. This morning we had our Downtown Development Authority Board meeting which took place in the same room at this table, and we spoke for over an hour and a half with the Chair of the County Commission about transit. It's on everyone's mind and while we have a long way to go, we do have a **$3 billion dollar train system** this year where Henry Flagler's original tracks were laid. So it's the first privately funded rail on the same track that Flagler created a hundred years ago.

Another sector where a lot of things are happening here is healthcare. Like all of you here, our firm started in Miami. I remember that when we started out 2009 in the middle of the recession, being from South Florida, people raised eyebrows whereas now, I just left with one of my investors, and they are all staying for the weekend. I am not surprised they scheduled a Friday meeting during winter time when it's 21 degrees and freezing in New York.

And given the conversations lately about the **SALT exemption** with state and local tax that Shalin referenced, that has been the number one theme when we speak with finance companies. Everyone is asking about that. Naturally we are in favor of getting rid of that deduction because it's great for this market.

We have already seen some of the bigger names coming here, whether it's David Tepper's Appaloosa or ESL or Barry Sternlicht with Starwood Capital. We also have a variety of local funds that have reached the $10, $15, and $20 billion mark that are home grown. So there are some good stories happening and of course your own stories as managers starting on your own in this city, grow a real business and feeling of confidence in your ability to raise capital. I remember when the Downtown Development Authority did our first Opalesque Roundtable about four years ago, about 90% of the conversation was how do you get investors when you're in Miami. That's no longer an issue at all.

The other thing I'd say is that of course we always focus a lot about Latin America in Miami, but that also means that we often get pigeonholed in a way. Now, when you look at Paramount Miami Worldcenter, the condo building we are building right outside this window, we have **buyers from 50 countries, and China is number 2.** Having just gotten back from China and before that from India, I can share with you that *we have been discovered by Asia,* they are just looking for a direct flight. Something will probably happen with JAL in the next 18 months and they are trying hard to get something direct from China as well. And once we have more direct flights, I think we are going to see a tremendous amount of investment from Asia into Miami.

Ricardo Navarro: When you go back a decade or more, particularly with the Latin American market, Miami was perceived as a city of consumption where you would go primarily to shop or for entertainment.

Since the crisis of 2009, we began to see an influx of people looking at the US and Miami in particular as an entry vehicle to invest in attractive real estate assets or assets that had corrected throughout the crisis and were benefitting from the appreciation of the currencies in the region. For example, we saw an influx of Brazilians coming to the market post the real estate crisis. We also had several **tax changes or amnesties** in many countries throughout the region where it was no longer beneficiary to hold offshore assets in places such as Panama or Cayman.

All of these factors accumulated over the last decade to a point where today not only are we seeing more developed private banking and wealth management infrastructure but also seeing the end clients more focused on the investment side as well.

This bodes well for the further development of niche strategies and opportunities that differentiate Miami from the mainstream funds and asset classes available in the more traditional finance hubs such as New York or London. That for me is a natural next step.

In addition, we are also starting to see an inflow of mainstream funds and potential clients moving southward towards Miami, complimenting the movement we have seen from Latin America to Miami over the last decade. Ultimately looking ahead I think there's a significant upside for an influx of assets and asset managers in south Florida.

Matthias Knab You have an office in Argentina. From that perspective or from your direct connections and observations, do you see more Latin American based family offices or asset managers opening up in Miami also from your personal experience?

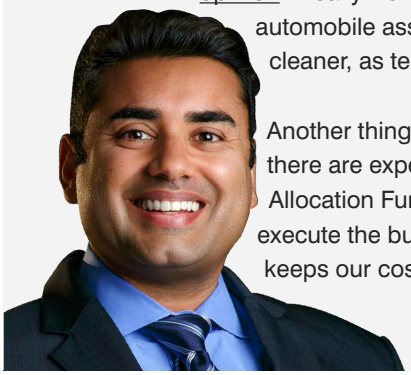
Ricardo Navarro: Yes correct, I do. Again, during the 2007 through 2012 period it was primarily to invest. There was huge interest in real estate for the reasons I had given, and since 2012 a lot has been tax driven.

In Argentina, there was a significant tax amnesty where for a number of reasons, some locally or due to the demise of the private banking secrecy in Switzerland, etc., many people moved assets from offshore into the US. Naturally that then tied into the **expansion of multifamily offices.** We also had a number of institutional clients that were usually not invested in onshore funds or vehicles, so these have been the main drivers for much of the relocation of assets we have seen over the last years.

Matthias Knab A quick comment regarding our AI discussion erlier. Deloitte recently published a piece with a think tank on hedge fund launches. And they said while in 2015, 47% of all hedge fund launches included a component of quantitative finance or machine learning and artificial intelligence, for this year (2018) they predict this number to reach 70%. Coming back to David's point, it's going to be really interesting.

David C. Coggins Exactly, this is where I see significant opportunity for this year. But let me also mention that a "hedge fund" has many meanings today. The primary purpose of a hedge fund should be to protect your LP's capital from systematic market risk. That is what I see as our job and what a hedge fund is supposed to do. We are there to generate an uncorrelated return stream where the stock selection process should generate pure alpha. And for this outcome, as we see it today artificial intelligence and machine learning are just tools in a toolbox.

Shalin Madan: I wouldn't be surprised if at some point in the future that number is 100%. The notion that every other industry can advance using technology and somehow the investment world will be stuck in some primitive age is just nonsense in my opinion. I really view the kind of prototypical stock jockey at a hedge fund to be the equivalent of the guy in the automobile assembly line in the 1960s. He doesn't really exist anymore. Therefore, as data sets become cleaner, as technology and programming languages advance, this is just an inevitability.

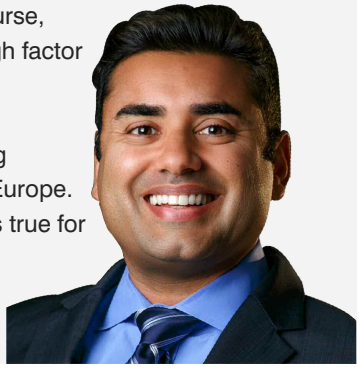


Another thing that we also have to remember is that a hedge fund is a business. There are revenues and there are expenses. For instance, given the level of breadth that we have in our Bodhi Tree Tactical Allocation Fund, if we go back just a few years only, we would have needed numerous analysts to execute the business plan. Now we can run a flexible business model that leverages technology and keeps our costs lower than would otherwise be.

Matthias Knab And there's no additional costs, right?

Shalin Madan: Correct, there is little additional cost once the core solution has been built. Of course, some algorithms have to be adaptive to changing relationships, but in general, if you have enough factor diversification, no one thing should break you.

In addition, leveraging technology allows one to **charge lower fees** and that's what you're seeing whether it's Uber or any other sort of disruptive technology coming out of Silicon Valley/Alley or Europe. The technology helps bring cost down, it increases efficiency and scale, and that paradigm holds true for the investment industry at large as well.

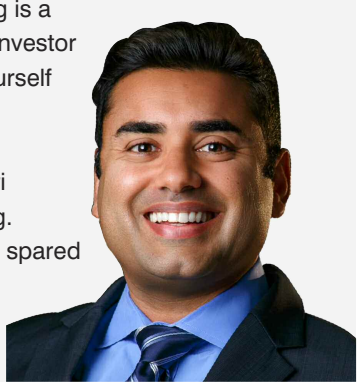


Matthias Knab Both David and Shalin were saying that in their view we are now in a period or phase where the optimal procedure and outcome can be achieved when the man and the machine work together. I saw a statistic on cancer detection, I cannot recall the source, but it said when an AI system is doing cancer detection, it gets it 95% right, when the doctor would be doing it, he's 96% right. But if the doctor uses AI, so when the two work together, that rate goes up to 99.5%.

David C. Coggins: In our space, it's critical to be able to predict regime changes accurately. I believe investors are paying us good money not to mimic or load up on known risk factors. So, we mainly want to **anticipate factors**, and part of this process is having a robust scientific approach to investing.

And going back to your point regarding the cancer detection, while I admire the results, the investing world has its own set of unique challenges when implementing an artificial intelligence process.

Shalin Madan: There's a bit of an irony here, and let me explain what I mean. When I was on the allocator side, what we were looking for with a good investment manager is process, and so the first question you ask is, "Is that process repeatable?" Now the thing about robust quantitative techniques is that it is entirely process driven. If good investing is a function of good process, these approaches should be the easiest to quantify. If you are a good investor and you have a repeatable process and the data is there, then you really should just program yourself and enjoy life!. That's really what it comes down to.



By the way, I hope nothing I am saying is revolutionary. I mean, we fly by wire; many of us ask Siri questions; I love using Pandora to map my musical tastes; so these things are already happening. Putting one's head into the ground, like an ostrich, won't stop the investment industry from being spared in the revolution (or evolution, depending on perspective).

Mark Fitzpatrick: Obviously everybody realizes the power of technology and how it's changed our lives. Our lives are moving so much faster these days and are so much different from when we grew up. As a kid, we went to malls to shop, Blockbuster to rent movies and libraries and newspapers gave us information. Technology is changing everything. The internet has allowed us to digitalize and share information and that has transformed every industry and the way we operate our lives.

I agree that technology is rapidly disrupting every single industry and making everything more efficient. At the same time, *everybody is also challenged to examine what their role is and how they are adapting to this rapidly changing world.* As David said, today you can no longer sit there, do research on stocks and say, "Invest into that stock," because the internet digitalized information and allowed everyone to share it so everyone has access to information. There is no more "information gap" that allows you to have an

edge over others so instead people invest in sectors through ETFs and computers process more information faster so the investment industry has now been automated which means investment professionals need to adapt. So I suggest that we all need to figure out where is technology going and how can we be a part of it.

For our business, we determined that we need to be investing outside of the equity markets because all of that is being automated and we want to invest in the "real economy of America" which is the private sector. However, even this industry of private lending is being transformed by technology.

The private lending industry is growing rapidly and many people understand the reason is because banks have stopped lending because of increased regulation. That is true but an equally big contributor is because they don't know the assets well enough they are lending to and they didn't invest into technology. Technology disrupts each business because it finds a faster way to make a connection and gets rid of inefficiencies. Unfortunately, inefficiencies are often a result of people and processes.

Banks have expensive infrastructures with large buildings, lots of employees and many processes to follow. All of that costs time and money and have to be paid for somehow from the borrowers. Technology has allowed for the ability to analyze data and underwrite more efficiently without the need for people filling out forms and talking to their supervisor. Instead technology allows you to apply for a loan online and that information can be captured and verified to bank information and other data online in a very efficient underwriting method. It can even go further and look into Yelp accounts, Linkedin accounts, etc. to better understand the borrower. Lenders have emerged that focus on a specific asset type and the privatization of lending is exploding. So, technology is going to change everything, it's going to continue to do that and we see it every day. So you just need to somehow figure out how to be that person that stays ahead of it instead of the person that loses her job because they didn't see it coming.

Shalin Madan: Just to offer a slight contrast, Bodhi Tree focuses a little bit more on the medium term with respect to our asset allocation. That's where we feel a lot of the returns can be made without getting into an arms-race with the behemoths.

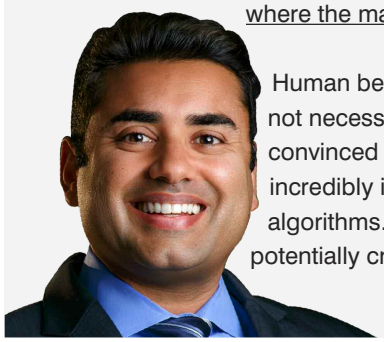
And so we are willing to accept some level of volatility and we are not really optimizing for month to month returns but rather for quarterly, semiannual and definitely annual returns. And that's a big difference. When you loosen up those parameters, the data can be very powerful and totally accessible for even a small shop like us.

I totally agree with David's statements of anticipating factors. In fact, this is our raison d'être. We call that the ***ex-ante* risk management.** This is risk management that you do not do after the loss, but rather, before the loss. If I were to point to my biggest gripe post-financial crisis, it's that VaR models and volatility targeting are so pervasive. When the vol regime changes, these models get caught flat-footed either over-exposed or under-exposed.

I think David, to your point, the --

David C. Coggins: Just to be clear, we are medium and long term oriented.

Salin Madan: Right. The thing about financial markets as opposed to some other industries is that they are non-linear. This is where the machines are going to get tripped up in my opinion.



Human beings still may have the better ability to recognize strange environments and regime shifts. I am not necessarily convinced machines can do that flawlessly, but more importantly, I'm not necessarily convinced that the pure quants who are programming these algorithms can do that too. That's why it's incredibly important to have a market practitioner married to a data scientist and a quant to create these algorithms. The market practitioner essentially acts as the adult in the room. This is how one can potentially create higher efficacy algorithms that don't blow up every few years.

Dr. Bret Diamond: I think the example that Matthias gave regarding the doctors working with AI that are out-performing either party working separately points to the potential efficacy of what's called the **"augmented model" or "Intelligence Augmentation"** where the AI program is working together in a supporting role with an expert human being. AI is significantly better than humans at tasks that primarily require speed and scale of computation. But this has been true of computing for a long time. For the other factors that are often required to intelligently complete important tasks, humans are far superior and may remain so for a long time or possibly for all time. For example: empathy, judgment, creativity, learning how to learn, combining a variety of areas of expertise and intuitively finding a solution from a complex, ambiguous, extensive array of possibilities are all areas that humans are far more advanced.

So I am confident that there is still a lot to be said and discovered about the augmented approach, and I believe that it is very likely that this will end up being the most efficacious AI model in the field of investing. As David and Shalin have been saying, AI has a long way to go before it reaches what many of us think its potential is. It's a great tool for the moment but it definitely can be augmented by many other factors that humans bring to the table.

The bottom line is that, while AI may be much more flexible than prior ways of programming computers and it is potentially worthy of the title "intelligence" by some definitions, I am confident that for a very long time investing will be driven by human decisions and that understanding human decisions will give one an advantage. If someday we could put all the information about how humans make decisions into an AI program that *might* be a wonderful advancement. But that goal may not be attainable for a long time. So again, that speaks in favor of an augmented model for the foreseeable future.

There are some uses of AI that are very useful and very attainable currently. For example, starting off by modeling how very successful investors achieve their success. Even before AI started to become more usable due to increases in processing power and improved data sets, we have been very successful in modeling what various subsets of traders and investors are likely to do next in order to take action shortly before they are likely to move. Subjects such as these are something that we have studied extensively and I believe that my education and experience in Psychology give me an edge in understanding.

Matthias Knab We also had a great discussion at our recent Investor Roundtable in New York about one scenario we may face where certain markets may be dominated by computers trading with other computers, and so one suggestion was to look at domains and strategies which still have certain embedded hurdles to digitization, computerization and automated trading. Any comments or thoughts around that?

Nitin Motwani: Let me add one thing on AI. This technology also makes it easier for people to work wherever they are or want to be. Shops like Shalin's or David's don't need 10 analysts, they may just need three quants. So this makes it much easier for them to setup shop in Miami, find those three quants, and much easier to get them to move here if they don't already exist here. That, coupled with all of the other technologies we have all been using for at least a decade now makes it easier for companies to work wherever they are. That's a positive and bodes well for Miami.

Regarding Matthias' example of cancer, we also know that people will live longer, right? Whether it's because of the doctor or technology, hopefully it's both, people will live longer and for us that bodes well for real estate in some respect.

And of course the real estate market is also being disrupted, as is the taxi industry by Uber, which also impacts parking, or Airbnb with hotels or We Work with office real estate. Everything is kind of changing how we live, work and play, and therefore I also agree with Mark that we have to be pro-actively engaged with technology.

Having just left our construction site, many aspects of real estate like finance and others are still inefficient. Technology should be doing a lot more there. However, when I'm selling condos to 50 different countries at Paramount Miami Worldcenter, I can already offer clients virtual reality tours of an entire building that look very accurate. People are able to see and experience things much earlier with technology. As a developer, we are also able to detect certain issues or problems with technology before we get to them, which helps to build faster and is less expensive because there are less problems later on. So those things will just continue to improve. We have a long way to go in the real estate industry but it will happen just like in every other industry.

David and Mark also hinted at job loss that is also happening with technology. That will change a lot, right? There are fewer traders and analysts needed, fewer construction people and there are already fewer taxi drivers – it will be interesting to see what the world will look like when there's potentially much less work left for humans, especially when they will be living to be a hundred instead of 70. We have to keep the bigger changes in mind as well and see how those macro changes can also be monetized.

Mark Fitzpatrick: That's right, technology changes everything, and we have to adapt to it in order to be relevant. I feel horrible for people that are losing their jobs, and without getting political here, it's not the Chinese or the Mexicans, that are taking the jobs, it's technology. Technology makes things more efficient by getting rid of unnecessary or sub-optimal processes, and unfortunately people are the reason for many of those.

I think we all agree that the asset management and particularly the wealth management industry is ripe for fundamental changes. For example, there are tens of thousands of different advisors out there. When you walk into their office, in many of them you'll find a handful of people sitting in their office with CNBC in the background to show that they are listening to the markets.

The question is really how are they differentiating themselves from other investment advisors? Chances are they came from a big wire house like Morgan Stanley, Goldman, etc. and decided they wanted to leave to start their own firm. They get an office, hire an office assistant and turn on CNBC. Now all of a sudden, they have to invest on behalf of their clients and so they have to understand equities, fixed income, hedge funds, private equities, cryptocurrencies, futures, etc. and each of these asset classes have tons of sub-categories. That is a big task. They also have to run their operations, marketing, regulation, compliance, technology, cyber, and deal with the calls coming in from marketers and clients. There are lots of demands but the only way they grow their business is if they spend the time developing relationships with clients. They need to be out on the street having dinners with their clients, going to

weddings and making connections so they develop a personal connection and understanding of who their clients are and how best to invest for their lifestyle.

What do they end up doing on the investing side? Well, technology has fixed that for us because there are ETFs now. So you just go to your computer and click a few buttons to buy from your Schwab account and get back to all your emails and all the other tasks that come with running a business.

At our firm, we want to be different and don't want to be a "copy cat" because if you look like everyone else, it's hard to differentiate between firms and you become a commodity where people will just look to see who can do it the cheapest. It's important to be unique and to tell a different story. We think it's scary the number of people that are buying ETFs and how much equities have been pushed up because there is no yield in fixed income and wealth managers need to put money to work. There's going to be a correction at some point and we want to be off that grid where technology pours money because the correction can be violent since technology also allows all these people to get out very quickly and remember, many funds are run by algorithms that sniff out this activity.

So instead, we want to be off the grid and focused on the private sector but we also need liquidity so we focus on private lending instead of private equity. It allows us to invest in the real economy and we see strength in the overall economy. The issue is that it takes a lot of work to spend time sourcing and performing diligence on these private opportunities and it can also be inefficient to invest. So we built solutions that wealth mangers can use to more efficiently invest in this space. The other key thing we did was, we understand that it is the wealth manager that has the relationship with the client. So instead of building a product they buy, we individually build a portfolio for each wealth manager and brand it to their firm and objectives. We run the operations and give them everything they need to "white label" and customize a portfolio for their firm. In the end, we have built **an efficient way to invest into alternatives for wealth managers** while giving wealth managers control and the ability to create a stronger brand for their firm. So I think you have to look at what's happening in every single industry and you have to evolve and adapt. That's the way that we're doing it.

Matthias Knab Ricardo, talk to us what you see happening in Latin America or the broader emerging markets.

Ricardo Navarro: I think the tendency in Latin America and the broader EM markets is still to do the old school kind of investing which is primarily driven by inefficient and/or illiquid markets. *I don't believe the stock trading volumes in emerging markets are at a level to allow technology to go in and be more active.* Most of the development of the asset management industry has been focused on growth, liquidity, providing more access or more equity, having more companies to issue in the equity market and more bond securities to be able to trade locally, and so on. Building out and diversifying the financial industry and markets has been the main focus so that the capital markets expressed as a percentage of GDP will expand in a lot of these countries to catch up with some more developed markets. At that point, you will see the development or the extensive use of technology to turn the markets more efficient.

In terms of investors appetite we obviously also saw a big shift to passive managers. It seems that a lot of the capital into liquid markets has been chasing the passive investment vehicles and it has made it more difficult for discretionary active managers to perform in that environment, unless you can compete on technology. So I do think that in more liquid, developed markets such as the US

we see passive vehicles compete on price, as well as a development of active managers that use technology to arbitrage some of the inefficiencies that still remain in the market. However I also expect that the pool of investors that can navigate that market without the use of models or technology will continue to shrink in the more liquid markets.

Matthias Knab Mark, before you described how many wealth advisors and the registered investment advisors are working right now, and maybe this got to change. Consolidation is always one option, and the other push will come from the robo-advisors. If you look at the generation of millennials and how they invest or will invest, they have much different procedures and needs than having their financial planner come to a wedding, no?

Mark Fitzpatrick: I agree, and that is why I believe people in the wealth management industry really have to carve out a niche because otherwise you're a commodity. If a client can't tell the difference between two firms, they will just go with the lowest price. It's the way that things work. If you're walking into 10 different offices but you really see the same thing, with CNBC on the wall and hear the same kind of stories, you're just go to the cheapest place.

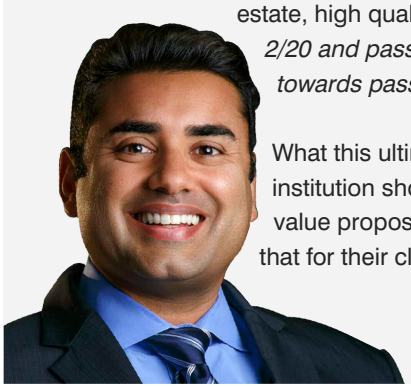
As the solution provider, you really need to extract your value in your conversations with the client. *It's actually pretty amazing how many rich people are just looking for the cheapest kind of solution, and they don't do that in every other aspect of their lives.* They're not eating at MacDonalds and they are not driving Kias but when it comes to investing, they sometimes look for the cheapest solution. If they are doing that, it's because they don't want to treat their money with the same respect as their health or someone hasn't been able to communicate the value of spending more to get something better for them.

So it's really important to be able to clarify what your value is and how you are different. If you are unable to do that, people will go to the biggest firms because they will feel that their money is safest there. *I don't really want to go into the hedge fund industry, but that's the typical cycle of an industry where you will see consolidation because the stories are starting to sound too similar and consultants will keep pouring money into the same names. There's not a lot of room for the smaller guys anymore because in most cases they have heard their story already.*

And so if a client really wants that exposure, they tend to go with the biggest institutions that have the nice offices and safe capital. So as the smaller guy you need to be a lot of different and carve out a niche.

Shalin Madan: As somebody who used to manage a multi-asset class family office, I can maybe give you some of the mindset as to why things are exactly like that. So the **fact is that well over 95% of institutions these days can't even beat a simple equity/bond construct of passives.** That's atrocious, but to be fair, many of these institutions are filled with very smart people. So why the disconnect? I believe it goes back to the fundamental question of, *"why are you using an investment strategy that was conjured up in the 1980s with the belief that it is broadly applicable today when there is so much money chasing so many ideas in both the liquid and illiquid space?"*

Furthermore, I would add that at an individual asset class level, one now sees that that *broad-based private equity can't even beat an equivalent index of stocks.* If you were to adjust it for a leverage and value factor it would be even worse. Even in real estate, high quality REITS can't beat core real estate. *A lot of this is due to fees in private equity which at 2/20 and pass-through expenses, make no sense whatsoever. So there are good reason for that push towards passive.*



What this ultimately means is that the value proposition of a manager or alternatives manager or any institution should be "I can beat your passive portfolio. I can solve your problems." This is Bodhi Tree's value proposition, "We can solve part of your problems." In the long run, if a Manager or an RIA can't do that for their clients, it's going to be incredibly difficult for them.

David C. Coggins: Technology is deflationary, so there are deflationary pressures, and there will be more dislocation, jobs lost and things like that. But, the bottom line is, your existence in the space and what you bring to the table.

So if you have a product that's differentiated, and you are excelling, you are still going to get these fees. And to Mark's point about people sitting in their office chairs watching CNBC: we have had this bull market run now for what, 9-10 years? I mean this is **last call,** folks. So far, they have been the beneficiaries of a great bull market.

I believe not to get too much in the politics, but when Trump was elected, the world started changing. It feels like it's right side up again. The environment just feels different, so it's going to be interesting in the next twelve months or so, I believe. We could have one or many adverse market moving events. Coupled with this Bitcoin craze that's going on right now, we could be in for a significant correction.

So we'll see, I don't know, time will tell.

Dr. Bret Diamond: Our products tend to appeal to the wealthiest, most educated, most savvy, most thoughtful type of investor. I have been doing this for three decades and I have a very strong, data supported confidence in this approach. More importantly, it seems that the wealthiest, most educated investors that I know agree to the point that a significant number of them worked hard to get me to manage outside money again.

But an advanced, multifaceted approach such as ours may not ever be applicable to the broad wealth management industry. Those in the broad wealth management industry address a very wide scope of the investors. The wealthiest, most savvy investors make up less than 10% of wealthy investors. But they probably have more wealth than the other 90%+ combined.

The way we conduct the Multi-Manager program allows us to pick from the managers that we find are the very best in each area and combine the most excellent from multiple areas. We identify the most advanced technology, the greatest human expertise and the managers that combine them in the most effective way. At the same time, we get an opportunity to combine these superior programs in a way that we believe the whole portfolio will be highly likely to perform much better over time than even the best individual manager.

For a client to fully understand and appreciate the real value of our approach requires an exceptionally intelligent, educated and motivated client. They make their decisions based on a very thorough, thoughtful analysis and a motivation to succeed beyond what most people strive for. These qualities have made them very successful in the other endeavors in their life and it means they are the ones that are most able to appreciate the extraordinary value that we offer. I would love to see the whole wealth management industry go in our direction because I think it would be better for everyone. I just do not think it is likely that the entire wealth management industry will ever implement the decision that has the greatest probability of success for their clients.

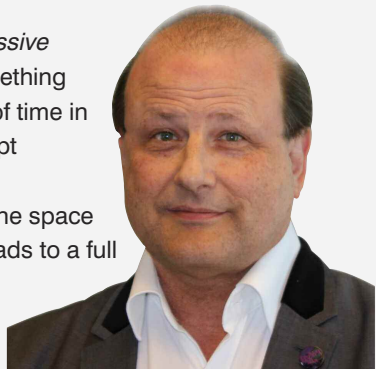
Matthias Knab You think the bottom line is education or what is it?

Dr. Bret Diamond: I think it's more than education, although education certainly plays a part. I think it is also partially due to the biases that are defined by Behavioral Finance and other psychologically oriented research. Not everyone is geared to be the most thoughtful, savvy and wealthy investor. The people who are in that position usually are there for a reason. If they are looking for an investment they perform as well as they have done in the other parts of their life and they are thrilled to find people like us to manage their portfolios for them. Very few are completely prepared for such a high level of achievement. In any competitive field by definition only a small percentage will be the very best. So *only a small percentage of investors are truly equipped to select the very best asset managers for their wealth.*

In terms of human psychology many people make their decisions about asset managers based on factors that have a very low probability to lead to success. As a somewhat extreme but clear example, they feel comfortable with a company because they see its advertisements a lot on television and the company name is on large buildings. Some wealth managers understand these aspects of human psychology that lead people to make decisions based on factors other than a thorough analysis of the facts and they try to succeed for themselves by gathering a large amount of assets though advertising, sales and marketing. Often companies that devote a large percentage of their assets to marketing then have less to devote to developing the best asset management approach. Perhaps they have less motivation as well if they feel they can always bring in new assets through marketing. Compare this motivation to a company that relies largely on growing their clients' accounts to increase assets under management. We do not advertise. Now that I think about it, this is only my second public event in years that has pulled me from behind the ten screens on my desk to tell a bit about our approach.

Related to the prior example is an **overemphasis on recency and short term thinking.** For example, the huge amount of money that has poured into ETN's and similar products that look to profit from declining volatility even as vol is bouncing around near all-time lows for an historically unprecedented period of time --- even today at eleven and one half months through 2017 we find the Vix with a nine-handle --- seems to me to be a relevant example.

Over a somewhat longer time frame I think the over-selling and over-popularity of so called "passive investing" may have an unhappy end result for its investors on an even larger scale. When something performs comparatively well for long enough – even though it is really a relatively short period of time in the scope of market history and especially if it appears to be consistent for long enough to tempt investors into irrational decisions it leads to the creation of products to take advantage of the phenomenon, which leads to advertising those products, which leads to a flood of assets into the space which at best usually leads to overcrowding and dilution of the prior profitability and at worst leads to a full blown financial crisis.



The reasons that most wealthy investors do not achieve investing with the ideal asset manager are more complex than we can cover here. I also don't mean this as indictment or generalization about all companies that advertise. This is just an example regarding how certain kinds of advertising relate to behavioral biases that lead investors to less than the best asset managers. I believe that the factors I have mentioned explain some of the reasons that these circumstances will likely continue into the future.

Mark Fitzpatrick: I agree with Bret, this business allows me to speak to many family offices, RIAs and other wealth managers and remember, my background was originally operations so I didn't have as much opportunity to do that before. One thing that I've learned for sure in speaking with our clients is that this is a relationship business and it's built on trust. At the end of the day, *the wealth managers that have been able to grow and build a bigger business and hire people and bring on more clients have been the ones that realize that and are out there on the street, and not the ones that are in the office and behind computers.*

Also, people don't need more data. They have too much data in their life and often our heads are ready to blow up at the end of the day. What we need is better relationships with people we can trust, with people that understand us and are doing their best to look out for us.

We decided that we won't go out to sell clients something, we don't want to show them another product. Instead we want to show them why we think this asset class is such a good investment opportunity and all the work we've done in the area. Then, we want to give them a solution where they can efficiently create their own product. We know they don't want to hop on planes to fly to California, Texas, New York and all over the place to find these managers and they certainly don't want to spend money on all the due diligence. We've done that work and give them a ready to implement solution for their clients.

But the biggest thing that's going to allow us to grow the business is the same thing that allows them to be successful. At the end of the day, our business takes a lot of effort and we could sit in the office all day long building the best structure and technology and finding the best managers but if it's not what people want then what are we doing? So we too need to be out on the street building relationships with wealth managers and understanding who they are and how we can partner with them to help them build better portfolios and grow their business.

So relationships and trust are always going to drive business. That means, there is always going to be a roll for people. People are getting tired of all the data, I think they are hungry for relationships and feeling that there are other people looking out for them.

Nitin Motwani: I just want to reflect again around technology. We spoke about the hedge fund space where especially when AI is involved you can reduce your team. We heard Shalin's example earlier with the man on the assembly line and Mark's comment that it's not immigrants who took those jobs, but technology, one person with the machine doing what a hundred people used to do. So there is that one person who makes it more efficient, and this concentration on or reliance on technology works with hedge funds and certain other financial companies, including some of the private wealth services as well because the data is a lot more easily available, the relationships are there, so you can make procedures very efficient there as well.

But, for example in a business like real estate, it's still a people business in the sense where you have to have boots on the ground and people dealing with municipalities which will improve over a long period of time with technology. You need to deal with a large range of different people such as attorneys, lenders, equity partners, and with the actual building of structures. So it's a more expensive business, and to David's point earlier, I don't think we'll see an evaporation like we did in 2009. I think real estate is less risky longer term and you get a good yield.

When I was at Goldman as an equity derivatives trader, there were 60 people in our trading class. Today that number has probably been cut in half or a third. There are just not that many people needed. I also remember when we were trading futures and had to switch to trading minis, it took a very long time, probably five times longer than the partner who led my team wanted it to. Of course, trading electronic minis were more efficient and transparent both for us and our clients, but people take time to change, and when they do, it's highly profitable. But again, you can do that on a trading floor, you can't do that out there building a condominium, et cetera. So I think that transformative impact of technology is going to be industry by industry.

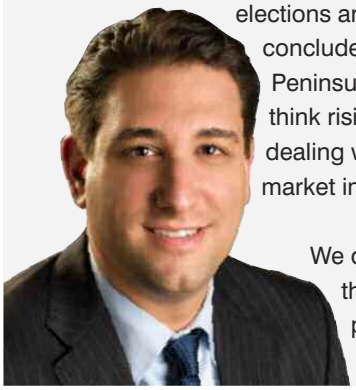
Another thing I noted from my interactions with a lot of the high net worth folks in South Florida, New York and all over the world is that they want to be more engaged in their interactions. They don't want to necessarily go to the big firm and just give them a big check. Rather, they want to know their manager, find out what their niche is, to Mark's point. And beyond that, in a lot of cases they also want to be more engaged in their own decision making. You may hear, "I'll invest $20 million in your fund, but I want to invest $20-$30 million in direct deals that I like, that I can touch, that I can say that that makes sense to me."

So I found that this segment of high or ultra high net-worth clients want to be more actively engaged as we go through this more volatile time, lower yielding time or what I would describe as a more uncertain future.

I also have a question for you guys around the table, what do you think the next one to two years looks like? The US market was up more than a lot of people expected. Ricardo mentioned the last recession, and since then, a lot of other economies were booming – commodities were booming, China was booming. There was always a part of the globe with a lot of cash wanting to do something, and right now, having just got back from China and India, those markets have a strong momentum. Their stock markets have done well, their credit markets have been good, there's been a lot of government involvement as well, however you define that. So I'm just curious what the table thinks about these times.

David C. Coggins: The short-to-medium term growth outlook for the US economy and financial markets remains constructive due to a tightening labor market and a continued recovery in private investment. However, we expected wider budget deficits and a higher debt-to GDP ratio in the years ahead as tax cuts lower revenue but will not be accompanied by offsetting reductions in economic growth or entitlement spending.

We believe that the opposition Democratic Party's chances of winning at least one chamber of Congress in 2018 midterm elections are better than 50%, meaning that **legislative gridlock** in 2019-20 looks increasingly likely. We conclude there are many risks and one significant threat in 2018. The risk of conflict on the Korean Peninsula is at its highest since the 1994 nuclear crisis, and we assign a 40% probability of war. We also think rising legislative gridlock could see President Donald Trump embark on a string of executive orders dealing with foreign policy, trade, and immigration, which could have far-reaching economic and financial market implications.



We question what will result from Americas oddly timed fiscal stimulus. As we move into 2018, we feel that markets might start to feel frightened by the prospects of an economy pushing well above its physical limits to growth being ultra turbo-charged. The markets will be digesting tax cuts,

increased public spending and extraordinarily large and cheap credit flows. Bond markets will start to push the Fed to start a credit tightening process. And what would come from increased pressure for the Fed to start raising rate more aggressively before we start talking about the prospects of stagflation we think will be a nightmare.

With that said we believe the worst threat we face is right here at home: The Federal Reserve. We believe in 2018 the Federal Reserve will bring great pain to financial markets both domestic and abroad. Our own quantitative risk and forecasting models we develop in-house are already suggesting an alarming volatility picture, a picture so bad "volocaust" comes to mind because our forecasting models suggest that the VIX will have a violent move in 2018.

The current policy unwind is qualitatively different from traditional recoveries and the underlying complications can be traced back to the later installments of QE, around 2011, which signaled the beginning of a new regime of market functioning; a new mode rarely seen to persist beyond transient episodes.

In general stocks, bonds and currency cannot all rally at the same time for a prolonged period. Really between 2011-2016, the three assets supported each other conditionally and rallied simultaneously which was the result of continued QE. *If we start to see significant adverse events unfolding in financial markets such as "volcaust," we will say looking back this was a problem created by policy unwind. And if unwind of the stimulus is its mirror image, where does one go when everything sells off?*

The current recovery has been anything but and therefore there is no reason to expect that recovery and the unwind of policy response will be conventional either. Bottom line the pattern of volatility, regarding breakdown across different assets, will determine the mode or risk rebalancing. Volatility will play a decisive role in determining the success and timing of the recovery and the economic trajectory.

In wrapping this conversation up, we feel that the Federal Reserve is ruining financial markets. Enormous damage has already been done by the interventions and distortions resulting from the world's central bankers. When you print money (as the Fed does) you cannot create wealth; you only transfer it from one party to another meaning there has been winners and losers. The losers: seniors dependent on fixed income, savers, pensioners and taxpayers. The winners have been the banks, ultra-rich and political parties and as bad as the damage done so far has been we feel the real pain has not begun yet. It's extremely realistic that central bankers have set the stage for an enormously dangerous and disruptive market crash. The kind that forces markets to close for days and weeks on end.

Ricardo Navarro: The key for me for the next two years is to what extent can we unwind the government or central bank intervention in the broader market and to what extent can we trust that they are either lucky enough or good enough to step back in a very orderly fashion. I think that's going to be the key.

David C. Coggins: There are only a few arguments for owning Bitcoin right now at these levels. *If you do not believe our world central bankers can unwind all the quantitative easing global markets have been drunk on now for nine years in an orderly fashion, you may well consider owning some digital currency, right?* You can also make the argument of owning Bitcoin to smuggle money.

Mark Fitzpatrick: I think if you look at the past, wealth manager used to have a 60/40 portfolio. The stability was designed to come from the fixed income component and the equity gives you the "kicker". Well, now there is no return at all from the 40% fixed income as rates have been driven down to stimulate the economy so advisors have been piling into equities to meet their targets and that works until it doesn't. *There are a lot of people overly exposed to public equities.*

That said, there are hundreds of thousands of people that know a lot more about the equity markets than me. There is so much data and variables out there and I'm not that smart to analyze what the outcomes are going to be so I would rather focus on outcomes I can control more. Private debt is an area where the outcomes are more consistent, so it's about spending time and resources on making sure you are with the right people and strategies.

In my mind, the stock market is not just about fundamentals but it tends to be a barometer of people's confidence and that overlay of human emotion and the pressure to put capital to work scares me. The majority of clients and investors have been doing well in the market, they're making money and feeling good and they are afraid to have cash sitting idle so it perpetuates itself and creates this type of environment.

When it comes to cryptocurrencies and blockchain, I think that there's something more than just this whole lack of confidence in governments. For example, there are still a lot of inefficiencies in the offshore banking world and this could be an offshore banking play. And then just looking behind the blockchain technology there's the idea that as the Internet was the digitalization of information, blockchain now could lead to the **digitalization of assets**, and that has the power to transform how we transact and do business. That is very powerful and exciting.

At the same time people have extra money that they are willing to pile in crypto currencies or ICOs, not knowing what the underlying asset really is or where it's going, they just don't want to miss that craze, so it's that **FOMO** or fear of missing out factor at play as well, which of course is a dangerous thing. I think there are opportunities in this area but people have "lost the plot".

I also believe there is something more to cryptocurrencies than a lack of confidence in governments. I know that if I am sitting in Africa and I want to buy some stock or a piece of property in the US, there's issues in doing that. Technology can evolve to make things more efficient for the whole world, and certainly the offshore banking and parts of the domestic industry is not efficient. Probably we shouldn't ignore the potential with digitalization of assets and the ability to sign contracts and transact through technology. It could change the way we transact and verify counterparties in the future to a much more efficient way and that has huge opportunities.

Unfortunately, people don't understand what is going on so they invest in Bitcoin because they just don't want to miss out. It's like a big gambling machine, and people love the idea of sitting out there on the golf course and talking about crypto currencies. It's a lot more exciting them our boring private credit lending portfolio.

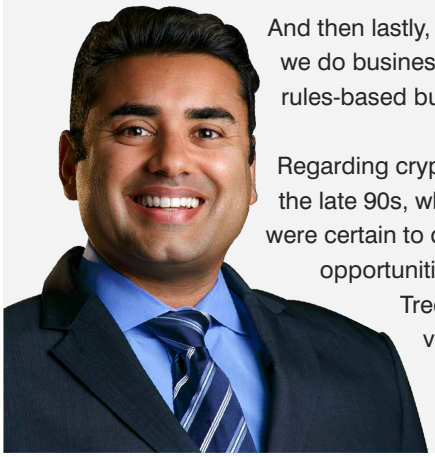
Shalin Madan: Coming back to the question asking for our outlook, I think that 2008 was a once in a lifetime event, and now many people model their portfolios from a reactive standpoint as to what happened in 2008, but that also was a very unique situation with financial leverage and asset liability mismatches in the banking system. I don't think that the next crisis looks like 2008. Where we are right now is a **classic late stage economy.** You are starting to see the yield curve at levels which we saw in 1998 and 2005, which probably infers that we are a couple of years away from the next recession.

If I were advising a family office or institution, certainly in my most illiquid speculative assets, I would be taking money off the table. Think U.S. real estate circa 2006.

Typically, in this part of the cycle we begin to see commodities inflation, so we should see energy and metals prices rising, and that's something we are definitely expecting, and are positioned for quite nicely for 2018.

I would also mention that just in general that hard assets are incredibly cheap versus financial assets. We may indeed be entering into a 10 year secular outperformance.

We also believe that EM has a lot of opportunity, exactly to your point Mark. I was recently in Africa for two weeks and ran my business perfectly. There was high speed connection, it's all I needed. Time difference is a bit of an issue, but our models are generally automated, so I had absolutely no issue whatsoever.



And then lastly, the blockchain is for lack of a better word, 'transformative'. It's going to change the way we do business. It's going to be incredibly disruptive to certain businesses, particularly process-driven, rules-based businesses. If I were an attorney, I would be pretty worried right now.

Regarding crypto currencies, I honestly don't know if Bitcoin is going to survive. This is very similar to the late 90s, which I saw firsthand living in Berkeley (California). For many years, Netscape and Yahoo were certain to dominate and the world is obviously very different today. Where we saw the best opportunities in the internet, in my opinion, was in picking up the pieces in 2001-2002. So Bodhi Tree has done an extensive amount of work in crypto and we are positioning ourselves to be very ready for that environment when it comes.

Matthias Knab What are you planning to do in crypto?

Shalin Madan: Nothing at the moment as it is not part of the fund's mandate. If we can build our current product to scale, it would be nice to leverage the technology roots of the firm to identify post-ICO distressed tokens for a new private-equity style product.

Matthias Knab Are you looking for ways to short?

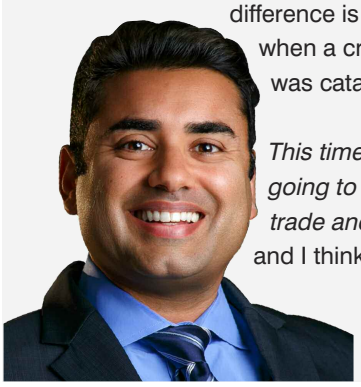
Shalin Madan: No. I don't know how one would short.

Mark Fitzpatrick: Shalin, you said 2008 was a one-time event, and I tend to agree, but there are certain things that we look for along the way, even in the lending industry, that we are trying to learn from.

What scares me personally is the financial engineering that can happen out there. In our industry, we need to focus on delivering unlevered returns of 8-10%. Sometimes in lending you see strategies that can't deliver that on their own so in comes the financial engineering to create a structured product that can get you to your desired return. *They have their strategies where they are lending at 5%, say student loans. So what they will do is they will go out there and create a securitization and sell off the top tranches and you are invested into the equity. And you get to your 10%, but there's fees all over the place, and you are basically four or five times leveraged.*

We want to stay 100 miles away from that type of thing, because anytime you have this financial engineering going on, the unwind is very, very painful because people are forced to sell and it's four or five times the assets suddenly being liquidated. So when there's a lot of financial engineering going on out there, that's what I worry about and that's what was worrisome in 2008.

Shalin Madan: For sure, leverage is always a cause of a lot of these issues that we see in the macro economy. I think the key difference is the level of leverage, you mentioned five times; Lehman Brothers was 30 times leverage. So, when a crisis becomes systemic to the banking system, you had a completely different outcome which was catastrophic, and all within a matter of weeks, by the way.



This time around in my opinion things will be more rolling than cataclysmic. That also means it's not going to be as easy. The best trade for 2008 was to be in a coma and wake up in 2009. That was the best trade and it won't be as easy this time. Now investors need a much more nuanced approach to investing and I think that requires a multidisciplinary, multi-asset, factor diversified portfolio.

Nitin Motwani: Also, it wasn't just Lehman; it was the entire mortgage market that got destroyed by subprime, and so that crisis impacted the single biggest investment that so many people in the United States have. We were approaching 70% home ownership, and just look at how many of those people got wiped out or are still affected in some way 10 years later.

I would say that mortgage underwriting has become much more conservative, and certainly on the development side we are seeing it as very conservative. Even the "financial engineering" from these debt funds that Mark invests in have been very disciplined and they are very sophisticated lenders. They are taking advantage of the regulatory environment more so than they are creating leverage. Their paper is actually good paper, right? That's of course a broad comment, and we interact a lot with these debt funds.

So I think Shalin's point is right, everyone has their horror stories about 2008 when you talk to various people about what happened to them during the last recession, whether it was themselves, their parents, the company they worked for, or about those three years they couldn't find a job, and so on. And therefore a lot of people are preparing for a 2008 event. This is also where the personal side comes back in its relevance, because when clients and investors can work with an active manager that they can trust, that they understand and who in a way won't betray them. Even in the financial crisis, while

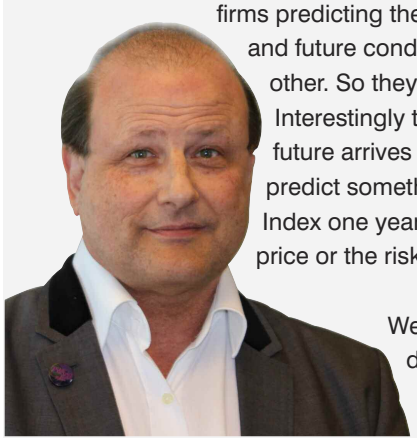
while hedge funds as a whole did not suffer the same losses as the underlying markets, it turned out that a lot of hedge funds weren't hedged but rather just hyper-levered. And when the market turned, they blew up in impressive style. That's not what they were paid Two and Twenty to do.

Dr. Bret Diamond: I would like to echo what you have been saying about the importance of relationships. I became a psychologist out of my desire to help others and I have carried this motivation into my work in asset management. The two primary focal points of my education and practice of psychology have been human peak performance and excellence in the psychotherapeutic process. Being a great psychotherapist requires being a great listener and communicator. I know that being able to understand and communicate well with my clients – understanding their needs so we can best help them and also explaining the benefits of our approach to them in the terms they can best relate to has been invaluable. I am sure a lot of my ability to do that comes from my previous profession in psychology.

Based on many of the insights expressed by my colleagues here at the Roundtable, as well as decades of in-depth research, I think it's also safe to say that human decision making and even human emotion are still very much alive in the financial markets. So I agree that most people will continue to do what Behavioral Finance shows us that most people have consistently done throughout the history of the financial markets; for example preparing for the last crisis and not for the next crisis. That is fundamental human behavior for most people. It takes awareness and discipline to overcome these basic human tendencies that usually have served very well for humans in the earlier stages of evolution but lead most people away from their goals in the modern financial markets.

Another example is reflected in the references to over-enthusiasm pushing the stock market and the cryptocurrency markets to irrational highs – with both the S&P 500 Index and Bitcoin hitting new all-time highs today with only two weeks remaining in 2017. This has happened again and again throughout history, dating back to the infamous Dutch Tulip Mania and crash of 1637 and even earlier. These tendencies are part of human psychology and I think even as we go forward with those of us on the leading edge being increasingly sophisticated with Artificial Intelligence and countless other advances, human psychology is going to be a part of the markets as long as it's humans that are programming the AI and the other technological developments. It is also human decisions that dictate which asset classes and asset managers receive an influx of capital and which have redemptions. As long as this is true and a large part of the population is influenced by the various biases that have been well documented in Behavioral Finance research there will be irrational influences in the markets that firms such as mine can profit from. I do believe that over long periods of time a larger percentage of the population learns to overcome outdated and counter-productive behavioral biases in favor of more rational decisions. But the percentage is still relatively low and increasing at a relatively slow rate.

In our own approach to picking managers and developing strategies, we do not rely on predicting the future in the "crystal ball" fashion that we so often see in advertisements and the financial media. Watching financial television programming for even a few hours one can see any number of truly dedicated, educated, knowledgeable professionals from the best known firms predicting the level of the stock market at a future date or any variety of economic indicators, markets and future conditions for the economy. Quite often their viewpoints are diametrically opposed to each other. So they both cannot be correct in the situation where they have diametrically opposed opinions. Interestingly they both can be wrong in that situation. It probably comes as no surprise that when the future arrives it shows the great majority of these predictions to be incorrect. Even if someone could predict something accurately regarding the market in the future – for example, the price of the S&P 500 Index one year from today – we still would not know the path that the index would take to arrive at that price or the risk that we would have to endure to arrive at that destination.



We favor an absolute return approach based on well researched probabilities that does not depend on any particular performance of a market or economic conditions to meet our

return and volatility management objectives. We include managers that can take advantage of bull markets in stocks, but we also include managers and programs that can take advantage of bear markets in stocks along with bull, bear and neutral market conditions in all of the many dozens of markets that are available for us in the great durable, liquid and transparent financial exchanges of the world.

Because so many investors already have significant exposures to the stock market we emphasize being non-correlated to stocks and being inversely correlated – having **Crisis Alpha –** when stocks, or stock/bond combinations, are experiencing bear markets and crash events. Many of the great minds of our profession have said something akin to: "true diversification is the only 'free lunch' in investing". We agree with this sentiment and with Ray Dalio when he tells us more precisely that *if you add assets that have a .60 correlation to your other assets – which happens to be the approximate correlation that average stocks have to each other – in a long-biased equity portfolio your risk can only go down by about 15% even if you add a thousand assets.* However, if you add the kind of assets that we favor – having an overall correlation of approximately zero – then with as little as fifteen assets the volatility of the portfolio can be cut by 80%. Therefore **by holding uncorrelated assets the return to risk ratio can be improved by a factor of 5X.** Our research and experience bears this out and of course it takes relatively simple calculations to show that it is true in theory. We have made a science of determining which approaches will stay non-correlated in all conditions and finding those investment approaches that have embedded Crisis Alpha that makes them inversely correlated to the stock market when stocks are going down yet still can potentially profit when the stock market is bullish or neutral.

We find that approaches such as these can be very successful without having a crystal ball to the future. To the extent that we do utilize predictions they are based on well researched probabilities and we find that shorter term predictions are much more accurate and reliable than longer term predictions. This seems intuitive given that the more time included, the more variables have an opportunity to change.

Rather than predict the price at some point in the future, we utilize tools that tell us important information about current actions we should take or not take. So our longer views are a result of combining our shorter term predictions. For example, we utilize a number of logical constructs similar to this one: if there is a very high probability that a particular market will continue rising or falling then we conclude that we should maintain our long position – or short position – perhaps for 6 months or longer. But we do it one minute, hour, day at a time. Regarding any predictions of the "crystal ball" variety that make a jump to some future point, we do theorize about such things to give us somewhat of an hypothesis to judge things by as they evolve. However we treat them as very tentative and only take action on them if they are backed up by significant research based on our core approach that I have described – quantitative analysis, advanced methods of backtesting, systematic optimization of reward to risk parameters, probabilities, Behavioral Finance applications, statistical arbitrage, non-correlation, trend analysis, relative value, etc.

It would be contrary to the philosophy that has served me so well for almost 30 years in this business to make firm predictions about some distant future. So I will refrain from doing that. But I think it is safe to say that this is a time of especially great risk for the markets and also immense positive potential for those positioned properly.

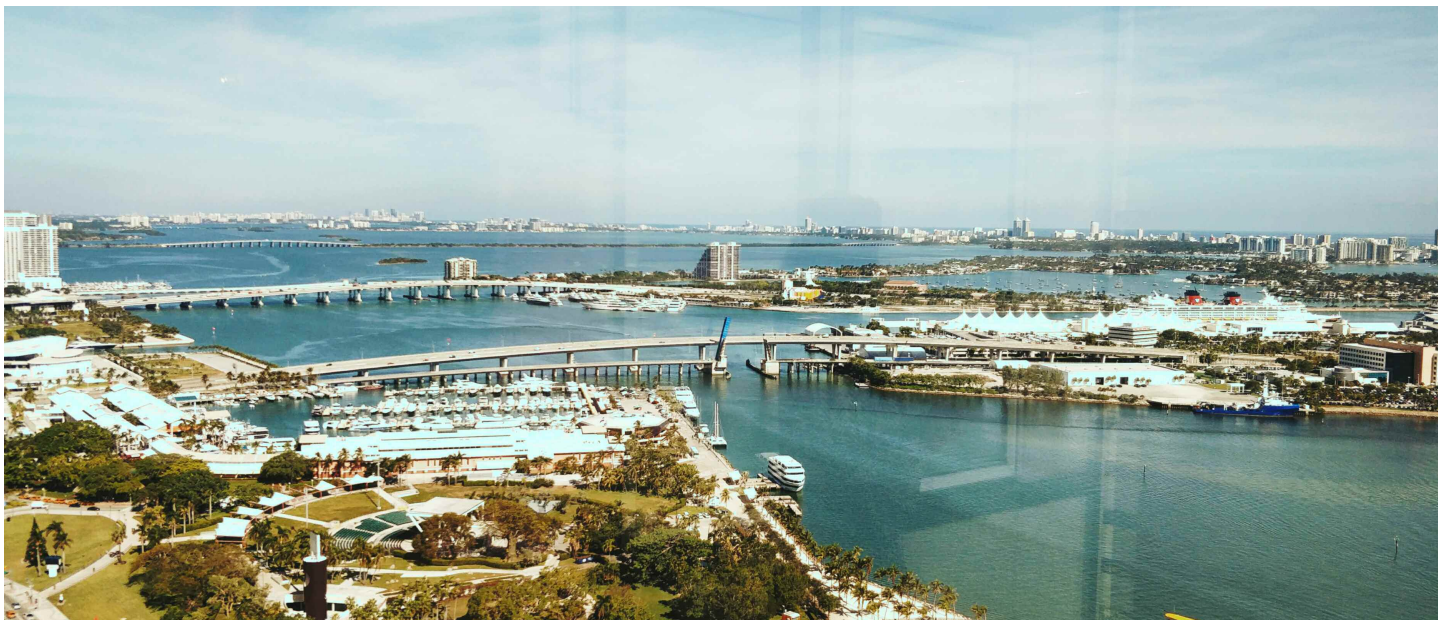
I agree that certainly we shouldn't be preparing for another 2008. Depending on how things unfold, the next crisis could be even more extreme. But that is by no means predestined. It could also be less problematic. However, the next crisis and its causes will almost certainly be much different in many ways than the events in 2008. The superficial details such as the particular assets that destabilize the economy, the names of the key role players, etc will probably be very different. But *the deeper structures – such as human behavioral biases, crowd behavior, motivating factors such as greed and fear, the realities of mathematics and probability, the nature and inter-relationships of and between various markets and many other deep structural factors* – that will be underlying the next economic crisis and every future financial crisis remain very much the same. So we do not need to foresee what will happen years in advance to be prepared for the next crisis. If we utilize methods that have a high probability to put us in the right market positions as events evolve this will serve us better than relying on predictions that assume that events in the distant future are predetermined.

I'd also agree that blockchain can potentially be a very transformative technology that can have all kinds of important applications. The cryptocurrency subsector also has very interesting potential that can be very positive. But cryptocurrencies also pose one of the risks that could precipitate a future economic crisis – just as every disruptive technology carries risks with it. The way that Bitcoin has run up recently, trading at $18,000 today, looks like "blow off top" market behavior that could lead to a very severe setback of more than 50% at any time in the near future. Eventually it could recover from such a crash and possibly go to much higher levels under the right conditions. At this stage cryptocurrency is not big enough to impact the overall economy in a very meaningful way, but if it does grow to a point where it's big enough, I think it could possibly precipitate a crisis in the overall economy. It also has significant geopolitical implications that we need to consider. Bitcoin and other cryptocurrencies may bring many benefits as well. I am only suggesting that an awareness of the risks may help us to mitigate or navigate the risks in the most efficient manner. Of course, anything I have said expresses the opinion of my firm for purposes of robust discussion among investing professionals – not certainty or fact – and in no way should be interpreted to imply anything about performance. I believe that the more attentive that we are to the potential risks that exist and of ways to manage these risks, along with the extraordinary opportunities, the more optimistic we can be. Overall I am very enthusiastic about the opportunities and innovations that we expect to see and to participate in as the future develops. I am also very optimistic about the future of our business, of Miami and of humanity.

Nitin Motwani: I actually see all of this as very positive for Miami because I think everything we have talked about here, including the technology and AI aspects, just add up to more reasons and arguments why we will see more and more people having the actual ability to move here, whether it's tax reasons, weather reasons, or lifestyle reasons.

Mark Fitzpatrick: Unfortunately, the readers are not seeing this view of the ocean and the blue skies here in December and how beautiful this city is.

I already mentioned that Miami has evolved a lot since I moved here in 2003, and it felt like a teenager back then and now it feels like somebody in the 20s and there's a lot of potential out there for further growth and success. There's just a ton of potential for the city, but it's already a great place to live and do business, and I am not going anywhere.



Actual view from the Roundtable meeting location – Miami Downtown Development Authority, 200 S. Biscayne Blvd. 29th floor.

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